



**NOTICE OF A REGULAR MEETING
THE BRENHAM CITY COUNCIL
THURSDAY, SEPTEMBER 15, 2022 AT 01:00 PM
SECOND FLOOR CITY HALL
COUNCIL CHAMBERS
200 W. VULCAN STREET
BRENHAM, TEXAS**

- 1. Call Meeting to Order**
- 2. Invocation and Pledges to the US and Texas Flags - 6th Grade Students from First Baptist Church School**
 - ♦ Invocation - Lucy Nienstedt
 - ♦ Pledge to the U. S. Flag - Archer Hayre
 - ♦ Pledge to the Texas Flag - Rebel Hord
- 3. Proclamations**
 - ♦ 45th Anniversary of First Baptist Church School
 - ♦ Constitution Week
 - ♦ Childhood Cancer Awareness Month
- 4. Citizens Comments**

CONSENT AGENDA

- 5. Statutory Consent Agenda**

The Statutory Consent Agenda includes non-controversial and routine items that Council may act on with one single vote. A councilmember may pull any item from the Consent Agenda in order that the Council discuss and act upon it individually as part of the Regular Agenda.

 - 5-a. Approve the Minutes from August 22, 2022 Workshop Meeting and the August 30, 2022 Special Workshop Meeting**
 - 5-b. Approve Ordinance No. O-22-018 on Its Second Reading to Grant a Non-Exclusive Franchise to Skoot-N-Hauler, LLC to Operate a Roll-Off Container Service for Residents, Businesses and Industries Inside Brenham City Limits**

- 5-c. Approve Ordinance No. O-22-019 on Its Second Reading Amending the Rate Tariff Schedule for the City of Brenham Sanitation Rates**
- 5-d. Approve Ordinance No. O-22-020 on Its Second Reading Amending the Rate Tariff Schedule for the City of Brenham Water Rates**
- 5-e. Approve Ordinance No. O-22-021 on Its Second Reading Adopting a City of Brenham Public Infrastructure Design Manual**
- 5-f. Approve the Selection of Kimberly Meisner (Place 6), Mary Dennis (Place 7), Chris Coffman (Place 8), and Opal Mauldin-Jones (Place 9) for TML Intergovernmental Risk Pool Board of Trustees and Authorize the Mayor to Execute Any Necessary Documentation**
- 5-g. Approve a Noise Variance for Women's Reproductive Rights Brenham, Texas for a March to be Held on October 8, 2022 on the Washington County Courthouse Square from 10:00 a.m. to 12:00 p.m.**
- 5-h. Approve a Noise Variance for the Zythological Society of North America, Texas Chapter, for the Brewstep 0.1K Saunter for a Cause to be Held on Saturday, October 15, 2022 in Downtown Brenham from 1:00 p.m. to 4:00 p.m.**
- 5-i. Approve a Noise Variance for the Texas Arts and Music Festival to be Held on Saturday, October 15, 2022 from 10:00 a.m. to 10:30 p.m. and Sunday, October 16, 2022 from 11:00 a.m. to 3:00 p.m.**
- 5-j. Approve a Noise Variance for St. Mary Immaculate Conception Catholic Church for the St. Mary's Catholic Church Street Dance to be Held on Saturday, October 22, 2022, at 701 Church Street, from 4:00 p.m. to 11: p.m.**

REGULAR SESSION

- 6. Discuss and Possibly Act Upon the Purchase of Audio Visual Equipment for the Brenham Police Department and Authorize the Mayor to Execute Any Necessary Documentation**
- 7. Discuss and Possibly Act Upon a Professional Services Agreement Between the City of Brenham and Strand Associates, Inc. Related to FY2022-23 On-Call Engineering Services and Authorize the Mayor to Execute Any Necessary Documentation**
- 8. Discuss and Possibly Act Upon the Approval of the Routine Airport Maintenance Program (RAMP) Grant Agreement No. M2317BREN with TxDOT for FY 2023 and Authorize the Mayor to Execute Any Necessary Documentation**

9. **Discuss and Possibly Act Upon Resolution No. R-22-028 Authorizing the Acceptance of Public Infrastructure Improvements on Chappell Hill Road**
10. **Discuss and Possibly Act Upon a Chapter 380 Agreement Between the City of Brenham and Brenham CFA Series, LLC and Authorize the Mayor to Execute Any Necessary Documentation**
11. **Discuss and Possibly Act Upon Payment to BK Stringer, Ltd. for the Design and Construction of Chappell Hill Road Improvements and Authorize the Mayor to Execute Any Necessary Documentation**
12. **Discuss and Possibly Act Upon Payment to BK Stringer, Ltd. Related to Masonry and Facade Improvements and Authorize the Mayor to Execute Any Necessary Documentation**
13. **Administrative/Elected Officials Report**

Administrative/Elected Officials Reports: Reports from City Officials or City staff regarding items of community interest, including expression of thanks, congratulations or condolences; information regarding holiday schedules; honorary or salutary recognitions of public officials, public employees or other citizens; reminders about upcoming events organized or sponsored by the City; information regarding social, ceremonial, or community events organized or sponsored by a non-City entity that is scheduled to be attended by City officials or employees; and announcements involving imminent threats to the public health and safety of people in the City that have arisen after the posting of the agenda.

EXECUTIVE SESSION

14. **Section 551.071 Texas Government Code - Consultation with Attorney - Consultation with City Attorney Regarding Aviators Plus, LLC v. City of Brenham, Texas; Cause No. 37896; 21st Judicial District Court, Washington County, Texas**
15. **Section 551.071 and Section 551.072, Texas Government Code - Consultation with City Attorney and Deliberation Regarding Real Property - Discussion and Deliberation, and Consultation with City Attorney, Regarding the Lease Between the City of Brenham and Washington County Concerning the Real Property Located at 301 N. Baylor Street, Brenham, Texas and Associated Issues**

RE-OPEN REGULAR SESSION

16. **Discuss and Possibly Act Upon Matters Related to Aviators Plus, LLC v. City of Brenham, Texas; Cause No. 37896; 21st Judicial District Court; Washington County, Texas and Associated Issues, and Authorize the Mayor or the City Manager to Execute Any Necessary Documentation**

17. Discuss and Possibly Act Upon a Lease Agreement Between the City of Brenham and Washington County Related to the 9-1-1 Communications Facility, Being the Real Property Located at 301 N. Baylor Street, Brenham, Texas and Authorize the Mayor or the City Manager to Execute Any Necessary Documentation

Adjourn

Executive Sessions: The City Council for the City of Brenham reserves the right to convene into executive session at any time during the course of this meeting to discuss any of the matters listed, as authorized by Texas Government Code, Chapter 551, including but not limited to §551.071 - Consultation with Attorney, §551.072 - Real Property, §551.073 - Prospective Gifts, §551.074 - Personnel Matters, §551.076 - Security Devices, §551.086 - Utility Competitive Matters, and §551.087 - Economic Development Negotiation

CERTIFICATION

I certify that a copy of the September 15, 2022 agenda of items to be considered by the City of Brenham City Council was posted to the City Hall bulletin board at 200 W. Vulcan St., Brenham, TX on Monday, September 12, 2022 at 11:00 a.m.

Jeana Bellinger, TRMC, CMC

City Secretary

Disability Access Statement: This meeting is wheelchair accessible. The accessible entrance is located at the Vulcan Street entrance to the City Administration Building. Accessible parking spaces are located adjoining the entrance. Auxiliary aids and services are available upon request (interpreters for the deaf must be requested twenty-four (24) hours before the meeting) by calling (979) 337-7567 for assistance.

I certify that the attached notice and agenda of items to be considered by the City Council was removed by me from the City Hall bulletin board on the _____ day of _____, 2022 at _____ AM PM.

Signature

Title

PROCLAMATION

WHEREAS, Since 1977, First Baptist Church School has provided a Christ-centered education to the children of Brenham and Washington County; and

WHEREAS, During this time, First Baptist Church School has worked with enthusiasm and commitment with families that desire a Christ-centered education for their children fostering the mission statement of 'FBCS seeks to LOVE unconditionally, EXCEL academically, LIVE biblically, LEAD fearlessly to impact our community and world for Jesus Christ'; and

WHEREAS, For 45 years, First Baptist Church School has been and continues to be dedicated to providing high-quality academic standards by nurturing the spiritual, intellectual, social, and physical growth of our students in a wholesome Christian environment; and

WHEREAS, First Baptist Church School has been a part of thousands of students' educational journey, and we continue to honor the commitment made 45 years ago by our founders; and

WHEREAS, First Baptist Church School has been and continues to be an important part of the tradition of educational excellence for children from six weeks old through sixth grade in Brenham and Washington County,

NOW, THEREFORE, I, Milton Y. Tate Jr., Mayor of the City of Brenham, do hereby proclaim the 2022-2023 school year, as

The 45th Anniversary of First Baptist Church School

In Witness, Whereof, I have set my hand and affixed the Seal of Brenham.

Milton Y. Tate Jr.
Mayor

PROCLAMATION

WHEREAS, The Constitution of the United States of America, the guardian of our liberties, embodies the principles of limited government in a Republic dedicated to rule by law; and

WHEREAS, September 17, 2022, marks the two hundred and thirty-fifth anniversary of the framing of the Constitution of the United States of America by the Constitutional Convention; and

WHEREAS, It is fitting and proper to give official recognition to this magnificent document and its memorable anniversary, and to the patriotic celebrations which will commemorate it; and

WHEREAS, Public Law 915 guarantees the issuing of a proclamation each year by the President of the United States of America designating September 17 through 23 as Constitution Week,

NOW, THEREFORE, I, Milton Y. Tate Jr., Mayor of the City of Brenham, do hereby proclaim September 17, 2022, as

Constitution Week

In Witness, Whereof, I have set my hand and affixed the Seal of Brenham.

Milton Y. Tate Jr.
Mayor

PROCLAMATION

- WHEREAS,** Childhood cancer is the leading cause of death by disease of children, ages 1 to 19 years in the U.S. and the second leading cause of death exceeded only by accidents; and
- WHEREAS,** Every year over 17,000 young children will be diagnosed with cancer, with the average age of diagnosis being 6 years old; and
- WHEREAS,** Survival rates for childhood cancers vary widely depending on the type of cancer and can range from less than 1% to over 90%; and
- WHEREAS,** Sixty percent of childhood cancer survivors experience severe or life-threatening complications in adulthood; and
- WHEREAS,** September is National Childhood Cancer Awareness Month and represents an annual opportunity for supporters nationwide to focus on and raise awareness of the challenges of childhood cancer; and
- WHEREAS,** In Brenham, Texas, Adam's Angels Ministry, a local charitable organization, who support families who face childhood cancer and encourages everyone to join in their efforts to help defeat this terrible disease; and
- WHEREAS,** It is right and just for the City Council and the residents of Brenham to join together with Adam's Angels and all children and families touched by childhood cancer to raise awareness and encourage funding;

NOW, THEREFORE, I Milton Y. Tate, Jr., Mayor of the City of Brenham, Texas do hereby proclaim September 2022 as

CHILDHOOD CANCER AWARENESS MONTH

In Witness, Whereof, I have set my hand and affixed the Seal of Brenham.

Milton Y. Tate, Jr.
Mayor

Brenham City Council Minutes

A workshop meeting of the Brenham City Council was held on Monday, August 22, 2022 beginning at 11:00 a.m. in the Brenham City Hall, Conference Room 2A, at 200 W. Vulcan Street, Brenham, Texas.

Members Present:

Mayor Milton Y. Tate, Jr.
Mayor Pro Tem Clint Kolby
Councilmember Shannan Canales
Councilmember Leah Cook
Councilmember Atwood Kenjura
Councilmember Adonna Saunders
Councilmember Albert Wright

Members Absent:

None

City of Brenham Staff present:

City Manager Carolyn Miller, City Secretary Jeana Bellinger, General Manager of Public Utilities Debbie Gaffey, Director of Finance Stacy Hardy, Fire Chief Roger Williams, Strategic Budget Officer Tim McRoberts, and Jennifer Hill

Citizens/Others Present:

Rhea Cooper

Media Present:

Jason May and Lucas Banda, Brenham Banner-Press; and Mark Whitehead, KWHI

1. Call Meeting to Order

2. Discussion and Presentation on the City of Brenham's Fire Department Station No. 2 and Associated Issues, Including But Not Limited to, Department Staffing, Calls for Service, and Impact on the FY2023 Proposed Budget

City Manager Carolyn Miller advised the Council that the FY2023 proposed budget includes issuing new 20-year Certificates of Obligation (COs) for the design and construction of Fire Station No. 2. Miller explained that during recent budget workshops several questions arose about the need for a second station and the construction and financing of the station. Due to all the questions raised by Council, this special meeting was scheduled to answer some of the questions.

Miller introduced former Interim Fire Chief Rhea Cooper. Miller explained that she asked Chief Cooper to give a presentation to help address the need for a second station. Cooper presented the following information to the City Council:

- Explained how fires work, time of detection versus products of combustion
- Insurance Service Office (ISO), Inc's rating system
 - Third party grading entity – grades all fire departments
 - Helps establish fire insurance premiums for residential and commercial
- Public Protection Classification (PPC) Program
 - ISO is the principal provider
 - PPC Rating Scale Points includes ten (10) classes rating from 0 (Class 10) to 90.00 or more (Class 1)
 - Collects information on a community's public fire protection using the Fire Suppression Rating Schedule
- Fire Suppression Rating Schedule (FSRS)
 - Allocates rating points based on the following criteria:
 - Fire Department (location, number of stations, training, maintenance, and testing of equipment): 50%
 - Fire Alarm (number of dispatchers, how alarms are received): 10%
 - Water Supply (hydrants and distribution system): 40%
 - Addendum Points (Fire Marshall and Building Officials): 6-7%
- City of Brenham's Rating and Goal
 - 2005 = Class 4 (68.91)
 - 2012 = Class 3 (73.08)
 - The goal is to get Brenham to a Class 2 rating
 - Historically, cities see an 8-9% decrease in fire insurance costs when going from a Class 3 to a Class 2 department.
- Generated Annual Savings
 - 8-9% savings in residential fire insurance costs
 - 2% savings in commercial fire insurance costs

- Ways to Improve Brenham's Rating
 - o Inspect fire hydrants twice per year (current practice)
 - o Strengthen pre-fire plan process (completed this process)
 - o Change to conventional engine/ladder (have made this change)
 - o Build a drill tower with fire room
 - o Build and staff an additional station

Cooper then provided City Council with an explanation of the ideal fire station staffing versus what Brenham currently has.

<u>Ideal Fire Station Staffing</u>		
Station 1	Station 2	Station 3
• 3 Personnel	• 3 Personnel	• 3 Personnel
<i>9 Personnel per shift</i>		
<u>Current Fire Station Staffing</u>		
<i>(3 Shifts)</i>		
Station 1	<i>Then</i>	
• 6 personnel per shift		
Station 1		Station 2
• 4 personnel per shift		• 4 personnel per shift
<i>Operating 2 Stations will require 24 personnel to staff both stations and cover for vacation/sick leave</i>		

Miller reminded the City Council that the city just completed a land swap with the Brenham Community Development Corporation (BCDC) for 5-acres in the Brenham Business Center. Miller explained that the land swap was for 3-acres the city owned off of South Chappell Hill Street across from the new Baker Katz retail development.

Councilmember Kenjura requested that staff look into land on the north side of town, near Brenham Elementary School. Kenjura expressed concern about the residential growth in that area and whether City Council should consider building the second station in that area instead of in the Brenham Business Center, on the south side of town. Fire Chief Roger Williams stated that he would do some research into other available land on the north side of town and provide Council with the information. Chief Williams also stated that he will provide an update on total rooftops in Brenham and fire response times.

After further discussion with City Council, it was agreed that staff would continue moving forward with planning Fire Station No. 2.

The meeting was adjourned.

Milton Y. Tate, Jr.
Mayor

Jeana Bellinger, TRMC, CMC
City Secretary

Brenham City Council Minutes

A special workshop meeting of the Brenham City Council and the City of Brenham Planning and Zoning Commission was held on Tuesday, August 30, 2022 beginning at 5:30 p.m. in the Nancy Carol Roberts Memorial Library, Roberta C. Johnson Program Room, at 100 Martin Luther King, Jr. Parkway, Brenham, Texas.

Members Present:

Mayor Milton Y. Tate, Jr.
Mayor Pro Tem Clint Kolby
Councilmember Shannan Canales
Councilmember Leah Cook
Councilmember Atwood Kenjura
Councilmember Adonna Saunders
Councilmember Albert Wright

Members Absent:

None

City of Brenham Planning and Zoning Commission Members present:

Keith Behrens, Marcus Wamble, Catharyne Neil, Deanna Alfred, Calvin Kossie, and Chris Cangelosi

City of Brenham Planning and Zoning Commission Members absent:

Artis Edwards, Jr.

City of Brenham Staff present:

City Manager Carolyn Miller, City Secretary Jeana Bellinger, General Manager of Public Utilities Debbie Gaffey, Director of Development Services Stephanie Doland, Deputy General Manager of Public Utilities Alton Sommerfield, Strategic Budget Officer Tim McRoberts Public Works Director Dane Rau, Economic Development Director Susan Cates, Jennifer Hill, Shawn Bolenbarr, Kim Hodde and Shauna Laauwe.

Citizens/Others Present:

None

Media Present:

Jason May, Brenham Banner-Press; and Josh Blaschke, KWHI

1. Call Meeting to Order

2. Presentation and Discussion on Impact Fees for Capital Improvements, Infrastructure and Facilities

Director of Development Services Stephanie Dolan welcomed everyone and introduced Ryan Tinsley and Kelly Hajek from Strand Associates Inc.

Tinsley advised that impact fees are an effective way to economically distribute the costs associated with water, wastewater, drainage and street improvements to the developers that are causing the need for improvements. Tinsley explained that impact fees are governed by Chapter 395 of the Texas Local Government Code and that these fees are a way for the City to recoup costs of capital improvements needed for new development. Tinsley stated that impact fees can only be assessed for the following capital improvements:

- Water Supply, Treatment and Distribution Facilities
- Wastewater Collection and Treatment Facilities
- Stormwater, Drainage and Flood Control Facilities
- Roadway Facilities

Tinsley and Hajek then explained the step-by-step process to begin the implementation of impact fees:

1. Form Capital Improvement Advisory Committee (CIAC)
2. Prepare Draft Land Use Assumptions (LUA) Map Recommendations and Population Projections
3. Present draft LUA and Population Projections to CIAC
4. Incorporate CIAC comments into LUA and Population Projections
5. Prepare draft Capital Improvement Plan (CIP)
6. Present final LUA, Population Projections, and draft CIP to CIAC
7. Incorporate CIAC comments and prepare Impact Fees
8. Present CIP and Impact Fees to CIAC
9. CIAC to make formal recommendation to City Council
10. Public Hearing for approval of LUA, CIP and Impact Fees
11. Adopt Impact Fee Ordinance

The meeting was adjourned.

Milton Y. Tate, Jr.
Mayor

Jeana Bellinger, TRMC, CMC
City Secretary

DRAFT

ORDINANCE NO. O-22-018

AN ORDINANCE GRANTING SKOOT N HAULER, LLC, ITS SUCCESSORS AND ASSIGNS, A FRANCHISE FOR THE PRIVILEGE AND USE OF PUBLIC STREETS, ALLEYS, AND PUBLIC WAYS WITHIN THE CORPORATE LIMITS OF THE CITY OF BRENHAM FOR THE PURPOSE OF ENGAGING IN THE BUSINESS OF COLLECTING SOLID WASTE FROM COMMERCIAL, RESIDENTIAL AND INDUSTRIAL SITES USING ROLL-OFF CONTAINERS AND/OR COMMERCIAL COMPACTORS; PRESCRIBING THE TERMS, CONDITIONS, OBLIGATIONS, AND LIMITATIONS UNDER WHICH SAID FRANCHISE SHALL BE EXERCISED; PROVIDING FOR THE CONSIDERATION; FOR PERIOD OF GRANT; FOR ASSIGNMENT; FOR METHOD OF ACCEPTANCE; FOR REPEAL OF CONFLICTING ORDINANCES AND FOR PARTIAL INVALIDITY.

WHEREAS, the City of Brenham, by ordinance, provides exclusively all solid waste collection and disposal services for solid waste generated from within the corporate limits of the City of Brenham; and

WHEREAS, the City of Brenham may, by ordinance and charter, grant franchises to other entities for the use of public streets, alleys and thoroughfares within the corporate limits of the City and for the collection and disposal of solid waste generated from within the corporate limits of the City of Brenham; and

WHEREAS, the City of Brenham desires to exercise the authority provided to it by ordinance and charter to grant a franchise for the collection and disposal of certain solid waste generated from within the corporate limits of the City of Brenham; and

WHEREAS, the City of Brenham hereinafter referred to as “CITY” desires to grant this franchise to Skoot-N-Hauler hereinafter referred to as “PROVIDER”, under the terms of this Agreement as set out below.

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

SECTION 1. DEFINITIONS

Agreement. This contract between the City of Brenham and for the provision of certain roll-off container and/or commercial compactor service within the corporate limits of the City of Brenham under certain terms and conditions set out herein.

City of Brenham. Also referred to as "CITY" in this Agreement.

City Council. Also referred to as "COUNCIL" denoting the governing body of the City of Brenham.

Customers. Those industrial, residential, and/or commercial premises located within the CITY that generates solid waste requiring collection using roll-off containers and/or commercial compactors.

Solid Waste. All putrescible and nonputrescible solid, semi-solid, and liquid wastes, including residential, industrial, commercial and municipal garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, discarded home and industrial appliances, vegetable or animal solid and semi-solid wastes, and other discarded solid and semi-solid wastes.

Roll-Off Containers. A type of solid waste industry container that is loaded by a winch truck. Also referred to as "container".

Commercial Compactor. A type of solid waste industry container that is loaded by a winch truck and compacts solid waste. Also referred to as "compactor".

Skoot-N-Hauler, LLC. Hereinafter referred to as "PROVIDER". The party contracting with the CITY for roll-off container and/or commercial compactor service, which contains demolition/construction debris or solid waste.

SECTION 2. GENERAL DESCRIPTION OF SERVICES TO BE PROVIDED

For and in consideration of the compliance by PROVIDER with the covenants and conditions herein set forth, and the Charter, Ordinances and Regulations of the City governing the collection and disposal of solid waste, CITY hereby grants to PROVIDER a non-exclusive franchise for use of designated public streets, alleys and thoroughfares within the corporate limits of City for the sole purpose of engaging in the business of collecting solid waste using roll-off containers and/or commercial compactors from commercial, residential and industrial sites within the jurisdictional limits of CITY, as approved by the City Manager or his designee.

SECTION 3.
AUTHORITY FOR TO PROVIDE SERVICE

CITY hereby grants to PROVIDER the privilege to collect from commercial, residential, and industrial customers within the City limits solid waste using roll-off containers and/or commercial compactors only.

SECTION 4.
DISPOSAL SITE TO BE USED

Unless approved otherwise in writing by the CITY, PROVIDER shall utilize any Type I permitted landfill that PROVIDER deems appropriate and is authorized for disposal of all solid waste, which is collected by PROVIDER from within the corporate limits of the CITY.

SECTION 5.
RATES TO BE CHARGED

A written Schedule of Rates that PROVIDER shall charge for the aforementioned services shall be provided to each customer, and such Schedule of Rates may be revised periodically as agreed by PROVIDER and its customers. PROVIDER shall immediately provide the CITY with copies of any and all revised Schedule of Rates documents.

SECTION 6.
PAYMENTS TO CITY

For and in consideration of the use of designated streets, alleys, and thoroughfares as well as in consideration of the covenants and agreements contained herein, PROVIDER agrees and shall pay to CITY upon acceptance of this Agreement and thereafter during the term hereof, a sum equivalent to five percent (5%) of PROVIDER's monthly gross revenues generated from PROVIDER's provision of solid waste roll-off container collection services within the CITY excluding actual landfill tipping charges.

Any revenue received by PROVIDER in excess of the actual landfill tipping charges will be subject to the franchise fee and shall be computed into PROVIDER's monthly gross revenue. Said payment shall be paid monthly to the City of Brenham Attn: City Secretary and must be received by the CITY no later than the twenty-fifth (25th) day of the month following the end of the previous month. If the payment due date falls on a Saturday, Sunday or other holiday designated by the CITY, the payment must be received by the CITY on the next regular business day.

Payments received by the CITY after the due date shall be assessed a ten percent (10%) penalty on the outstanding franchise fee amount owed under this Section.

Failure by PROVIDER to pay amounts due under this Agreement, after written notice by CITY, shall constitute Failure to Perform under this Agreement and CITY may invoke the provisions of Section 15 of this Agreement (FAILURE TO PERFORM), and/or any other remedy available to the CITY in law or equity.

SECTION 7. ACCESS TO RECORDS & REPORTING

CITY shall have access to PROVIDER's records, billing records of those customers served by PROVIDER and all papers relating to this Agreement and the operation of solid waste roll-off container collection and disposal services within the CITY. Access by CITY to PROVIDER's records shall be provided to CITY within ten (10) business days, after written notice to PROVIDER during normal business hours.

The following records and reports shall be filed quarterly with the City Secretary or his/her designee:

- A. Reports of all complaints, investigations, and actions taken by PROVIDER with regard to services provided pursuant to this Agreement.
- B. A listing of all PROVIDER's accounts served and monthly revenue derived from roll-off containers placed in the CITY under the terms of this Agreement. The reports should include: a unique customer identification or account number, frequency of pick-up, size of container and monthly charges.

The CITY is subject to the Texas Public Information Act ("Act"). Generally, the Act requires the release of requested information by the CITY, but there are exceptions. If the requested information meets the criteria outlined in the exceptions, the CITY may decline to release the information for the purpose of requesting a decision from the Texas Attorney General's Office. The Act excepts from public disclosure trade secrets and certain commercial or financial information. The Act states the CITY may withhold:

- A. A trade secret obtained from a person and privileged or confidential by statute or judicial decision; or
- B. Commercial or financial information for which it is determined based on specific factual evidence that disclosure would cause substantial competitive harm to the person from whom the information was obtained.

Pursuant to Section 552.305 of the Act, the CITY is obligated to make a good faith attempt to contact third parties who have a trade secret interest or a commercial financial interest in the information that's been requested so that the third party has an opportunity to submit reasons to the Texas Attorney General's Office why the information should be withheld or released.

The CITY will comply with Section 552.305 of the Act with regard to any requests for records concerning PROVIDER that invoke Section 552.305.

SECTION 8. PLACEMENT OF CONTAINERS

All roll-off containers and/or compactors placed for service within CITY shall be located in such a manner so as not to be a safety or traffic hazard. Under no circumstances shall PROVIDER place containers on public streets, alleys and/or thorough fares without the prior written approval of the CITY. CITY reserves the right to specify to PROVIDER the exact location and time period allowed for placement of any roll-off container(s) it places for service in CITY.

PROVIDER agrees and acknowledges that it shall be liable for any and all damages it causes to any public street, alley and/or thorough fare, and associated improvements and PROVIDER will pay CITY's entire construction costs and other expenses associated with repairing and/or replacing the damaged public street, alley and/or through fare, and associated improvements.

SECTION 9. CONTAINER MAINTENANCE

PROVIDER agrees to properly maintain as necessary, including but not limited to cleaning and painting, all roll-off containers placed for service within CITY.

SECTION 10.
COMPLAINTS REGARDING SERVICE/SPILLAGE

PROVIDER shall receive and directly respond to any complaints pertaining to service from their roll-off containers and/or compactor customers located within CITY. However, any such complaints received by CITY shall be forwarded to PROVIDER within twenty-four (24) hours of their receipt by CITY. PROVIDER shall respond to all complaints within twenty-four (24) hours of receiving notice of such complaint from CITY and shall report to CITY as to the action taken. Failure by PROVIDER to respond and report to CITY on action taken within this twenty-four (24) hour period may subject PROVIDER to a \$25.00 per incident charge from CITY payable with the next payment due to CITY under Section 6 of this Agreement.

PROVIDER agrees that during transport all vehicles used by PROVIDER in the removal of solid waste shall be properly covered to prevent spillage, blowing, or scattering of refuse onto public streets or properties adjacent thereto. All equipment necessary for the performance of this Agreement shall be in good condition and repair. A standby vehicle shall always be available. PROVIDER's vehicles shall at all times be clearly marked with PROVIDER's name in letters not less than three (3) inches in height.

SECTION 11.
OBEISANCE OF LAWS

PROVIDER agrees that it shall comply with all laws, policies, rules and regulations of the United States, State of Texas, and CITY. All collections made hereunder shall be made by PROVIDER without unnecessary noise, disturbance, or commotion.

SECTION 12.
UNDERSTANDINGS PERTAINING TO NON-EXCLUSIVITY

It is understood by and between the parties that this Agreement executed by and between the parties on the 15th day of September, 2022, constitutes the only agreement between the parties. It is further understood and agreed that there are no other agreements between these parties with regard to the disposal of commercial, industrial or residential solid waste in the CITY using roll-off containers/compactors and that this Agreement does not authorize PROVIDER to utilize the streets, alleys or public ways to dispose of commercial, industrial, or residential solid waste other than demolition and construction debris. Both parties agree and understand that nothing in this Agreement conveys to PROVIDER an exclusive franchise for the services described in this Agreement and that this Agreement is non-exclusive.

SECTION 13.
OWNERSHIP OF MATERIALS COLLECTED

Nothing herein shall create or be construed to convey any title to CITY of any solid waste

collected pursuant to the provisions of this agreement.

SECTION 14. INTERRUPTION OF SERVICE OR DEFAULT

A. Termination of Service. In the event that PROVIDER terminates service to any customer with the CITY limits for cause, PROVIDER must notify the CITY through certified mail within forty-eight (48) hours of termination and state the cause of such termination.

B. Excessive Interruption in Service. If the interruption in service continues for a period of seventy-two (72) hours or more, then it may constitute Failure to Perform under this Agreement and CITY may invoke the provisions of Section 15 of this Agreement (FAILURE TO PERFORM).

SECTION 15. FAILURE TO PERFORM

It is expressly understood and agreed by the parties that if at any time PROVIDER shall fail to perform any of the terms, covenants, or conditions herein set forth, CITY may after a hearing as described herein, revoke and cancel the Agreement by and between the parties and said Agreement shall be null and void. Upon the determination by the staff of CITY that a hearing should be held before the City Council, CITY shall mail notice of the hearing to PROVIDER, at the address designated herein or at such address as may be designated from time to time, by registered or certified mail. The notice shall specify the time and place of the hearing and shall include the allegations being asserted for the revocation of this Agreement. The hearing shall be conducted in public before the City Council and PROVIDER shall be allowed to present evidence and given an opportunity to answer all reasons for the termination set forth in the notice. In the event that the Council determines that the allegations set forth are true as set forth in the notice it may by majority vote cancel this Agreement between the parties at no penalty to the CITY.

SECTION 16. INDEMNIFICATION

In the event CITY is damaged due to the act, omission, mistake, fault or default of PROVIDER, then PROVIDER shall indemnify and hold CITY harmless for such damage.

PROVIDER is to indemnify and hold CITY harmless for any disposal of any prohibited material whether intentional or inadvertent.

PROVIDER shall indemnify and hold CITY harmless from any and all injuries to or claims of adjacent property owners caused by PROVIDER, its agents, employees, and representatives.

PROVIDER agrees to and shall indemnify and hold harmless CITY, its officers, agents and employees, from and against any and all claims, losses, damages, causes of action, suits, and liability of every kind, including all expenses of litigation, court costs, and attorney's fees, for injury to or death of any person, or for damage to any property, arising out of or in connection with the work done by PROVIDER under this Agreement, regardless of whether such injuries, death or damages are caused in whole or in part by the negligence, including but not limited to the contractual comparative negligence, concurrent negligence or gross negligence, of CITY.

SECTION 17. INSURANCE

PROVIDER shall procure and maintain at its sole cost and expense for the duration of the Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by PROVIDER, its agents, representatives, volunteers, employees or subcontractors.

PROVIDER insurance coverage shall be primary insurance with respect to the CITY, its officials, employees and volunteers. Any insurance or self-insurance maintained by the CITY, its officials, employees or volunteers shall be considered in excess of the PROVIDER insurance and shall not contribute to it.

PROVIDER shall include all subcontractors as additional insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage's for subcontractors shall be subject to all of the requirements stated herein.

Certificates of Insurance and endorsements shall be furnished to CITY and approved by CITY before work commences.

A. STANDARD INSURANCE POLICIES REQUIRED

1. Commercial General Liability Policy
2. Automobile Liability Policy
3. Worker's Compensation Policy

B. GENERAL REQUIREMENTS APPLICABLE TO ALL POLICIES

1. General Liability and Automobile Liability insurance shall be written by a carrier with a better rating in accordance with the current Best Key Rating Guide.
2. Only Insurance Carriers licensed and admitted to do business in the State of Texas will be accepted.
3. Deductibles shall be listed on the Certificate of Insurance and are acceptable only on a per occurrence basis for property damage only.
4. Claims Made Policies will not be accepted.
5. The CITY, its officials, employees and volunteers are to be added as "Additional Insured" to the General Liability and the Automobile Liability policies. The coverage shall contain no special limitations on the scope of protection afforded to the CITY, its officials, employees or volunteers.
6. A Waiver of Subrogation in favor of the CITY with respect to the General Liability, Automobile Liability, and Workers' Compensation insurance must be included.
7. Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the CITY.
8. Upon request, certified copies of all insurance policies shall be furnished to the CITY.

C. COMMERCIAL GENERAL LIABILITY

1. Minimum Combined Single Limit of \$1,000,000 per occurrence for Bodily Injury and Property Damage.
2. No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.

D. AUTOMOBILE LIABILITY

1. Minimum Combined Single Limit of \$1,000,000 per occurrence for Bodily Injury and Property Damage.

E. WORKERS' COMPENSATION

1. Employer's Liability limits of \$500,000/\$500,000/ \$500,000 are required.

F. CERTIFICATES OF INSURANCE

1. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent, and shall contain provisions representing and warranting the following:
 - a. The company is licensed and admitted to do business in the State of Texas.
 - b. The insurance set forth by the insurance company are underwritten on forms which have been approved by the Texas Department of Insurance or ISO.
 - c. Sets forth all endorsements as required above and insurance coverage's as previously set forth herein.
 - d. Shall specifically set forth the notice of cancellation, termination, or change in coverage provisions to the CITY.
 - e. Original endorsements affecting coverage required by this section shall be furnished with the certificates of insurance.

SECTION 18. ASSIGNMENT

This Agreement and the rights and obligations contained herein may not be assigned by PROVIDER without the specific prior written approval of the City Council. Any assignment by PROVIDER without prior written approval of the City Council shall be null and void.

SECTION 19. SAFETY

PROVIDER shall perform the collection in accordance with applicable laws, codes, ordinances and regulations of the United States, State of Texas, Washington County, and CITY and in compliance with OSHA and other laws as they apply to its employees. It is the intent of the parties that the safety precautions are a part of the collection techniques for which PROVIDER is solely responsible. In the carrying on of the work herein provided for, PROVIDER shall use all proper skill and care, and PROVIDER shall exercise all due and proper precautions to prevent injury to any property, person or persons. PROVIDER assumes responsibility and liability and hereby agrees to indemnify the CITY from any liability caused by PROVIDER's failure to comply with applicable federal, state or local laws and regulations, touching upon the maintenance of a safe and protected working environment, and the safe use and operation of machinery and equipment in that working environment.

SECTION 20.
AD VALOREM TAXES

PROVIDER agrees to render all personal property utilized in its solid waste operation services to Washington County Appraisal District so that said personal property will be the subject of ad valorem taxation for the benefit of CITY.

SECTION 21.
NOTICES

All notices required under the terms of this Agreement to be given by either party to the other shall be in writing, and unless otherwise specified in writing by the respective parties, shall be sent to the parties at the addresses following:

City of Brenham
P.O. Box 1059
Brenham, Texas 77834
ATTN: City Secretary

Skoot-N-Hauler, LLC
1200 Choctaw Lane
Brenham, Texas 77833
ATTN: Peter L. Nicklas, III, Owner

All notices shall be deemed to have been properly served only if sent by certified mail, to the person(s) at the address designated as above provided, or to any other person at the address which either party may hereinafter designate by written notice to the other party.

SECTION 22.
AMENDMENTS

It is hereby understood and agreed by the parties to this Agreement that no alternation or variation to the terms of this Agreement shall be made unless made in writing, approved by both parties, and attached to this Agreement to become a part hereof.

SECTION 23.
SEVERABILITY

If any section, sentence, clause or paragraph of this Agreement is for any reason held to be invalid or illegal, such invalidity shall not affect the remaining portions of the Agreement.

SECTION 24.
TERM OF AGREEMENT

The term of this Agreement shall be effective beginning on the ____ day of _____ 2022, being the date of acceptance by PROVIDER and shall terminate on September 30th, 2023.

Thereafter, this Agreement shall automatically renew annually for a subsequent one (1) year terms beginning on October 1 and terminating on the following September 30 unless either party gives written notice of non-renewal by certified mail no later than sixty (60) days prior to the then current termination date. Further, either party may terminate this Agreement without cause at any time by providing the other party with sixty (60) days written notice of termination by certified mail. This section is not intended, nor shall this section be construed, to limit or prohibit a party's ability to terminate this Agreement as otherwise provided in this Agreement.

SECTION 25.
ACCEPTANCE OF AGREEMENT

That PROVIDER shall have sixty (60) days from and after the final passage and approval of this Ordinance to file its written acceptance thereof with the City Secretary, and upon such acceptance being filed, this Ordinance shall take effect and be in force from and after the date of its acceptance and shall effectuate and make binding the agreement provided by the terms hereof.

SECTION 26.
AUTHORIZATION TO EXECUTE

The parties signing this Agreement shall provide adequate proof of their authority to execute this Agreement. This Agreement shall inure to the benefit and is binding upon the parties hereto and their respective successors or assigns but shall not be assignable by either party without the written consent of the other party.

SECTION 27.
PUBLIC MEETING

It is hereby found and determined that the meeting(s) at which this Ordinance was considered were open to the public, as required by Chapter 551, Texas Government Code, and that advance public notice of time, place, and purpose of said meetings was given in accordance with law.

PASSED and APPROVED on its first reading this 1st day of September 2022.

PASSED and APPROVED on its second reading this 15th day of September 2022.

Milton Y. Tate, Jr.
Mayor

ATTEST:

Jeana Bellinger, TRMC, CMC
City Secretary

ORDINANCE NO. O-22-019

AN ORDINANCE OF THE CITY OF BRENHAM, TEXAS AMENDING THE RATE TARIFF SCHEDULES FOR RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES, AND THE CITY'S COLLECTION AND TRANSFER STATION; AND PROVIDING FOR AN EFFECTIVE DATE OF THIS ORDINANCE.

WHEREAS, the City Council of the City of Brenham, Texas deems it necessary to change the rates for all residential and commercial solid waste collection, disposal and recycling services and the services that are provided at the City of Brenham's Collection and Transfer Station;

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

SECTION 1.

The City Council of the City of Brenham, Texas, does hereby adopt the Residential and Commercial Solid Waste Collection, Disposal and Recycling Services Rate Schedule and the Collection and Transfer Station Rate Schedule for brush & waste that is disposed of at the City of Brenham's Collection and Transfer Station as set forth in the attached Exhibit "A", which is made a part hereof for all purposes pertinent, to be effective with utility billing occurring on or after October 1, 2022.

SECTION 2.

This Ordinance shall take effect as provided by the Charter of the City of Brenham, Texas. The implementation of rates as set forth herein and on the attached Exhibit "A" shall be effective with utility billing occurring on and after October 1, 2022.

PASSED and APPROVED on its first reading this the 1st day of September 2022.

PASSED and APPROVED on its second reading this the 15th day of September 2022.

Milton Y. Tate, Jr.
Mayor

ATTEST:

Jeana Bellinger, TRMC, CMC
City Secretary

ALL SERVICES	800	810
TARIFF	SECTION NO.	SHEET NO.
RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES AND COLLECTION AND TRANSFER STATION RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective – May 7, 2020)

RATE SCHEDULE - RESIDENTIAL

Residential Collection:

Curbside Solid Waste Collection and Recycling Services
One Time Per Week Solid Waste Collection
Bi-Weekly Recycling Collection
\$17.00 per month/per household

Residential Collection: Senior/Disabled Persons (Age 65 or older):

Curbside Solid Waste Collection and Recycling Services
One Time Per Week Solid Waste Collection
Bi-Weekly Recycling Collection
\$12.50 per month/per household (application required for discounted rate)

Additional Container: \$9.00 per month, per container (sanitation customers only).

Curbside Brush Pick-up: Upon request only. \$17.00 per request.

- Curbside brush pick-up is limited to 12 bags per household.
- All limbs must be bundled and tied together. Each bundle shall be no larger than four (4) foot in length and six (6) inches in diameter.

RATE SCHEDULE - COMMERCIAL

Commercial Collection – Front Load Dumpster:

Size	Number of Pick-Ups Per Week						
	1X	2X	3X	4X	5X	6X	Extra
2 YD	82.32	148.97	215.61	283.57	350.21	359.36	25.00
4 YD	103.23	190.78	278.35	367.20	454.74	543.61	35.00
6 YD	113.24	208.86	308.26	393.82	488.19	586.33	40.00
8 YD	135.18	243.05	352.83	450.83	559.29	669.05	45.00

ALL SERVICES	800	811
TARIFF	SECTION NO.	SHEET NO.
RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES AND COLLECTION AND TRANSFER STATION RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective – May 7, 2020)

Commercial Collection – 96 Gallon Cart:

No. Of Carts	Monthly Fee
1	\$ 23.52
2	39.19
3	54.88
4	78.29
5	90.59
6	109.61

Commercial Recycling:

Choice of 2, 4, 6 or 8-Yard Dumpster
One Time Per Week Collection
\$46.00 per month, per dumpster
\$ 40.00 per additional pick-up

Any location where dumpster and/or cart is blocked and collection vehicle must return to provide service shall be an additional \$15.00, per occurrence.

Lock bar installed on sanitation dumpster shall be an additional \$45.00 per dumpster.

RATE SCHEDULE – COLLECTION/TRANSFER STATION

Transfer Station Services – Compactible Waste:

Receiving, hauling, packing and transporting to a Type 1 Landfill
In-City rate
\$ 48.00 per ton

Receiving, hauling, packing and transporting to a Type 1 Landfill
Out-of-City rate
Price shall be negotiable between exclusive franchise holder and transfer company
disposing of waste from outside the city limits.

ALL SERVICES	800	812
TARIFF	SECTION NO.	SHEET NO.
RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES AND COLLECTION AND TRANSFER STATION RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective – May 7, 2020)

Transfer Station Services – Non-Compactible Waste:

Receiving, hauling, packing and transporting to a Type 1 Landfill
\$ 90.00 per ton

Receiving, hauling, packing and transporting to a Type 1 Landfill
City of Brenham Departments only
\$ 45.00 per ton

Collection Station Services – Brush

Residential Brush, Per Pound	\$0.0125 (\$20.00 minimum)
Residential Brush, Per Ton	\$30.00 (\$5.00 minimum)
Commercial Brush, Per Pound	\$0.01625 (\$32.50 minimum)
Commercial Brush, Per Ton	\$40.00 (\$40.00 minimum)
Residential Brush Collected by City of Brenham Departments	\$22.50 per ton

Collection Station Services – Tires

15” or less	\$6.00 per tire
16” or greater	\$15.00 per tire
Tractor tires	\$65.00 per tire
Tire with rim	\$1.00 extra

Collection Station Services – Mulch

Double ground	\$22.50 per ton
Single ground	\$10.00 per ton
50 tons or more within 30 days	\$17.50 per ton
2 cu.ft. bag	\$2.50 per bag

Residential Garbage

\$2.00 per bag

ALL SERVICES	800	813
TARIFF	SECTION NO.	SHEET NO.
RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES AND COLLECTION AND TRANSFER STATION RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective – May 7, 2020)

Collection Station Services – Rake-Off Fees

Brush	\$5.00 per occurrence
Debris	\$10.00 per occurrence
Shingles and other roofing materials	\$15.00 per occurrence

Collection Station Services – Recycling, Unlimited Drop-Offs

City of Brenham Resident	No Charge
Washington County (non-City resident)	\$45.00 per year
City of Brenham Commercial Business	\$45.00 per year*

*If the Commercial Business is participating in monthly recycling services, there will be no additional charge.

ALL SERVICES	800	814
TARIFF	SECTION NO.	SHEET NO.
RESIDENTIAL AND COMMERCIAL SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING SERVICES AND COLLECTION AND TRANSFER STATION RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective – May 7, 2020)

**POLICIES FOR SOLID WASTE COLLECTION, DISPOSAL AND RECYCLING
SERVICES – RESIDENTIAL AND COMMERCIAL**

1. A new customer or a change in service requires Form 7, Application of Service, be filled out at the Public Utilities Office. The form must be signed by the applicant. Copies will be disbursed to the following departments: Public Works and Utility Billing Department.
2. Any changes to the rates contained herein must be approved by the City Council and shall be effective on the date determined by the City Council. Utility Billing Department will adjust customer bills accordingly.
3. Any customer requesting to be included in any special sanitation program must complete the necessary paperwork.
4. Any customer who has residential utility service with the City shall be subject to charges for solid waste collection, disposal and recycling services and shall comply with all City health ordinances regarding the disposal of solid waste.
5. Residential solid waste service shall be collected once per week on a regularly scheduled day. Residential recycling service shall be collected bi-weekly on a regularly scheduled day.
6. Services are available outside the city limits to residential customers presently residing on a current residential truck route that is adjacent to the city limits.
7. Solid waste and recycling containers must be at the curb by 8:00 A.M. on collection day and removed from the curb by 8:00 p.m. on collection day. Containers shall not be placed at the curb for collection prior to 8:00 p.m. the day prior to the scheduled collection day.
8. All solid waste and recycling containers must be placed within three feet of the curb or edge of pavement if there is no curb.
9. Residential collection trucks will not pick up tires, grass clippings, leaves, tree trimming, batteries, carpet, construction materials, furniture and heavy metal objects.
10. Disposal of hazardous waste, explosives, ammunition, used oil and filters, flammable liquids, radioactive waste and/or lead-acid batteries at the Collection/Transfer Station is strictly prohibited. Vehicle tires shall not be placed for curb-side collection, but will be accepted for disposal at the Collection/Transfer Station

ORDINANCE NO. O-22-020

AN ORDINANCE AMENDING THE WATER RATE TARIFF SCHEDULES FOR WATER SERVICES FOR THE CITY OF BRENHAM, TEXAS; AND PROVIDING FOR AN EFFECTIVE DATE OF THIS ORDINANCE:

WHEREAS, the City Council for the City of Brenham, Texas ("City Council") deems it necessary to change the rates charged for water services to its customers in order to provide for conditions of utility service which promote health, safety, and welfare of the citizens of Brenham, Texas.

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

SECTION I

The City Council of the City of Brenham, Texas does hereby adopt the Water Rate Schedules for water services set forth in the attached Exhibit "A", which is made a part hereof for all purposes pertinent, to be effective with utility billing occurring on or after October 1, 2022.

SECTION II

This Ordinance shall take effect as provided by the Charter of the City of Brenham, Texas. The implementation of rates as forth herein and on the attached Exhibit "A" shall be effective with utility billing occurring on and after October 1, 2022.

PASSED AND APPROVED, on its first reading this the 1st day of September 2022.

PASSED AND APPROVED, on its second reading this the 15th day of September 2022.

Milton Y. Tate, Jr.
Mayor

ATTEST:

Jeana Bellinger, TRMC, CMC
City Secretary

ALL SERVICES	600	610
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

GENERAL SERVICE - URBAN

RATE SCHEDULE - W-A

APPLICABILITY

This rate is applicable to all residential customers receiving water service through a permanent meter installation.

AVAILABILITY

This rate is available to all customers located within the corporate limits of the City of Brenham, Texas.

RATES

First 3,000 gallons or less	\$ 21.89
3,001 – 10,000 gallons	\$ 4.80/1,000 gallons
10,001 – 25,000 gallons	\$ 6.01/1,000 gallons
25,001 and above	\$ 7.51/1,000 gallons

MINIMUM CHARGES

The minimum monthly bill shall be \$ 21.89.

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	611
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The homeowner will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	620
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	

(Supersedes Rate Change effective 10/01/21)

GENERAL SERVICE - RURAL

RATE SCHEDULE W-B

APPLICABILITY

This rate is applicable to all residential customers receiving water service through a permanent meter installation.

AVAILABILITY

This rate is available to all customers located outside the corporate limits of the City of Brenham, Texas.

RATES

First 3,000 gallons or less	\$ 25.17
3,001 – 10,000 gallons	\$5.52/1,000 gallons
10,001 – 25,000 gallons	\$6.92/1,000 gallons
25,001 and above	\$ 8.64/1,000 gallons

MINIMUM CHARGES

The minimum monthly bill shall be \$ 25.17.

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	621
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULE	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The customer will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	630
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
(Supersedes Rate Change effective 10/01/2021)		

TEMPORARY CONSTRUCTION SERVICE

RATE SCHEDULE W-D

APPLICABILITY

This rate is applicable to all customers that receive water delivered into a tank truck, tank trailer, portable sprayer, portable mixer, or other similar container from a temporary meter set on a fire hydrant.

AVAILABILITY

This rate and service is only applicable to those who pay the required deposit and the fee for meter placement, and who are approved by the General Manager of Public Utilities prior to usage.

RATES

First 3,000 gallons or less	\$ 21.34
3,001 – 10,000 gallons	\$ 5.87/1,000 gallons
10,001 – 25,000 gallons	\$ 7.34/1,000 gallons
25,001 and above	\$ 9.18/1,000 gallons

MINIMUM CHARGES

The minimum monthly bill shall be \$ 21.34.

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, the customer will forfeit the entire deposit and the City may, at its sole option, remove the fire hydrant meter and terminate service to the customer.

CHARACTER OF SERVICE

Water supplied under this rate schedule is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	631
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. The customer will pay an initial deposit of three hundred dollars (\$300.00) in cash or check to the City of Brenham.
2. In addition, where service is rendered from a fire hydrant, the customer will be required to pay a non-refundable fee of two hundred dollars (\$200.00) to cover the City's cost of setting up and removing a temporary meter on a fire hydrant. The superintendent of the Water Distribution Department has the authority to refuse service from any fire hydrant where, in his opinion, the rendering of such service would have an adverse effect on the pressure or flow to other customers in the surrounding area.
3. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
4. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.

ALL SERVICES	600	640
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

YARD SPRINKLER SYSTEM SERVICE – URBAN

RATE SCHEDULE W-E

APPLICABILITY

This rate is applicable to all residential customers receiving water service through a permanent meter installation, which serves which serves only a yard sprinkler system.

AVAILABILITY

This rate is available to all customers located within the corporate limits of the City of Brenham, Texas.

RATES

0 – 10,000 gallons	\$ 5.19/1,000 gallons
10,001 – 25,000 gallons	\$ 6.49/1,000 gallons
25,001 and above	\$ 8.12/1,000 gallons

MINIMUM CHARGES

No minimum monthly bill

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	641
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The customer will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	642
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

YARD SPRINKLER SYSTEM SERVICE – URBAN

RATE SCHEDULE W-I

APPLICABILITY

This rate is applicable to all commercial and industrial customers receiving water service through a permanent meter installation, which serves only a yard sprinkler system.

AVAILABILITY

This rate is available to all customers located inside the corporate limits of the City of Brenham, Texas.

RATES

0 – 10,000 gallons	\$ 5.19/1,000 gallons
10,001 – 25,000 gallons	\$ 6.49/1,000 gallons
25,001 and above	\$ 8.12/1,000 gallons

MINIMUM CHARGES

No minimum monthly bill

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	643
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The customer will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	650
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

GENERAL SERVICE - URBAN

RATE SCHEDULE W-F

APPLICABILITY

This rate is applicable to all commercial and industrial customers receiving water service through a permanent meter installation.

AVAILABILITY

This rate is available to all customers located within the corporate limits of the City of Brenham, Texas.

RATES

First 3,000 gallons or less	\$ 21.34
3,001 – 10,000 gallons	\$ 2.93/1,000 gallons
10,001 – 25,000 gallons	\$ 3.67/1,000 gallons
25,001 and above	\$ 4.59/1,000 gallons

MINIMUM CHARGES

The minimum monthly bill shall be \$21.34.

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	651
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The homeowner will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES TARIFF	600	660
SECTION NO.	SHEET NO.	
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

GENERAL SERVICE - RURAL

RATE SCHEDULE W-G

APPLICABILITY

This rate is applicable to all commercial and industrial customers receiving water service through a permanent meter installation.

AVAILABILITY

This rate is available to all customers located outside the corporate limits of the City of Brenham, Texas.

RATES

First 3,000 gallons or less	\$ 24.54
3,001 – 10,000 gallons	\$ 3.38/1,000 gallons
10,001 – 25,000 gallons	\$ 4.22/1,000 gallons
25,001 and above	\$ 5.28/1,000 gallons

MINIMUM CHARGES

The minimum monthly bill shall be \$ 24.54.

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate schedule is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	661
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The customer will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	670
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

YARD SPRINKLER SYSTEM - RURAL

RATE SCHEDULE W-H

APPLICABILITY

This rate is applicable to all residential, commercial and industrial service through a permanent meter installation, which serves only a yard sprinkler system.

AVAILABILITY

This rate is available to all customers located outside the corporate limits of the City of Brenham, Texas

RATES

0 – 10,000 gallons	\$ 5.97/1,000 gallons
10,001 – 25,000 gallons	\$ 7.46/1,000 gallons
25,001 and above	\$ 9.35/1,000 gallons

MINIMUM CHARGES

No minimum monthly charge

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate schedule is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	671
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2022	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and meter is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. The customer will be billed for metered water when City personnel find the water meter on.
6. Abnormally high water bills caused when a customer has a water leak (break in line, leaking commode, etc) will be adjusted a maximum of \$150 for a maximum of two billing periods. A customer whose current water bill is abnormally high because of a water leak must bring or mail a receipt to the Utility Billing Department showing that the problem has been fixed or a written and signed statement from the customer if the customer repaired the problem himself. Utility Billing will require the completion of one additional full billing cycle in order to be certain that the problem has been fixed. If the customer's water bill returns to normal, they will be credited for one-half of the water that leaked for a total maximum adjustment of \$150. If necessary, this adjustment/credit may be made for a maximum of two billing periods if the customer experienced an abnormally high water bill for more than one billing period.
7. Minimum water bills will be assessed based on the number of electric meters. Apartments will be billed one minimum for each rental unit on the premises.

ALL SERVICES	600	680A
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2019	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 1/22/06)	

FIRE LINE SERVICE - URBAN

RATE SCHEDULE 20, 21, 22, 23, and 24

APPLICABILITY

This rate is applicable to all residential, commercial, and industrial customers receiving unmetered standby water service for the sole purpose of feeding an automatic fire sprinkler system or similar apparatus.

AVAILABILITY

This rate schedule is available to all customers located within the corporate limits of the City of Brenham, Texas.

RATES

Size of Service Line	Flat Monthly Rate
4 inch (Rate Schedule 20)	\$ 21.38
6 inch (Rate Schedule 21)	62.11
8 inch (Rate Schedule 22)	132.36
10 inch (Rate Schedule 23)	238.02
12 inch (Rate Schedule 24)	384.48

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate schedule is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	681A
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2019	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 1/22/06)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and service line is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. Service rendered under this schedule is for standby service only. Connection of fixtures or facilities used on a regular basis is specifically prohibited.
6. The City does not guarantee minimum pressure or rates of flow for service provided under this schedule.

ALL SERVICES	600	680B
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2019	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 1/22/06)	

FIRE LINE SERVICE - RURAL

RATE SCHEDULE 30, 31, 32, 33, AND 34

APPLICABILITY

This rate is applicable to all residential, commercial, and industrial customers receiving unmetered standby water service for the sole purpose of feeding an automatic fire sprinkler system or similar apparatus.

AVAILABILITY

This rate schedule is available to all customers located outside the corporate limits of the City of Brenham, Texas.

RATES

Size of Service Line	Flat Monthly Rate
4 inch (Rate Schedule 30)	\$ 24.59
6 inch (Rate Schedule 31)	71.43
8 inch (Rate Schedule 32)	152.21
10 inch (Rate Schedule 33)	273.73
12 inch (Rate Schedule 34)	442.15

TERMS OF PAYMENT

All rates specified herein are net, and the gross rates for delinquent payments are ten percent (10%) higher. Each bill for service is due within fifteen (15) days after issuance unless such day falls on a holiday or weekend, in which case payment is due on the next workday. If full payment is not received at the City's offices or other approved payment location on or before the due date, all of the customer's utility services will be considered delinquent and subject to disconnection.

CHARACTER OF SERVICE

Water supplied under this rate schedule is normally treated surface water approved for public water supply by the Texas Commission on Environmental Quality.

ALL SERVICES	600	681B
TARIFF	SECTION NO.	SHEET NO.
WATER RATE SCHEDULES	OCTOBER 1, 2019	
SECTION TITLE	EFFECTIVE DATE	
	(Supersedes Rate Change effective 1/22/06)	

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations in effect from time to time.
2. Bills will be adjusted by the proportionate part of any tax or charge levied or assessed against the City or upon its water business as a result of any new or amended laws becoming effective after the effective date of this rate schedule.
3. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
4. If the installation of a service tap and service line is necessary to provide the customer with service, the cost of such installation is the responsibility of the customer.
5. Service rendered under this schedule is for standby service only. Connection of fixtures or facilities used on a regular basis is specifically prohibited.
6. The City does not guarantee minimum pressure or rates of flow for service provided under this schedule.

ALL SERVICES TARIFF	600 SECTION NO.	690 SHEET NO.
WATER RATE SCHEDULES SECTION TITLE	OCTOBER 1, 2022 EFFECTIVE DATE	

(Supersedes Rate Change effective 10/01/2021)

WATER SERVICE FEES

RATE SCHEDULE W-N

APPLICABILITY

This rate schedule is applicable to the installation of service taps, service lines, water meters, and other miscellaneous water service-related items, for residential, commercial, and/or industrial customers.

AVAILABILITY

These rates are available to all customers or prospective customers of the City's water system.

- I. The actual tapping of a water main, by City staff, to provide service to an adjoining lot. The fee for connecting a meter to a line that has not been pre-stubbed, or has been pre-stubbed by the City, shall be based on meter size: A pre-stubbed water service is defined as a water service that has already been tapped at the main and has had the water service line extended to the property line. These fees are as follows:

1 Inch service tap, service line, and meter	\$1,030.00
1-1/2 Inch service tap, service line, and meter	\$1,530.00
2 Inch service tap, service line, and meter	\$1,715.00
*4 Inch service tap, service line, and meter	At Cost

* Turbine meters only

Note: The fees established herein do not include cost for boring and casing, if required. Costs for boring and casing will be added to these fees based on actual cost.

Note: A water service installation that requires removal of pavement in a TxDOT right-of-way will be charged at the actual cost of work performed or incurred by the City. An owner may choose to hire a contractor to install the service at their own cost and the City will inspect the work to determine if the water service installation complies with the City's specifications. If an owner chooses to hire a contractor to install the service, the work must be completed in compliance with the City's specifications (or approved alternatives), as determined by the City, in its sole discretion, after inspection of the work. The final pavement repair must be performed immediately upon completion of the water service installation.

The fees for the installation of an irrigation meter commonly referred to as a split service are set forth below.

ALL SERVICES TARIFF	600 SECTION NO.	691 SHEET NO.
WATER RATE SCHEDULES SECTION TITLE	OCTOBER 1, 2022 EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/1921)	

If a split service meter is installed at the same time as the installation of a new service connection, the fee is as follows:

1 Inch Split Service off a 1 Inch Service	\$265.00
1 Inch Split Service off a 1 ½ Inch Service	\$275.00
1 Inch Split Service off a 2 Inch Service	\$290.00

If a split service meter is installed after the installation of a new service connection, the fee is as follows:

1 Inch Split Service off a 1 Inch Service	\$375.00
1 Inch Split Service off a 1 ½ Inch Service	\$385.00
1 Inch Split Service off a 2 Inch Service	\$400.00

- II. The fees for connecting a meter to a line that has been pre-stubbed at no expense to the City shall be based on meter size, and are as follows:

1 Inch	\$ 260.00
1-1/2 Inch	\$ 645.00
2 Inch	\$ 710.00
4 Inch or larger	\$1,300.00

- III. The fee for connection, by others, to existing taps on City installed water mains to connect new water mains are as follows:

Existing Main Size (inches)	New Main Size (inches)	Connection Fee
6	4	\$ 840.00
6	6	\$ 935.00
8	4	\$ 870.00
8	6	\$ 920.00
8	8	\$1,105.00
10	4	\$ 835.00
10	6	\$ 945.00
10	8	\$1,085.00
10	10	\$1,440.00
12	4	\$ 970.00
12	6	\$1,050.00
12	8	\$1,170.00
12	10	\$1,465.00
12	12	\$1,725.00

ALL SERVICES TARIFF	600 SECTION NO.	692 SHEET NO.
WATER RATE SCHEDULES SECTION TITLE	OCTOBER 1, 2022 EFFECTIVE DATE	

(Supersedes Rate Change effective 10/01/1921)

Note: The fees established herein do not include cost for boring and casing, if required. Costs for boring and casing will be added to these fees based on actual cost.

Note: A water service installation that requires removal of pavement in a TxDOT right-of-way will be charged at the actual cost of work performed or incurred by the City. An owner may choose to hire a contractor to install the service at their own cost and the City will inspect the work to determine if the water service installation complies with the City's specifications. If an owner chooses to hire a contractor to install the service, the work must be completed in compliance with the City's specifications (or approved) alternatives, as determined by the City, in its sole discretion, after inspection of the work. The final pavement repair must be performed immediately upon completion of the water service installation.

IV. Miscellaneous Water Service Fees:

The fee for installation of one or more fire hydrants shall be based on actual cost.

The fee for replacing a 1" curb stop damaged by other than City personnel - \$95.00. Replacement of curb stops larger than 1" will be charged at actual cost.

The fee for moving meter at customer's request shall be as follows:

Meter Size	Moving Meter up to Fifteen (15) Feet	Moving Meter between Fifteen (15) and Thirty (30) Feet
1 Inch	\$225.00	\$365.00
1 1/2 Inch	\$285.00	\$430.00
2 Inch	\$315.00	\$460.00

Note: Moving meters larger than 2" will be charged at actual cost.

The fee for raising or adjusting a meter at customer's request shall be as follows:

Meter Size	Fee
1 Inch	\$ 70.00
1 1/2 Inch	\$210.00
2 Inch	\$270.00

Note: Raising or adjusting meters larger than 2" will be charged at actual cost.

The fee for installing or extending a water mainline from an existing tap to the property line shall be based on actual cost.

The fee for changing meter size shall be based on the following:

Downsizing a 2", 1 1/2" and 1" meter - \$50.00

ALL SERVICES TARIFF	600 SECTION NO.	693 SHEET NO.
WATER RATE SCHEDULES SECTION TITLE	OCTOBER 1, 2022 EFFECTIVE DATE	
	(Supersedes Rate Change effective 10/01/21)	

Downsizing a 3" and larger meter – At Cost

Note: When an existing meter is changed to a larger size and a new tap and service line are required, the fee shall be the same as for a new connection of the same size.

The fee for setting a fire hydrant meter shall be \$200.00 and requires a \$300.00 deposit.

The fee for turning water service off/on for repairs at customer request shall be \$50.00 plus \$25.00 additional if done after regular business hours (regular business hours are 8:00 a.m. to 5:00 p.m., Monday – Friday, excluding holidays).

The fees for services not specifically addressed in this tariff will be charged in the amount of the actual cost of performing the service.

- V. Replacement of water taps due to deterioration. Water tap deterioration will be determined by the City based on standards set by the Texas Commission on Environmental Quality, or its successor agency and the edition of the International Plumbing Code, as amended, in effect at the time of the determination, for minimum residual pressure and flow.

All Taps	No Charge
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CHARACTER OF SERVICE

Facilities provided under this rate will consist of the installation of an appropriate size corporation stop or tapping saddle, installation of an appropriate size angle meter stop or gate valve, installation of an appropriate size meter, installation of a meter box, and the installation of a sufficient amount of an appropriate size service line to allow the placement of the meter at or near the customer's property line.

SPECIAL CONDITIONS OF SERVICE

1. Service rendered under this schedule is subject to the City's Rules and Regulations as may be amended from time to time.
2. Service will be rendered under this schedule when the City has facilities immediately adjacent to the customer's premises. If a main line extension is required to provide service to the customer, the customer's cost of the line extension will be determined in accordance with the City's extension policy in effect at the time of the extension.
3. In the event a customer desires to increase the size of an existing service, the cost of such enlargement will be equal to the cost of the installation of the new size of service.

ORDINANCE NO. O-22-021

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRENHAM, TEXAS, ADOPTING THE PUBLIC INFRASTRUCTURE DESIGN MANUAL AS APPENDIX “F” OF THE CODE OF ORDINANCES OF THE CITY OF BRENHAM, TEXAS; REPEALING ALL ORDINANCES IN CONFLICT HERewith; PROVIDING FOR A SEVERABILITY AND SAVINGS CLAUSE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the existing City of Brenham Design and Construction Standards were developed in June 1996 and since that time construction standards, materials and best engineering practices have significantly improved; and

WHEREAS, the City Council recognizes the Public Infrastructure Design Manual, attached hereto as Exhibit “A” and incorporated herein for all pertinent purposes, will allow for greater consistency, clarity and ease of use and administration of public infrastructure; and

WHEREAS, the City Council first considered a draft of the Public Infrastructure Design Manual during a workshop meeting on February 21, 2022 and a subsequent workshop session on August 18, 2022 to consider repealing the existing Design and Construction Standards and adopting the Public Infrastructure Design Manual; and

WHEREAS, the City Council finds that there is a public necessity for the adoption of a new Design Manual and that the Public Infrastructure Design Manual does not unreasonably impede the rights of those who bought or improved property with reference to the classification and development standards which existed at the time the investment was made; and

WHEREAS, the City Council finds that the adoption of the Public Infrastructure Design Manual promotes the health, safety, and general welfare of the community through engineering best practices; and

WHEREAS, the City Council finds that the adoption of the Public Infrastructure Design Manual facilitates the adequate provision of transportation, water, sewer, stormwater, paving and other public improvement requirements.

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

SECTION 1.

The Public Infrastructure Design Manual is hereby adopted as set forth in **Exhibit “A”** attached hereto and incorporated herein as Appendix F of the Code of Ordinances of the City of Brenham by reference for all purposes.

SECTION 2.

The Director of Development Services or designee shall cause the Public Infrastructure Design Manual to be reviewed from time to time and shall recommend such revisions as are necessary to account for changing conditions, updated technical standards for the development of public infrastructure, and administration of the Public Infrastructure Design Manual.

SECTION 3.

If any provision of this Ordinance is illegal, invalid, or unenforceable under present or future laws, the remainder of this Ordinance will not be affected and, in lieu of each illegal, invalid, or unenforceable provision, a provision as similar in terms to the illegal, invalid, or unenforceable provision as is possible and is legal, valid, and enforceable will be added to this Ordinance.

SECTION 4.

Any project for which a complete development application has been accepted and permitted by the City before the effective date of this Ordinance may proceed pursuant to the 1996 Design and Construction Standards. Any project which has not been started by the City on or after the effective date of this Ordinance shall adhere to the standards set forth in this Ordinance.

SECTION 5.

Any provision of any prior Ordinance of the City, whether codified or uncoded, which are in conflict with any provision of this Ordinance, are hereby repealed to the extent of the conflict, but all other provisions of the Ordinances of the City, whether codified or uncoded, which are not in conflict with the provisions of this Ordinance, shall remain in full force and effect. The Public Infrastructure Design Manual adopted by this Ordinance expressly repeals, supersedes and replaces the City of Brenham 1996 Design and Construction Standards in its entirety.

SECTION 6.

It is hereby declared to be the intention of the City Council that the phrases, clauses, sentences, paragraphs and sections of this Ordinance are severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional or invalid by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality or invalidity shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Ordinance, since the same would have been enacted by the City Council without the incorporation of this Ordinance of any such unconstitutional or invalid phrase, clause, sentence, paragraph or section.

SECTION 7.

Notice of the time and place, where and when said Ordinance would be considered by the City Council at any and all public meetings was given in accordance with applicable law, prior to the time designated for meeting.

SECTION 8.

This Ordinance shall take effect upon its adoption by the City Council and publication as required by law.

PASSED and APPROVED on its first reading this the 1st day of September 2022.

PASSED and APPROVED on its second reading this the 15th day of September 2022.

Milton Y. Tate, Jr.
Mayor

ATTEST:

Jeana Bellinger, TRMC, CMC
City Secretary



Exhibit A

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200 W. Vulcan, Brenham, Texas 77834



PUBLIC INFRASTRUCTURE DESIGN MANUAL

PURPOSE

This Public Infrastructure Design Manual is intended to set a standard of design for public infrastructure in the City of Brenham and the City of Brenham's extraterritorial jurisdiction that is consistent, cost-effective, efficient, maintainable, and protects public safety. These standards are a guide for design, but not a substitute for good engineering. It is the obligation of the designer to use these standards responsibly and professionally to produce designs conforming to commonly accepted engineering practices. It may at times be desirable or necessary to vary from the standards in this manual to produce a product in accordance with these goals. When the need arises, please refer to the section on exceptions.

Any reference by this manual to any law, regulation, rule, publication, or any other source shall refer to the most recently adopted, promulgated, or otherwise effective version applicable as such may be amended from time to time.

ADOPTION

(Insert language from Ordinance approval adopting these standards here)

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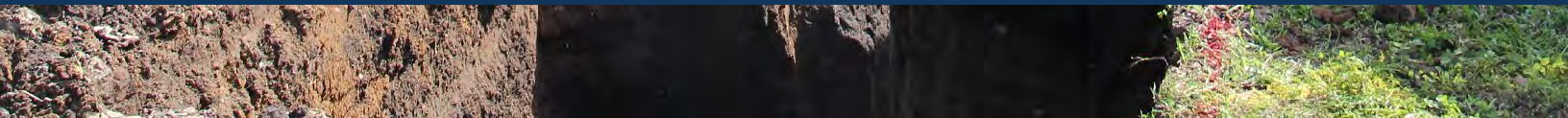


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PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 1 - GENERAL



CHAPTER 1

GENERAL

1.01 GENERAL

- A. This chapter describes the general requirements of the construction process, the preparation of construction drawings, the supporting documents required within the City limits, and the extraterritorial jurisdiction of the City of Brenham (City). This chapter also describes procedural requirements for the construction process.
- B. The City of Brenham Development Services Department shall approve construction drawings for public improvements within the City limits or applicable properties in the extraterritorial jurisdiction. Applicable properties located in the extraterritorial jurisdiction shall mean properties receiving City services including but not limited to water, sanitary sewer, gas, electric and/or discharging into the public storm sewer system.
- C. Construction drawings for private improvements within public right-of-way and public easements that connect to or affect the public infrastructure shall be approved by the City subject to the requirements of this Design Manual (Manual) and are subject to review and approval using the process defined in this manual.
- D. City staff and or their designee will be available for preliminary meetings to discuss a proposed project with the Project Engineer.
- E. Materials and manufactured items used in construction of an infrastructure project shall be approved by the City before installation. Water, wastewater, and drainage system appurtenances shall be subject to the approved items as listed in the Approved Products List, (which is included in Appendix A of this manual). Items not appearing on the approved list shall not be used for construction of public infrastructure in the City.
- F. It may at times be desirable or necessary to vary from the standards in this manual to produce a product in accordance with these goals. Exceptions to these standards are authorized only if approved in writing by the City. Exception request must be submitted at the time of the original construction drawing submittal. Persons seeking an exception to these standards shall submit to the Development Services Department a request explaining what exception is being requested, why the exception is being requested, and an explanation of how or why the resulting product will be equivalent or superior to the product that would result from constructing the improvement in strict accordance with these standards.
- G. Upon receipt of an exception request, the City shall approve or disapprove such request within 30 business days. Construction work related to the request should not begin before approval. Any construction work related to the request that proceeds without approval shall be subject to removal and replacement at the cost of the party who performs such construction work.

1.02 References

All projects that are required to conform to these standards shall also be in compliance with all applicable City ordinances. All construction drawings and supporting documentation shall conform to the requirements of these standards and all applicable regulations of all federal, state, county, and local entities having jurisdiction.

Relevant related laws and regulations include, but are not limited to, the following:

A. City of Brenham

1. Utilities, Chapter 26 of the City Code.
2. Flood Damage Prevention, Chapter 8 1/2 of the City Code.
3. Subdivisions, Chapter 23 of the City Code.
4. Zoning, Appendix A of the City Code.
5. Building and Structure, Chapter 6 of the City Code.
6. Fire Protection and Prevention, Chapter 8 of the City Code.

B. State of Texas

1. Texas Accessibility Standards (TAS), pursuant and subject to the Texas Government Code, Chapter 469, and the Texas Administrative Code, Title 16, Chapter 68.
2. Rules and Regulations published by the Texas Commission on Environmental Quality (TCEQ):
 - a. Rules and Regulations for Public Water Systems, Texas Administrative Code, Title 30, Chapter 290, Subchapter D.
 - b. Design Criteria for Domestic Wastewater Systems, Texas Administrative Code, Title 30, Chapter 217.
 - c. TCEQ storm water pollution prevention protection standards.
3. State of Texas Engineering Practice Act, Texas Occupational Code, Chapter 1001.
4. Professional Land Surveying Practices Act, Texas Occupational Code, Chapter 1071.
5. Texas Manual on Uniform Traffic Control Devices.

C. National

1. Americans with Disabilities Act, 42 U.S.C § 12101 et seq and regulations, 28 CFR Part 36.
2. American Association of Highway and Transportation Officials, A policy on Geometric Design of Highways and Streets.
3. Institute of Transportation Engineers, Traffic Engineering Handbook.
4. Highway Capacity Manual, National Research Council, Transportation Research Board.

1.03 Definitions

For the purpose of this Manual, the following words and phrases shall have the meanings respectively ascribed to them by this section.

Approved Products List – List of approved products that can be used for construction in the City. This list is included in Appendix A of this manual and may be updated periodically.

City Code – The code or ordinances of the City of Brenham, Texas.

Collector Streets – Street routes that have short travel distances and collect traffic from intra-city streets and funnel it into major thoroughfares or other collector streets.

Commercial Driveway Approach – The portion of a driveway within the public right-of-way that provides access to property on which an office, retail commercial center, or a building having more than three dwelling units is located or any driveway approach that accesses property primarily used for nonresidential purpose.

County – The applicable political subdivision of the State of Texas in which a subject tract is located in; Brenham, Texas city limits and its extraterritorial jurisdiction is within Washington County.

Design Analysis – Narrative and calculation necessary to support design of a project.

Director of Public Works – The Director of Public Works or his designee.

Drawings – Plan, profile, detail and other graphic sheets to be used in a construction contract, which define character and scope of the project.

Driveway – Entrance to and exit from premises where it is possible to park completely off the street, and which is not open for vehicular traffic except by permission of the owner of said private property.

Driveway Approach – A way or place including paving and curb returns between the street travel lanes and private property that provides vehicular access between the roadway and said private property.

Dwelling Unit – A building or portion thereof designed exclusively for residential occupancy.

Highway, Street, or Roadway – A general term denoting a public or private way for the purpose of vehicular travel.

Infrastructure – Any facility or structure proposed to be constructed, reconstructed, repaired, or regraded wholly or partially within right-of-way public easements or connecting to right-of-way, including, but not limited to, streets, driveways, sidewalks, curbs, gutters, culverts, open ditches, storm drains, and irrigation facilities owned or maintained by a public entity.

Intersection – The area embraced within the prolongation or connection of the lateral curb lines, or, if none, then the lateral boundary lines of two or more roadways. This includes public street, private street, commercial driveway, residential driveway, driveway approach, alley or combination thereof that join one another at, or approximately at, right angles, or the area within which vehicles traveling upon different roadways joining at any other angle may come into conflict.

Major Thoroughfare – Highways, streets, and roadways devoted to moving large volumes of traffic over long distances. Major thoroughfares shall be set forth in the Major Thoroughfare Plan adopted by the City Council and may be amended, periodically.

Professional Engineer – An engineer currently licensed by, and in good standing with the Texas Board of Professional Engineers.

Professional Land Surveying – A surveyor currently registered with and in good standing with the State of Texas Board of Professional Land Surveying.

Project Engineer Representative – A representative of the design engineer who possesses the knowledge, skills and abilities to carry out inspection duties to insure compliance with the approved drawings and specifications.

Private Projects or Private Improvements – All projects involving construction, reconstruction, modification or maintenance of privately owned or maintained facilities including, but not limited to, buildings, parking lots, utility systems, private shared-access drives, and any facility supporting functions within private property boundaries.

Public Improvements, or Public Projects – All projects involving construction, reconstruction, modification or maintenance of public infrastructure, including, but not limited to, streets, drainage facilities, water and wastewater systems, construction in public right-of-way or easements. Any project that will be accepted for permanent maintenance by a public agency or political subdivisions of the State of Texas. Any project subject to review and approval by the terms of Section 1.01 of this chapter.

Residential Developments – Residential developments shall mean all areas identified as residential under the Brenham Zoning Ordinances or otherwise zoned or devoted primarily to residential use.

Residential Driveway Approach – The portion of a driveway within the public right-of-way that provides access to property on which a single-family residence, duplex, or multi-family building containing three or fewer dwelling units is located.

Residential Streets – Street routes that provide access to local property owners and which connect property to major thoroughfares or collector street networks.

Residential Structure – A single-family home, apartment house, townhouse, condominium or any other type of dwelling unit.

Revegetation – Restoration of existing ground cover for all areas disturbed by construction activities. Revegetation may include applying hydro-mulch or sod to the disturbed area. In accordance with TCEQ Stormwater Control requirements, vegetative cover must be restored to 70% of its original condition prior to removal of erosion or sediment controls (ESC's).

Review Authorities – The authorized representatives of City departments, divisions, or sections responsible for reviewing and approving calculations and drawings for privately funded projects, and for design and construction contracts with the City.

Right-of-way – Property that is publicly owned or upon which a governmental entity has an express or implied property interest (e.g., fee title and easements) held for a public purpose. Examples of such public purpose include by way of example and not limitation, highways, streets, sidewalks, drainage facilities, sewerage and water facilities.

Sidewalk – The section of pavement between the curb lines of a roadway and the adjacent property lines or located within an easement intended for the use of pedestrians.

Specification – City of Brenham Standard Specification plus project-specific narrative descriptions of procedures, requirements, and materials for particular project.

Standard Construction Details – This is a separate document that contains the City construction details and may be updated periodically.

Standards – The requirements of this Manual.

Subdivision Ordinance – Chapter 23 of the City code as it may be amended from time to time.

Traffic Impact Analysis – A study performed by engineers with expertise in traffic engineering principles and practice that reviews development of a specific property and how it integrates into the existing City Street network. The analysis uses data and conclusions developed in previous studies and identifies improvements needed to mitigate the impact of traffic generated by a development on the street network system.

1.04 CONSTRUCTION DRAWING REVIEW PROCESS

- A. A recorded plat shall be on file with the Washington County Clerk prior to final approval of the construction plans. A copy of the final, recorded plat is required in all plan sets, before approval for permitting or as permitted in accordance with Chapter 23 – Subdivision of the Code of Ordinances. All separate or special easements that may be required for construction shall be recorded in Washington County Official Records prior to final approval of the construction drawings.
- B. The applicant shall submit complete drawings for each review phase in accordance with the Development Services Application Procedures and Standard Forms. A project number will be assigned to all projects and this number will be stated on the returned plan review. Please reference the number in all correspondence relating to that project. Drawings will be reviewed, and typed comments will be returned to the submitting design professional in a timely manner.
- C. If a project has begun the review process but becomes inactive for a period of 12 months from the date of the last correspondence, the project will be considered stopped. Projects reactivated after 12 months of inactivity will be treated as new submittals, subject to all current requirements and changes in codes or ordinances.
- D. Submit an indexed listing of all expectation or deviations from the requirements of the Manual or the Standard Construction Details with the original drawing submittal.

- E. Signature of the Director of Development Services or his/her designee on approved construction drawings for utilities that are intended to remain private, does not infer acceptance of the City for ownership or maintenance or operation of facilities indicated on the drawings.

1.05 QUALITY ASSURANCE

- A. Surveying and platting shall be accomplished under direction of a Professional Land Surveyor. Recording documents shall be sealed, signed, and dated by a Professional Land Surveyor.
- B. Engineering calculations shall be prepared by or under direct supervision of a Professional Engineer trained and licensed in disciplines required by the project scope and sealed by the Professional Engineer. Final engineering design drawings shall be sealed, signed, and dated by the Professional Engineer responsible for development of the drawings.
- C. Final architect design drawings shall be sealed, signed, and dated by the licensed Architect responsible for development of the drawings.
- D. Final irrigation design drawings shall be sealed, signed, and dated by either a Texas Professional Engineer, a licensed irrigator, or a licensed Landscape Architect.

1.06 CAPACITY ALLOCATIONS

- A. Construction drawing approval shall not infer that capacity is committed for service to the property. A capacity allocation for service to the development and approval of the connection design shall be secured separately prior to connection to water and wastewater facilities.
- B. Prior to beginning construction on a project, a current commitment of drainage capacity for the proposed development, including the status of any drainage fees that may be due or have been paid, will be required. The commitment shall be issued by the relevant agencies such as Washington County or the City, as applicable.

1.07 CONSTRUCTION PROCEDURE REQUIREMENTS

- A. Construction on Public Projects and within public rights-of-way and easements shall not begin until construction drawings are approved by the City, and a Construction Permit has been issued. A schedule of fees is on file in the Development Services Department. Construction shall not begin within an existing easement of right-of-way until all permits, or any right-of-way use agreements are negotiated between the affected parties.
- B. Schedule a preconstruction meeting with the City at least 48 hours prior to the desired start of construction for the project.
- C. The City will make periodic inspections. The City shall be notified at least 24 hours prior to each time concrete is placed on the project. The City shall be notified at least 24 hours prior to all pipe inspection tests and other tests that may be required. All Saturday construction shall be scheduled with the City at least 48 hours in advance. There will be no construction or inspections made on Sundays except in the event of an emergency. Request for Sunday or holiday construction or inspections shall be made in writing and submitted to the City for approval not later than 72 hours prior to the intent. All Saturday, Sunday, or holiday inspections will be on fee basis paid directly to the City prior to final approval of the project. A schedule of fees is on file in the Development Services Department.

- D. Notify the City staff at least 48 hours prior to a final inspection. The City staff and representative of all entities having jurisdiction shall be present during all final inspections (i.e., TCEQ, TxDOT, etc.).
- E. For all projects, upon request, all delivery tickets for material (e.g., concrete, cement stabilized sand) shall be submitted to the Development Services Department. These delivery tickets shall be maintained by the Engineer of Record for a minimum of one year from the completion of the project.
- F. Significant changes from approved construction drawings shall be approved by the Development Services Department prior to construction. The Project Engineer will submit revised plans to the Development Services Department for re-approval. The Development Services Department will respond in writing within ten working days.
- G. Competent, full-time resident inspection by the Project Engineer's representative shall be provided at all critical points of construction and as deemed necessary by the City. Critical points of construction include, but are not limited to, operations involving inspection of bedding and pipe prior to backfilling, placing and compaction of backfill, placement of structural concrete and paving, sidewalk placement, and all on-site testing activities.
- H. A certified testing laboratory shall be on site to perform applicable test required so that construction practices and material conform to drawing and specification requirements.
- I. All disturbed areas must be properly revegetated prior to demobilization and acceptance of project.

1.08 APPROVAL AND ACCEPTANCE

- A. Public projects shall have the final approval of the Development Services Department prior to placing the facilities in service.
- B. Infrastructure projects within the City and extraterritorial jurisdiction will be subject to a one-year maintenance period. An inspection before the end of the maintenance period of an infrastructure project shall be conducted by the Public Projects staff and all other entities having jurisdiction and a punch list of items to correct shall be issued. If the punch list items are not corrected and accepted by the City within 30 days from the generation of the punch list, the project shall be subject to re-inspection and the generation of a new punch list.
- C. The Engineer of Record or Developer shall contact the City to schedule the one-year maintenance inspections. Maintenance bonds are required to be in force until final acceptance by the City. Before final acceptance by the City, Owner shall be responsible for all maintenance. All facilities, including street lighting and electricity in lift stations, shall be operational and in good condition before final acceptance of a project.
- D. Acceptance into the one-year maintenance period shall be granted by the City when the items listed in Section 23-31 of the City of Brenham Code of Ordinances are complete.

- E. The project can be considered complete when the project closeout documents listed in Section 23-31 of the City of Brenham Code of Ordinances are properly submitted and accepted by resolution by the City of Brenham City Council.
- F. Until such time as the project is complete, in accordance with 1.08E above, all infrastructure shall remain the property of the developer and the sole responsibility for any and all line marking, maintenance, and/or repair shall remain that of the developer.

END OF CHAPTER



PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 2 - RIGHT-OF-WAY USE

CHAPTER 2 RIGHT-OF-WAY USE

2.01 GENERAL

- A. These standards describe the general requirements for the use of public rights-of-way and public easements and the supporting documents required for permit approval by the City. These standards also address the location requirements for franchise utilities.
- B. The City Development Services Department shall approve and permit all activity within the public rights-of-way and public easements within the City.
- C. Construction drawings for private improvements within public rights-of-way and public easements, or that connect to or affect the public infrastructure, shall be approved by the City subject to the requirements of this Manual and are subject to review and approval using the process defined in this Manual.
- D. Permit fees shall be assessed in accordance with the latest Fee Schedule adopted by the City Council and applicable state and federal law.
- E. In exercising its police powers as necessary to protect the health, safety, and welfare of the public, the City has first priority over all other uses of the public right-of-way and public utility easements. The City reserves the right to, among other things, lay water, sewer, drainage, and other pipelines, cables, or conduits; complete underground and overhead work; add improvements such as attachments, restructuring, or changes in street facilities across, along, over, or under a public street, alley or right-of-way occupied by an agency or right-of-way user; and to change the curb, sidewalks, or the grade of streets.
- F. All transmission, distribution, and collection structures, lines, equipment, trees, and other facilities erected by a right-of-way user within the City shall be so located as to cause minimum interference with the proper use of the right-of-way, and to cause minimum interference with the rights and reasonable convenience of property owners who join any of said streets. The City reserves the right (in permit or otherwise) to restrict or determine the route (pathway) or spatial location, whether horizontal, vertical, or depth, of any facility or structure or improvement in the public right-of-way or public utility easements. The City reserves the right to reserve space for future utilities.
- G. The right-of-way user shall be responsible for stormwater management, erosion control, and excavation safety measures that comply with City, state, and federal guidelines. Requirements shall include, but not limited to, construction fencing around any excavation that will be left overnight, silt fencing in erosion areas until reasonable vegetation is established, and barricade fencing around open holes.
- H. The City shall take reasonable precautions, but is under no obligation, to protect non-City-owned facilities during the course of roadway maintenance and improvements. The City will make reasonable efforts to notify known users within 2 feet of back-of-curb of planned roadway maintenance or improvements that may impact their facilities. It is the responsibility of the installer or owner of the facilities to protect their facilities and to remove or adjust the location of their facilities as appropriate.

2.02 DEFINITIONS

For the purpose of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section.

Emergency Operations – Those operations and repairs necessary to prevent damage or injury, maintain the health or safety of the public or any person, and the work necessary to address or prevent an immediate service interruption. Upgrading of facilities, new service installation, and neighborhood improvement project are not emergency operations.

Excavation – Any activity that removes or otherwise disturbs soil, pavement, driveways, curbs, or sidewalks in the right-of-way.

Facilities – The equipment and property including, but not limited to, lines, poles, mains, pipes, conduits, ducts, cables, valves, manholes, handholes, and wires located under, on, or above the surface of the ground within the right-of-way, and related facilities and equipment used or useful for the provision of utility services.

Pavement – Refers to the surface of streets containing Portland cement or asphalt that covers the underlying subgrade and base.

Permit – A permit issued by the City authorizing work in the right-of-way.

Permittee – Any person or right-of-way user to whom a permit is issued to excavate a right-of-way.

Repair – The temporary or permanent construction work necessary to make the right-of-way useable.

Repair area – The area around an excavation where the pavement and subgrade are impacted by the excavation.

Restoration – The process by which an excavation right-of-way and surrounding area, including, but not limited to, pavement and foundation structures, ground cover, landscaping, and monuments are returned to the same condition, or better than that which existed before the commencement of the work.

Right-Of-Way or Public Right-of-Way (ROW) – The area on, below, adjacent to, or above a public roadway, street, public sidewalk, alley, waterway, or utility easement in which the municipality has an interest, and shall include, but not limited to, all easements now held, or hereafter held, by the City, but shall specifically exclude private property.

ROW User – A person, its successors, and assigns, that uses the ROW for purpose of work, excavation, provision of services, or installing constructing, maintaining, or repairing facilities thereon including, but not limited to, landowner and service providers.

Routine Service Operation – A work activity that makes no material change to the facilities and does not disrupt traffic.

Street – The paved portion of the ROW that has been constructed or resurfaced with concrete asphalt, or some other surface.

TMUTCD – The Texas Manual on Uniform Traffic Control Devices, latest edition.

Utility – Any private or publicly owned entity that uses ROW to furnish the public any general public service including (without limitations) sanitary sewer, gas, electricity, water, telephone, petroleum products, telegraph, heat, steam, or chilled water, together with the equipment, structures, and appurtenances belonging to such entity and located within and near the ROW.

2.03 ROW PERMITS

- A. Any disturbance within the roads, streets, and easements of the City requires a ROW use permit. Such disturbances include digging or excavating anywhere within the ROW, installation, replacement, or repair of lines, conduits, and franchise utilities, erection of utility poles, installation of lights, transformers, switches, and other appurtenances, installing, removing, or repairing curbs, gutters, sidewalks, driveway aprons, irrigation systems, planting trees, or other improvements. Excavations for telecommunication service drops that are completed within 48 hours are excluded from the need to obtain a ROW use permit.
- B. A ROW use permit is not required for street construction projects undertaken by the City pursuant to a contract between the City and its Contractor for projects permitted under other City permits or for those uses that the Public Projects staff finds to be minor in nature.
- C. A ROW use permit is not required for routine maintenance of existing utilities within the ROW that does not require a lane closure in excess of two hours and will be completed in the same calendar day. However, maintenance activity that involves an excavation or boring within the ROW or a lane closure in excess of two hours does require a ROW permit describing the type and location of work to the City.
- D. In the event of an emergency that demands immediate action to protect the public health, safety, or welfare, when a permit cannot be reasonably or practically obtained beforehand, emergency actions may proceed provided that notification be provided to the public utilities dispatcher at (979) 337-7400.
- E. Before the issuance of a ROW use permit the applicant, his agent, or Contractor shall:
 - 1. Furnish evidence of insurance or self-insurance or public liability and property damage issued by an insurance company, authorized to transact business in the State of Texas. If a valid certificate is on file with the City, subsequent applications may reference the certificate on file.
 - 2. Issue a statement holding the City harmless and free of liability, to the extent allowed in Chapter 283 of Texas Local Government Code, from work performed under the authority of the permit. If a valid certificate is on file with the City, subsequent applications may reference the certificate on file.
 - 3. Post an assurance bond or other method of guarantee acceptance to the City to ensure that the work covered by the permit will be completed in accordance with the latest edition of this Manual.

4. Submit a Traffic Control Plan for review if the work involves a lane closure of more than four hours; however, all lane closures require traffic control in accordance with the TMUTCD.
 5. Prepare drawings and specifications for the for the proposed work to be performed. If required, these drawings should show the subject area and adjacent areas, the existing conditions, the proposed work, and any changed to the existing conditions.
 6. Adhere to the State of Texas, Underground Facility Damage Prevention, and Safety Act. Before any excavation work, the Dig Safely guidelines shall be followed, including calling a notification center in advanced of excavation (Call-Before-You-Dig (800) 545-6005).
- F. The applicant for the permit, his agent, or the Contractor shall protect from damage, utility conduits, sewer conduits, water conduits, lawns, shrubbery, trees, fences, structures, or other property encountered in its work. The applicant shall not trespass upon private property. It is the applicant's responsibility to determine the boundary between public ROW and private property. Prior to entering upon private property, the applicant shall secure written permission from the property owner or owners affected.
 - G. The applicant, his agent, or the Contractor shall, at all times, ensure the safety of the traveling public. It shall provide, install, and maintain traffic control devices as described by the TMUTCD and, when required, will also take such other measures of precaution as directed by the City. The City has the authority to stop work if the traffic control does not conform to the requirements of the TMUTCD.
 - H. The City shall inspect all work within the ROW of dedicated streets, dedicated drainage ways, or public easements. The City shall have the authority to revoke the permit whenever it is clear that the drawings, details, and specifications are not being followed. All work and materials used shall be in accordance with the requirements of the manual and the City Standard Construction Details.
 - I. All lane closures require 24-hour notification of the police and fire department before closing.
 - J. Permittee shall dispose of all material removed from the ROW and any waste created by permittee in compliance with all state, federal, and local laws and requirements.
 - K. Except in the case of an emergency, whenever excavation is required in the ROW adjacent to an occupied property, the ROW user shall notify the property owner of the activity through use of a door hangar, which shall include the following information:
 1. Permit number.
 2. Identity of the Contractor and the ROW user, including a 24-hour emergency contact name and phone number, and a phone number to obtain more information regarding the project.
 3. The anticipated duration of the construction work.
 - L. Every permittee and ROW user shall prosecute its work diligently and in a good, safe, and workmanlike manner, and shall safeguard and protect the public, using the street or ROW where the work is being performed, from accidents or damage by placing barriers, lights, and other sufficient safeguards around all cuts, openings, an excavation. All material, implements, and tools stored upon the premises and used in connection with the excavation shall be stored in a safe and nonhazardous manner.

- M. The City reserves its right, as provided herein, to revoke or suspend any permit, without refund of the permit fee, in the event of a breach by the permittee of the terms or conditions of the permit, this Manual or any other City ordinance. A breach of the terms of the permit shall include, but not be limited to, any of the following:
1. The violation of any provision of the permit.
 2. The failure to meet insurance, surety bond, or indemnification requirements.
 3. The failure to complete the work as specified in the permit.
 4. The failure to correct a condition indicated on an order issued pursuant to City ordinances.
 5. Repeated traffic control violation.
 6. Failure to protect facilities or repair facilities damaged in the ROW.
 7. Any safety violation or other action that threatens the health, welfare, or safety of the public as solely determined by the City.
- N. A permit shall only be valid for the area of the ROW specified within the permit. No permittee may cause any work to be done outside the area specified in the permit, except as provided herein. Any permittee who determines that an area is greater than that which is specified in the permit must apply for and receive a new ROW permit.
- O. No work shall commence until erosion control measures (e.g., silt fence) and advance warning signs, marker, cones, and barricades are in place.
- P. Any request for a permit to excavate street pavement shall include a description of the proposed restoration of the area, as well as a statement of clear and convincing evidence as to why alternate procedures cannot or should not be used in lieu of excavating a street. All pavement cuts and repairs shall be performed by a contractor with experience in street repair work and performed in accordance with the City Repair Details and City specifications or, if unusual conditions are encountered, the City may require new standards for compaction, backfill, and pavement restoration. Any damage to pavement outside the removal area shall also be repaired subject to approval of the City staff.
- Q. A permittee or ROW user shall maintain its repairs in the ROW for one year from the completion date of any repair. In the case the pavement or the surface of the street, alley, or ROW in, over, or near any excavation should become depressed, cracked, or broken at any time (or fails in any way at any time after the excavation has been made and during the one-year warranty) the ROW user shall be responsible for repair of the failure.
- R. Open trenches may be temporarily backfilled for the convenience of the permittee of public safety. Traffic-bearing plates can be used temporarily for pavement areas. Such temporarily measures will only be allowed for a maximum duration of 48 hours.

- S. All excess water and mud shall be removed from the trench before backfilling. Any backfill placed during a rainy period or at other times, where excess water cannot be prevented from entering the trench, will be considered temporary and shall be removed as soon as weather permits. All disturbed base material or any base that has been undermined shall be removed and discarded. All backfill within the right-of-way shall be installed and tested in accordance with the applicable section of the standards provided in this manual.
- T. All earth, materials, sidewalks, pavement, utilities, conduits, crossing, irrigation, landscaping, monuments, manhole covers, valve covers, meter box lids, or improvements or any kind owned or possessed by the City, and damaged, disturbed, or removed by a ROW user shall be fully repaired promptly by the ROW user, at its sole expense, to the reasonable satisfaction of the City.
- U. After any excavation, the ROW user shall, at its expense, restore the ROW, trench envelope, pavement structure, and the surrounding area to at least the same condition it was prior to the excavation. The restoration shall be made in accordance with specifications set forth herein, and the repair shall endure without failure for one year from the completion date of any repair.
- V. In the event the ROW user fails to restore the ROW in the manner and to the condition required herein, or fails to satisfactorily or timely complete all restoration, the City may, at its option, serve written notice upon the ROW user that, unless within 5 business days after serving of such notice a satisfactory arrangement can be made for the proper restoration of the ROW by the ROW user, the City may take over the work and prosecute same to completion, by contract or otherwise, at the sole expense of the ROW user. The ROW user, and its surety, shall be liable to the City for any and all cost incurred by the City by reason of such prosecution and completion. Nothing contained herein shall limit any other remedies available to the City.
- W. The ROW user is required to comply with the Storm Water Pollution Protection Plan (SWPPP) developed for the development and for the implementation and maintenance of the Best Management Practices (BMP). Once the project is complete and the final BMPs are installed, ROW user shall maintain the BMPs until revegetation is established to prevent sediment transport and erosion. The ROW user is responsible for the removal of BMPs once the revegetation is established. These BMPs shall be removed within 30 days once the revegetation has been reestablished.
- X. If any excavation cannot be backfilled immediately, the ROW user shall securely and adequately cover the excavation and maintain proper barricades, safety fencing or lights as required, from the time of the opening of the excavation until the excavation is surfaced and opened for travel.
- Y. No trench shall be open in any paved area of the ROW for the purpose of laying pipes, conduits, or ducts more than 200 feet in advance of the pipe, conduit, or ducts being placed in the trench, other than with the prior written consent of the City. No trench shall be opened in any nonpaved ROW for the purpose of laying pipes, conduits, or ducts more than 500 feet in advance of the pipe, conduit, or ducts being placed in the trench, other than with prior written consent of the City. In all areas of the ROW, all trenches shall be closed prior to the end of the business day.
- Z. Before a permit shall be issued, the applicant shall execute and deliver to the City (to be kept on file with the City) a good and sufficient bond of performance or assurance in accordance with the requirements of Section 12.04.

- AA. Utility and other street crossings under pavement shall not be installed within 2 feet of the bottom of the subgrade.
- BB. The permittee of ROW use shall maintain its equipment or facilities once installed, in perpetuity. Above ground facilities shall be maintained in a neat, organized, and workmanlike appearance in the opinion of the City. This may require that the permittee or ROW holder be required to repair or replace the surface facilities with new equipment or equipment with decorative features. Should the surface area equipment not be maintained in a workmanlike appearance, refer to Section 12.03.V for resolution. Additionally, failure to maintain upkeep of existing facilities may cause future permits to be delayed or revoked until such items are addressed.
- CC. The permittee or ROW user facilities that are to be abandoned, and after all facilities are removed and properly abandoned, shall remove all surface features and the surface shall be restored to match the surrounding area. Should the surface area not be restored refer to Section 12.03.V for resolution. Additionally, failure to restore the area may cause future permits to be delayed or revoked until such items are addressed.

2.04 INSURANCE AND BONDING REQUIREMENTS

- A. A ROW user shall obtain and maintain insurance in the amounts reasonably prescribed by the City with an insurance company licensed to do business in the State of Texas. A person shall furnish the City with proof of insurance at the time of request for permits. The City reserves the right to review the insurance requirements and to reasonably adjust insurance coverage and limits when the City Manager determines that changes to statutory law, court decisions, or the claims history of the industry or the person require adjustment of the coverage.
- B. For purpose of this section, the City will accept certificates of self-insurance issued by the State of Texas or letters written by the person in those instances where the state does not issue such letter, which provide the same coverage as required herein. However, for the City to accept such letters the ROW user must demonstrate by written information that it has adequate financial resources to be self-insured entity as reasonably determined by the City, based on financial information requested by and furnished to the City.
- C. The City's current insurance requirements are described in the following. If a certificate of insurance is on file from a previous application and has not expired, the valid certificate may be referenced on subsequent applications.
- D. The ROW user shall furnish, at no cost to the City, copies of certificates of insurance evidencing the coverage required by this chapter to the City. A ROW user shall immediately advise the City Attorney of actual or potential litigation that may develop or may affect an existing carrier's obligation to defend and indemnify.

1. The ROW User shall procure and maintain at its sole cost and expense for the duration of the permit, insurance coverage for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the ROW User, its agents, representatives, volunteers, employees, or subcontractor. The ROW User's insurance coverage shall be primary insurance with respect to the City, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officials, employees, or volunteers shall be considered in excess of the ROW User's insurance and shall not contribute to it. Further, the ROW User shall include the City as an additional insured under its policy. All coverage for subcontractor shall be subject to all of the requirements stated herein. Certificates of insurance and endorsements shall be furnished to the City and approved by the City before work commences.
2. Standard insurance Policies Required:
 - a. Commercial General Liability Policy
 - b. Automobile Liability Policy
 - c. Workers' Compensation Policy
3. General Requirements Applicable to all Policies:
 - a. General Liability and Automobile Liability insurance shall be written by a carrier with an A: VIII or better rating in accordance with the current Best Key Rating Guide.
 - b. Only Insurance Carriers licensed and admitted to do business in the State of Texas will be accepted.
 - c. Deductibles shall be listed on the Certificate of Insurance and are acceptable only a per occurrence basis for property damage only.
 - d. "Claims Made" policies will not be accepted.
 - e. The City of Brenham, its officials, employees, and volunteers, are to be added as "Additional Insure" to the General Liability policy. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officials, employees, or volunteers.
 - f. A Waiver of Subrogation in favor of the City with respect to Workers' Compensation Insurance must be included.
 - g. Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior to written notice has been given to the City of Brenham.
 - h. Upon request, certified copies of all insurance policies shall be furnished to the City of Brenham.
4. Commercial General Liability

- a. Minimum Combined Single Limit of \$100,000 per occurrence for bodily injury and property damage.
 - b. No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.
- 5. Automobile Liability
 - a. Minimum Combined Single Limit of \$100,000 per occurrence for bodily injury and property damage.
- 6. Worker's Compensation
 - a. Employer's Liability limits of \$100,000 for each accident is required.
- 7. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agents. And shall contain the following provisions and warranties:
 - a. The company is licensed and admitted to do business in the State of Texas.
 - b. The insurance policies provided by the insurance company are underwritten on forms that have been provided by the Texas Board of Insurance.
 - c. All endorsements and insurance coverage according to requirements and instructions contained herein.
 - d. The form of the notice of cancellation, termination, or change in coverage provisions to the City of Brenham.
 - e. Original endorsements affecting coverage required by this section shall be furnished with the certificates of insurance.
- E. Before a permit shall be issued, the applicant shall execute and deliver to the City (to be kept on file with the City) a good sufficient bond of performance or assurance. Said bond should be approved by the City and conditioned that the person making the application shall promptly adjust, pay, and settle all legitimate claims for damages that may result by reason of carelessness or negligence in the manner of performing such work or by reason of any defects therein caused or arising from careless, negligent, or imperfect construction thereof. This also includes holding the City, its council member, officers, employees, volunteers, agents and representative, free and harmless from liability on all such claims for damages to the performance or assurance bond that shall cover the cost of repairs in or upon the street, sidewalk, or other public place where the work is to be done that may become necessary by reason of such cut or excavation having been made. The bond shall be maintained until the City accepts the work after expiration of the one-year maintenance period. With respect to the ROW user's obligation to comply with the requirements for a performance or assurance bond, the City may allow the ROW user to self-insure such obligation upon production of evidence that is satisfactory to the City.
- F. The amount of the required performance or assurance bond shall be as follows:

1. Work requiring street, sidewalk, or pavement excavation, or excavation within 5 feet of pavement – 120 percent of the original construction cost.
2. Residential driveways, street tree planting, or other work - \$2,000.00.

2.05 PUBLIC AND PRIVATE LOCATIONS

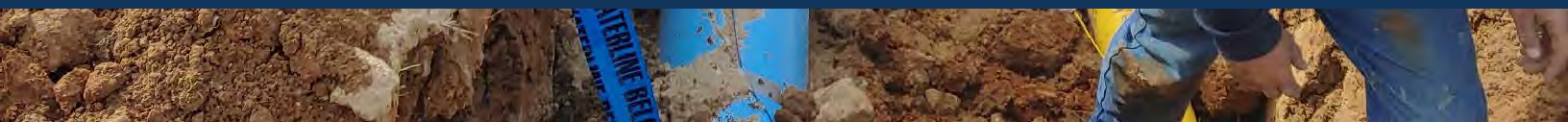
- A. New installations of public and private utilities (i.e., community antenna television (CATV) telephone, or gas) within the ROW shall be located in accordance with the alignments shown in Detail ROW-1 that is included in Appendix B of this manual.
- B. The minimum horizontal and vertical separation between private utilities and any public utility shall be 18 inches.
- C. The location of jack and bore pits shall be shown on permit applications. Jack and bore pits shall be at least 5 feet from the back-of-curb or edge of pavement.
- D. Public and private utility depths within the public ROW shall not be less than the utility depths requirements of the Typical Easement Installation Details shown in the following:
- E. Public and private utilities along open ditch roadways shall be installed in utility easements adjacent to the public ROW when the easements are available. Franchise utilities along open ditch roadways shall not be less than 2 feet below the flowline of any ditch under any circumstance and, wherever possible, shall be installed between the outside bank of the ditch and the ROW line.
- F. Public and private utilities crossing under street pavement shall not be installed within 2 feet from the bottom of the subgrade.

END OF CHAPTER



PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 3 - WATER SYSTEMS DISTRIBUTION



CHAPTER 3

WATER DISTRIBUTION SYSTEMS

3.01 GENERAL

- A. This chapter includes the design requirements for public water distribution systems within the city limits and the extra-territorial jurisdiction of the City.
- B. The City's staff shall approve water distribution drawings for all public improvements within the City limits or extraterritorial jurisdiction. Construction shall conform to the City's Standard Construction Details.
- C. Construction drawings for private improvements, within public rights-of-way and public easements, that connect to or affect the public infrastructure shall be approved by the City. These improvements are subject to the requirements of this Manual and are subject to review and approval using the process defined in this Manual.
- D. Construction and sizing of all water mains and appurtenances shall meet or exceed the requirements of the Texas Commission on Environmental Quality (TCEQ).
- E. The Public Water System shall not extend beyond the water meter. All construction to the meter shall conform to the requirements of this Manual. All construction beyond the meter is considered private and shall conform to the requirements of the City's adopted Plumbing Code.
- F. All proposed water distribution systems and interconnects between separate systems or utility districts, shall be approved by the City staff.
- G. No interconnect between the City's public water supply system and any separate system, utility district, or private water source will be permitted without the prior written consent and approval by the City.

3.02 DESIGN REQUIREMENTS

- A. Public water distribution systems shall be designed to handle the necessary water flow based upon complete development. The necessary water flow shall include applicable residential and nonresidential uses and fire protection flows.
- B. The City may require oversizing of proposed infrastructure to serve future development or extension of main lines. If City chooses to require such oversizing, City will participate in the cost of the oversize and will negotiate an oversize agreement with the developer to establish the terms of the participation effort.
- C. The water system shall be designed to deliver peak-hour demand flows. The fire flow must be available above the peak-hour demand of the system and for a duration and at the residual pressure as specified by the Fire Marshall.

- D. One hard copy and one electronic copy in Adobe Acrobat (.pdf) format of the system hydraulic calculation, sealed by a Texas Registered Professional Engineer, shall be provided with all water distribution system drawings. These calculations shall show how the water flow rates were computed, design assumptions, and how fire flow requirements are met. If the proposed water distribution system is connecting to an existing system, verification of the flow rates and pressure in the existing system (both before and after inclusion of the new system) shall be provided by the design engineer and approved by the City.
- E. Fire flow requirements are based upon International Fire Code, as amended in the Code of Ordinances, latest adopted edition.
- F. The overall water system shall be designed to maintain adequate pressure throughout the system. In all cases, specific water pressure and flow analysis and study shall be required. The layout of the water mains should provide maximum circulation of water to prevent future problems of odor, taste, or color as a result of stagnant water.
- G. Permanent dead-end mains will not be allowed if looping alternatives are available. This may require extending the water mains beyond the limits of the project.
- H. In unavoidable permanent dead-end situations, lines shall be 6" or longer and not exceed 600 feet in length and shall be equipped with a 2" automatic flushing device.
- I. The length of a dead-end water main shall be measured from the intersection with a multiple feed (looped) main to the end of the main.
- J. Where a water main is stubbed out for future extensions, place a valve to isolate the dead-end and extend a 20' section of pipe with a cap on the end on the downstream side of the isolation valve. Restrain the water main to prevent line separation. Thrust blocking will not be allowed. No customer services shall be located on the dead-end until it is extended. Provide a 2" automatic flushing device at the end of the dead-end line in advance of the isolation valve.

3.03 SYSTEM LAYOUT AND PLACEMENT

- A. Water system layout and placement requirements are established based on land uses, as established in this section. These layouts and placement requirements are intended to be minimum requirements; larger mains, shorter runs, or additional looping may be required based upon fire flow calculations. If a property is not covered within the development types listed, the City staff shall designate the type of development.
 - 1. Type A (Residential) Development shall include all properties and rights-of-way within zoning district R-1 through R-3 and any planned development districts that allows any R-1 through R-3 use developed in accordance with the intent and requirements of these districts and developments similar in density and use.
 - 2. Type B (Commercial) Development shall include all properties and rights-of-way within zoning districts B-1, B-2, B-3, B-4, I, and PD use developed in accordance with the intent and requirements of these districts and developments similar in density and use.
- B. Water mains in Type A (Residential) Development shall have a minimum size as follows:

1. Two-inch water mains may serve a maximum of two domestic, residential service connections. Two-inch mains shall not exceed 200 feet in length and shall be installed with a 2" automatic flushing device at the end of the line. All 2-inch water mains shall be specifically approved by the City staff.
 2. All 4-inch water mains shall be specifically approved by the City Staff.
 3. Six-inch water mains shall be maximum of 1,500 feet long when supported on both ends by 8-inch mains or larger. Six-inch water mains shall have no more than two fire hydrants. Dead-end 6-inch mains shall not be more than 600 feet in length and shall be equipped with a 2" automatic flushing device.
 4. Eight-inch water mains are required for mains over 1,500 feet long, or when three or more intermediate fire hydrants are required. Eight-inch water mains shall not be dead-end, except as provided in Section 3.02.
 5. Twelve-inch and larger water mains will be required at locations established by the City or as determined by the design calculations.
- C. Water mains in Type B (Commercial) Developments shall have a minimum sizing as follows:
1. Minimum size of water mains shall be 8-inch. Maximum length of a dead-end 8-inch main shall be 600 feet. A dead-end main shall be terminated with a 2" automatic flushing device.
 2. Twelve-inch and larger water mains will be required at locations established by the City staff or as determined by the design calculations.
- D. Water main and appurtenances are not allowed in the following sizes: 3-inch, 10-inch, and 14-inch.

3.04 FIRE HYDRANTS (Flushing Valves)

- A. Fire hydrants shall have a three-way nozzle arrangement, a 5 and 1/4-inch compression type main valve, a mechanical joint (MJ) boot, and conform to the requirements of American Water Works Association (AWWA) C502. Hydrants shall be factory painted red with yellow pumper caps and silver streamer caps. Bonnet shall be painted in accordance with the table shown in 3.04F. Field painting of the hydrants after installation is not allowed, other than as specified in 3.04F or for minor touch-up. Approved fire hydrants shall be listed on the Approved Product List.
- B. Fire hydrant spacing shall be measured along the length of the main. Fire hydrants shall be spaced along all mains 6 inches and larger as follows:
1. Type A (Residential) Development – Four hundred feet minimum to 500 feet maximum spacing, or as designated by the Fire Marshal.
 2. Type B (Commercial) Development – Two hundred and fifty feet minimum to 300-feet maximum spacing and at all street intersections, or as designated by the Fire Marshal.

3. If applicable, fire hydrant spacing measurements shall begin from the nearest existing fire hydrant to the new development so as to avoid spacing that exceeds these standards.

C. Location – Fire hydrants or flushing valves shall be located as follows:

1. Fire hydrants shall be located a minimum of 2 feet behind the back of the curb, or projected future curb, and be set at the point of curvature (PC) of the intersection curb radius. To the maximum extend practical, fire hydrants shall be located on lot lines.
2. On all open-ditch roadways, set the fire hydrants or flushing valves within 3 feet of the right-of-way. Fire hydrants shall not be located between the edge-of-pavement and the open ditch.
3. Fire hydrants located between right-of-way intersections should be set at a lot line. However, this location may be adjusted 5 feet either way to miss driveways or other obstructions, in which case the fire hydrants should not be closer than 3 feet from curbed driveways or 5 feet from non-curbed driveways.

D. The depth of bury for all fire hydrants shall be established such that the manufacture's bury line on the fire hydrant is installed at the ground line at each location or at the finished ground after pavement construction.

E. Fire hydrants shall be installed in accordance with all applicable TCEQ rules and regulations.

F. The bonnet of the fire hydrant shall be factory painted white and then shall be field painted in accordance with the table below. Fire hydrants shall be color coded on the fire hydrants bonnet based upon fire flow test administered prior to final walk through. The paint used shall be a polyurethane enamel or approved equal and applied in accordance with the manufacturer's instructions. The color code shall be as follows:

Flow Rate (GPM)	Paint Color
< 500	Red
500-999	Orange
1000-1499	Green
1500+	Light Blue

G. All fire hydrants shall be installed so that the streamer connection will face the fire lane or street, or as directed by the Fire Marshal.

H. Fire hydrants, when placed at intersections or access drives to parking lots, when practical, shall be placed so that no part of the fire truck will block the intersection or parking lot access when connections to the fire hydrant are made.

I. A Blue Stimsonite, Fire-Lite reflector model 88-SSA (or approved equal) shall be placed 12 inches from the centerline of the street, offset toward the fire hydrant. At intersections, reflectors shall be placed on both roadways opposite the fire hydrant.

- J. Fire hydrants that are to be designated as private shall have a factory coated body color of red. The caps and bonnets shall be color coded in accordance with Section 3.04F. These fire hydrants will be owned and maintained by the property owner/entity. The valve for the fire hydrant line shall be located at the public water main.
- K. All fire hydrants shall be set on a foundation consisting of either a pre-cast concrete block or a 90-pound sack of premix concrete.
- L. All fire hydrants shall have a 3'L x 2'W x 4" thick unreinforced concrete splash pad installed directly in front of the pumper nozzle to reduce or eliminate erosion that might result from flushing the hydrant.
- M. All fire hydrants must be equipped with an isolation valve located adjacent to the water main.

3.05 WATER DISTRIBUTIONS SYSTEM MATERIALS

- A. All materials used in the construction of public water distribution systems must be in conformance with AWWA and NSF International guidelines.
- B. PVC Pressure Pipe, 2-inch through 12-inch, shall conform to the requirements of ANSI/AWWA C900, current revision, Class 150 DR 18. Pipe shall be designed and constructed in conformance with the minimum requirements of the "Manual of Water Supply Practices", AWWA Manual No. M23. PVC pipe with the use of ductile iron fittings is the preferred material for water line construction. The use of DIP is allowed, as necessary.
- C. Ductile Iron Pipe, 4-inch through 54-inch, shall conform to the requirements of "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds for Sand-Lined Molds, for Water and Other Liquids," AWWA C151, (ANSI A21.51), current revision. Pipe thickness shall be the minimum specified in C151. Under special conditions, the City may require thickness design in conformance with the minimum requirements of "Thickness Design for Ductile Iron Pipe," AWWA C150 (ANSI A21.51), current revision. Pipe shall be installed in conformance with the minimum requirements of AWWA C600, "Installation of Gray and Ductile Cast-Iron Water Mains and Appurtenances." DIP shall be furnished with epoxy or cement mortar lining, AWWA C104 (ANSI A21.4). Polyethylene tube encasement shall be provided as required.
- D. Bedding and backfill shall conform to Section 3.09 of this Manual and as shown in the City's Standard Construction Details.

3.06 LOCATION OF WATER MAINS AND EASEMENT REQUIREMENTS

- A. All public mains shall be installed within a public utility easement, or right-of-way. A minimum of 4 feet of cover shall be maintained at all times, except as allowed by section 3.08.
- B. Water mains shall be placed along a uniform alignment with the right-of-way. When necessary, the water main may be deflected at a fire hydrant location to accommodate proper installation of the fire hydrant. At all locations where a water main changes alignment, the location of the water main shall be clearly shown on the construction drawings. A minimum distance of 2 feet shall be maintained from the right-of-way line to the nearest outside edge of the water line.

- C. For new construction, any water main, except at a fire hydrant, and located less than 5 feet from the dedicated right-of-way line, and within the right-of-way shall have a public utility easement adjoining the right-of-way. Public utility easements adjoining a right-of-way shall be sufficient width to provide a minimum of 12.5 feet of clearance on each side of the centerline of the pipe.
- D. Water mains shall be located within the right-of-way as shown in Standard Detail ROW-1.
- E. Water mains not within the public right of way shall be centered in a public utility easement the width of which will be determined by City staff.

3.07 CLEARANCE OF WATER LINES FROM OTHER UTILITIES

- A. Water mains shall be designed and located to conform to regulations of the TCEQ.
- B. For water mains crossing an existing or proposed sanitary sewer or force main, the minimum clearances between the utilities shall comply with the latest edition of "Rules and regulations for Public Water Systems," of the TCEQ.

3.08 DEPTH OF COVER

- A. Minimum depth of cover for water mains shall be as follows:
 - 1. Twelve-inch and smaller mains shall have a minimum cover of 4 feet from the top of curb. At utility conflicts the water main cover may be reduced to 3 feet with the approval of the City. For open ditch roadway section, 12-inch and smaller mains shall be installed at least 3 feet below the ultimate flow line of ditch or 6 feet below natural ground at the right-of-way line. Whichever is deeper.
 - 2. Sixteen-inch and larger mains shall have a minimum cover of 5 feet from the top of curb. For open ditch roadway sections, 16-inch and larger mains shall be installed at least 3 feet below the flow line of ditch or 7 feet below natural ground at the right-of-way line, whichever is deeper.
 - 3. Water mains shall be located in a manner that minimizes the impact on adjacent facilities or infrastructure and allows for ease of maintenance of the water line.
- B. Changes in grade to clear other utilities or underground features may be made by deflecting pipe joints. The maximum designed deflection shall be no more than the manufacturers allowable deflection. The vertical realignments shall be restrained in each direction in accordance with restraint requirements and be constructed with MJ fitting and restraints. Any bell joints located in the vertical realignment shall also be restrained.

3.09 TRENCHING, BEDDING, AND BACKFILL REQUIREMENTS

- A. The minimum trench width shall be equivalent to the outside diameter of the pipe plus 12".
- B. The maximum trench width shall be equivalent to the outside diameter of the pipe plus 36".
- C. The minimum trench depth shall be equivalent to the desired bury depth of the pipe plus the outside pipe diameter plus 6".

- D. Pipes should be bedded with bank sand.
- E. Sand bedding shall fill the entire width of the trench and shall extend from a depth of 6" below the pipe to 6" above the pipe.
- F. Bedding shall be installed in maximum 9" loose lifts and be compacted by vibratory equipment to a 90% standard proctor (ASTM D698).
- G. Backfill in non-paved areas and under concrete paved roadways shall consist of select backfill from the excavation.
- H. All backfill within public rights-of-way and public easements shall be installed in maximum 9" loose lifts and be compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.
- I. In non-paved areas the backfill shall fill the entire trench width of the trench and shall extend from the top of the sand bedding to a depth of 6" below the elevation of the finished surface.
- J. In non-paved areas, the uppermost 6" of backfill shall consist of topsoil. If the trench extends through an existing vegetated landscape, any excavated or disturbed area adjacent to the trench shall be re-sodded with grass that is similar to the exiting landscaping.
- K. Under concrete roadways, the backfill shall fill the entire width of the trench and shall extend from the top of the sand bedding to the elevation of the bottom of the concrete paving. All water lines located underneath and within 1 foot of any asphalt paving be backfilled with cement stabilized sand.
- L. Under asphalt paving, the cement stabilized sand shall fill the entire trench width and shall extend from the top of the sand bedding to the elevation of the bottom of the base section.
- M. The cement stabilized sand shall be in accordance with the following requirements.
 - 1. The cement shall be Portland Cement, Type I, ASTM C150.
 - 2. The sand shall be clean, durable sand, with less than 0.5 percent clay clumps, ASTM C142; with less than 0.5 percent lightweight pieces, ASTM C123; with organic impurities, ASTM C40, not showing a color darker than standard color, and a plasticity index of less than 6 when tested in accordance with ASTM D423 and ASTM D424.
 - 3. Compact to 95 percent Standard Proctor Density (ASTM D2922-78 and ASMT D3017-78) in maximum loose lifts of 8-inches thick. Actual testing shall be required as specified in Section 3.13 of this Manual.
 - 4. The cement-sand mixture shall consist of at least 2.5 bags of cement per cubic yard of mixture. The cement-sand mixture shall have a minimum unconfined compressive strength of 100 pounds per square inch (psi) in 48 hours, when compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.

5. Cement stabilized sand shall be placed and compacted within 3 hours of batching.

3.10 PIPE LOCATION MARKING

- A. Adequate markings on site as specified below and accurate as-built locations shall be provided so that the water lines and services can be easily located by the City in the future.
- B. A continuous tracer wire, such as a solid 14-gauge copper clad wire with blue shielding or approved equal, shall be affixed to the top of the new water main prior to bury and shall have a snake pit tracer station installed at a maximum of 500 feet. The tracer station shall have a 2' x 2' concrete pad around it and shall be shown on the plans. Tracer wire shall be connected to all water meter angle stops, fire hydrants, and valve box risers. Wire splices shall be completed using approved, underground connector. Soldered connections are not permitted. A continuity test shall be completed prior to acceptance.
- C. The location of water services shall be marked on the curb by etching or casting a "W" into the face of the curb directly over the water service location

3.11 INSTALLATION BY BORE AND JACK

- A. Bore and jack sections shall be specifically approved by the City and clearly shown on the drawings by location and footage.
- B. The following criteria are generally used as a basis for setting bore and jack sections.
 1. Bore pits shall be at least 3 feet from the back of curb and 5 feet from back of curb on a major thoroughfare. Bore pits in highways, county roads, or railroad right-of-way shall conform to these requirements and to the requirements of the crossing permit or use agreement. All bore pits shall be shored in accordance with Occupational Safety and Health Administration (OSHA) requirements. Bore pits or receiving pits to be located in street or driveway paving, shall be shown on drawings.
 2. All existing developed areas shall be restored to original condition after construction.

3.12 VALVES

- A. All water systems valves shall conform with AWWA standards and shall be designed as follows:
 1. Four-inch through 18-inch valves shall be resilient seated gate valves, AWWA C509, counterclockwise opening with MJ fittings. Valves shall have a complete epoxy coating on all iron parts in the valve interior to eliminate corrosion.
 2. Twenty-inch and larger valves may be resilient gate valves, AWWA C509 or butterfly valves, AWWA G504, with complete epoxy coating to avoid corrosion of all iron parts, as approved by the City. All valves shall be counterclockwise opening. All valves shall be direct-bury type.
 3. Cast-iron valve boxes are required on all valves.
 4. All valves shall be sized equal to the size of the main upon which it is located.
 5. Valves shall be approved by the City and shall be listed on the Approved Product List.

- B. Valves shall be set at a maximum distance of 1,000 feet along the main.
 - 1. The total number of valves at any water line intersection shall equal the total number of main lines extending out from the intersection, i.e., three (3) for a tee and four (4) for a cross.
 - 2. All valves shall be equipped with a Snake Pit tracer wire station installed adjacent to the valve in a 2' x 2' concrete pad that is located around the valve box.
- C. Valves shall be located as follows:
 - 1. All mains shall be valved within the street right-of-way. Valves shall not be placed within 4 feet of ultimate pavement, except as specifically approved by the City.
 - 2. Valves are normally located on the projection of intersection street right-of-way lines or at the curb return adjoining a paved street across the main. Tapping sleeves and valves are excluded from this requirement.
 - 3. All fire hydrants shall be isolated from the service main with a valve located on the fitting at the main line.
 - 4. Intermediate valves not located on the projection of intersection street right-of-way lines may be located at a lot line projection or 5 feet from the fire hydrant.
 - 5. Valves shall be placed at the end of all mains that are to be extended in the future and extend the main a minimum of 20 feet past the valve. Valve and piping shall be restrained using MJ fittings, restraints, and pipe joint restraints. Thrust blocks are not allowed.

3.13 FITTINGS AND APPURTENANCES

- A. Fittings shall be Ductile-Iron Compact Fittings 4-inch to 12-inch, AWWA C153/A21.53.84, conforming to the minimum requirements of "Gray-Iron and Ductile-Iron Fittings, 12-inch through 48-inch, for Water and Other Liquids", AWWA C153 (ANSI 21.10), current revision. Fittings shall be furnished with epoxy or cement mortar lined, AWWA C104 (ANSI A21.4).
- B. All fittings shall be identified and described on the construction drawings.
- C. Water main fittings shall be MJ fittings.
- D. Polyethylene tube encasement shall conform with the minimum requirements of "Polyethylene Encasement for Gray and Ductile Cast-Iron Piping for Water and Other Liquids," ANSI/AWWA C105, current revision. Soils within the project shall be tested in accordance with Appendix A of ANSI/AWWA C105 to adequately determine the requirements for encasement.
- E. Concrete thrust blocking or mechanical restraints shall be required on all bends, tees, plugs, and combinations thereof. Refer to the City's Standard Construction Details for specifications.
- F. The maximum allowable size of a tapping sleeve and valve on an existing pipe is equal to the pipe diameter of the main to be tapped.

3.14 DUCTILE IRON WATER PIPE

- A. All transitions from DIP to approved water main materials shall be constructed using MJ fittings.
- B. All DIP shall be constructed of materials as specified in Section 3.05.

3.15 TESTING

- A. It is the responsibility of the contractor to deliver a finished product in compliance with the contract documents and applicable federal, state, and local requirements. An independent testing laboratory shall be used to verify contract document compliance.
- B. The contractor is responsible for notification of the City and the independent testing laboratory in accordance with the City's notification requirements. In the event construction activity occurs without proper notification to the City, the work in question is subject to removal and replacement in accordance with the standards at the discretion of the City.
- C. Water lines shall be tested in accordance with the following:
 - 1. A hydrostatic exfiltration test shall be performed on all water lines in accordance with the requirements of the TCEQ and AWWA C600-10 (DIP) or C605-13 (PVC pipe) prior to being placed in service.
 - 2. New water lines shall be thoroughly disinfected in accordance with AWWA Standard C651 and TCEQ requirements, and then flushed and sampled prior to being placed in service.
 - 3. Copies of all test results shall be given to the City.
- D. Cement Stabilized Sand Testing
 - 1. A minimum of two random samples for compressive strength shall be taken each week. For smaller projects, one sample may suffice with City approval. The City reserves the right to require additional tests, at the Contractor's expense, if it is deemed necessary.
 - 2. In the event of a change in supplier, samples shall be drawn on the first day of delivery from the new supplier, regardless of previous samples taken.
 - 3. Cement stabilized sand samples shall be taken at the point of placement of the cement stabilized sand and identified as to the location of the sample.
 - 4. Cement stabilized sand densities shall be taken a minimum of every 150 linear feet of trench, with a minimum of two test (one per direction of travel) at each road crossings. When used as subgrade on roadway repairs, density test shall be taken every 100 square feet of subgrade, with a minimum of one test per repair.
- E. Bedding, Backfill, Testing
 - 1. Bedding and density test shall be performed a minimum of every 300 linear feet of trench in each lift. Density test shall be offset on altering lifts and test locations shall be identified by station number.

3.16 EXISTING FACILITY CROSSINGS

- A. Installation of water main across a proposed or existing public street, driveway, sidewalk, railroad, pipeline, or drainage way shall conform to the requirements of this section.
 - 1. Public Street – All existing public streets are to be bored and jack regardless of surface. Bore and jack length shall be computed as roadway width at proposed bore plus 5 feet to either side.
 - 2. Driveways – Concrete and asphalt driveways in good condition shall be bored and jacked. Bore and jack length shall be computed as driveway width at bore plus 5 feet to either side. Where driveways cross culvert pipe sections along open ditch streets and the proposed water main is in proximity and parallel to the culvert pipe, the length of bore shall be the same as the length of culvert pipe.
 - 3. Sidewalks – When the water line crossed under a sidewalk in good condition, the sidewalk shall either be bored and jacked or removed and replaced to the City criteria, whichever is most cost-effective. Bore and jack length shall be at least the width of the sidewalk. The proposed type of construction shall be noted on the drawings.
 - 4. Railroad Crossings – All railroad crossings require a pipeline crossing permit to be issued by the corresponding railroad company and shall be bored and jacked in accordance with the requirement of that permit and the standards provided in this Manual.
 - 5. Drainage Way – When a water line cross under an existing drainage way, the water conveying portion of the drainage way shall be bored and jacked in accordance with the standards provided in this Manual.
 - 6. Trees – When saving trees is a consideration, all trees 6 inches or larger in diameter and within 10 feet of the centerline of the water main must be noted on all drawings. The water main shall be bored and jacked within the drip line of any tree larger than 6 inches in diameter.

3.17 BARRICADING AND SIGNAGE

- A. Proper barricading and signage, conforming to the Texas Manual of Uniform Traffic Control Devices' latest edition, shall be required on all projects.
- B. Adequate signage for vehicular and pedestrian traffic shall be installed.
- C. A traffic control plan shall be submitted to the City and approved by the City for all streets open to travel by the public.

3.18 WATER SERVICES

- A. Water services 2" and smaller must be single lot connections.
- B. The minimum size for a single lot service shall be 1".
- C. Water services shall be located within the public utility easement as close to the lot line as possible.

D. Single lot services shall consist of the following components:

1. An epoxy coated double strap tapping saddle with stainless steel straps at the main line.
2. A brass ball-type corporation stop with cc threads.
3. Polyethylene service line.
4. A brass, angle, ball-type lockable curb stop with 360-degree operating T-head.
5. A concrete meter box with a cast iron or concrete lid having a 2" plug in it.

E. Water services 4" and larger shall be installed using pipe and fittings that comply with the applicable sections of these design standards and shall be located in vaults.

F. The City of Brenham to supply the water meter in all instances upon payment of the applicable service connection fee.

G. Water service in Type A (Residential) Development

1. Water services from the main to the meter curb stop shall be installed using materials from the Approved Products List.
2. Water services lines shall be placed at a minimum depth of 36 inches below final paving elevation.
3. Meter boxes shall be located just outside the public right-of-way in a public utility easement along the projection of a lot line. Location of meters on open ditch streets shall be specifically approved by the City.
4. Public system maintenance shall end at the water meter. The water meter box or vault shall be constructed to meet the City's requirements and will be maintained by the City.

H. Water Service in Type B (Commercial) Developments

1. Backflow prevention (i.e., detector check valves) shall be required on all fire lines.
2. The location of the service line tee, valve, valve box, and temporary plug shall be designated on the construction drawings in the appropriate location to serve the "future meter".
3. Location of water distribution appliances necessary for the fire protection (i.e., vault, "PIE", post indicator valves, and "FDC" fire department connections) shall be determined by the Fire Marshal.

3.19 AIR RELEASE VALVES

- A. Two-inch (2") air release valves shall be installed at all high points in the proposed distribution system piping.
- B. A high point in the distribution system is defined as a point having an elevation change of 20' or more.

- C. Air release valve assemblies shall be constructed from materials on the City's Approved Product List and shall be installed in accordance with the City's Standard Details.

END OF CHAPTER



PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 4 - SANITARY SEWER SYSTEMS

CHAPTER 4

SANITARY SEWER SYSTEMS

4.01 GENERAL

- A. This chapter includes the design requirements for sanitary sewer collection systems within the City limits and the extraterritorial jurisdiction of the City.
- B. The City's staff shall approve sanitary sewer collection drawings for all public improvements within the City limits or extraterritorial jurisdiction. Construction shall conform to the City Standard Construction Details.
- C. Construction drawings for private improvements, within public rights-of-way and public easements, that connect to or affect the public infrastructure shall be approved by the City subject to the requirements of this Manual and are subject to review and approval using the process defined in this Manual.
- D. Construction and sizing of all sanitary sewer mains and appurtenances shall meet or exceed the requirements of the TCEQ.
- E. The public sanitary sewer system shall be defined as all sewers, and services leads located in public easements or street rights-of-way and that are installed in accordance with these standards. The public sanitary sewer system shall not extend beyond the service connection. All public construction shall conform to the requirements of this Manual. All private construction beyond the service connection shall conform to the requirements of the City's adopted Plumbing Code.
- F. No Interconnects between the City's sanitary sewer system and any separate system, utility district, or private sanitary sewer collection system will be permitted without the prior written consent and approval by the City.
- G. Sanitary sewer service shall be extended to all building sites prior to development. Septic systems are not allowed, except as specifically approved by the City.

4.02 DESIGN REQUIREMENTS

- A. Sanitary sewer systems shall be designed to handle the necessary flow based upon complete development. The necessary flow shall include applicable residential and non-residential average daily flows and shall include a minimum peak design flow of four times the average daily flows.
- B. The average daily flow for the design of sanitary sewers shall be based on a minimum set by the TCEQ in gallons per day per single-family connection for residential areas. Commercial, industrial and office areas shall be designed for an average day flow that can be anticipated from the contributing area.

- C. One copy of the system hydraulic calculations, sealed by a Texas Registered Professional Engineer, shall be provided electronically (PDF format) with all sanitary sewer system drawings. These calculations shall show how the sanitary flow rates were computed, design assumptions, and that TCEQ requirements are met. If the proposed sanitary sewer system is connecting to an existing system, verification of the availability of capacity in the existing system, after inclusion of the new system, shall be provided by the design engineer and approved by the City.
- D. All gravity sewers will be designed to accommodate the peak flow from the contributing service area. The peak flow will be computed using a peaking factor of four multiplied by the average daily flow for the contributing area. For non-residential areas, the peak flow should include consideration of flow characteristics from the anticipated development.
- E. Additional consideration of peak flow shall be given for design of pumping stations. The impact of pumping stations on the upstream and downstream sanitary sewer system shall be evaluated. The peak flow for design of a pumping station shall be based on the actual flow into the station.
- F. The minimum size allowable public sanitary sewer main shall be six inches. Public sanitary sewers are not allowed in back lot or rear yard easements.
- G. The minimum size residential double sanitary sewer service lead shall be six inches and shall not serve more than two residential services.
- H. Commercial sewer service leads shall be six-inch pipe or larger and shall not serve more than one commercial connection.
- I. All elevations shall be shown to the nearest 0.01 of a foot.
- J. All mains to be installed under an existing roadway should be installed by bore unless otherwise approved by the City.

4.03 SYSTEM LAYOUT AND PLACEMENT

- A. All sanitary sewer systems shall be designed in conformance with the requirements of the TCEQ and other applicable standards.
- B. All stationing shall be based on centerline of street right-of-way stations.
- C. The minimum depth of a sewer main along a curb and gutter street shall be four feet below finished grade or top of curb to the top of pipe, whichever is lower. Sanitary sewers laid along open ditch streets shall have a minimum cover of six feet from the average ground line at the adjacent street right-of-way or two feet below the flow line of the open ditch to the top of the pipe, whichever is lower. In situations where sewer main must be shallower than the depths reference above, the shallower sewer main must be constructed of C900 PVC pressure rated pipe.
- D. The maximum allowed depth for sanitary sewer collection lines is 16 feet from top of curb to invert of pipe. Sanitary sewers greater than 10 feet in depth to invert of pipe require public utility easements as stated in Section 4.06.

- E. Sanitary sewers shall be laid in a straight alignment, manhole-to-manhole. No curvilinear bends in excess of the pipe manufacturer's recommended pipe deflection amounts are allowed.
- F. Vertical Alignment should avoid high or low points between connections.
- G. Sanitary sewer hydraulic requirements include:
 - 1. Design velocity in a gravity sewer flowing full shall be a minimum of 2.0 feet per second (fps) and a maximum of 10 fps. In both cases, the Manning Formula has been used with an n coefficient of 0.013. The use of different pipe materials will not alter the use of n=0.013 for the purposes of design.
 - 2. Minimum acceptable slopes in sewers shall be as follows:

Size of Pipe (inches)	Minimum Slope (%)	Maximum Slope (%)
6	0.50	12.35
8	0.335	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.115	2.83
21	0.095	2.30
24	0.08	1.93
27	0.07	1.65
30	0.06	1.43
33	0.055	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*
*For pipes larger than 29 inches in diameter, the slope shall be determined by Manning's formula to maintain a velocity greater than 2.0 feet per second and less than 10.0 feet per second when flowing full.		

- H. Unequal size sewers shall be designed so that the inverts of the pipes are matched at manholes. When this is not possible, the upstream sewer may be designed so that the flow line of the upstream sewer is higher than the flow line of the downstream sewer. When the flow line of the upstream sewer is raised more than 24-inches above the flow line of the downstream sewer, a drop manhole connection is required, except as specifically approved by the City.
- I. Sanitary sewer service leads shall be laid at a minimum of 0.50 percent slope.

4.04 MANHOLES

A. Manhole requirements include:

1. Manholes shall be placed at points of changes in alignment, grade, or size of sewers, at all four-way and three-way connections, and at the end of all sewers. Cleanout boots will, however, be allowed on the dead end of a sanitary sewer line that is less than 150 feet long with specific approval from the City.
 - a. Manholes placed at the end of a collection system pipe that may be extended in the future must include pipe stub-outs with plugs.
 - b. Manholes in a straight-run pipe shall be spaced at a maximum distance of 500 feet apart.
 - c. The maximum allowable manhole spacing for collection systems with horizontal curvature is 300 feet. In such cases, a manhole must be at the point of curvature and the point of termination of a curve.
 - d. Manholes shall have a traffic bearing frame and cover. Manholes shall have a design strength of 4,500 pounds per square inch (psi) and be in compliance with ASTM C478 reinforcement.
 - e. Sewers laid in easements shall have a manhole at each side of a street crossing.
 - f. Manholes should be located to eliminate the inflow of stormwater into the sanitary sewer. The top of the manhole rim elevation shall be shown on the drawings for all sanitary manholes. Manholes shall not be located within the street pavement. Manholes shall have inflow protection inserts, a minimum thickness of 1/8-inch, made of high-density polyethylene (HDPE) meeting ASTM D 1248 Class A, Category 5, Type 111. Insert shall include a lift strap and vent hole with a vent disk. Manholes may be sealed with gaskets and bolts when specifically approved by the City. Where gasketed manhole covers are required for more than three manholes in sequence, an alternate means of venting shall be provided at less than 1,500-foot intervals.
 - g. Manholes shall be constructed in accordance with the City Standard Construction Details. The diameter of a manhole constructed over the center of a sewer shall vary with the size of the sewer, as follows:

Sewer Size	Manhole Diameter
8- through 12-inch	4-foot minimum
15- through 27-inch	5-foot minimum
30-inch	6-foot minimum
36-inch	6-foot minimum

- B. Manholes deeper than 12 feet shall be a minimum of 5-foot diameter, depending on pipe size. If a drop structure is required, the manhole shall be a minimum of 5-foot in diameter.

1. A drop manhole is required for pipes that have a change in elevation of greater than 24 inches. The manhole will be a minimum of 5 feet in diameter. The use of an interior drop is required.
2. Steps in manholes will not be permitted.
3. Manhole covers shall be 32 inches in diameter or larger, cast-iron, shall include a traffic bearing type ring and cover with the words "Sanitary Sewer," and the City logo cast into the cover. All manhole covers shall be made impermeable to surface drainage by providing a solid cover in accordance with City Standard Construction Details. Whenever a manhole is placed in a low-lying area, an additional impermeable lining shall be provided underneath the cover to present flow.
4. All manhole adjustments shall be made with 3-inch precast concrete rings or traffic-related HDPE adjustment rings. A maximum of five adjustment rings are permitted.
5. Manhole cones shall be concentric cast.
6. All new manholes shall have an interior surface coated with an approved epoxy coating a minimum of 100 millimeters thick. If the project requires a rehabilitation of an existing manhole, the epoxy coating thickness shall be 125 millimeters thick.
7. Bituminous coatings are not allowed.
8. Coatings shall be tested with a Holiday tester.
9. Testing shall be in accordance with latest edition of the National Association of Corrosion Engineers (NACE) "Standard Recommended Practice Discontinuity Testing of Protective Coatings."
10. All holidays shall be marked, repaired, and retested. All joints shall be grounded smooth prior to installation of the interior coating. Should the manhole be pre-coated at the place of manufacturing, the joint shall be grouted smooth, and the grouted area shall be coated in accordance with this section.
11. Interior coating is not required, however, if polymer concrete, corrosion-resistant manholes are used that are manufactured using the additive XYPEX.
12. Fiberglass manholes are not allowed as part of public sanitary sewer systems. All manholes within public rights-of-way and public easements shall be pre-cast or cast-in-place manholes.
13. Where unequal size pipes enter a manhole, inverts of pipes are required to be at the same elevation, unless due to an elevation drop connection.

4.05 SANITARY SEWER SYSTEM MATERIALS

- A. All materials used in the construction of sanitary sewer systems shall be in conformance with the City's Approved Products List and the requirements of the TCEQ. Sewers shall be designed to meet or exceed the pipe manufacturer's recommendations for depth.

- B. Solvent welded sanitary sewer joints are not an acceptable joining method for PVC piping materials. Use of rubber gasketed bell and spigot sanitary sewer joints shall be mandatory.
- C. Sanitary sewers 15 inches or less in diameter and installed at depths of 16 feet or less to invert shall be constructed conforming to ASTM specification D 3034 SDR-26 (115 psi). The color shall be green and shall meet ASTM specifications D 3212 for pipe joined with rubber gaskets conforming to ASTM F477. Bell (female) ends of pipe shall be installed on the upstream side with spigot (male) ends oriented downstream.
- D. All sanitary sewers greater than 18 inches in diameter and less than 27 inches in diameter and installed at depths of 18 feet or less to invert shall be constructed conforming to ASTM specification F679 SDR-26 (115psi). The color shall be green and shall meet ASTM specifications D 3212 for pipe joined with rubber gaskets conforming to ASTM F477. Bell (female) ends of pipe shall be installed on upstream side with spigot (male) ends oriented downstream.
- E. Sanitary sewers exceeding 27 inches in diameter shall be constructed of PVC pipe approved by the City. Bell (female) ends of pipe shall be installed on the upstream side with spigot (male) ends oriented downstream.
- F. A 2-inch wide green marker tape with the words "Sanitary Sewer" shall be installed 12 inches above the top of pipe during installation. All sanitary sewer mains shall be equipped with a 14-gauge, copper clad tracer wire and shall have a snake pit tracer station installed at a maximum of 500 feet. These should be shown on plans.
- G. All force mains 12 inches or less in diameter shall be constructed of PVC and shall be AWWA specification C 900, Class 150, DR 18. The color shall be green and shall meet ASTM specifications D 3139 for pipe joined with rubber gaskets conforming to ASTM F 477, or DIP shall conform to the requirements of "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds for Sand- Lined Molds, for Water and Other Liquids," AWWA C151, (ANSI A21.51), current revision. Pipe shall be lined with Protecto 401 ceramic epoxy lining or approved equal. Pipe thickness shall be the minimum specified in C151. Bell (female) ends of pipe shall be installed on upstream side with spigot (male) ends oriented downstream. All ductile iron fittings shall be MJ and restrained with Ebba "Meg-a-lugs," or approved equal. The fittings shall be lined with Protecto 401 ceramic epoxy lining or approved equal. A 2-inch wide green marker tape with the words "Sanitary Sewer Forcemain" shall be installed 12 inches above the top of pipe during installation. Force mains shall be equipped with a 14-gauge, copper clad tracer wire and shall have a snake pit tracer station installed at a maximum of 500 feet. These should be shown on plans.
- H. All force mains greater than 12 inches shall be AWWA specification C 905, Class 235, DR 18. The color shall be green and shall meet ASTM specifications D 3139 for pipe joined with rubber gaskets conforming to ASTM F 477, or DIP shall conform to the requirements of "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds for Sand-Lined Molds, for Water and Other Liquids," AWWA C151, (ANSI A21.51), current revision. Pipe shall be lined with Protecto 401 ceramic epoxy lining or approved equal. Pipe thickness shall be the minimum specified in C151. Bell (female) ends of pipe shall be installed on upstream side with spigot (male) ends oriented downstream. All ductile iron fittings shall be Ductile-Iron Compact Fittings AWWA C153/A21.53.84 MJ and restrained with Ebba "Meg-a-lugs" or approved equal. The fittings shall be lined with Protecto 401 ceramic epoxy lining or approved equal. A 2-inch- wide green marker tape with the words "Sanitary Sewer Forcemain" shall be installed 12 inches above the top of pipe during installation. Force mains shall be equipped with a 14-gauge, copper clad tracer wire and shall have a snake pit tracer station installed at a maximum of 500 feet.

These should be shown on plans. Bedding and backfill shall conform to Section 6.04 and to the City's Standard Construction Details.

4.06 LOCATION OF SANITARY SEWERS AND EASEMENT REQUIREMENTS

- A. Sanitary sewers shall be designed and located to conform to regulations of the TCEQ.
- B. Sanitary sewers shall be placed within the right-of-way at least 4 feet from the back of curb. Sanitary sewers shall be placed along a uniform alignment within the right-of-way.
- C. Where required, additional easements shall be provided adjoining the right-of-way to provide required clearances. A public utility easement adjoining a public right-of-way shall be of sufficient width to provide a minimum of 12.5 feet of clearance on each side of the centerline of the pipe.
- D. The minimum width of a public utility easement not located adjacent to a public right-of-way shall be 20 feet.
- E. Where sanitary sewers or force mains are installed in easements separated from public rights-of-way by other private or utility company easements, the sanitary sewer easement should be extended along or across the private utility company easement to provide access for maintenance of the sewer or force main.

4.07 CLEARANCE OF WATER LINES FROM SANITARY SEWER LINES

- A. Sanitary sewers shall be designed and located to conform to regulations of the TCEQ. The latest edition of "Rules and Regulations for Public Water Systems," of the TCEQ, shall be followed for minimum criteria and instructions for water line crossings.

4.08 TRENCHING, BEDDING, AND BACKFILL REQUIREMENTS

- A. All bedding and backfill shall be in accordance with the City Standard Construction Details. All backfill within public rights-of-way and public easements shall be compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.
- B. The minimum trench width shall be equivalent to the outside diameter of the pipe plus 12".
- C. The maximum trench width shall be equivalent to the outside diameter of the pipe plus 36".
- D. The minimum trench depth shall be equivalent to the desired bury depth of the pipe plus the outside pipe diameter plus 6".
- E. Pipes shall be bedded with bank sand.
- F. Sand bedding shall fill the entire width of the trench and shall extend from a depth of 6" below the pipe to 6" above the pipe.

- G. Bedding shall be installed in maximum 9" loose lifts and be compacted by vibratory equipment.
- H. In water bearing sand, washed shell, or other approved, granular material will be required with geo-textile fabric wrap as shown in the City Standard Construction Details. When water-bearing sands are encountered, the City shall be notified immediately.
- I. Backfill in non-paved areas and under concrete paved roadways shall consist of select backfill from the excavation.
- J. In non-paved areas the backfill shall fill the entire trench width of the trench and shall extend from the top of the sand bedding to a depth of 6" below the elevation of the finished surface.
- K. In non-paved areas, the uppermost 6" of backfill shall consist of topsoil. If the trench extends through an existing vegetated landscape, any excavated or disturbed area adjacent to the trench shall be re-sodded with grass that is similar to the existing landscaping.
- L. All sanitary sewer lines located underneath and within 1 foot of any asphalt paving shall be bedded in cement stabilized sand in accordance with the Standard Construction Details. The cement stabilized sand shall be in accordance with the following requirements.
 - 1. The cement shall be Portland Cement, Type I, ASTM C150.
 - 2. The sand shall be clean, durable sand, with less than 0.5 percent clay lumps, ASTM C142; with less than 0.5 percent lightweight pieces, ASTM C123; with organic impurities, ASTM C40, not showing a color darker than standard color, and a plasticity index of less than six when tested in accordance with ASTM D423 and ASTM D424.
 - 3. Compact to 95 percent Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78) in maximum loose lifts of 8 inches thick. Actual testing shall be required as deemed necessary by the City.
 - 4. The cement-sand mixture shall consist of at least 1.5 sacks of cement per ton of sand. The cement-sand mixture shall have a minimum unconfined compressive strength of 100 psi in 48 hours, when compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.
 - 5. Under asphalt paving, the cement stabilized sand shall fill the entire trench width and shall extend from the top of the sand bedding to the elevation of the bottom of the base section.
- M. Under concrete roadways, the backfill shall fill the entire width of the trench and shall extend from the top of the sand bedding to the elevation of the bottom of the concrete paving.

4.09 PIPE LOCATION MARKING

- A. Adequate markings on site as specified below and accurate as-built locations shall be provided so that the wastewater lines and services can be easily located by the City in the future.

- B. A continuous tracer wire, such as a solid 14-guage copper clad wire with blue shielding or approved equal, shall be affixed to the top of the new wastewater main prior to bury and shall have a snake pit tracer station installed at a maximum of 500 feet. The tracer station shall have a 2' x 2' concrete pad around it and shall be shown on the plans. Wire splices shall be completed using approved, underground connectors. Soldered connections are not permitted. A continuity test shall be completed prior to acceptance.
- C. The location of sanitary sewer services shall be marked on the curb by etching or casting a "Y" into the face of the curb directly over the sanitary sewer service location.

4.10 INSTALLATION BY BORE AND JACK

- A. Bore and jack sections shall be specifically approved by the City and clearly shown on the drawings by location and footage.
- B. The following criteria are generally used as a basis for setting bore and jack sections.
 - 1. Bore pits shall be at least 3 feet from the back of curb and 5 feet from back of curb on a major thoroughfare. Bore pits in highways, county roads, or railroad rights-of-way shall conform to these requirements and to the requirements of the crossing permit or use agreement. All bore pits shall be shored in accordance with Occupational Safety and Health Administration (OSHA) requirements. Bore pits or receiving pits to be located in street or driveway paving, shall be shown on drawings.
 - 2. All existing developed areas shall be restored to original condition after construction.

4.11 TESTING OF INSTALLED PIPE AND MANHOLES

- A. It is the responsibility of the contractor to deliver a finished product in compliance with the contract documents and applicable federal, state, and local requirements. An independent testing laboratory shall be used to verify contract document compliance.
- B. The Contractor is responsible for notification of the City and the independent testing laboratory in accordance with the City's notification requirements. In the event construction activity occurs without proper notification to the City, the work in question is subject to removal and replacement in accordance with the standards at the discretion of the City.
- C. For a collection system pipe that will transport wastewater by gravity, the following TCEQ testing methods are required:

§217.57 Testing Requirements for Installation of Gravity Collection System Pipes:

- (a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. The test must conform to the following requirements:

(1) Low Pressure Air Test.

- (A) A low pressure air test must follow the procedures described in American Society for Testing and Materials (ASTM) C 828, ASTM C 924, or ASTM F 1417 or other procedure approved in writing by the executive director. The testing times listed in Table C.4. in Figure: 30 TAC §217.57(a)(1)(B)(ii) must

be used, regardless of the testing procedure.

(B) For sections of collection system pipe with an average inside diameter less than 36 inches, the following procedure applies, unless a pipe is to be tested as required by paragraph (2) of this subsection.

(i) A pipe must be pressurized to 3.5 pounds per square inch (psi) gauge. If groundwater is present, then a pipe must be pressurized to 3.5 psi gauge greater than the pressure exerted by groundwater above the pipe.

(ii) Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

Figure: 30 TAC §217.57(a)(1)(B)(ii)

Equation C.3.

$$T = \frac{(0.085 \times D \times K)}{Q}$$

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds

K = $0.000419 \times D \times L$, but not less than 1.0

D = average inside pipe diameter in inches

L = length of pipe line, in feet

Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface

(C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following table:

Figure: 30 TAC §217.57(a)(1)(C)

Table C.4. - Minimum Testing Times for Low-Pressure Air Test

Pipe Diameter (inches)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1,020	133	7.693
21	1,190	114	10.471
24	1,360	100	13.676
27	1,530	88	17.309
30	1,700	80	21.369
33	1,870	72	25.856

- (D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.
- (E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure of the test.
- (F) Collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.
- (G) A testing procedure for a pipe with an inside diameter greater than 33 inches must be approved in writing by the executive director.

(2) Infiltration/Exfiltration Test.

- (A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 10 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole, or at least two feet above the existing groundwater level, whichever is greater.
- (B) An owner shall use an infiltration test in lieu of an exfiltration test when pipes are installed below the groundwater level.
- (C) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall take remedial action in order to reduce the infiltration or exfiltration to an amount within the limits specified by Equation C.3. in Figure: 30 TAC §217.57(a)(1)(B)(ii) before putting the system into service. An owner shall retest a pipe following a remedial action according to the requirements of this chapter.

Deflection testing of gravity sewer lines shall be conducted after completion of final backfill and grading for piping installed in areas that will not be paved. In areas where gravity sewer piping is installed beneath paving, deflection testing shall be conducted after subgrade preparation is completed. Such initial testing shall be conducted 30 days or longer after piping has been inspected and backfilled. In the event of a failed test, the line will be repaired and retested 30 days after the backfill has been replaced. No pipe shall exceed a deflection of 5 percent. The deflection test shall be conducted using a rigid ball or mandrel having an inside diameter equal to 95 percent of the inside diameter of the pipe. The test shall be performed without mechanical pulling devices and shall be in accordance with the requirements of the TCEQ.

D. The following TCEQ testing methods are required for sanitary sewer force mains:

§217.68 Force Main Testing:

- (a) The final plans and specifications must include the pressure testing procedures.
- (b) A pressure test must use 50 pounds per square inch above the normal operating pressure of a force main.

- (c) A temporary valve for pressure testing may be installed near the discharge point of a force main and must be removed after a test is successfully completed.
- (d) A pump isolation valve may be used as an opposite termination point.
- (e) A test must involve filling a force main with water.
- (f) A pipe must hold the designated test pressure for a minimum of 4.0 hours.
- (g) The leakage rate must not exceed 10.0 gallons per inch of diameter per mile of pipe per day. The following equation must be used to calculate the acceptable leakage rate in gallons per hour per 1,000 feet of pipe.

Figure: 30 TAC §217.68(g)

Equation C.5.

$$L = \frac{SD\sqrt{P}}{155,400}$$

Where:

L = Acceptable leakage rate (gallons/hour/1,000 feet of pipe, based on a leakage rate of 10.0 gallons per inch of diameter per mile of pipe per day)

S = Length of pipe (feet)

D = Nominal diameter of pipe (inches)

P = Average test pressure (pounds/square inch)

E. The following TCEQ testing methods are required for sanitary sewer manholes:

§217.58 Testing Requirements for Manholes:

- (a) All manholes must pass a leakage test.
- (b) An owner shall test each manhole, after assembly and before backfilling, for leakage using hydrostatic exfiltration testing, vacuum testing, or any other method approved in writing by the executive director. A manhole must be tested separately and independently from the collection system pipes.
 - (1) Hydrostatic Testing.
 - (A) The maximum leakage rate for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.
 - (B) To perform a hydrostatic test, an owner shall seal all wastewater pipes coming into the manhole with an internal pipe plug, fill the manhole with water, and maintain the test for at least one hour.
 - (C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.
 - (2) Vacuum Testing. An owner must perform vacuum testing according to either subparagraph (A) or (B) of this paragraph. If a manhole fails the vacuum test, the

owner must apply grout to the exterior of the excavated manhole before retesting the manhole.

(A) Texas Test.

- (i) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.
- (ii) Grout may not be placed in horizontal joints before testing.
- (iii) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.
- (iv) An owner shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.
- (v) A test head must be placed at the inside of the top of a cone section, and the seal must be inflated in accordance with the manufacturer's recommendations.
- (vi) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.
- (vii) A test does not begin until after the vacuum pump is off.
- (viii) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

(B) American Society for Testing and Materials (ASTM) Test. The owner may require manhole testing that meets the requirements of ASTM D1244-11.

F. In addition to deflection and pressure testing, the City may require that certain sewer installations be videoed after completion of construction, if necessary, to ensure that City requirements are met.

G. Cement Stabilized Sand Testing:

- 1. A minimum of two random samples for compressive strength shall be taken each week. For Smaller projects, one sample may suffice with City approval. The City reserves the right to require additional tests, at the Contractor's expense, if it is deemed necessary. In the event of a change in supplier, samples shall be drawn on the first day of delivery from the new supplier, regardless of previous samples taken.
- 2. Cement stabilized sand samples shall be taken at the point of placement of the cement stabilized sand and identified as to the location of the sample.
- 3. Cement stabilized sand densities shall be taken a minimum of every 150 linear feet of trench, with a minimum of two tests (one per direction of travel) at each road crossing. When used as subgrade on roadway repairs, density tests shall be taken every 100 square feet of subgrade, with a minimum of one test per repair.

H. Bedding, Backfill, Testing:

1. Bedding and density tests shall be performed a minimum of every 300 linear feet of trench in each lift. Density tests shall be offset on alternating lifts and test locations shall be identified by station number.

- I. Copies of all test results shall be given to the City with the project closeout documents.

4.12 EXISTING FACILITY CROSSINGS

- A. Installation of a sanitary sewer main across a proposed or existing public street, driveway, sidewalk, railroad, pipeline, or drainage way shall conform to the requirements of this section.
 1. Public Streets - All existing public streets are to be bored and jacked regardless of surface. Bore and jack length shall be computed as roadway width at proposed bore plus 5 feet to either side.
 2. Driveways – Concrete and asphalt driveways in good condition shall be bored and jacked. Bore and jack length shall be computed as driveway width at bore plus 5 foot to either side. Where driveways cross culvert pipe sections along open ditch streets and the proposed wastewater main is in close proximity and parallel to the culvert pipe, the length of bore shall be the same as the length of culvert pipe.
 3. Sidewalks – When the wastewater line crosses under a sidewalk in good condition, the sidewalk shall either be bored and jacked or removed and replaced to the City's criteria, whichever is most cost-effective. Bore and jack length shall be at least the width of the sidewalk. The proposed type of construction shall be noted on the drawings.
 4. Railroad Crossings – All railroad crossings require a pipeline crossing permit to be issued by the corresponding railroad company and shall be bored and jacked in accordance with the requirements of that permit and the standards provided in this manual.
 5. Drainage Way – When a wastewater line crosses under an existing drainage way, the water conveying portion of the drainage way shall be bored and jacked in accordance with the standards provided in this manual.
- B. Trees – When saving trees is a consideration, all trees 6 inches or larger in diameter and within 10 feet of the centerline of the water main must be noted on the drawings. The wastewater main shall be bored and jacked within the drip line of any tree larger than 6 inches in diameter.

4.13 BARRICADING AND SIGNAGE

- A. Proper barricading and signage, conforming to the Texas Manual of Uniform Traffic Control Devices' latest edition, shall be required on all projects.
- B. Adequate signage for vehicular and pedestrian traffic shall be installed.
- C. A traffic control plan shall be submitted to the City and approved by the City for all streets open to travel by the public.

4.14 SANITARY SEWER SERVICES

- A. Two-way cleanouts shall be installed at the end of each service and be terminated 6 inches below grade with a threaded cap and a concrete box. The downstream cleanout shall have a

section of pipe stubbed out and capped to facilitate connection. Services shall be terminated within the public utility easement as close to the lot line as possible.

- B. Sewer service leads shall not exceed 125 feet in length, unless approved by the City. Near-side double sewer service leads shall not exceed 20 feet in length and may extend across a public right-of-way or easement. All leads shall not be deeper than 8 feet.
- C. For Single-Family Residential Lots:
 - 1. Far-side service connections shall be installed at the time of construction of the sewer. Double sewer service leads shall be located within a public right-of-way or easement.
 - 2. Service connections shall be constructed of materials on the City's approved Product List.
 - 3. Service connections should be installed at a manhole, when possible.
- D. For Multi-Family Residential, Commercial, and Office Development.
 - 1. Service connections shall be made at a manhole. Long service connections should be installed at the time of construction of the sewer.
 - 2. Service connections shall be constructed of materials on the City's approved Product List and in accordance with 6.03 I above.
- E. General requirements for service connections at manholes include the following:
 - 1. Service connections shall be made at manholes whenever possible. When a service connection stub-out is not provided, an opening shall be cored out of the manhole at the required elevation. The service connection shall be extended into the manhole and the opening secured and grouted, and the manhole coating shall be repaired in accordance with the coating manufacturer's recommendations.
 - 2. A service connection at a concrete manhole shall have a rubber boot that is cast into the manhole, or the service location shall be cored. The rubber boot shall be secured and then grouted. The manhole interior coating shall be repaired in accordance with the manufacturer's recommendations. When a hole for a service connection in an existing brick manhole exceeds 8 inches, the manhole shall be replaced.
 - 3. Service connections entering a manhole 24 inches or more above the flow line of the manhole shall include an internal drop pipe with fittings. The cored opening for the pipe shall be secured and grouted, and the manhole coating shall be repaired in accordance with the coating manufacturer's recommendations.
- F. The location of sewer services shall be marked on the curb by etching or casting a "Y" into the face of the curb directly over the sewer service location.
- G. Service connections that are installed after initial construction of a sewer shall be constructed using a PVC saddle with gasket and stainless-steel straps as included on the City's Approved Product List.

4.15 LIFT STATIONS AND FORCE MAINS

- A. Lift stations shall be designed in conformance with the "TCEQ Design Criteria for Sewerage Systems" (latest edition). Lift stations should be considered only when a gravity system cannot be achieved. All lift stations shall be specifically approved by the City. The Design Engineer shall provide design requirements and pertinent data with construction drawings for review. A preliminary design meeting with the City staff is recommended. Lift stations shall be designed as follows:
1. The lift station site shall be conveyed in fee to the City. The site may be part of a larger site that includes a public wastewater treatment facility or other facility. The site shall have a minimum size of 50 feet by 50 feet.
 2. Site access shall be provided by a 15-foot-wide public right-of-way with an approved, all-weather access road of a minimum of 12 feet in width. Wet well structures shall be a minimum of 12 feet from the outside walls of the structure to the site boundary fencing. Fencing shall be in conformance with the City Zoning Ordinance.
 3. Use drainage swales, sidewalls and driveways, culverts, storm sewers, or a combination thereof for internal site drainage. Site drainage may sheet flow to a public right-of-way. Storm sewer systems, if provided, shall be sized in accordance with applicable design guidelines.
 4. The top of the wet well and all electrical controls shall be located 3-feet above the 100-year floodplain. Entry to the site must be accessible during a 25-year flood.
 5. Locate the wet well, and specifically, the pumps in the wet well such that a crane truck can back up to (or beside) the hatch to facilitate removal of the pumps without leaving the pavement. Provide sufficient room for construction access as well as on-going maintenance.
 6. Include an on-site manhole no farther than 80' upstream of the lift station wet well. Ideally, the on-site manhole shall be located within the fenced in area and shall be located so as not to block vehicle access to the facilities and shall be located in an area that does not receive vehicle traffic.
 7. The design of the lift station shall include a potable water connection in accordance with the design standards for water services. In addition to the service connection requirements specified in the design standards for water connections, the potable water connection must include a $\frac{3}{4}$ " Reduced Pressure Zone Backflow Device (RPZ) conforming to AWWA's Manual M14, a hose bibb (self-draining and freeze resistant, installed 12" above the 100-year flood plain), hose-bibb vacuum breaker, and freeze protection.
 8. All gravity sanitary sewers discharging to the wet well shall be located where the invert elevation is at or above the liquid level of the pump's "ON" setting to achieve the firm pumping capacity. Valves and check valves shall not be located in the wet well but may be located in a valve vault or on a concrete slab. Piping shall be spaced to maintain the pump manufacturer's minimum clearances between pumps.
 9. Size the diameter of the wet well, hatches, and hatch spacing to accommodate the selected pumping equipment. Consideration should be given to the dimensions of the ultimate pump in a multi-phased lift station to ensure adequate clearances. Provide a minimum of 18 inches of clearance from the inside wet well wall to all flanges to enable removal of all bolts. Pre-cast concrete wet wells may be used in any diameter provided calculations demonstrate that wet well thickness and material weight will resist imposed up-lift pressure. Provide hatch

safety nets with aluminum sliding rails or Flygt Safe-hatch access cover.

10. The wet well volume shall be based on the minimum cycle time of the largest pump planned for the lift station plus additional depth to prevent motor overheating and vortexing. Wet well working volume should be sized to allow for the recommended pump cycle for each pump.

The cycle time shall not be less than those listed in the following:

Motor Horsepower	Cycle Time (Minutes)
<50	6
50-100	10
>100	15

11. The "OFF" elevation of the submersible pumps shall be deep enough to prevent vortexing and motor overheating. The Design Engineer shall verify with all pump manufacturers on the City's Approved Product List that each pump is capable of operating continuously at the "OFF" elevation shown on the drawings.
12. The wet well floors shall have a minimum of 10 percent slope to the pump intakes and have a smooth finish. There shall be no wet well projections, which will allow deposition of solids under normal operating conditions. The inlet structure shall be designed to minimize turbulence.
13. The wet well shall have a vent sized such that the maximum velocity of air through the vent is 600 feet per minute at the firm pumping capacity. Vents shall have a stainless-steel insect screen that is easily replaceable and will prevent the entrance of rainwater. Vent pipes shall be corrosion resistant.
14. Access shall be provided to underground valve vaults. Stairways shall have corrosion-resistant, non-slip steps and conform to OSHA regulations with respect to rise and run. Where ladders are utilized in lieu of stairways, ladders shall conform to OSHA requirements.
15. Floor drains from valve vaults to wet wells shall be designed to prevent gas and raw sewer water from entering the valve vault. Such designs shall include "P" traps and floating ball type backwater valves.
16. All walls shall be a minimum of 18 inches from the outermost edge of all flanges to enable removal of all bolts. Pipes shall have a minimum spacing greater than that required by the pump manufacturer for minimum pump spacing. Swing check valves shall be positioned such that the shafts may be removed without removing the valve body.
17. Design shall follow the latest version of ACI 350 with the exception that the minimum concrete cover over steel reinforcing shall be at least 4 inches where in contact with raw sanitary sewer.
18. Wet wells shall be designed to resist the effects of buoyancy assuming full saturation of the surrounding soils to the finished grade or the 100-year floodplain, whichever is greater. Surface friction shall not be included in the design unless a friction factor is provided in a geotechnical report signed and sealed by a licensed professional engineer. A safety factor of 1.1 shall be used for buoyancy resistance. Wet well walls shall be designed to withstand

lateral earth pressures and static water levels at finished grade as outlined in ACI 350. At a minimum, 3,500 psi concrete shall be used. Top slabs shall be designed for a uniform loading of 100 pounds per square foot and a point load equal to the weight of the largest pump planned for the lift station at any location.

19. Hatches shall be constructed entirely of aluminum and designed for a minimum of 150-pound-per-square-foot load. The underside of the hatch shall have the following stenciled in red paint: "Warning! Confined Space Entry." Where individual hatches are incorporated into the top slab, the separation distance from inside face to inside face shall be a minimum of 12 inches.
20. Where riser pipes pass through the top slab, offsets or two 45-degree bends shall be used to provide clearance between the outside diameter of the pipe and the inside face of the hatches. The amount of clearance will be determined by the diameter of the slab reinforcing and the maximum aggregate diameter.
21. Use of vault-type or aboveground valves and piping is permitted. Valves shall be mounted in a concrete vault, or on an aboveground concrete foundation. Isolation and check valves shall not be located in the wet well.
22. If a valve vault is not used, the valves must be a minimum of 18" above ground with pipe supports every 5 feet. A minimum 6-inch-thick concrete slab must be placed below the piping gallery and valves. The slab must extend 3-feet beyond all valves and piping to allow for access to and maintenance of the piping and valves.
23. Pumps shall be Flyght, non-clog, submersible pumps capable of passing a 3-inch diameter or greater incompressible sphere and shall have suction and discharge openings a minimum of 4 inches in diameter. Pump seals shall be silicon carbide or tungsten carbide.
24. Pumps shall be sized to operate at optimum efficiency. Minimum acceptable efficiency at the operating point shall be 60 percent, unless specifically approved by the City. Leak detection sensors shall be provided in the motor housing of submersible pumps. Pumps shall be securely supported, in accordance with manufacturer recommendations, so as to prevent movement or vibration during operation. Rail-type pump support systems shall be provided for submersible pump installations so that pump removal and installation can be performed without requiring dewatering of or entry into the wet well. Rails, lifting chains, and hardware shall be constructed of Series 300 stainless steel.
25. Electric motors shall be sized so as to operate at a maximum design load without use of the service factor. Electric motors shall be 120-volt single-phase, 240-volt single-phase, 240-volt three-phase, or 480-volt three-phase. Motor service factor shall be a minimum of 1.15. Thermal protection shall be provided in the motor housing.
26. The following electrical power sources shall be considered for serving lift stations:
 - a. For stations where total pump motor sizes do not exceed 30 horsepower (hp), and where any individual pump motor size does not exceed 20 hp, 120/240-volt, three-phase service is recommended.
 - b. For stations where individual pump motor sizes do not exceed 5 hp and motor ratings are available as single-phase, and where three-phase service is not available, 120/240-volt, single-phase service may be used.

- c. For stations where total pump motor sizes exceed 30 hp and where individual motor sizes exceed 20 hp, 480/277-volt, three-phase service is recommended.
27. Emergency power connections shall require a manual transfer switch and a 200-amp, 3 pole, 4 wire generator receptacle equivalent to a Hubbell HBL4200RS2W the pump controller shall include magnetic starters utilizing melting alloy overloads, and be equipped with a pump alternator, an ultrasonic level controller, backup floats, alarm contacts, and a power supply. The use of variable frequency drive is acceptable. Lightning and surge protection shall be installed on the main power bus.
28. All panels and controls shall be covered by a constructed overhang to shield the equipment from sun and rain.
29. Panel area shall be lit by an outside, overhead light fixture.
30. The following controls and indicators shall be provided:
- a. Pump HOA Selector Switch (for each pump).
 - b. Alarm Reset Switch.
 - c. Seal-Fail and Over-Temp Reset Switch (for each pump protection module supplied by pump manufacturer).
 - d. Phase-Fail Light.
 - e. Pump Run Light (for each pump).
 - f. Control Power Light On.
 - g. Pump Seal-Fail Light (for each pump protection module - supplied by pump manufacturer).
 - h. Pump Over-Temp Light (for each pump protection module - supplied by pump manufacturer).
 - i. High Level Alarm Indicator.
 - j. Alarm Rotating Beacon Light.
 - k. Pump Run Elapse Time Meter (for each pump).
31. The following motor protection devices shall be provided:
- a. Motor Circuit Protectors (MCPs) or circuit breakers.
 - b. Motor Overload Current Trip Devices or C.T.'s with Relays (for each motor).
 - c. Motor Over-Temp and Seal Fail Relays (for each motor - furnished by pump motor manufacturers).
 - d. Phase Fail Relay.
32. Level Controls
- a. Primary: Ultrasonic level controller, rated for wastewater application.
 - b. Back-up: PVC ball type float with mercury switch - high and low level.
 - c. In the event of fail signal from Ultrasonic level device, controller automatically switches to floats.

33. Alarm Signals:

- a. Alarms activate local indicator lights and send signals to the City's SCADA system. Communication method shall be approved by the City.

34. Pump Cable Terminal Boxes:

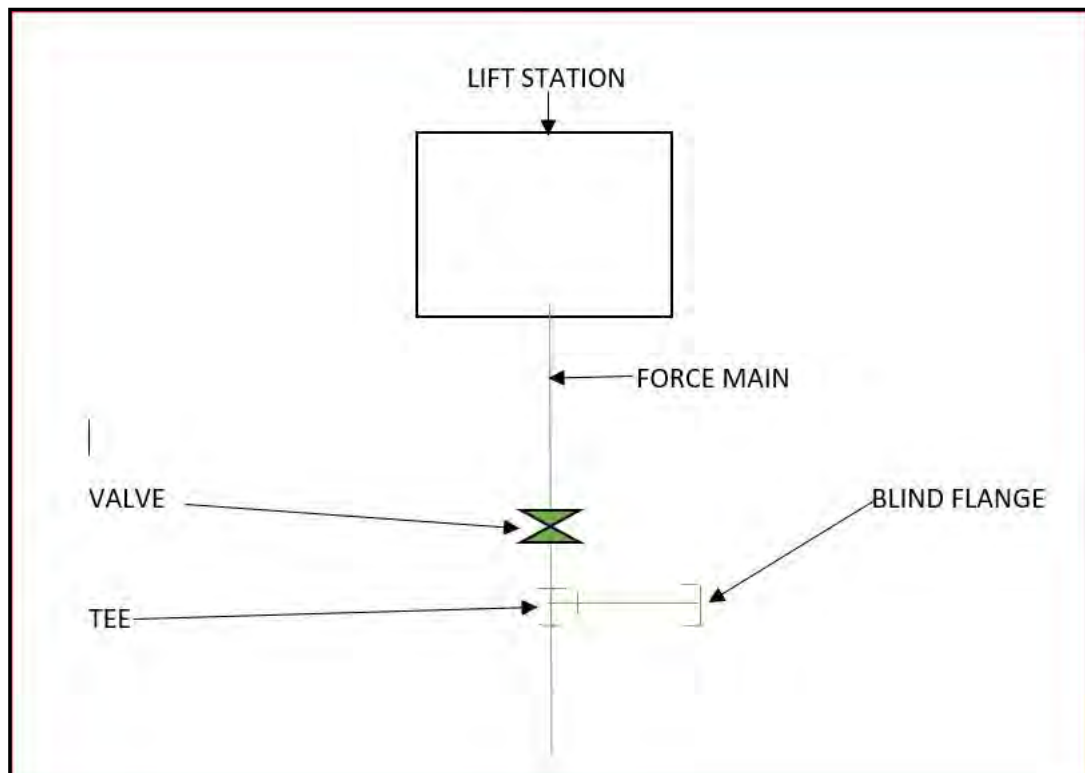
- a. NEMA 4X stainless steel boxes are to be mounted near the pump access hatch for termination of pump power and control cables, and for termination of transducer and float cables.

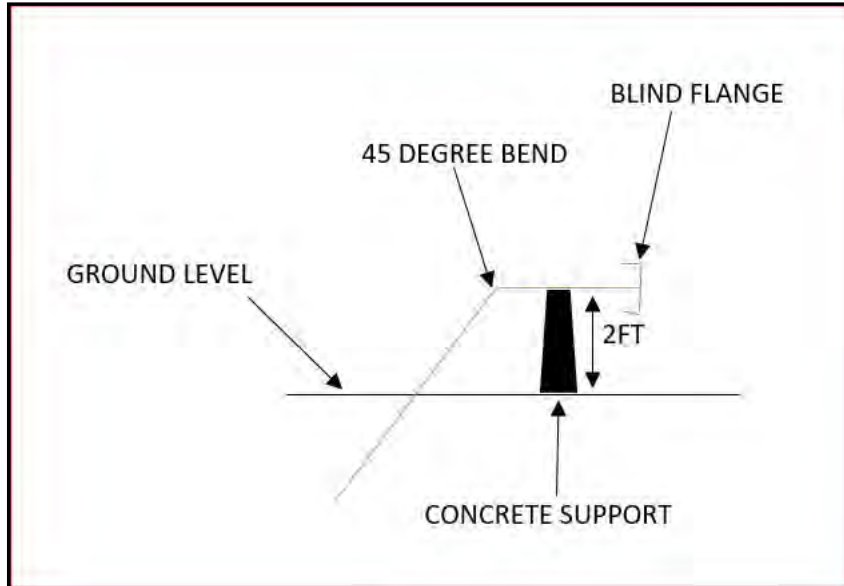
35. Control Panel Enclosure:

- a. NEMA 4X stainless steel enclosure on factor stainless steel stands with inside swing door, back plate, quick release latches, and hooking clasp.

36. Emergency operations shall be considered.

- a. Provide fittings and a blind flange that will be readily accessible for emergency bypass pumping in accordance with the schematics below:





- b. Provide external hook-up for an emergency generator as specified in 27 above.
37. Force mains shall be a minimum of 4 inches in diameter, unless used in conjunction with grinder pumps. Pump stations with two pumps shall have force main velocities of a minimum of 3 fps with one pump in operation. For pump stations with three or more pumps, the force main velocity shall not be less than 2 fps with the smallest pump only in operation. Force main velocities shall not exceed 6 fps without the engineer performing an analysis for possible high and low negative surge pressures in the event of sudden pump failure.
38. Isolation valves shall be provided on the discharge side of pumps for submersible pumps, positioned such that the pump or check valve can be isolated for removal. Plug valves shall be used. Check valves shall be swing type with an external lever and shall be installed in a horizontal position. Use of butterfly valves, tilting disc check valves, or other valves using a tilting disc in the pipe flow is not permitted.
39. Surge relief valves, air release, or combination air and vacuum valves shall be provided, as required.
40. Lift station piping shall have flanged, grooved (Victaulic) or flexible connections to allow for removal of pipe and check valves without interruption of the lift station operation.
41. Lift stations shall be designed to discharge the peak design flow at the system head required and to operate efficiently during any initial, interim, or ultimate design phase.
42. Firm pumping capacity shall be provided, and is defined as total station, maximum pumping capacity, with the largest pumping unit out of service.
43. Pump selection shall be based on the analysis of the system head and pump capacity curves for the determination of pumping capacities. System losses shall be calculated in accordance with the Hydraulic Institute standards. The selected C coefficient value for use in the calculation of friction head losses per the Hazen-Williams Formula shall be based on the selected pipe material for new and aged (20-year) conditions.

44. Force main velocities shall be included on the system curve.
45. Design considerations shall include corrosion control and protection of concrete and metallic surfaces located within the wet well or valve vault, or within the immediate vicinity from the effect of hydrogen sulfide (H₂S) gas in the wastewater. The effects of H₂S gas should be minimized by reducing the production or release of H₂S gas from the wastewater discharging to or being contained in the lift station. Design and control methods shall include the following.
- a. Protecting the exposed concrete and steel surfaces with an epoxy lining, refer to the Approved Products List for a list of materials. Exposed piping shall be protected with a 100 percent solids novolac epoxy or approved equal.
 - b. The use of Series 300 stainless steel for equipment, piping, or devices exposed to corrosive gases.
 - c. Design wet wells that lack interior corners, projections, or areas that can result in the accumulation of solids. Design interior surfaces with smooth finishes that facilitate cleaning.
 - d. Provide wash-down water at site when possible.
46. Corrosion protection shall be provided by coating interior concrete surface of the wet well, structural steel, piping and hangers, air systems, electrical, mechanical, and other components subject to a corrosive environment. All metal components subject to a corrosive environment shall be stainless steel or aluminum unless otherwise approved by the City. Surfaces to be protected include the following.
- a. Interior of the wet well: The interior of the wet well shall be coated with an approved epoxy coating. Refer to Approved Products List for the list of materials.
 - b. Piping located within the wet well: Exposed piping shall be protected within a 100 percent solids novolac epoxy or approved equal.
 - c. Guide rails, lifting chains, hardware, and miscellaneous metal shapes located within the wet well shall be constructed or manufactured of Series 300 stainless steel.
47. Lift station construction drawings shall include drawings that provide the following information:
- a. Site layout.
 - b. Plan and profile of pump station and associated site piping.
 - c. Profile view of pump operational and control valves and settings.
 - d. Hydraulic system curve.
 - e. Electrical wiring and control system schematics.
 - f. Structural details.

- g. Developer shall provide the City with a complete set of Operations and Maintenance manuals on all equipment to be installed.

END OF CHAPTER



PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 5 - STORMWATER SYSTEMS



CHAPTER 5

STORMWATER SYSTEM DESIGN REQUIREMENTS

5.01 GENERAL

- A. This chapter includes the minimum design requirements for public and private stormwater systems within the City limits of the City.
- B. The City's staff shall approve stormwater system drawings for all public improvements within the City limits. Construction shall conform to the City Standard Construction Details.
- C. Construction drawings for private improvements, within public rights-of-way and public easements, or that connect to or affect the public infrastructure shall be approved by the City subject to the requirements of this Manual and are subject to review and approval using the process defined in this Manual.
- D. Design, construction, and sizing of all stormwater systems shall meet or exceed the requirements of the City.
- E. All roadway drainage systems that are to become a maintenance responsibility of the City shall be enclosed storm sewers, except as specifically approved by the City.
- F. Public storm sewers are defined as sewers and appurtenances that provide drainage for a public right-of-way, or more than one private tract, are located in public rights-of-way or easements and have been accepted by the City. Private storm sewers provide internal drainage for reserves or tracts within the private development. Private storm sewer connections to public storm sewers shall occur at a junction box or at the back of an inlet as approved by the City. All private storm sewers within the public right-of-way shall be constructed in conformance with these standards.
- G. All calculations and design drawings shall be prepared under the supervision of a Professional Engineer trained and licensed under the disciplines required by the project scope. The final design drawings and all design calculations must be sealed, signed, and dated by the Professional Engineer responsible for the development of the drawings.
- H. All construction drawings shall contain minimum slab elevation, with reference to the most current vertical datum from the most current FEMA flood maps.

5.02 DEFINITIONS

Conduit – Any open or closed device for conveying flowing water.

Drainage Area Map – Area map of watershed that is subdivided to show each area serve by each subsystem.

Hydraulic Grade Line – A line representing the pressure head available at any given point within the drainage system.

Redevelopment – A change in land use that alters the impervious cover from one type of development to either the same type or another type and takes advantage of the existing infrastructure in place as a drainage outlet.

In-fill Development – Development of open tracts of land in areas where the storm drainage infrastructure is already in place and takes advantage of the existing infrastructure as a drainage outlet.

Rational Method – A method for calculating the peak run-off for a storm drain system using the following equation $Q=CiA$ for run-off, typically used for drainage areas of less than 200 acres.

Design Storm Event – Rainfall intensity upon which the drainage facility will be sized.

Positive Overflow Pathway – The surface flow, through designated route, of the collective sheet flow of stormwater that results when the minor drainage system has reached capacity.

Rainfall Frequency – Probability of a rainfall event of defined characteristics occurring in any given year. The National Oceanic and Atmospheric Administration (NOAA) publishes information on rainfall frequency (NOAA Atlas 14 Point Precipitation Frequency Estimates).

For the purpose of storm drainage design, the following frequencies are applicable:

1. 2-year frequency – a rainfall intensity having a 50 percent probability of occurrence in any given year, or nominally likely to occur once every 2 years.
2. 5-year frequency – a rainfall intensity having a 20 percent probability of occurrence in any given year, or nominally likely to occur once every 5 years.
3. 10-year frequency – a rainfall intensity having a 10 percent probability of occurrence in any given year, or nominally likely to occur once every 10 years.
4. 25-year frequency – a rainfall intensity having a 4 percent probability of occurrence in any given year, or nominally likely to occur once every 25 years.
5. 100-year frequency – a rainfall intensity having a 1 percent probability of occurrence in any given year, or nominally likely to occur once every 100 years.

Sheet Flow – Overland storm run-off that is not conveyed in a defined conduit and is typically in excess of the capacity of the conduit.

Manning's Equation: $V = (K_{in}) R^{2/3} S$, V .

1. Where: $K = 1.49$ for English units or 1.0 for metric units
2. V = velocity (feet per second).
3. R = hydraulic radius (feet) (area per wetted perimeter).
4. S =friction slope (headless per length).
5. $n = 0.013$ for concrete pipes.
6. $n = 0.024$ for CMP pipes.

Continuity Equation: $Q = VA$

1. Where: Q = discharge (cubic feet per second).
2. V =velocity (feet per second).
3. A =cross sectional area of conduit (square feet).

FEMA – Federal Emergency Management Agency.

5.03 DESIGN REQUIREMENTS

- A. **Stormwater Goals:** The goal of all drainage design within the City limits of Brenham is the prevention of structure flooding and the maintenance of one lane passable in each direction on major thoroughfares during a 100-year storm event. This is accomplished through application of various drainage enhancements, such as storm sewers, open channels, detention, and overland (sheet) run-off. The combined system is intended to prevent structural flooding from extreme events up to a 100-year storm. Recognizing that each site has unique differences that can enhance the opportunity to provide proper drainage, the intent of these criteria is to specify minimum requirements that can be modified provided that the objective for drainage standards is maintained. Street ponding of short duration is anticipated and designed to contribute to the overall drainage capability of the system. Storm sewers are designed as a balance of capacity and economics. These conduits are designed to convey less intense, more frequent rainfalls with the intent of allowing for traffic movement during these events. When rainfall events exceed the capacity of the storm sewer system, the additional run-off shall be stored or conveyed overland in a manner that reduces the threat of flooding to structures and maintains mobility on major thoroughfares.
- B. Drawing sets shall include a drainage area map, which will contain calculations of flow by the rational method or other approved drainage calculation method.
- C. Drainage systems for curb-and-gutter pavements shall be underground closed conduits; individual residential lot drainage is exempt.
- D. The system hydraulic calculations for the storm sewer design and the 100-year storm, including design storm hydraulic grade line calculations, sealed by a Texas Registered Professional Engineer, shall be provided with all stormwater system drawings. An electronic spreadsheet shall be submitted showing pipe sizes, material, design criteria, and calculations for each section (manhole-to-manhole) of the stormwater system.
- E. Private stormwater systems along private streets shall be designed to the standards of public stormwater systems.
- F. The lowest chord of all bridges shall be a minimum of 12 inches above the 100-year water surface elevation, or, at or above the level of natural ground, or in accordance with the FEMA regulations latest revisions, whichever is greater.
- G. All storm sewer designs and drainage drawings for new developments shall include protection from the 100-year storm event through the use of positive overflow pathways. All positive overflow pathways for extreme events shall be contained within exclusive reserves and shall not be part of a residential lot unless the 100-year event is contained within a below grade conduit. If the 100-year event is contained within a below grade conduit, then the conduit shall be within the right-of-way or an exclusive storm sewer easement.

H. Design Frequency

1. Newly Developed Areas: The minimum design storm event for sizing storm sewers in newly developing areas will be a five (5) year storm for local streets and a ten (10) year storm for arterials and collectors.
 2. Redevelopment, New Development, or In-fill Development: For developments on properties one (1) acre in size or greater, the existing storm drain will be evaluated by conducting a drainage impact study or analysis.
 3. If the proposed redevelopment has a lower or equal impervious cover, no modifications to the existing storm drain are required.
 4. If the hydraulic gradient of the existing storm drain is one (1) foot below the elevation of the adjacent street gutter, no improvements to the existing storm drain are required.
 5. If the hydraulic gradient indicates that structures are threatened by flooding, the applicant has the option of either making improvements to the existing storm drain or providing on-site detention.
- I. Storm sewers shall have a minimum vertical clearance of six (6) inches and a minimum horizontal clearance of three (3) feet from all other utilities. The clearance shall be measured from the outside wall of the pipe.
- J. Minimum depth of a storm sewer (measured to the top of pipe) shall be 24 inches below top of curb or finished grade, whichever is lower.
- K. Minimum size storm sewer for main and inlet lead shall be 24-inch.

L. Pipe Material Considerations

1. Storm sewer and culvert pipe shall be precast reinforced concrete pipe or High-Density Polyethylene (HDPE) with watertight joints, unless specifically approved by the City.
2. Concrete pipe shall be manufactured in conformance with the requirements of ASTM C 76, "Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe," current revision. Reinforced concrete pipe shall be Class III or stronger. The design engineer shall provide for increased pipe strength when conditions of the proposed installation exceed the allowable load for Class III pipe. All concrete pipe shall have rubber gasket joints meeting the requirements of ANSI/ASTM C 443, "Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets," current revision. When specifically approved by the City, reinforced concrete arch and elliptical pipe conforming to ASTM C506 and C507, respectively, current revision, may be installed in lieu of circular pipe. Reinforced concrete box culverts shall meet the minimum requirements of ASTM C1433, "Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers," current revision. Box culvert joints may be sealed with rubber gaskets meeting the requirement of ASTM C 1677 "Joints for concrete box culverts using rubber gaskets" or the joint may be sealed with RAM-nek. Pipe joints for arch and elliptical pipe shall be sealed using RAM-nek or approved equal.

3. Reinforced concrete pipe, as described above shall meet or exceed the following minimum requirements:

Pipe Class	Maximum Cover (Ft)
III	10
IV	20

4. Reinforced concrete pipe shall be designed in accordance with the American Concrete Pipe Association, "Concrete Pipe Design Manual." Maximum cover on the pipe shall be measured from the top of pipe to the ultimate finished grade or natural ground, whichever is greater.
5. HDPE pipe shall be manufactured in conformance with the requirements of ASTM F2306, "Standard Specifications for 12" to 60" Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications. HDPE pipe shall be installed, bedded, and backfilled in accordance with the requirements specified in the Bedding and Backfill section of this Chapter.
6. Storm sewer outfalls shall have slope protection to prevent erosion. Slope protection may be constructed of slope paving. Slope paving shall be 5-inch thick, five sack concrete with 1/2-inch steel rebar on 24-inch centers, each way. Slope protection texturing shall be required where public access is likely.
7. Private storm sewer systems shall be reinforced concrete pipe, high-density polyethylene pipe (HDPE) with water-tight joints meeting ASTM D3212, PVC pipe of minimum SDR 26 rating or A-2000 PVC pipe. Reinforced concrete pipe or HDPE with watertight joints is required within the public right-of-way and public easements.

M. Velocity Considerations

1. Minimum velocities shall not be less than 3 feet per second (fps) with the pipe flowing full, under the design conditions.
2. Maximum velocities shall not exceed 8 fps.

3. Appropriate energy dissipation measures shall be provided at all outfalls. Minimum acceptable slopes in storm sewers shall be:

Size of Pipe	Fall in Feet
(Inches)	(Per 100 Feet of Sewer)
12	0.38
18	0.24
24	0.18
30	0.13
36	0.10
42	0.08
48	0.07
54	0.06
60	0.05
66	0.045
72	0.040
18	0.036
84	0.033
90	0.030
96	0.028

N. Pipe Sizes and Placement

1. Use storm sewer and inlet leads with at least 12-inch inside diameter or equivalent cross section within the public right-of-way or along private streets.
2. Box culverts shall be at least 2 feet by 2 feet. Closed conduits (circular, elliptical, or box) shall be selected based on hydraulic principals and economy of size and shape.
3. Larger pipes upstream should not flow into smaller pipes downstream unless construction constraints prohibit the use of a larger pipe downstream, or the improvements are outfalling into an existing system, or the upstream system is intended for use in detention.
4. Match crowns of pipe at any size change unless depth constraints or other conditions justify matching flow lines.
5. Locate storm sewers in public street rights-of-way or in approved easements.
6. All storm sewers and inlet leads shall be laid in a straight line. Changes of alignment shall be accomplished at junction boxes only.

O. Consideration of Overland Flow

1. All storm sewer designs shall include provisions for an overland positive overflow pathway to accommodate stormwater that exceeds the capacity of the storm sewer system.

2. Design Frequency: Design frequency for consideration of overland sheet flow shall consider extreme storm events that exceed the capacity of the underground storm sewer system resulting in ponding and overland sheet flow through the development to the primary outlet. The minimum design frequency for overland sheet flow shall be the 100-year design storm.
3. Relationship of structures to street or parking lot ponding: All structures shall be a minimum of 2 feet higher than the highest level of ponding anticipated resulting from the extreme event analysis.
4. Calculation of Flow
 - a. Streets shall be designed so that consecutive high points in the street will provide for a gravity flow of drainage to the ultimate outlet.
 - b. For non-major thoroughfare streets, the maximum depth of ponding at any point on the gutter line shall be a maximum of 12 inches above the gutter line.
 - c. Sheet flow between lots can be provided only through a defined drainage easement. All positive overflow pathways for extreme events shall be contained within exclusive reserves and shall not be part of a residential lot unless the 100-year event is contained within a below grade conduit. If the 100-year event is contained within a below grade conduit, then the conduit shall be within the right-of-way and/or an exclusive storm sewer easement.
 - d. A map shall be provided to delineate extreme event flow direction through a proposed development and how this flow is discharged to the primary drainage outlet.
 - e. In areas where ponding occurs and no positive overflow pathway exists, a calculation shall be provided showing that run-off from the 100-year event can be conveyed and remain in compliance with all requirements of this section.

P. Consideration of Street Ponding

1. The storm sewer system must convey flows from a 100-year storm event without ponding water in the street at levels that exceed the maximum allowable level. Street ponding elevations shall be shown on the drainage area map and/or the plan and profile sheets in all construction drawings.
2. The maximum allowable ponding level for a minor or collector street is the lowest of the following: (1) one foot above natural ground; (2) twelve inches above the gutter line; or (3) one foot below the lowest slab elevation for a 100-year storm event.
3. The maximum amount of ponding allowed on a major thoroughfare is twelve inches above the outside (non-median) gutter line. For a major thoroughfare, the minimum median top of curb elevation shall be at or above the 100-year flood plain elevation.
4. Drainage calculations, along with water surface or hydraulic grade line profiles shall be submitted to the City for approval.

Q. Starting Water Surface and Hydraulic Gradient

1. The hydraulic gradient shall be calculated assuming the greater of the top of the outfall pipe or the 25-year design stormwater surface elevation as the starting water surface.
2. For the Design Storm, the hydraulic gradient, at all times, shall be one foot below the elevation of the adjacent street gutter.

R. Junction Boxes

1. Junction Boxes shall be installed at the following locations:
 - a. Size or cross-section changes of storm sewers.
 - b. Inlet lead and storm sewer intersections.
 - c. Changes in pipe grade or alignment.
 - d. Street intersections.
 - e. A maximum spacing of 500 feet measured along the conduit run.
2. Junction boxes shall be placed on lot lines to the maximum extent practical. Do not place junction boxes in driveways or in the street in front of, or immediately adjacent to, a driveway.
3. Manhole covers on junction boxes shall be cast iron, traffic bearing, type ring and cover with the words "Storm Sewer" cast into the cover with the City's emblem in the center (see City Standard Construction Details).
4. Cast-in-place junction boxes shall use 4000 psi minimum concrete with #5 bars @ 12" centers each way.
5. Junction boxes shall be equipped with a 30" opening, cast iron frame and lid with pick holes designed to withstand H20 loading and shall be marked "Storm Sewer".
6. The top of the frame and lid shall be set flush with the finished surface of the area where the junction box is located.
7. Adjustment rings used to adjust a lid and frame to grade must be constructed of concrete, high density polyethylene and be designed to withstand the anticipated live and static loads.
8. Concrete collars having a minimum width of six inches (6") shall be installed at the intersection of the storm sewer main and the junction box.

S. Inlets

1. Curb inlets shall be spaced and sized to intercept the calculated runoff for the design storm. The water surface elevation at the inlet shall be less than or equal to the gutter line for the design storm flow.
2. Do not locate inlets adjacent to esplanade openings without prior approval.

3. Place inlets on side streets intersecting major streets, unless justification based on special conditions can be provided.
 4. For all new construction, convey public or private alleyway drainage to an inlet prior to entering the public street drainage system.
 5. Locate inlets at low points in the gutter.
 6. Valley gutters across intersections are not permitted.
 7. Maximum travel distance of water in the street to a curb inlet shall be 300 feet on a major thoroughfare and in a commercial area. The maximum travel distance of water in the street permitted in a single-family residential area shall be 600 feet.
 8. Backslope swale interceptors shall be required at locations where sheet drainage enters detention basin or open channels. Backfill around inlets with 1.5 sacks per ton of cement stabilized sand to the bottom of the pavement subgrade.
 9. Curb inlets shall have a minimum opening width of five (5) feet.
 10. Curb inlets shall be made of either pre-cast concrete or cast-in-place concrete designed to withstand the anticipated live and static loads.
 11. Curb inlets shall be equipped with a 30" opening, cast iron frame and lid with pick holes designed to withstand H20 loading and shall be marked "Storm Sewer".
 12. The top of the frame and lid shall be set flush with the finished surface of the area where the junction box is located.
 13. Adjustment rings used to adjust a lid and frame to grade must be constructed of concrete, high density polyethylene and be designed to withstand the anticipated live and static loads.
 14. Concrete collars having a minimum width of six inches (6") shall be installed at the intersection of the storm sewer main and the inlet.
- T. Public storm sewers shall be located within a public street right-of-way or a public utility easement, dedicated to the public and adjoining a public street right-of-way. Public storm sewers shall not be allowed in back lot easements.
- U. Storm sewer alignment within a public street right-of-way.
1. Where required, additional easements shall be provided adjoining the right-of-way to provide required clearances. A public utility easement adjoining a public right-of-way shall be of sufficient width to provide a minimum of 12.5 feet of clearance on each side of the centerline of the pipe.
 2. Usable right-of-way is defined as the area located from 2 feet behind curb to the usable right-of-way line.
 3. The minimum width of a public utility easement not located adjacent to a public right-of-way shall be 20 feet.

4. The outside edge of pipe shall be no closer than 2 feet to the edge of right-of-way.
5. Where storm sewers are installed in easements separated from public rights-of-way by other private or utility company easements, the storm sewer easement should be extended along or across the private utility company easement to provide access for maintenance of the sewer or force main.

5.04 TRENCHING, BEDDING AND BACKFILL REQUIREMENTS

- A. All bedding and backfill shall be in accordance with the City Standard Construction Details. All backfill within public rights-of-way and public easements shall be compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.
- B. The minimum trench width shall be equivalent to the outside diameter of the pipe plus 18".
- C. The maximum trench width shall be equivalent to the outside diameter of the pipe plus 24".
- D. The minimum trench depth shall be equivalent to the desired bury depth of the pipe plus the outside pipe diameter plus 6".
- E. Bedding shall fill the entire width of the trench and shall extend from a depth of 6" below the pipe to bottom of the pipe.
- F. Initial backfill shall extend from the bottom of the pipe to 6" above the top of the pipe.
- G. Final backfill shall extend from the top of the initial backfill to either the finished subgrade for unpaved areas or the pavement subgrade.
- H. All Bedding and backfill shall be installed in maximum 6" loose lifts and be compacted by vibratory equipment.
- I. In non-paved areas, the uppermost 6" of backfill shall consist of topsoil. If the trench extends through an existing vegetated landscape, any excavated or disturbed area adjacent to the trench shall be re-sodded with grass that is similar to the existing landscaping.
- J. All storm sewer lines located underneath and/or within 1 horizontal foot of any asphalt paving shall be bedded in cement stabilized sand in accordance with the Standard Construction Details. The cement stabilized sand shall be in accordance with the following requirements.
- K. The cement shall be Portland Cement, Type I, ASTM C150.
- L. The sand shall be clean, durable sand, with less than 0.5 percent clay lumps, ASTM C142; with less than 0.5 percent lightweight pieces, ASTM C123; with organic impurities, ASTM C40, not showing a color darker than standard color, and a plasticity index of less than six when tested in accordance with ASTM D423 and ASTM D424.

- M. Compact to 95 percent Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78) in maximum loose lifts of 6 inches thick. Actual testing shall be required as deemed necessary by the City.
- N. The cement-sand mixture shall consist of at least 1.5 sacks of cement per ton of sand. The cement-sand mixture shall have a minimum unconfined compressive strength of 100 psi in 48 hours, when compacted to a minimum of 95 percent of Standard Proctor Density (ASTM D2922-78 and ASTM D3017-78), without additional moisture control, cured and tested in accordance with ASTM C31.
- O. For Reinforced Concrete Pipe (RCP):
 - 1. RCP Pipes shall be bedded with bank sand.
 - 2. Initial Backfill for RCP Pipe shall consist of select backfill from the excavation.
 - 3. Final backfill for RCP Pipe shall be select backfill from the excavation.
- P. For High-Density Polyethylene (HDPE) Pipe:
 - 1. Pipe shall be bedded with Cement Stabilized Sand.
 - 2. Initial Backfill for HDPE Pipe shall consist of Cement Stabilized Sand.
 - 3. Final backfill for HDPE Pipe in concrete paved areas shall be Cement Stabilized Sand.
 - 4. Final Backfill for HDPE Pipe in unpaved areas shall be Select Backfill from the excavation.

5.05 INSTALLATION BY BORE AND JACK

- A. Bore and jack sections shall be specifically approved by the City and clearly shown on the drawings by location and footage.
- B. The following criteria are generally used as a basis for setting bore and jack sections.
 - 1. Bore pits shall be at least 3 feet from the back of curb and 5 feet from back of curb on a major thoroughfare. Bore pits in highways, county roads, or railroad rights-of-way shall conform to these requirements and to the requirements of the crossing permit or use agreement.
 - 2. All bore pits shall be shored in accordance with Occupational Safety and Health Administration (OSHA) requirements. Bore pits or receiving pits to be located in street or driveway paving, shall be shown on drawings.
 - 3. All existing developed areas shall be restored to original condition after construction.

5.06 TESTING OF INSTALLED PIPE AND MANHOLES

- A. It is the responsibility of the contractor to deliver a finished product in compliance with the contract documents and applicable federal, state, and local requirements. An independent testing laboratory shall be used to verify contract document compliance.
- B. The Contractor is responsible for scheduling tests with the City and the independent testing laboratory and for notifying the City of all test results. In the event construction activity occurs without proper notification to the City, the work in question is subject to removal and replacement in accordance with the standards at the discretion of the City.
- C. Cement Stabilized Sand Testing:
 - 1. A minimum of two random samples for compressive strength shall be taken each week. For Smaller projects, one sample may suffice with City approval. The City reserves the right to require additional tests, at the Contractor's expense, if it is deemed necessary. In the event of a change in supplier, samples shall be drawn on the first day of delivery from the new supplier, regardless of previous samples taken.
 - 2. Cement stabilized sand samples shall be taken at the point of placement of the cement stabilized sand and identified as to the location of the sample.
 - 3. Cement stabilized sand densities shall be taken a minimum of every 150 linear feet of trench, with a minimum of two tests (one per direction of travel) at each road crossing. When used as subgrade on roadway repairs, density tests shall be taken every 100 square feet of subgrade, with a minimum of one test per repair.
- D. Bedding, Backfill, Testing:
 - 1. Bedding and density tests shall be performed a minimum of every 300 linear feet of trench in each lift. Density tests shall be offset on alternating lifts and test locations shall be identified by station number.
- E. Copies of all test results shall be given to the City with the project closeout documents.

5.07 EXISTING FACILITY CROSSINGS

- A. Installation of a storm sewer main across a proposed or existing public street, driveway, sidewalk, railroad, pipeline, or drainage way shall conform to the requirements of this section.
 - 1. Public Streets - All existing public streets are to be bored and jacked regardless of surface. Bore and jack length shall be computed as roadway width at proposed bore plus 5 feet to either side.
 - 2. Driveways – Concrete and asphalt driveways in good condition shall be bored and jacked. Bore and jack length shall be computed as driveway width at bore plus 5 feet to either side.

3. Sidewalks – When the storm sewer line crosses under a sidewalk in good condition, the sidewalk shall either be bored and jacked or removed and replaced to the City's criteria, whichever is most cost-effective. Bore and jack length shall be at least the width of the sidewalk. The proposed type of construction shall be noted on the drawings.
 4. Railroad Crossings – All railroad crossings require a pipeline crossing permit to be issued by the corresponding railroad company and shall be bored and jacked in accordance with the requirements of that permit and the standards provided in this manual.
 5. Drainage Way – When a storm sewer line crosses under an existing drainage way, the water conveying portion of the drainage way shall be bored and jacked in accordance with the standards provided in this manual.
- B. Trees – When saving trees is a consideration, all trees 6 inches or larger in diameter and within 10 feet of the centerline of the water main must be noted on the drawings. The storm sewer main shall be bored and jacked within the drip line of any tree larger than 6 inches in diameter.

5.08 BARRICADING AND SIGNAGE

- A. Proper barricading and signage, conforming to the Texas Manual of Uniform Traffic Control Devices' latest edition, shall be required on all projects.
- B. Adequate signage for vehicular and pedestrian traffic shall be installed.
- C. A traffic control plan shall be submitted to the City and approved by the City for all streets open to travel by the public.

5.09 STORMWATER DETENTION REQUIREMENTS

- A. The intention of stormwater detention is to mitigate the effect of the new development on an existing drainage system.
- B. Application of Detention
 1. All development/redevelopment must be designed in a way that mitigates the effects of the development on other properties. In other words, post-development peak runoff for the design storm(s) event must be less than or equal to pre-development peak runoff. This shall be accomplished through the use of on-site stormwater detention facilities designed to mitigate storms up to and including the 100-year (1 percent) event.
 2. In some watersheds where mitigation is performed on a regional basis, individual detention sites may not be required. It is the responsibility of the project owner to coordinate with City staff to determine whether regional detention or individual mitigation facilities are necessary for the development.
 3. For developments on properties one (1) acre in size or greater, the existing storm drain will be evaluated by conducting a drainage impact study or analysis.
 4. The use of on-site detention is required during the following:

- a. When the drainage impact analysis requires on-site detention to remedy the effects of the proposed development.
 - b. When reported incidence of structural flooding exists.
 - c. When in-fill or redevelopment will result in a potential threat to existing structures unless the current infrastructure is improved.
 - d. When post-development flows result in street ponding levels which exceed City requirements.
 - e. If, in the opinion of the City, post-development flows will have an adverse impact on adjacent properties.
5. When development occurs within the 100-year floodplain, compensatory storage within the detention pond is required to offset the amount of fill placed within the regulatory floodplain.
6. Detention may not be required if redevelopment occurs without increasing the overall impervious character of the site, then no detention will be required by the City unless the application of detention will prevent existing structure flooding.
- C. Detention volume for redevelopment areas is calculated on the basis of the amount of area of the redeveloped impervious cover.
- D. Private parking areas, private streets, and private storm sewers may be used for detention with prior approval of the City.
- E. Calculation of Outlet Size.
- 1. Detention pond discharge pipe into an existing storm sewer line or existing City or other public entity facility:
 - a. Maximum pool elevation at or below the design hydraulic grade at the outfall – The discharge line shall be sized for the Design Storm with the outfall pipe flowing full. The pond will float on the drainage system to provide maximum benefit.
 - b. Maximum pool elevation at or above the hydraulic grade at the outfall. Provide a reducer or restrictor pipe to be constructed inside the discharge line. The discharge line shall be sized for the Design Storm with the outfall pipe flowing full.
 - c. Reducer or Restrictor Pipes shall be sized as follows:
 - (1) The reducer or restrictor will be sized for undeveloped rate of discharge at no greater than 0.5 cubic fps per acre unless capacity for a greater flow rate is verified in the receiving system and approved by the City.
 - (2) Use the following equations to calculate the required outflow orifice:

$$Q = CA (2g)1t^2 (h)1t^2$$

$$D = 0^{112} / (2.25 h)^{114}$$

Where:

Q =outflow discharge (cfs)

C=0.8

A = orifice area (square feet)

g = gravitational factor (32.2)

h =head, water surface differential (feet)

D = orifice diameter (feet)

- (3) Restrictor shall be either of the required diameter or of the equivalent cross-sectional area. The orifice diameter D shall be a minimum of 0.5 feet.
- d. In addition to a pipe outlet, the detention basin shall be provided with a gravity spillway that will protect structures from flooding should the detention basin be overtopped.
- e. Detention ponds shall maintain a minimum freeboard of 1 foot between the top of bank and the 100-year water surface elevation. Trash rack is required at the pond outfall.
- f. Pond outfall pipe to an existing roadside ditch system shall be tied to the nearest driveway culvert. No direct outfall to a City-maintained ditch is allowed. All outfall pipe configuration must conform to the slope of the receiving ditch.
- g. Side slopes of the proposed detention basin shall not exceed a 4:1 (horizontal to vertical) ratio.

F. Detention Facility Ownership and Easements.

1. Private Facilities:

- a. Responsibility for maintenance of the detention facility must be indicated on recorded plat and a maintenance plan shall be submitted to the City for review.
- b. All private properties being served have drainage access to the pond. Dedicated easements may be required.
- c. No public properties may drain into the detention area.
- d. A maintenance agreement shall be provided when multiple tracts are being served.
- e. A maintenance work area of 30-foot width surrounding the extent of the detention area shall be provided. Public rights-of-way, drainage reserves or permanent access easements may be included as a portion of this 30-foot width.

G. Proper dedication of public access to the detention pond must be shown on the plat.

5.10 CONSTRUCTION DRAWING REQUIREMENTS

A. Minimum construction drawing submittals include the following.

- 1. A drainage area map shall be included in the construction drawings. The drainage area map shall include the following:

- a. Drainage areas, including areas draining from off-site onto or adjoining the project.
 - b. Design storm runoff.
 - c. 100-year storm runoff.
 - d. Route of overland flow including the overflow to a drainage way sized to accommodate the 100-year flow.
 - e. Elevations for the 25- and 100-year storms in the outfall channel.
 - f. Flow per inlet.
 - g. Maximum 100-year ponding elevation.
 - h. Street ponding elevations for the 100-year event.
 - i. Geotechnical and Soils Testing Report that substantiates design.
 - j. Supporting calculations.
- 2. Copies of any documents that show approval of exceptions to the City design criteria.
 - 3. Design calculations for storm line sizes and grades, and for detention facilities, if any.
 - 4. Design calculations for the hydraulic grade line of each line or ditch, and for detention facilities, if any.
 - 5. Existing contour maps and final grading drawings of the project.
 - 6. Plan and profile sheets showing stormwater design.
 - 7. Projects located within a floodplain boundary or within a floodplain management area shall show the floodplain boundary or floodplain area, as appropriate, on the drainage area map.
 - 8. Stormwater detention maintenance agreement letters.
- B. All drainage calculations shall be submitted in an electronic spreadsheet.
- C. Upon request, the supporting stormwater model input and output files shall be provided for review.

END OF CHAPTER



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PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 6 - PAVING

CHAPTER 6 PAVING

6.01 GENERAL

- A. This chapter provides design standards for the construction of streets, paving, sidewalks, and driveway access within the City of Brenham.
- B. The standards provided here are primarily for the design of local streets and collector streets. Additional design standards as specified by AASHTO and/or TXDoT shall apply for arterial streets and freeway sections.
- C. The City shall approve construction drawings for streets, paving, sidewalks, and driveway access within the City limits. All construction shall conform to the standards referenced in this manual and as shown in the City Standard Construction Details.
- D. Construction drawings for private improvements, within public rights-of-way and public easements that connect to or affect the public infrastructure, shall be approved by the City, are subject to the requirements of this Manual, and are subject to review and approval using the process defined in this Manual.
- E. Street design should conform to all applicable planning tools, such as the City Subdivision Ordinance, the City Major Thoroughfare Plan, the City bike or pedestrian and parks or trail master plans, the *Texas Manual on Uniform Traffic Control Devices (TMUTCD)*, the AASHTO Policy on Geometric Design of Highways and Streets, and approved master drawings. Other considerations for design should include street function, street capacity, service levels, traffic safety, driver expectancy, pedestrian safety, and utility locations. These additional considerations may affect the minimum requirements set forth herein.
- F. A traffic impact study may be required as a part of the approval process for driveways and other roadway access. A traffic impact analysis (TIA), when required, shall be prepared by an individual, group, firm, or corporation having demonstrated professional emphasis and experience in transportation planning, engineering, and in the preparation of similar analyses. The TIA document shall bear the seal and signature of a Texas Registered Professional Engineer.
- G. All driveways shall be constructed in accordance with the City Standard Construction Details.

6.02 DEFINITIONS

For the purposes of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section.

Collector Streets – Street routes that have short travel distances and collect traffic from intracity streets and funnel it into major thoroughfares or other collector streets.

Development – Identified as the new construction of any building, structure, or improvement, or the enlargement of any exterior dimension of any building, structure, or improvement.

Commercial Driveway Approach – The portion of a driveway within the public right-of-way that provides access to property on which an office, retail, or commercial center is located to a building having more than five dwelling units or to any driveway approach which accesses property that is primarily used for a nonresidential purpose.

Driveway – Entrance to and exit from premises where it is possible to park completely off the street, and which is not open for vehicular traffic except by permission of the owner of such private property.

Driveway Approach – A way or place including paving and curb returns between the street travel lanes and private property that provides vehicular access between the roadway and said private property.

Driveway Approach Width – As the term is used here, the width of a driveway approach refers to the width of driveway pavement at the point where the property line intersects the driveway pavement.

Intersection – The area embraced within the prolongation or connection of the lateral curb lines, or, if none, then the lateral boundary lines of two or more roadways, including public street, private street, commercial driveway, residential driveway, driveway approach, alley, or combination thereof which join one another at, or approximately at, right angles, or the area within which vehicles traveling upon different roadways joining at any other angle may come into conflict.

Lot – Identified as an undivided tract or parcel of land having frontage on a public or private street, contained within a block, and designated on a subdivision plat by numerical or letter identification.

Major Thoroughfare – Street routes that are identified as major thoroughfares as set forth in the Major Thoroughfare Plan adopted by City Council and as may from time to time be amended.

Multi-family Dwelling – Identified as a structure containing more than two separate units for single-family occupancy.

Nonresidential Driveway Approach – A driveway which provides access to property on which an office, retail, commercial, or industrial center is located, a building having more than five dwelling units is located, or any driveway approach which accesses property that is primarily used for a nonresidential purpose.

Residential Driveway – Identified as a driveway intended to provide access from a public or private street to a single adjacent, detached residential unit or a group of single residential units numbering less than five (5).

Right-of-Way – Property that is publicly owned or upon which a governmental entity has an express or implied property interest (e.g., fee title or easement) held for a public purpose. Examples of such public purpose include by way of example and not limitation, a highway, a street, sidewalks, drainage facilities, sewerage, and water facilities.

Street, Private – Identified as a private roadway, not dedicated to public use, which provides vehicular access from a public street to more than two residential dwelling units, or two or more commercial or industrial buildings or parking areas.

Street, Public – Identified as any public roadway or right-of-way, dedicated for public use, which provides vehicular access to adjacent land.

Streets

6.03 GENERAL ROADWAY DESIGN

Public Roadways – The standard for public roadways within the City limits is concrete, curb-and-gutter construction, and served by underground storm sewers.

Roadway Classifications – The City recognizes four basic classifications of public roadways that include freeways, arterials, collectors, and local streets. Each class provides a certain degree of continuity, capacity, and accessibility to adjacent land uses. While differentiated by function, there is also a variance in geometric design. Table 6.1 summarizes the general design criteria of roadways within the City.

Roadway Geometries – Geometries of City streets may be defined as the geometry of the pavement and curb areas that govern the movement of traffic within the confines of the rights-of-way. Included in the geometries are pavement width, degree of curvature, width of traffic lanes, median nose radii, curb radii at street intersections, cross fall, crown height, pavement thickness, and geometric shapes of islands separating traffic movements and other features.

Design Speed – The design speed is a primary factor in the horizontal and vertical alignment of roadways. Design features such as curvature, superelevation, turning movement radii, and sight distance affects roadway lane width, pavement width, pavement cross-slope, pavement crown, and clearances. Refer to Table 11.1.

Grades – Roadway grades shall be a minimum of 0.3 percent in order to ensure proper flow of surface drainage toward inlets and a maximum of 6 percent. Steeper grades may be permitted on local residential streets and where required by topographical features, and as approved by the City.

Roadway Centerline – Roadways shall be placed in the center of the right-of-way but may be shifted slightly, with prior City approval, to avoid groupings of trees. The centerline of curves shall be tangent to the centerline of street at each end of curve.

Cross Slope or Crown Height – Thoroughfares shall have a minimum cross-slope of 1/4-inch per foot and a maximum cross-slope of 3/8-inch per foot. Collectors and local streets shall have 6-inch crowns.

Pavement Strength – All concrete pavement and curbs shall be a minimum 3,500 psi.

Sight Distance – All intersections shall be evaluated for adequate sight distances in accordance with AASHTO guidelines. Sight distance triangles shall be shown on the plan view of construction drawings.

Channelization – Channelization shall conform to AASHTO "A Policy on Geometric Design of Highways and Streets," latest edition.

Private Streets – Private streets are streets that are not owned by the City, State of Texas, or the County and are not dedicated for public use. All private streets shall be constructed to the same standards as public streets.

Requirements for Arterials.

1. The full right-of-way for thoroughfares shown on the adopted City of Brenham Thoroughfare Plan shall be dedicated at the time of platting of the development.
2. When the full section of an arterial is located within the City limits and is dedicated on a final plat, the esplanade and all lanes shall be constructed at the time of development of the adjacent subdivision.
3. In some cases, if approved by the City, one-half of a planned major thoroughfare that is being built as a boulevard section may be constructed at the time of initial construction of the adjacent development.
4. Permanent barricades, conforming to the requirements of the Texas Manual of Uniform Traffic Control Devices, shall be constructed at the termination of lanes on partially constructed thoroughfares.
5. For roadway turnouts placed at an existing cross-street intersection, the turnout should be designed to fit the ultimate pavement width of the intersecting cross street and then transitioned to the existing roadway.
6. Residential driveways shall not access arterial or collector streets without written approval from the City. Subdivision layouts shall be designed to avoid homes requiring collector street access.

TABLE 6.1 – City of Brenham Roadway Requirements

Criteria	Roadway Class				
Classification	Freeway	Arterial	Major Collector	Minor Collector	Local
Purpose	Designed to move large volumes of traffic through urban areas and provide direct access to local freeways, while also providing controlled access to adjacent businesses.	Designed to provide support and relief to the SH and FM roadways by providing additional routes to accommodate high traffic volumes	Designed to collect traffic from local areas and distribute to the arterial network. Typically accommodates 2 lanes of traffic with turning lanes or median and with limited to no on-street parking.	Designed to collect traffic from local areas and distribute to the arterial network. Typically accommodates 2 lanes of traffic with on-street parallel parking on both sides.	Designed to provide access to abutting property and to collect traffic between parcels of land and collector and arterial streets. Local streets include all other streets that are not included in the higher classifications.

Right-of-Way	120 feet	100 feet	80 feet	70 feet	55 feet
Typical Pavement Width (back-to-back)	Varies	61 feet	41 feet or 43 feet	39 feet	31 feet
Traffic Lanes	4 - 6	5	2	2	2
Lane Configuration	2-3 Travel Lanes each direction divided	2 Travel Lanes in each direction and 1 Left Turn Lane	2 Travel Lanes and 2 Parking Lanes Or 2 Travel Lanes, One Left Turn Lane, and 1 Parking Lane	2 Travel Lanes and 2 Parking Lanes	2 Travel Lanes and 1 Parking Lane
Minimum Left-turn Lane	11 feet	12 feet	11 feet	---	---
Minimum Right-turn	11 feet	11 feet	11 feet	---	---
Minimum Median Width	24 feet	14 feet	14 feet	---	---
Minimum Travel Lane	12 feet	12 feet	12 feet	11 feet	11 feet
Parking Lane Width	---	---	8 feet	8 feet	8 feet
Minimum Pavement Thickness	8-inch	8-inch	7-inch	6-inch	6-inch
Minimum Grade	0.3 percent	0.3 percent	0.3 percent	0.3 percent	0.3 percent
Maximum Grade	6 percent	6 percent	8 percent	8 percent	10 percent
Minimum Horizontal	2,000 feet	1,000 feet	800 feet	800 feet	300
Minimum Tangent Between	300 feet	300 feet	200 feet	200 feet	100 feet
Vertical Clearance	16 feet	16 feet	16 feet	16 feet	16 feet
Parking	None	None	Permitted	Permitted	Permitted
Typical Volume Range	30,000 to 45,000	7,000 to 30,000	5,000 to 10,000	2,000 – 5,000	500-2,000

6.04 GRADES

- A. The minimum longitudinal grade shall be 0.25%.
- B. The desired longitudinal grade shall be 0.50%.
- C. The minimum cross slope shall be 1%.

- D. The minimum grade for curb returns and cul-de-sacs shall be 0.50% and the design shall show flow lines and/or top of curb grades at all PC and PT of curves.
- E. Inverted crown drainage is not allowed.
- F. At intersections, the grades of the intersecting streets shall be no more than 2% for the first 25 feet of the intersecting curb line to provide a safe approach sight distance and accessible routes in accordance with the Texas Accessibility Standards.

6.05 GENERAL INTERSECTION REQUIREMENTS

- A. Street intersections should be designed at right angles with tangent centerlines whenever possible.
- B. Intersections shall have adjacent visibility triangles free of obstacles such as vegetation, entry signage, buildings, structures, and fences. Public use facilities, such as fire hydrants, traffic control signs, and utility structures are exempted.
- C. Curb radii, measured from the face of curb, shall be 25-foot minimum on local residential and minor collector streets, and 35-foot minimum on major collectors and arterials. The minimum curb radii shall be 50 feet or more, depending on an evaluation of vehicular types and volumes, in commercial or industrial areas. Minimums shall be increased at skewed intersections.
- D. Intersections of major thoroughfares shall maintain a maximum slope of 2 percent along both major thoroughfares for a minimum distance of 200 feet upstream and downstream of the intersection.
- E. Intersections of collector streets with major thoroughfares shall maintain a maximum slope of 2 percent along the collector street for a minimum distance of 100 feet upstream and downstream of the intersection.
- F. Streets and traffic lanes shall be properly aligned across an intersection. Proposed streets shall be aligned with existing streets.
- G. When turnouts are provided at an existing street, the ultimate cross section is required to the end of the curb return. If necessary, a pavement transition is required to reduce the pavement width to the existing cross section.
- H. Intersections shall be designed as a high point in the drainage system, whenever possible. Gutter lines shall not extend across traffic lanes.
- I. Streets intersecting major thoroughfares shall maintain a minimum of 350 feet of separation from another public street. Separation is defined as the distance from pavement face of curb to pavement face of curb. Streets intersecting collector streets shall maintain a minimum of 250 feet of separation. Local streets shall maintain a minimum separation of 200 feet.
- J. Metropolitan joint intersections are not allowed.
- K. Pavement width transitions shall meet or exceed requirements of the Texas Manual of Uniform Traffic Control Devices and AASHTO.

6.06 INTERSECTION RIGHT-OF-WAY REQUIREMENTS

- A. Right-of-way width for a 4-lane thoroughfare that intersects a 4-lane thoroughfare shall be 120 feet for a distance of 200 feet and then taper to the standard right-of-way width.
- B. Right-of-way width for a collector street that intersects a 4-lane thoroughfare shall be 90 feet for a distance of 200 feet and then taper to the standard right-of-way width, as required in Section 11.05.H, with a 150-foot minimum taper. See Figure 11.5.

6.07 MEDIAN, LEFT-TURN LANE, RIGHT-TURN LANE, DECELERATION LANE, AND ISLAND DESIGN

- A. Minimum bay storage lengths may need to be calculated in accordance with a traffic analysis. The referenced standards are minimum requirements. Middle-block left turns may be permitted when specifically approved by the City.
- B. Median openings on major thoroughfares, when areas adjoining the right-of-way are not planned for immediate development, may be spaced 1,000 feet apart, measured nose-to-nose, when specifically approved by the City.
- C. Required Median Openings and Left-Turn Lanes:
 - 1. Median openings on divided thoroughfares shall be required at all street intersections. Median openings may be constructed to serve nonresidential driveways provided that the minimum spacing requirements listed are met. Left-turn lanes shall be provided at all median openings where a street intersects the divided thoroughfare. Left-turn lanes may be required at nonresidential driveways if warranted by a traffic study.
 - 2. Median openings for street intersections and non-residential driveways may be moved, closed, or modified at the discretion of the City to facilitate traffic flow.
- D. Left-Turn Storage
 - 1. All left-turn storage bays on divided thoroughfares shall be a minimum of 11 feet in width.
 - 2. Left-turn lanes will be delineated as shown in the City Standard Construction Details and as approved by the City.
 - 3. Solid stamped, colored concrete pavement shall be used in the median when the median width measured from back-of-curb to back-of-curb is a distance of 4 feet or less.
- E. Medians on Public Street Entrances to Developments:
 - 1. Medians installed on undivided roadway entrances to subdivisions for aesthetic or any other purpose shall be a minimum of 13 feet wide and 80 feet long.
 - 2. In areas where a divided subdivision entry is constructed, the transition to the normal residential street width shall begin a minimum of 50 feet upstream or downstream of the first street intersection.

F. Minimum Right-Turn Storage and Transition Length:

1. Right-Turn Lane Storage:

- a. Right-turn lanes shall be provided at the intersection of a divided thoroughfare with another divided thoroughfare. Right-turn lanes may be required at the intersection of collector streets with divided thoroughfares if traffic conditions warrant.
- b. All right-turn storage areas shall be 11-foot wide.
- c. An additional 10 feet of right-of-way shall be provided with right-turn lanes unless adequate right-of-way to construct and maintain the right-turn lane and adjacent improvements in the right-of-way (i.e., sidewalks) exists.
- d. Right-turn lanes shall be delineated in accordance with City Standard Details and this Manual.

6.08 ALLEY AND SERVICE ROAD DESIGN

- A. Public alleys are prohibited.

6.09 GATED DEVELOPMENT ENTRANCE REQUIREMENTS

- A. Gated developments shall have a median divided street that will allow for a vehicular U-turn prior to the gate in the event that access is denied. The turn-around shall be a minimum of 18 feet in width.
- B. Entry gates shall be set back from the right-of-way a minimum of 60 feet to provide stacking. There shall be a minimum of 40 feet to the entry keypad, or first stop, to allow room for the longest queue of vehicles expected to access the gate. Length of queue shall be determined by the development TIA, address the turning movements into and out of the development, and determine if mitigation will be required. Impacts that could cause backups onto the existing roadways because of the gated entrance are not allowed.
- C. The hinge point of the gate shall be a minimum of 18 inches behind back of the curb.
- D. Gates shall be equipped with a Knox box for emergency access.
- E. Vehicular gates shall not encroach on public sidewalks.

6.10 PUBLIC RIGHT-OF-WAY VISIBILITY REQUIREMENTS

- A. Adequate sight distance at the intersection of all streets shall be assured. This sight distance is provided through the use of a Corner Visibility Triangle or a Sight Line Triangle. Construction drawings for roadways shall show both the Corner Visibility Triangle and the Sight Line Triangle on the plan view of proposed streets.
- B. Landscaping and Obstruction Requirements for Corner Visibility and Site Line Triangles:

1. No fence, wall, screen, sign, structure, foliage, hedge, tree, brush, shrub, berm, driveway planting, parking, or any other item, either man-made or natural shall be erected, planted, or maintained in a position that will obstruct or interfere with a driver's clear line of sight within both the corner visibility and sight line triangle (i.e., VAM's).
2. Vision at all intersections shall be clear from obstructions at elevations between 30 inches and 10 feet above the average gutter elevation within each sight line triangle. Existing trees shall have a clear trunk of 8 feet above average gutter elevation within each sight triangle. Traffic control devices shall remain visible at all times in accordance with the requirements of the TMUTCD.

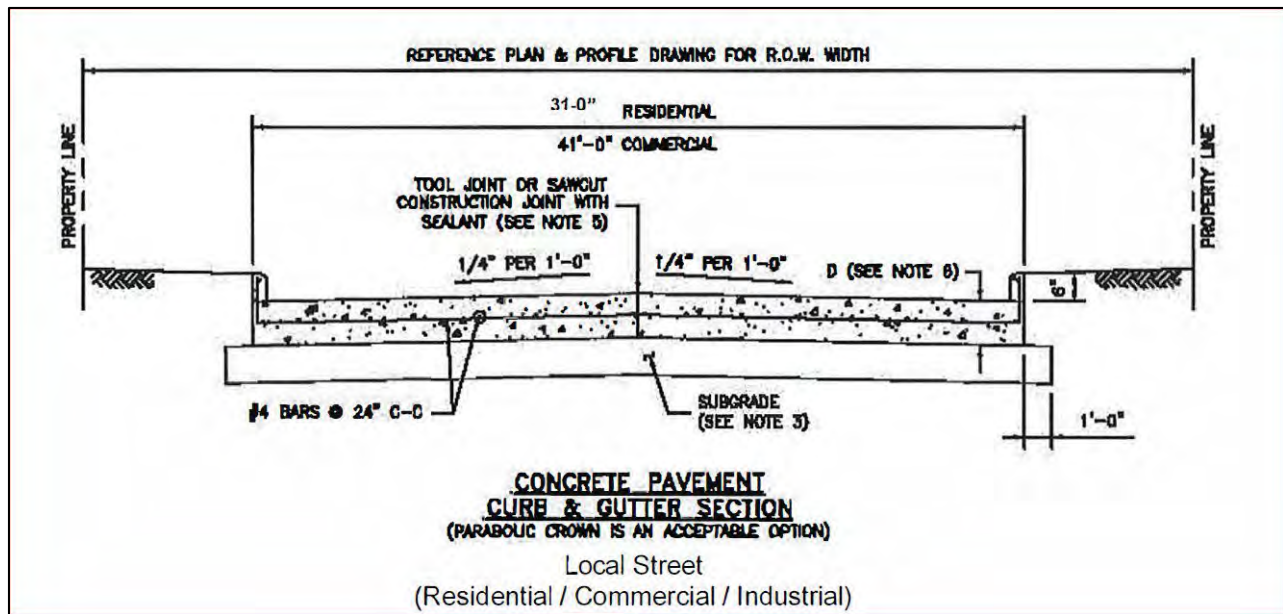
C. Landscape Drawing Requirements:

1. A sitework or landscape drawing is required that shows the plan of the street on both sides, and the median where necessary, of each proposed driveway or street to the proposed development with the grades, curb elevations, proposed street or drive locations, and all items (both natural and man-made) within both the corner visibility and sight line triangles.
2. This sitework or landscape drawing shall show no horizontal or vertical restrictions (either existing or future) within the corner visibility and sight line triangles.

6.11 PAVEMENT STRUCTURE REQUIREMENTS

- A. Local residential streets (55-foot right-of-way) and minor collector streets (60-foot right-of-way) shall have a minimum thickness of 6 inches with #4 reinforcing bars spaced at 24 inches measured center to center of the rebar. All transverse paving headers shall be spaced at a maximum of 60 feet. Lap splices will be staggered in adjacent bars. Minimum overlap shall be 10 inches.
- B. Major collector streets (70-foot right-of-way) and all streets in multi-family residential, commercial or industrial areas shall have a minimum thickness of 7 inches with #4 reinforcing bars spaced at 24 inches measured center to center of the rebar. All transverse paving headers shall be spaced at a maximum of 60 feet. Lap splices will be staggered in adjacent bars. Minimum overlap shall be 10 inches.
- C. Major thoroughfares (greater than 70-foot right-of-way) shall have a minimum thickness of 8 inches with #4 reinforcing bars spaced at 24 inches measured center to center of the rebar. All transverse paving headers shall be spaced at a maximum of 60 feet. Lap splices will be staggered in adjacent bars. Minimum overlap shall be 10 inches.
- D. The design engineer is responsible to ensure that the pavement structure is designed to withstand the anticipated loads that are expected on the roadway.
- E. Hot mix asphaltic concrete pavement is not permitted for roadways.

- F. Lime determination shall be made using a soil proctor from the site. Subgrade shall be stabilized to a minimum 6 inches thick to reduce Plasticity Index (PI) to fifteen as determined by lime series. If a PI of 15 or less cannot be obtained, then the lime treated soils must obtain a pH of 12.4, subgrade must be increased to 8 inches thick and compacted to 95 percent standard proctor density. Add 1 percent for field variation. Subgrade shall be compacted to 95 percent standard proctor density. Alternative subgrade stabilization may be substituted when the geotechnical engineer for the project makes specific recommendations and when specifically approved by the City; however, the stabilization requirement shall not be waived.
- G. Lime shall be applied in accordance with TXDOT 260. Subgrade stabilization and compaction shall extend a minimum of 2 feet beyond the back-of-curb or edge of pavement.
- H. Concrete pavement thickness design is required for all pavement within industrial and commercial areas and on major thoroughfares to identify roadways where the minimum pavement thickness may need to be increased. Concrete pavement thickness design shall be based on AASHTO design procedures for rigid pavements.
- I. Horizontal dowels or saw cutting full depth are required when making a connection of a proposed street to an existing concrete street. When the existing concrete street has no exposed steel or has been saw cut full depth, the dowels shall be #4 bars, 24 inches long, embedded 12 inches, and epoxied. Dowels shall be 12 inches center-to-center, unless otherwise specified.
- J. Dead-end streets or ends of concrete slabs designed to be extended in the future shall have paving headers and 15 inches of reinforcing steel exposed beyond the pavement, coated with asphalt, and wrapped with burlap or paving headers, and dowel type expansion joint for future pavement tie.
- K. Pavement extensions shall connect to the existing pavement with a pavement undercut and a minimum steel overlap of 12 inches. Refer to City Standard Construction Details.
- L. All concrete to be removed shall be removed either to an existing joint or a sawed joint. Saw cuts shall be the full depth of the pavement.
- M. All concrete pavement should be finished to a light broom finish.
- N. Local streets shall be designed and constructed in accordance with the following diagram:



6.12 REINFORCED CONCRETE PAVEMENT MATERIALS

- A. Concrete – All concrete shall be a minimum of 5 1/2 sacks of cement per cubic yard of concrete and achieve an unconfined compressive strength of 3,500 psi at 28 days.
- A. Reinforcing Steel – Grade 60, ASTM A615, current.
- B. Aggregate – Limestone shall be used wherever possible. Granite is permitted only with prior approval by the City. River rock or similar "hard" aggregates are not permitted.
- C. All materials and workmanship shall conform to the TxDOT Standard Specifications, 2004, and the *Texas Manual on Uniform Traffic Control Devices, 2011*, and any revisions thereto.

6.13 GRADING AND LAYOUT REQUIREMENTS

- A. Minimum gradient on gutter shall be 0.30 percent.
- B. Inlet spacing shall be as defined in Chapter 5.
- C. Maximum cut measured from finished grade at the right-of-way line to top of curb shall be 1.75 feet. The maximum slope for all driveways shall be 7 percent.
- D. Minimum grade shall be 1 percent fall around intersection turnout for a minimum radius of 25 feet. Grade for larger radius shall be determined on an individual basis.

- E. All major collector and major thoroughfare streets and collectors shall have a 6-inch-high barrier concrete curb as shown in the City Standard Construction Details. Local streets may be constructed with a 4-inch by 12-inch lay-down curb as shown in the City Standard Construction Details. All streets within 50 feet of a permanent waterbody must have standard 6-inch curb installed. All streets within 30 feet from curb to the high bank must include a guard rail analysis. At the intersection of a 6-inch barrier curb and a 4-inch by 12-inch lay-down curb, the 6-inch curb shall be continued around the curb return of the lesser street.
- F. Minimum slope for the gutter of a cul-de-sac shall be 0.60 percent.
- G. The amount of cross slope over the pavement section should be shown on the drawings. The usual cross slope is 3/8-inch per foot from the curb line to quarter point, 1/4-inch per foot from quarter point to centerline, and 1/8-inch per foot for left-turn lanes.
- H. When connecting to an existing curbed street, the gutter lines for the proposed and existing streets shall be matched and elevations called out.
- I. Proposed top of curb elevations should be designed to match the top of the curb at an existing inlet.
- J. Top of curb and bottom of curb elevations shall be shown on the construction drawings.
- K. Gutter elevations are required for vertical curves where a railroad track is being crossed.
- L. Where railroad crossings are not at right angles to the pavement slab, vertical curves should be calculated for each curb line and should be posted at 10-foot intervals in the profile.
- M. When meeting an existing curb-and-gutter street, top-of-curb elevations shall be designed to meet an elevation 6 inches above the existing gutter. At existing inlets, top-of-curb elevations shall be designed to match existing top-of-curb elevations.
- N. Adjust existing manhole frames and covers within the limits of the proposed pavement to meet the proposed top-of-slab elevation.
- O. Adjust existing manhole frames and covers outside the limits of the pavement to conform to the final grading plan.

6.14 CUL-DE-SAC PAVEMENT

- A. Public streets shall not dead-end without a cul-de-sac.
- B. Cul-de-sacs are to have a minimum right-of-way radius of fifty (50) feet for a single-family and two-family use and sixty (60) feet for other uses.
- C. The minimum right-of-way radius shall be 10 feet greater than the minimum pavement radius. The right-of-way radius shall be clear of permanent obstructions. See Figure 11.19 for minimum cul-de-sac requirements.

- D. The distance from the face of curb of a cul-de-sac to the right-of-way line shall be a minimum of 10 feet.
- E. Curb radii at the transition to the cul-de-sac shall have a minimum radius of 25 feet in single-family residential areas and 35 feet in commercial areas, measured at the face of curb.
- F. The length of a cul-de-sac is defined as the distance from the centerline of the intersecting pavement to the center of the cul-de-sac bulb measured along the centerline of the street right-of-way. The maximum length of a dead-end street with a permanent turnaround shall be 600 feet, except in conditions of unusual topography or in the event said street accommodates rural lots in the extraterritorial jurisdiction, in which case the maximum length shall be 800 feet.
- G. The minimum grade line around a cul-de-sac shall be 0.60 percent.

6.15 Pavement Testing Requirements

- A. It is the responsibility of the contractor to deliver a finished product in compliance with the contract documents and applicable federal, state, and local requirements. An independent testing laboratory shall be used to verify contract document compliance.
- B. The Contractor is responsible for notification of the City and the independent testing laboratory in accordance with the City's notification requirements. In the event construction activity occurs without proper notification to the City, the work in question is subject to removal and replacement in accordance with the standards at the discretion of the City.
- C. The Contractor is responsible for any and all fees and costs associated with the testing requirements.

PAVEMENT SUBGRADE

- A. Pavement subgrade shall be a minimum of 6 inches thick, shall be within 0.2 inches of final lines and grade, and shall vary uniformly between points. Subgrade stabilization and compaction shall extend a minimum of 2 feet beyond the back-of-curb or edge of pavement. All subgrade shall be compacted to a minimum of 95 percent of the maximum dry density of the material as determined by Standard Proctor Compaction Test ASTM D-698. Moisture content on all density tests shall be within plus or minus 2 percent of optimum moisture to achieve a passing test.
- B. Subgrade density tests are required at a longitudinal spacing of every 150 linear feet, staggered across both lanes of traffic, and on pavement cast full width on undivided roadways. Density tests shall include the entire cross section of the subgrade, including the area 2 feet outside of the form boards. For pavement cast half-width, density tests are required every 300 linear feet for each half of the roadway, with the tests offset from tests in the adjacent half of pavement by 150 linear feet. Regardless of any other requirement, all cul-de-sacs shall have a minimum of one density test within the cul-de-sac.
- C. Lime depth checks are required for all pavement subgrades at the same spacing and frequency requirement as density tests.

- D. Lime determination shall be made using a soil proctor from the site. Subgrade shall be stabilized to a minimum 6 inches thick to reduce PI to 15 as determined by lime series. If a PI of 15 or less cannot be obtained, then the lime-treated soils must obtain a pH of 12.4, must be increased to 8 inches thick; and be compacted to 95 percent standard proctor density (add 1 percent for field variation). Lime subgrade shall be mixed evenly and allowed 72 hours between mixing to cure. Remixed lime shall have 100 percent of the representative sample passing a 1 3/4-inch sieve and 85 percent of the sample passing a 3/4-inch sieve and 60 percent passing the #4 sieve.
- E. Lime operations shall not occur if the ambient temperature is 40 degrees Fahrenheit and falling. Lime operations may occur if the ambient temperature is 35 degrees Fahrenheit and rising.
- F. Subgrade densities shall be retaken in the event of a 1/2 inch or greater rainfall or in the event the ambient air temperature falls below 32 degrees Fahrenheit for greater than three hours.
- G. Subgrade density testing shall occur after the subgrade has been cut to final lines and grade. No subgrade/earthen material may be placed on the subgrade after passing density tests have been achieved.
- H. Prior to the application of lime slurry, the roadbed shall be excavated to subgrade, shaped to conform to the typical sections, lines, and grades as shown on drawings. The material, before lime is added, shall be scarified to the secondary grade (proposed bottom of the lime stabilized subgrade). A "proof roll" shall be performed prior to the application of lime slurry to identify any wet or unstable materials. Any wet or unstable materials below the secondary grade shall be corrected by scarifying, adding lime, and compacting until it is of uniform quality. The results of the proof roll and any correcting action shall be documented by the testing laboratory.

CONCRETE PAVEMENT

- A. All concrete mix designs shall be approved by both the independent testing laboratory and the City prior to the placement of concrete on any project.
- B. Concrete operations shall not occur if the ambient temperature is 40 degrees Fahrenheit and falling. Concrete operations may occur if the ambient temperature is 35 degrees Fahrenheit and rising.
- C. Concrete shall be tested every 150 cubic yards or less of concrete that is placed each day. Test shall be conducted for the following criteria:
 - 1. Entrained air – Not to exceed 5 percent.
 - 2. Slump – Between 2 1/2 and 5 inches.
 - 3. Concrete Temperature – Not to exceed 95 degrees Fahrenheit (without appropriate admixtures)
 - 4. Cylinders – A minimum of one set of four cylinders to be tested for compressive strength.
- D. Concrete cylinders, taken at the time of placement, shall be the standard for testing for compressive strength. In limited, unique circumstances, concrete cores of the finished pavement may be tested for compressive strength, with prior approval by the City.

- E. In the event concrete cores are approved for testing, the pavement shall meet the required compressive strength without consideration of an allowance for cut cores or any other reduction in strength allowance.
- F. Pavement shall meet both the minimum compressive strength and the minimum thickness requirements before acceptance by the City. Pavement that fails to meet both requirements shall be removed and replaced prior to acceptance by the City.
- G. In the event pavement thickness requirements are not met, the limits of the short pavement shall be identified through the use of additional cores at 10-foot spacing on each side of the deficient pavement until the minimum thickness requirement is met.
- H. In the event a variance for deficient pavement thickness is considered by the City, the City shall consider the extent of the thickness deficiency in area and thickness, the concrete compressive strength, the thickness of the subgrade, the performance of the remainder of the pavement on the project, and the performance history of the contractor on the project when reviewing the variance. In addition, the impact of the deficient pavement on the City's long-term maintenance costs shall be considered.
 - 1. Accepted pavement deficient in thickness between 0.00 and 0.1 inches shall be considered without a maintenance fund payment based upon the recommendation of the design engineer, the extent and location of the deficient pavement, verification of subgrade, and other relevant specifications being met and other relevant factors.
 - 2. Pavement deficient in thickness between 0.11 and 0.20 inches shall require a maintenance fund payment to the City of 25 percent of the contract unit price times the area of deficient thickness pavement.
 - 3. Pavement deficient in thickness between 0.21 and 0.25 inches shall require a maintenance fund payment to the City of 50 percent of the contract unit price times the area of deficient thickness pavement.
 - 4. Pavement deficient in thickness greater than 0.25 inches shall not be considered for acceptance.
- I. Finished pavement shall have either a burlap-drag or a tight (less than 12 inches between centerlines) belt finish. Pavements that are excessively smooth or rough shall be subject to removal and replacement.
- J. Finished streets shall positively drain and be free from areas of standing water (birdbaths) within 12 hours after water has ceased to flow by gravity. Street subject to acceptance by the City for City maintenance shall be flooded with sufficient water along the gutter line to identify potential birdbaths prior to acceptance into the one-year maintenance period. Pavement scarifying or grinding is not allowed to remediate birdbaths on newly constructed pavement.
- K. All concrete placed shall be uniformly sprayed with a membrane curing compound as described in Item 526 in the TxDOT standard specification for construction. Improper application will result in rejection of the concrete.

6.16 TRAFFIC CALMING GUIDELINES

- A. The City encourages the implementation of traffic calming philosophy in the design and retrofitting of subdivisions. The ITE "Guidelines on Traffic Calming" and the Texas Manual on Uniform Traffic Control Devices shall be considered in the design of new subdivisions. The City may require traffic calming implementation in new subdivision design. It is the responsibility of the land planner to document consideration of traffic calming techniques in the initial design and plat process (i.e., concept plan stage).
- B. Approved traffic calming devices shall not include the installation of speed bumps in either new or existing subdivisions. Other physical modifications to the standard street cross section may be considered as a last resort. Nonstandard street geometries shall require a clearly identified, actual problem of the nature that may be resolved by the proposed physical modification. All physical modifications require prior written approval by the City.

Sidewalks

6.17 SIDEWALK DESIGN

- A. Definition of Sidewalk – A sidewalk is defined as that paved area in a street right-of-way or adjacent easement that is between the curb lines or the edge of pavement of the roadway and the adjacent property or easement lines that is designed for the use of pedestrians.
- B. The maximum grade of the sidewalk shall be 1/2-inch per foot. The maximum cross-fall of the sidewalk shall be 1/4-inch per foot. Sidewalks shall conform to the latest Americans with Disabilities Act (ADA) and Texas Department of Licensing and Regulation (TDLR) requirements and to the following standards.
- C. Residential and Nonresidential Areas – When constructed, shall be a concrete sidewalk, 5 feet in width and located within the street right-of-way. Sidewalks and parkways (curb to right-of-way) shall be graded at 1/4-inch per foot above the top of the street curb.
- D. If other materials are placed in the right-of-way between the sidewalk and curb, the material shall meet City specifications, and be of a color and texture distinctly different from the sidewalk and specified on the site plan.
- E. Meandering Sidewalks – Meandering sidewalks may be located in a common area if sufficient width does not exist in the ROW.
- F. Sidewalks on Bridges – All street bridges on major thoroughfares and major collectors shall have a sidewalk constructed on each side of the bridge. Pedestrian access or routing shall be provided on all bridges on all streets. The sidewalk shall be a minimum of 6 feet wide with a parapet wall or traffic rail, provided a minimum of 2 feet behind the back-of-curb of the roadway. A standard pedestrian bridge rail protecting the sidewalk shall be provided on the outside edge of the bridge.

- G. Sidewalks on Box Culvert Crossings – All box culvert crossings shall have a sidewalk constructed on each side of the culvert. The sidewalk shall be a minimum of 5 feet wide with a standard pedestrian handrail as shown in Figure 11.13, provided on the outside edge of the culvert unless the drop off is greater than 10 feet from the outside edge of the sidewalk.
- H. Sidewalk wheelchair ramps shall be required at all intersections. They shall be installed in accordance with ADA and TDLR requirements. The intersections of cul-de-sacs that do not have a defined straight section of cul-de-sac and a cul-de-sac bulb do not have to install wheelchair ramps at the intersection. Wheelchair ramps shall be located in front of any stop or yield signs or stop bars.
- I. All wheelchair ramps shall have raised detectable warning surfaces (truncated domes) in accordance with accessibility requirements.
- J. Sidewalk construction across an esplanade: When required, raised esplanades shall be cut to allow for the continuation of crosswalks at grade. At-grade sidewalks across esplanades shall be a minimum of 6 feet wide. Patterned concrete or brick may be used with specific approval of the City.

Driveways

6.18 DRIVEWAY DESIGN REQUIREMENTS

- A. Design Philosophy
Large speed differentials among motor vehicles traveling the same or connecting roadways creates unsafe driving conditions. Minimizing speed differentials through the proper design of driveway approaches promotes driver and pedestrian safety.

It is the City's policy to require a driveway design that creates no more than a 20 mph (miles per hour) maximum speed differential on roadways. The goal of the City policy is to create a balance between optimal access and safety.

Generally, as the widths of streets and vehicular speeds increase, the number of driveway approaches should decrease. Driveway approaches accessing major thoroughfares should be situated in a manner that minimizes the number of potential conflict points. A single piece of property served by multiple driveways may increase speed differentials and is generally considered undesirable. For commercial development, shared commercial driveways shall be a requirement. Regulated access, removing turning vehicles from the traffic stream and channelization of traffic should be determined on a site-specific basis, taking into consideration the policies and requirements of the City and other regulating entities, and following generally-accepted traffic engineering principles.

City policy is to require turn bays and acceleration/deceleration lanes on major thoroughfares or to use equally effective traffic-controlling methods that will minimize speed differential and increase overall safety.

- B. A sight distance analysis is required for all driveways located within a horizontal or vertical curve of the frontage roadway.
- C. Driveways shall not be located within the functional areas of intersections.
- D. Driveway grades shall be minimized. The maximum algebraic change in grade of driveways allowed on all streets is 7 percent.

- E. Driveway approaches shall be built with a circular curb radius connecting the raised curb of the roadway to the driveway approach in accordance with the City Standard Construction Details. In order that the definition of the location of the edge of pavement for the roadway may be maintained, driveway approach radii shall always be designed to become tangent to the street curb line.
- F. Driveway approaches, driveways and required parking spaces shall be all-weather, dustless surfaces in accordance with Appendix A – Zoning of the Code of Ordinances.
- G. Driveway curb returns shall terminate within the boundaries of the lot served by the driveway. Driveway widths shall be measured between the edges of pavement or the face of curbs, as applicable, at the property or right-of-way line. Driveway approaches within the public right-of-way shall be constructed of concrete.
- H. All driveways shall be designed to intersect the adjacent street at a 90-degree angle unless specifically approved by the City.
- I. Driveways shall not be permitted in the transition area of any right-turn, acceleration or deceleration lane.
- J. Driveways that intersect at a mid-block median shall have the driveway centerline intersect with the midpoint of a median opening (measured nose-to-nose).

6.19 SINGLE-FAMILY RESIDENTIAL DRIVEWAY REQUIREMENTS

- A. No direct access to a major thoroughfare or major collector from a residential driveway approach is allowed. Access to a minor collector or local street is allowed.
- B. No lot may have more than two driveways accessing the adjacent street or streets. Side lot access is not allowed within the first 120 feet of a street serving as the entrance to a subdivision.
- C. Driveways shall be located a minimum of 30 feet away from the intersection of streets, measured from the curb return of the street to the curb return of the portion of the driveway closest to the street.
- D. Circular driveways are allowed on residential lots with a local street frontage of 75 feet or greater. A maximum of two driveways are allowed on the street on which the 75-foot street frontage is located, provided that the driveways meet all other requirements of this chapter.
- E. Residential driveways shall have a minimum curb radius of 5 feet. The driveway curb returns shall terminate within the boundaries of the lot served by the driveway.
- F. Residential driveway approaches shall have a minimum width of 12 feet and a maximum width of 30 feet. On-site residential driveways shall be a minimum of 12 feet.
- G. Driveway approaches within the public right-of-way shall be constructed of concrete.
- H. All special, non-standard materials, such as exposed aggregate, dyed concrete, or concrete pavers, and special signage, that are installed by a developer, homebuilder, or homeowner shall be specifically approved by the City and shall be maintained by the installer, owner, or his assigns. Any maintenance of non-standard items by the City will be done using standard materials and methods.

6.20 MULTI-FAMILY RESIDENTIAL REQUIREMENTS

- A. Multi-family residential developments shall meet the same driveway standards as nonresidential developments.

6.21 NONRESIDENTIAL DRIVEWAY REQUIREMENTS

- A. Adequate distance between cross street intersections and access drives shall be provided to ensure intersection or driveway conflict areas are minimized.
- B. Along either side of any corner commercial or industrial property only one driveway will be allowed, and the driveway approaches shall be located so as to maintain a minimum distance from the corner of the intersecting roadways equal to 65 feet if the street is an arterial or 55 if the street is a collector or local street. Driveways on corner lots are subject to all the requirements of this chapter, including spacing and cross-access requirements.
- C. Nonresidential driveways shall be shared among different property owners or users when necessary to maintain minimum spacing requirements. Joint-access drives shall include full drive width and access pavement and be built at the same time as the first development.
- D. Interconnectivity of multiple properties shall be maintained in the frontage of the lot adjacent to the road.
- E. Nonresidential driveways shall match existing openings in medians, whenever possible. No cuts through the left-turn reservoir of a median shall be permitted.
- F. Undivided nonresidential driveway approaches shall have a minimum width of 25 feet and a maximum width of 40 feet. Divided nonresidential approaches shall have a minimum width of 32 feet and a maximum width of 58 feet. Travel lanes of divided driveways shall be a minimum of 12-foot wide and shall be divided by a raised median a minimum of 8-foot wide.
- G. Nonresidential driveway approach curb radii shall be a minimum of 25 feet. Curb radii of signalized driveway approaches shall be a minimum of 35 feet. Selection of the appropriate driveway curb radii shall consider the roadway speed limit, pedestrian activity, the existence of turn lanes, roadway geometries, intersection signalization, and other appropriate criteria.
- H. Nonresidential driveways which serve service fixtures such as drive-through windows, mailboxes, gasoline pumps, and other similar fixtures shall allow traffic to utilize the fixture without interfering or impeding the movement of driveway or roadway traffic.
- I. Nonresidential driveway spacing shall meet the spacing requirements for driveways located along major thoroughfares and collectors, unless specifically approved by the City.
- J. The spacing and location requirements for driveways shall be applied to both existing driveways and those shown on proposed development drawings and plats. Driveway locations and requirements shall be considered at the earliest possible stage of development of a tract.

6.22 DRIVEWAYS ALONG MAJOR THOROUGHFARES AND COLLECTORS

- A. The following requirements shall apply with respect to driveway approach spacing and location along major thoroughfares and collector streets. Spacing between driveways should be measured along the property line from the edge of one driveway to the closest edge of the next driveway, and not from centerline to centerline.
1. The minimum required spacing between driveway approaches and intersections for driveways along collector streets and major thoroughfares is as follows.

Table 6.2 – City of Brenham Minimum Driveway Spacing

Posted Speed	Minimum Spacing
(mph)	(feet)
25	150
30	230
35	300
40	350
45	400
50	450
>50	TIA required

2. Driveway approaches accessing major thoroughfares and collectors shall be aligned with opposing driveway approaches, if any, or should be offset by 200 feet or more to provide adequate left turn storage capacity in advance of each driveway approach and to avoid the overlap of left-turn lanes.
 3. The spacing and location of driveways shall be related to both existing adjacent driveways and those shown on approved development drawings.
 4. Driveways shall be spaced at distances sufficient to ensure that conflicting movements at adjacent driveways do not overlap.
- B. Entrances to nonresidential driveway approaches shall be designed so as to provide adequate sight distance required for safe travel. A sight distance analysis, sealed by a professional engineer, shall be provided on all construction drawings. The sight distance analysis will show the available sight triangles with all proposed and existing improvements in place.
- C. Turn bays shall meet the minimum requirements of the Institute of Transportation Engineers (ITE) and the American Association of State Highway and Transportation Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets."
- D. Notwithstanding any other requirements set forth herein, signalized driveway entrances shall be required of driveway approaches whose TIA recommends the installation of a signal and shall conform to ITE and AASHTO traffic signal spacing guidelines.
- E. Deceleration lanes for right-turns into driveways shall be required in accordance with the TIA to minimize driveway or roadway conflicts.
1. No driveway shall be permitted within the transition area of a right-turn or deceleration lane, unless otherwise approved by the City.

2. The applicant shall be responsible for the design, right-of-way adjustment of utilities, and construction costs of any required auxiliary and deceleration lane.

6.23 Construction Standards

Table 6.3 – City of Brenham Driveway Construction Standards

	Residential	Commercial	Industrial
Minimum Concrete Thickness	5" in ROW	6" in ROW	8" in ROW
Rebar Spacing	#3's @ 12" centers	#4's @ 12" centers	#5's @ 12" centers
* Slope in accordance with Texas Accessibility Standards			

6.24 Driveways on Existing Strip Paved, Open Ditch Section Roadways

- A. All driveways along existing strip paved, open ditch section roadways shall have culvert pipes installed below them in accordance with Detail STM-5, which is included in the Appendix B of this document.

END OF CHAPTER



PUBLIC INFRASTRUCTURE DESIGN MANUAL

CHAPTER 7 - TRAFFIC SIGNS, MARKINGS, AND STREET LIGHTING

CHAPTER 7

TRAFFIC SIGNS, MARKINGS, AND STREET LIGHTING

7.01 GENERAL

- A. These standards describe the general requirements for the design and construction or the modification of traffic signs and markings within the City limits.
- B. All traffic signs and markings to be installed in accordance with the Texas Manual of Uniform Traffic Control Devices (MUTCD).
- C. Developer shall purchase and install all traffic control signs and markings and all required street signs.
- D. This guideline serves as a reference standard and does not supersede any design standards set forth by the MUTCD, Texas Accessibility Standards (TAS) of the Architectural Barriers Act, or any other federal, state, or local law or regulation. The intent is to provide a standard reference to promote the highest quality and latest engineering practices available.
- E. Traffic signs, markings shall be prepared by an individual, group, firm, or corporation having demonstrated professional emphasis and experience in transportation planning, engineering, and in the preparation of similar analyses. The construction documents shall bear the seal and signature of a Texas Registered Professional Engineer.
- F. Street layouts shall be designed to avoid the use of multi-way stop signs in new developments to the maximum extent practicable.

7.02 TRAFFIC SIGNS

- A. Traffic and street signage locations shall be shown on the paving plan in the construction drawings. Traffic signs shall conform to the requirements of the Texas Manual of Uniform Traffic Control Devices as adopted by the City. Prior to final approval of a construction project, all signage shall be installed in accordance with the approved construction drawings.
- B. Standard signage shall be flat blank aluminum, covered with high-intensity prismatic sheeting or higher-grade sheeting. Traffic control signage shall meet the requirements of the Texas Manual for Uniform Traffic Control Devices. Refer to the City Standard Construction Details.
- C. All traffic signs shall be installed on approved steel posts with a Texas Universal Triangular Slipbase System per TxDOT SHT. SMD (Slip-1) - 02 or a Universal Anchor System.
- D. Posts shall be installed to a depth of approximately 33" below grade in a 12" diameter x 30" deep concrete foundation.
- E. Traffic Signs shall be installed so that the lowest part of the lowest sign is 7' above grade.
- F. Traffic signs shall be installed a minimum of 2' from the back of the nearest curb.

7.03 Street Name Signs

- A. Each intersection on an arterial street shall have a minimum of four street name signs (two for each intersecting street) installed on the same post and above the proposed traffic control signs for that intersection.
- B. Each intersection on local or collector streets shall have a minimum of two street name signs (one for each intersecting street) installed on the same post and above the proposed traffic control signs for that intersection on opposite corners of the intersection.
- C. Street name signs shall have a green (color) hi intensity grade reflective background and shall have 4.5" white lettering and upper-case characters.
- D. The block numbers and suffixes are to be 2.5" white lettering.
- E. Street signs shall be 6" in height and 30" long.

7.04 Striping and Pavement Markings

- A. Developer shall apply striping to arterial and collector street segments only.
- B. Developer to apply appropriate pavement markings to all classes of streets.
- C. Striping and pavement markings shall meet TxDOT standards.
- D. Pavement markings shall be shown on the approved construction drawings for all projects.
- E. Gorilla Hi-Performance Acrylic Zone Marking Paint or approved alternate shall be used on all streets.

7.05 Street Lighting

- A. Developers will be required to install streetlights on galvanized metal poles, according to the following standards on public streets in subdivisions within the city limits and furnish necessary easements or rights-of-way.
- B. Streetlights shall be located and spaced to ensure adequate illumination for both vehicular and pedestrian safety in accordance with City Code – Subdivision Ordinance Section 23-16(21). Streetlights shall be installed at all street intersections and intervals of not more than 300 feet along streets, except that they may be spaced at an average of 600 feet between intersections on low-density residential streets.
- C. The recommended location and minimum number of streetlights shall be approved by the local electrical utility company and be marked on the final approved copy of the subdivision plat.
- D. Streetlights shall be located so as to be of general benefit to the surrounding neighborhood.
- E. Streetlights shall be installed a minimum of 2' from the back of the nearest curb.
- F. Streetlights shall be mast arm mounted, and the mast arm shall be mounted 30' above grade.

- G. Streetlights shall incorporate an 8' mast arm constructed of hot-dipped galvanized metal.
- H. Luminaire shall be an arm mounted, cobra head type, 120/277-volt, 110-watt, static LED luminaire with photo control receptacle on top.
- I. The developer of the subdivision shall be responsible for the total expense of furnishing and installing the streetlight luminaire, complete with photoelectric controls, standard, with an underground electric supply circuit of proper size; and the developer shall be responsible for all trenching and backfill for installing the underground circuit.
- J. The specification of all equipment and materials to be used shall have prior approval of the City before installation.

7.06 CONSTRUCTION DRAWING REQUIREMENTS

- A. This section defines the minimum elements that are required on the construction sheets.

- 1. Title Sheet

- a. Include intersection(s) and street name(s), Engineer, and City Logo.
 - b. Date when plans are completed.
 - c. Vicinity map and key map location.
 - d. Project title including project scope and proper road names.
 - e. Funding for construction.
 - f. Site map with north arrow.
 - g. Signature block, including a block for private utility signoffs.

- 2. Index Sheet.

- 3. The City Construction Notes.

- 4. TxDOT specification note and barricade note, when applicable.

- 5. Private Utility Notes (utility notes for all known utilities).

- 6. Project-specific traffic signal notes.

- 7. Basis of Estimate or Summary of Traffic Signal Quantities Sheet

- a. This sheet includes all wires or cables, conduits, ground boxes, and span wires providing quantities.
 - b. Detailed estimated quantities per location or per specific system.

- c. Provide all detailed items with TxDOT reference item and numbers.
- d. Bid items will be discussed under bid documents.
- e. Identify materials to be furnished by City or others (when applicable).
- f. Quantities are for estimate purposes only.

8. Existing Conditions Layout

- a. Show all existing signing, (including speed limits, all approaches), joints in pavement, type of pavement, condition of pavement (for loops if applicable), and overhead power lines.
- b. Show scale.
- c. Existing pavement markings and signing.
- d. Existing geometries.
- e. Existing utility locations.
- f. Any existing signal equipment.
- g. North arrow up or to the right.
- h. Right-of-way and easements.

9. Paving Plan (when applicable)

- a. Provide a proposed design showing required wheelchair ramps and landings to access pedestrian push buttons. These paving improvements must comply with the current TAS of the Architectural Barriers Act.
- b. Provide applicable construction notes or paving details.
- c. Provide various notes to contractor.
- d. Provide ramp and landing dimensions as required.

10. Pavement Marking and Signing Layout

- a. This base shall show all proposed paving improvements as existing and include all existing signing and striping.
- b. Provide proposed design of all applicable pavement markings.
- c. "Signal Ahead" signs are typically provided on approaches in accordance with MUTCD requirements.

d. Show on drawings:

- (1) Right-of-way and easements.
- (2) Roadway geometries.
- (3) Utilities.
- (4) Existing Pavement Markings and Sign details (complete).
- (5) Proposed Pavement Markings and Sign details (complete, including removal of existing pavement markings and signing as needed).
- (6) Construction signing.
- (7) Stop bars.
- (8) Crosswalks, if required.
- (9) Wheelchair ramps, if required.
- (10) North arrow up or to the right.
- (11) Legend.
- (12) Scale.
- (13) Special notes.

11. Pedestrian Walkway Details

- a. Current pedestrian walkway details with the following plan layout details.
- b. Existing intersection condition.
- c. Proposed pole locations and identified.
- d. Proposed pedestrian walkway design layout.

12. Notes for Plan Layout

- a. Callouts for all signals and sign types.
- b. Callouts for all signs and all sign types.
- c. Notes to reference specific sheet(s).
- d. Any note pertaining to signal design shall be included.

- e. Special VIVDS specification if required.
- f. Special equipment descriptions.
- g. Maintenance of existing traffic signals and operation parameters.

13. Standard Detail Sheets

- a. Any details pertaining to the proposed signal design shall be included.
- b. The details shall be the latest available from the City and TxDOT.
- c. Any necessary quantities, such as pole and foundation details, shall be filled out.
- d. All detail sheets to be sealed.

END OF CHAPTER



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PUBLIC INFRASTRUCTURE DESIGN MANUAL

APPENDIX A - APPROVED PRODUCTS LIST



City of Brenham Approved Products List

Component	Type	Preferred Manufacturer
PVC Fittings	Gasketed SDR 26 Heavy Wall Fitting	Plastic Trends OR Equivalent
Cleanout Adapter	SDR 35	Plastic Trends
Treaded Cleanout Plug	SDR 35	Plastic Trends
Sanitary Sewer Cleanout Boot		Sigma
Gravity Pipe	SDR 26	JM Eagle
Force Main Pipe	C-900 Green	
Meter Box	Christy #B09	Old Castle
Meter Box Lid for Sewer	Christy #BX09D Marked Sewer	Old Castle
Tracer Wire	#12 Solid, Insulated Tracer Wire OR #14 Solid, Copper Clad Insulated Tracer Wire	
Retainer	CamLock Style 120	Smith-Blair
Gate Valve	Ductile Iron	American Flow Control
Ductile Iron Fittings		Sigma OR Equivalent
32" Cast Iron Manhole Ring		East Jordan Iron Works
32" Manhole Sewer Lid	City of Brenham Logo	East Jordan Iron Works
Concrete Risers		MDN
Fiberglass Manhole Patch		Containment Solutions
Valve Box	19-22" 461-S	Tyler Union
Valve Box Top	19-22" 461-S	Tyler Union
Valve Box Lid	CI 5 1/4" Drop Marked Water	Tyler Union
Valve Box	22-37" 562-S	Tyler Union OR Sigma
Valve Box Top	22-37" 562-S	Tyler Union OR Sigma

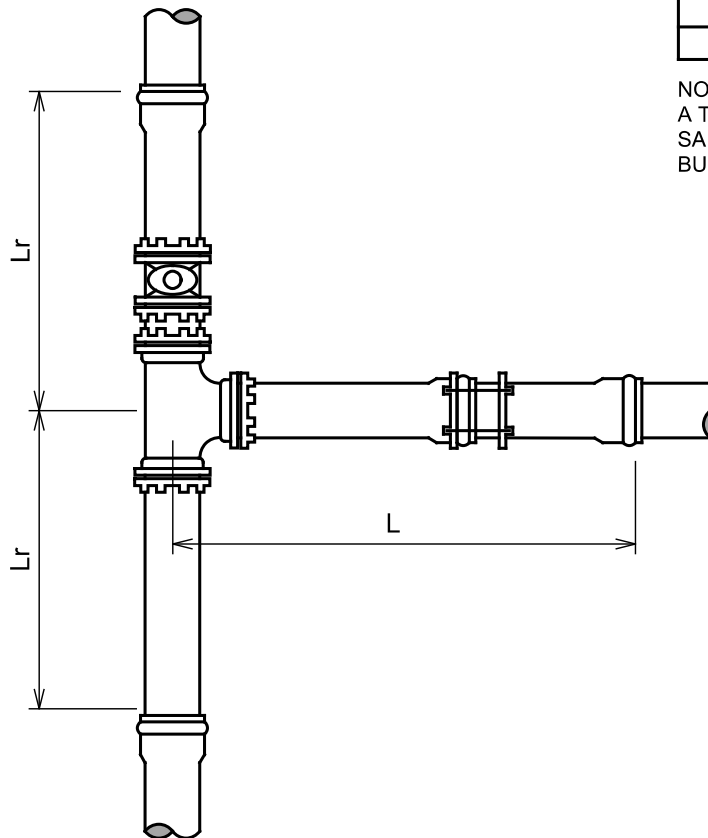


GENERAL NOTES

1. THE VALUES IN THE TABLE WERE ESTABLISHED FOR DISTANCE 'Lr' EQUAL TO 'L'. OTHER VALUES OF 'L' MAY BE CALCULATED FOR VARYING DISTANCES OF 'Lr'.
2. ALL JOINTS WITHIN DISTANCE 'L' OF A TEE SHALL BE RESTRAINED USING AN APPROVED MECHANICAL RESTRAINT SYSTEM.
3. NO JOINTS, OTHER THAN RESTRAINED VALVES LOCATED ADJACENT TO THE TEE, ARE ALLOWED WITHIN DISTANCE 'Lr' OF A TEE.

TEES		
MAIN SIZE	BRANCH SIZE	'L' AND 'Lr'
6"	4"	4'
6"	6"	7'
8"	4"	3'
8"	6"	6'
8"	8"	10'
10"	6"	5'
10"	8"	8'
10"	10"	11'
12"	6"	4'
12"	8"	7'
12"	10"	10'
12"	12"	13'
16"	6"	3'
16"	8"	5'
16"	10"	8'
16"	12"	10'
16"	16"	17'

NOTE: CALCULATIONS BASED ON A TEST PRESSURE OF 150 PSI, A SAFETY FACTOR OF 1.5 AND A BURY DEPTH OF 3.5'



THRUST RESTRAINT (TEES)

STANDARD CONSTRUCTION DETAILS

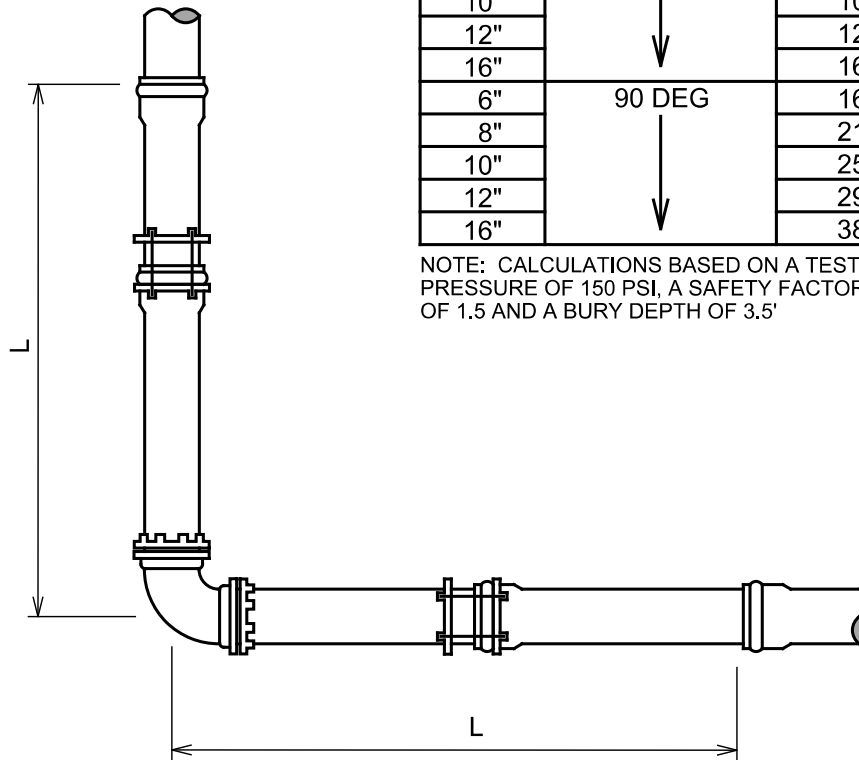
DATE: 07/12/21

REVISED
DATE: 07/12/21

WTR - 1

GENERAL NOTES

1. ALL JOINTS WITHIN DISTANCE 'L' OF A HORIZONTAL BEND SHALL BE RESTRAINED USING AN APPROVED MECHANICAL RESTRAINT SYSTEM.



HORIZONTAL BENDS			
PIPE SIZE	BEND	'L' PVC PIPE	'L' D.I. PIPE W/ POLY
6"	11-1/4 DEG ↓	2'	2'
8"		2'	2'
10"		3'	3'
12"		3'	3'
16"		4'	4'
6"	22-1/2 DEG ↓	3'	3'
8"		4'	5'
10"		5'	6'
12"		6'	7'
16"		8'	9'
6"	45 DEG ↓	6'	7'
8"		9'	10'
10"		10'	12'
12"		12'	14'
16"		16'	18'
6"	90 DEG ↓	16'	18'
8"		21'	23'
10"		25'	28'
12"		29'	33'
16"		38'	43'

NOTE: CALCULATIONS BASED ON A TEST PRESSURE OF 150 PSI, A SAFETY FACTOR OF 1.5 AND A BURY DEPTH OF 3.5'



THRUST RESTRAINT
(HORIZONTAL BENDS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/12/21

REVISED
DATE: 07/12/21

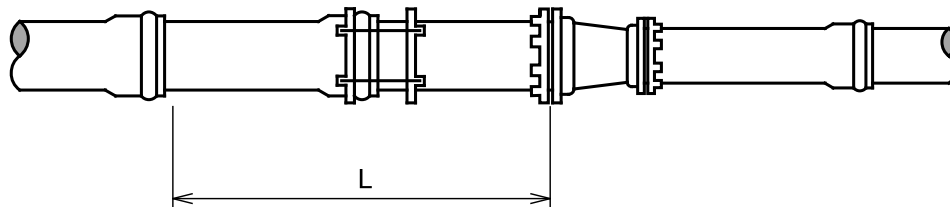
WTR - 2

GENERAL NOTES

1. ALL JOINTS WITHIN DISTANCE 'L' ON THE LARGE PIPE SIDE OF A REDUCER SHALL BE RESTRAINED USING AN APPROVED MECHANICAL RESTRAINT SYSTEM.

REDUCERS			
LARGE PIPE SIZE	SMALL PIPE SIZE	'L' PVC PIPE	'L' D.I. PIPE W/ POLY
6"	4"	26'	40'
8"	6"	27'	42'
10"	8"	26'	41'
12"	10"	46'	70'
16"	12"	51'	78'

NOTE: CALCULATIONS BASED ON A TEST PRESSURE OF 150 PSI, A SAFETY FACTOR OF 1.5 AND A BURY DEPTH OF 3.5'



THRUST RESTRAINT
(REDUCERS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/12/21

REVISED
DATE: 07/12/21

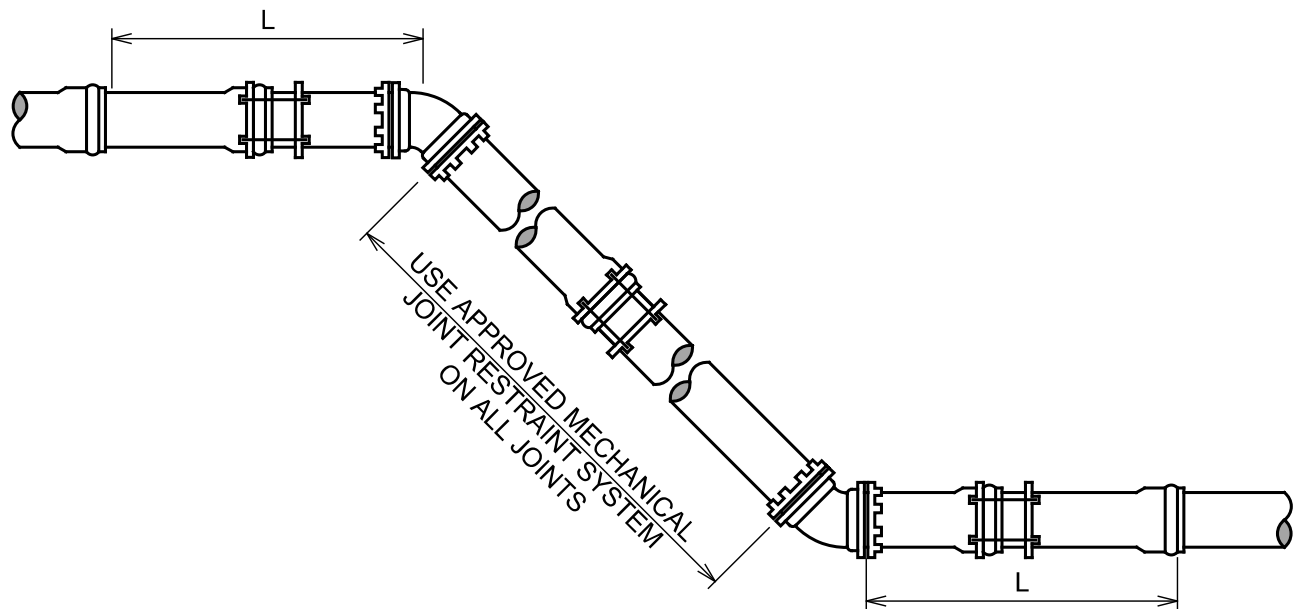
WTR - 3

GENERAL NOTES

1. ALL JOINTS WITHIN DISTANCE 'L' OF A VERTICAL BEND SHALL BE RESTRAINED USING AN APPROVED MECHANICAL RESTRAINT SYSTEM.

VERTICAL BENDS			
PIPE SIZE	BEND	'L' PVC PIPE	'L' D.I. PIPE W/ POLY
6"	45 DEG ↓	6'	7'
8"		9'	10'
10"		10'	12'
12"		12'	14'
16"		16'	18'
6"	90 DEG ↓	16'	18'
8"		21'	23'
10"		25'	28'
12"		29'	33'
16"		38'	43'

NOTE: CALCULATIONS BASED ON A TEST PRESSURE OF 150 PSI, A SAFETY FACTOR OF 1.5 AND A BURY DEPTH OF 3.5'



THRUST RESTRAINT
(VERTICAL OFFSETS)

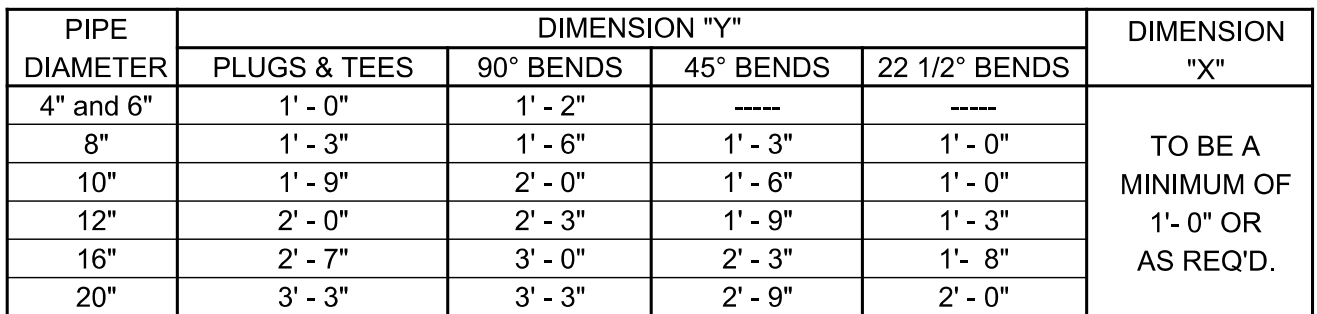
STANDARD CONSTRUCTION DETAILS

DATE: 07/12/21

REVISED
DATE: 07/12/21

WTR - 4

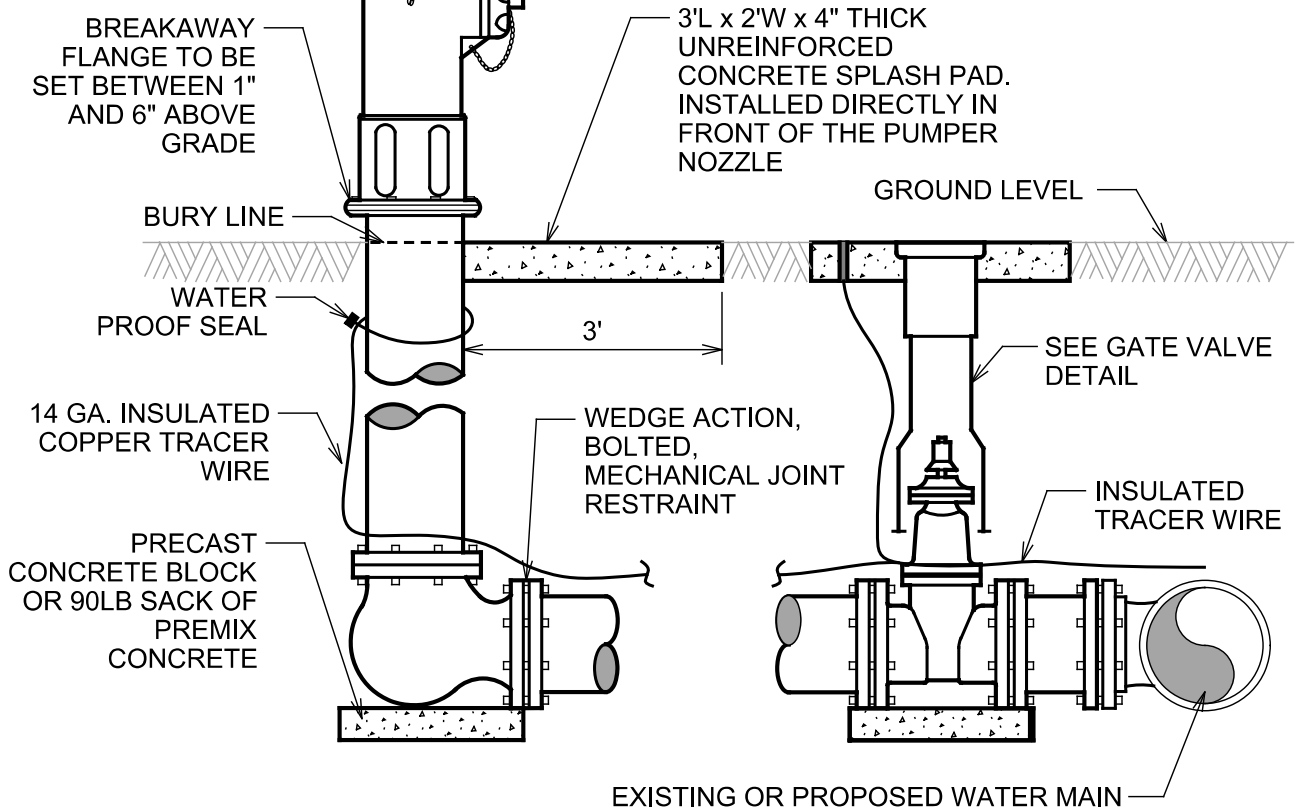
1. FITTINGS SHALL BE DUCTILE-IRON COMPACT FITTINGS 4-INCH TO 12-INCH, AWWA C153/A21.53.84, CONFORMING TO THE MINIMUM REQUIREMENTS OF "GRAY-IRON AND DUCTILE IRON FITTINGS, 12-INCH THROUGH 48-INCH, FOR WATER AND OTHER LIQUIDS", AWWA C153 (ANSI 21.10), CURRENT REVISION. FITTINGS SHALL BE FURNISHED WITH EPOXY OR CEMENT MORTAR LINED, AWWA C104 (ANSI A21.4).
2. POLYETHYLENE ENCASEMENT SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF "POLYETHYLENE ENCASEMENT FOR GRAY AND DUCTILE CAST-IRON PIPING FOR WATER AND OTHER LIQUIDS, "ANSI/AWWA C105, CURRENT REVISION. SOILS WITHIN THE PROJECT SHALL BE TESTED IN ACCORDANCE WITH APPENDIX A OF ANSI/AWWA C105 TO ADEQUATELY DETERMINE THE REQUIREMENTS FOR ENCASEMENT.
2. IN ADDITION TO JOINT RESTRAINTS, CONCRETE THRUST BLOCK MAY ALSO BE UTILIZED TO PROPERLY RESTRAIN JOINTS.



GENERAL NOTES

1. FIRE HYDRANT SHALL BE MANUFACTURED BY MUELLER, OR AMERICAN DARLING.
2. FIRE HYDRANTS SHALL HAVE A THREE-WAY NOZZLE ARRANGEMENT, A 5-1/4 INCH COMPRESSION TYPE MAIN VALVE, A MECHANICAL JOINT (MJ) BOOT, AND CONFORM TO THE REQUIREMENTS OF AMERICAN WATER WORKS ASSOCIATION (AWWA) C502.
3. FIRE HYDRANT COLOR SHALL BE RED WITH YELLOW PUMPER CAPS AND SILVER STEAMER CAPS.
4. THE BONNET OF THE FIRE HYDRANT SHALL BE FACTORY PAINTED WHITE.
5. INSTALL WEDGE ACTION, BOLTED MECHANICAL JOINT RESTRAINT ON ALL PIPE JOINTS BETWEEN MAIN & HYDRANT.
6. CONTRACTOR SHALL INSTALL A BLUE REFLECTIVE PAVEMENT MARKER AT THE CENTERLINE OF EACH STREET IN LINE WITH THE HYDRANT.
7. HYDRANT WEEP HOLES SHALL BE WRAPPED WITH CONSTRUCTION GRADE PLASTIC.

FIRE HYDRANT AWWA C 502 WITH 5 1/4 " MAIN VALVE OPENING
(2) - 2 1/2 " HOSE NOZZLES NATIONAL STANDARD NUT



FIRE HYDRANT

STANDARD CONSTRUCTION DETAILS

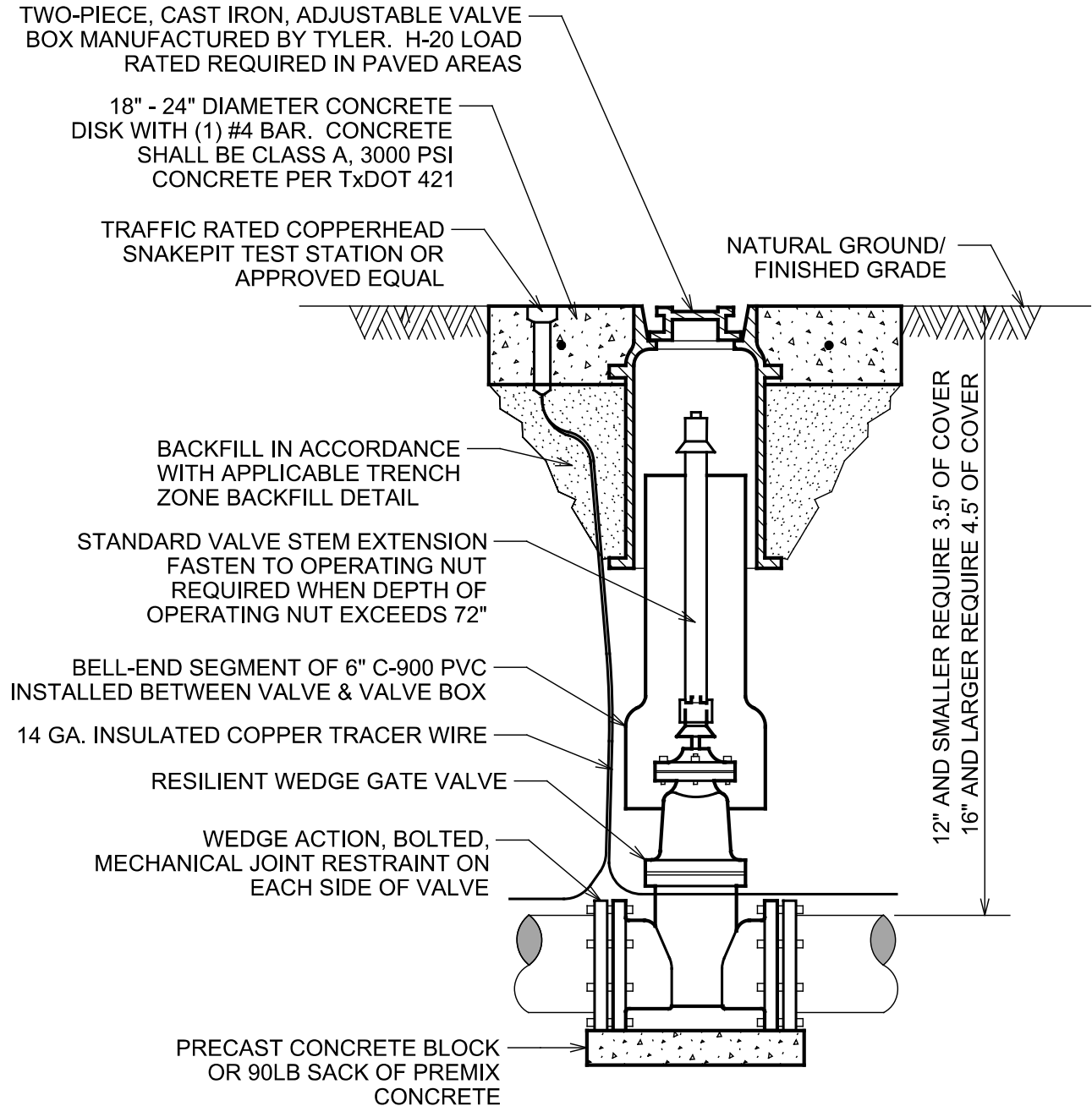
DATE: 07/20/21

REVISED
DATE: 07/20/21

WTR - 6

GENERAL NOTES

1. ALL MAIN LINE VALVE 18" IN DIAMETER & SMALLER SHALL BE RESILIENT WEDGE GATE VALVES.
2. MAIN LINE VALVE WITH DIAMETERS GREATER THAN 18" MAY BE EITHER RESILIENT WEDGE GATE VALVES OR BUTTERFLY VALVES.
3. RESILIENT WEDGE GATE VALVES SHALL BE AMERICAN FLOW CONTROL.
4. TRACER WIRE SHALL BE CONNECTED TO ALL WATER METER ANGLE STOPS, FIRE HYDRANTS, AND VALVE BOX RISERS.



GATE VALVE

STANDARD CONSTRUCTION DETAILS

DATE: 07/12/21

REVISED
DATE: 07/12/21

WTR - 7

GENERAL NOTES

1. MAIN LINE VALVES WITH DIAMETERS GREATER THAN 18" MAY BE EITHER RESILIENT WEDGE GATE VALVES OR BUTTERFLY VALVES.
2. BUTTERFLY VALVES SHALL BE PRATT OR APPROVED EQUAL.
3. TRACER WIRE SHALL BE CONNECTED TO ALL WATER METER ANGLE STOPS, FIRE HYDRANTS, AND VALVE BOX RISERS.

TWO-PIECE, CAST IRON, ADJUSTABLE VALVE BOX MANUFACTURED TYLER. H-20 LOAD RATED REQUIRED IN PAVED AREAS

18" - 24" DIAMETER CONCRETE DISK WITH (1) #4 BAR. CONCRETE SHALL BE CLASS A, 3000 PSI CONCRETE PER TxDOT 421

TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL

NATURAL GROUND/
FINISHED GRADE

BACKFILL IN ACCORDANCE WITH APPLICABLE TRENCH ZONE BACKFILL DETAIL

STANDARD VALVE STEM EXTENSION FASTEN TO OPERATING NUT REQUIRED WHEN DEPTH OF OPERATING NUT EXCEEDS 72"

14 GA. INSULATED COPPER TRACER WIRE

BELL-END SEGMENT OF 6" C-900 PVC INSTALLED BETWEEN VALVE & VALVE BOX

PRECAST CONCRETE BLOCK OR 90LB SACK OF PREMIX CONCRETE

54" COVER (MIN)



BUTTERFLY VALVE

STANDARD CONSTRUCTION DETAILS

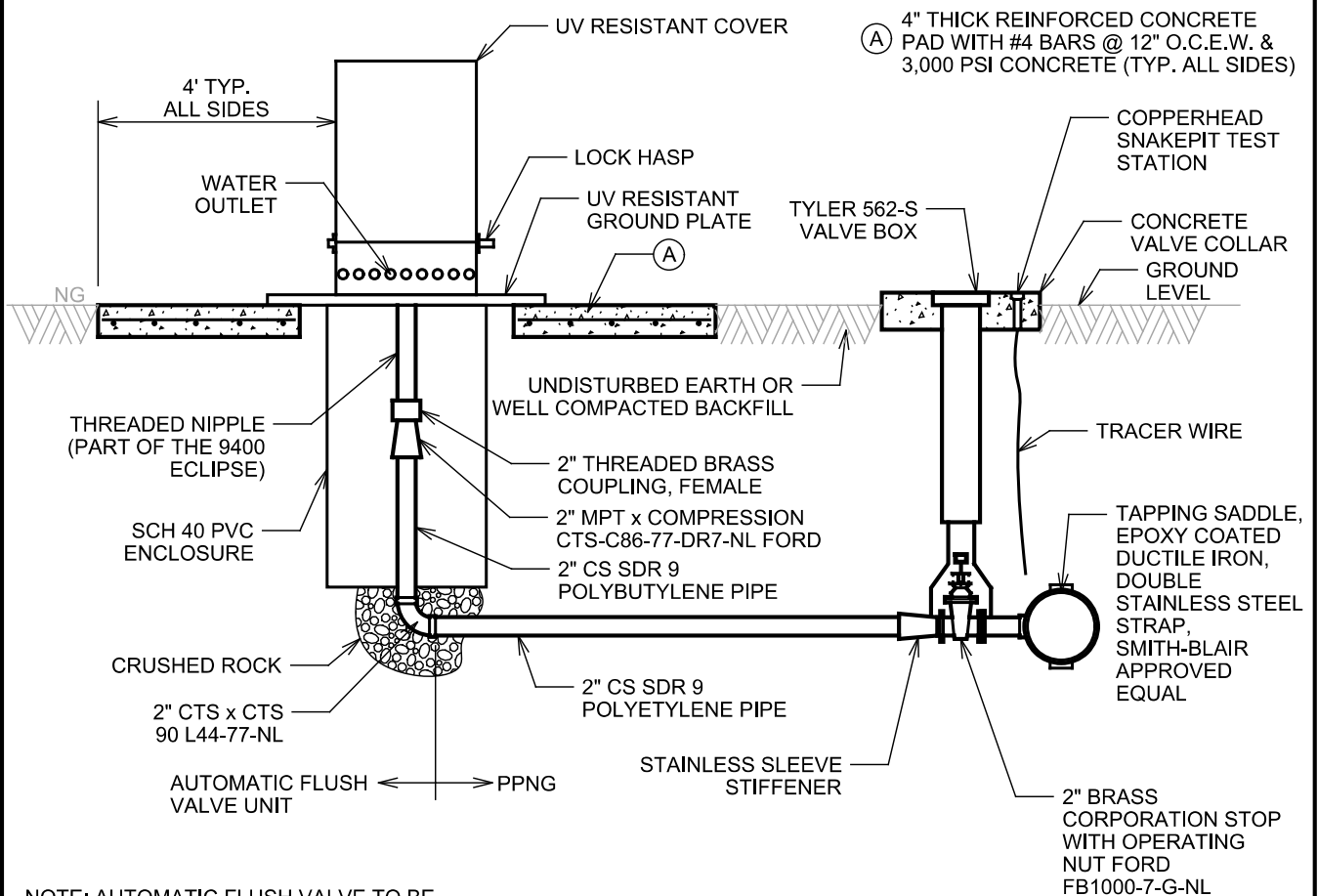
DATE: 07/12/21

REVISED
DATE: 07/12/21

WTR - 8

GENERAL NOTES

1. PERMANENT DEAD-END MAIN WILL NOT BE ALLOWED IF LOOPING ALTERNATIVES ARE AVAILABLE. THIS MAY REQUIRE EXTENDING THE WATER MAINS BEYOND THE LIMITS OF THE PROJECT.
2. IN UNAVOIDABLE PERMANENT DEAD-MAIN SITUATIONS, LINES SHALL BE 6" OR LARGER AND NOT EXCEED 600 FEET IN LENGTH AND SHALL BE EQUIPPED WITH A 2" AUTOMATIC FLUSHING DEVICE.
3. THE LENGTH OF A DEAD-MAIN WATER MAIN SHALL BE MEASURED FROM THE INTERSECTION WITH A MULTIPLE FEED (LOOPED) MAIN TO THE END OF THE MAIN.
4. WHERE A WATER MAIN IS STUBBED OUT FOR FUTURE EXTENSION, PLACE A VALVE TO ISOLATE THE DEAD-MAIN AND EXTEND A 20' SECTION OF PIPE WITH A CAP ON THE END ON THE DOWNSTREAM SIDE OF THE ISOLATION VALVE. RESTRAIN THE WATER MAIN TO PREVENT LINE SEPARATION. THRUST BLOCKING WILL NO BE ALLOWED. NO CUSTOMER SERVICES SHALL BE LOCATED ON THE DEAD-END UNTIL IT IS EXTENDED. PROVIDE A 2" AUTOMATIC FLUSHING DEVICE AT THE END OF THE DEAD-END LINE IN ADVANCE OF THE ISOLATED VALVE.



NOTE: AUTOMATIC FLUSH VALVE TO BE MODEL #9400 ECLIPSE AS MANUFACTURED BY THE KUPFERLE FOUNDRY COMPANY OR MODEL #HG-1-BASIC-S-8021-2 AS MANUFACTURED BY HYDRO-GUARD.

NOTE: VALVE PRICE INCLUDES VALVE, VALVE BOX, CONCRETE COLLAR.



DEAD-END MAIN WITH AUTOMATIC FLUSHING DEVICE

STANDARD CONSTRUCTION DETAILS

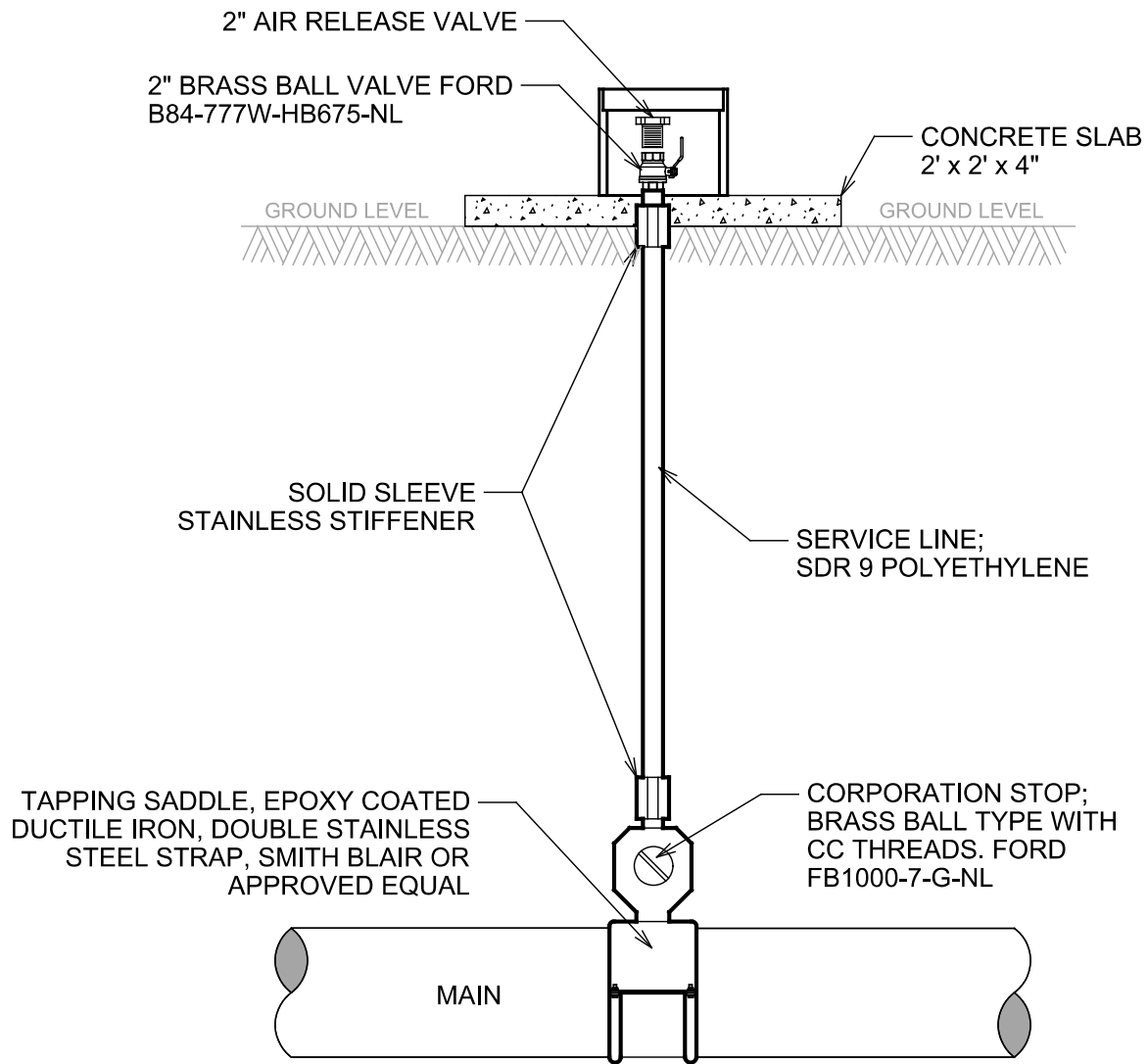
DATE: 07/20/21

REVISED
DATE: 07/20/21

WTR - 9

GENERAL NOTES

1. A.R.I D040 AIR RELEASE WITH AN ENCLOSURE MADE BY PIPELINE PRODUCTS VCAS-1424-14"x24" POLYETHYLENE ENCLOSURE.
2. TAP TO COME OFF OF TOP OF MAIN TO ALLOW AIR TO ESCAPE.



2" AIR RELEASE VALVE DETAIL

STANDARD CONSTRUCTION DETAILS

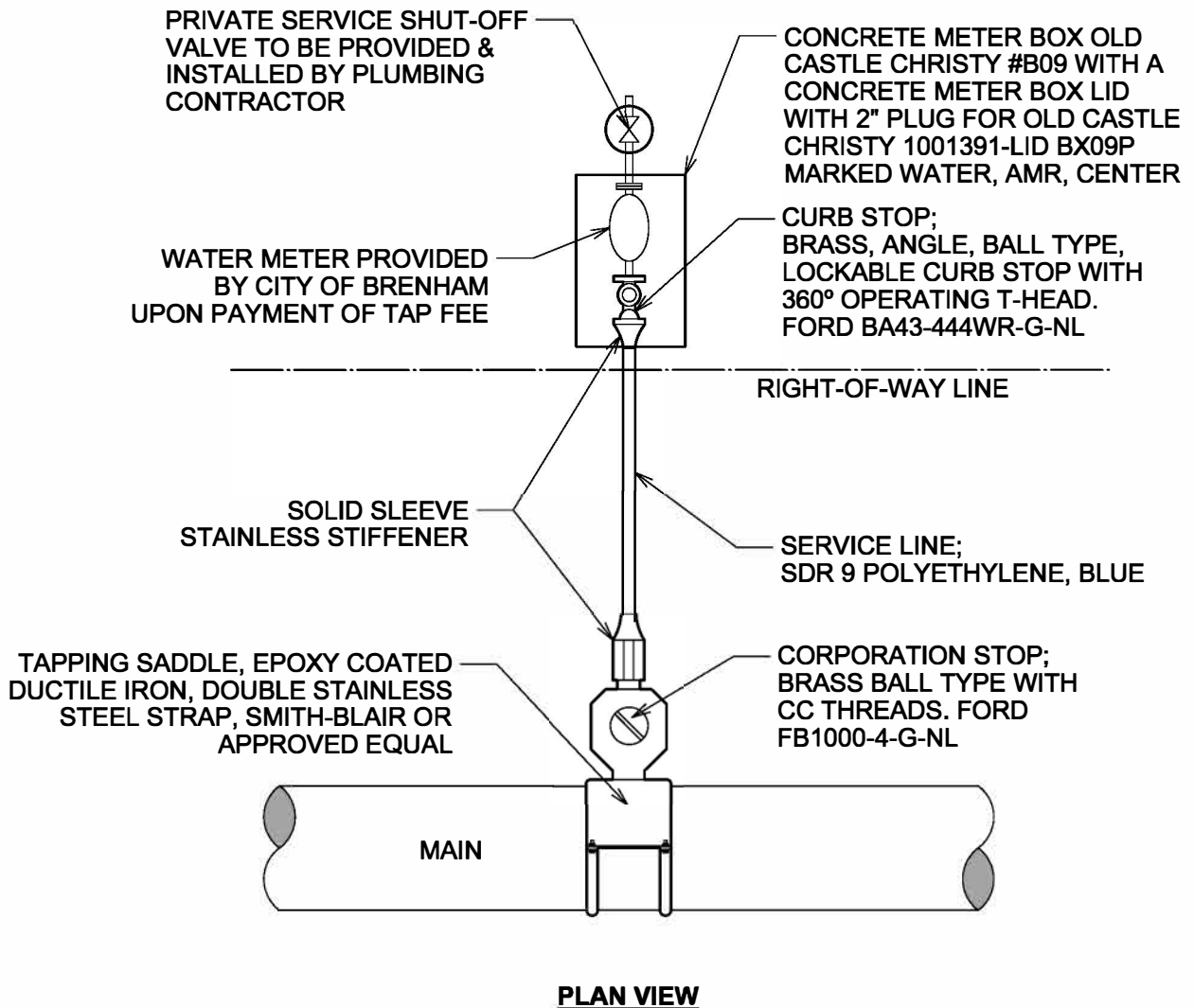
DATE: 07/20/21

REVISED
DATE: 07/20/21

WTR - 10

GENERAL NOTES

1. WATER SERVICES 2" AND SMALLER MUST BE SINGLE LOT CONNECTIONS.
2. MINIMUM SIZE SERVICE FOR SINGLE LOT CONNECTION SHALL BE 1".
3. WATER SERVICE SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AS CLOSE TO THE LOT LINE AS POSSIBLE.
4. CITY OF BRENHAM TO SUPPLY WATER METER UPON PAYMENT OF TAP FEE BY DEVELOPER OR DEVELOPER'S CONTRACTOR.
5. INSTALL TRACER WIRE ALONG SERVICE LINE. CONNECT WITH WATER TIGHT UNDERGROUND CONNECTORS TO THE TRACER WIRE THAT RUNS ALONG THE MAIN WATER LINE. TERMINATE BY LEAVING A 3' SPOOL OF TRACER WIRE INSIDE OF METER BOX.



1" WATER SERVICE DETAIL (SINGLE SERVICE)

STANDARD CONSTRUCTION DETAILS

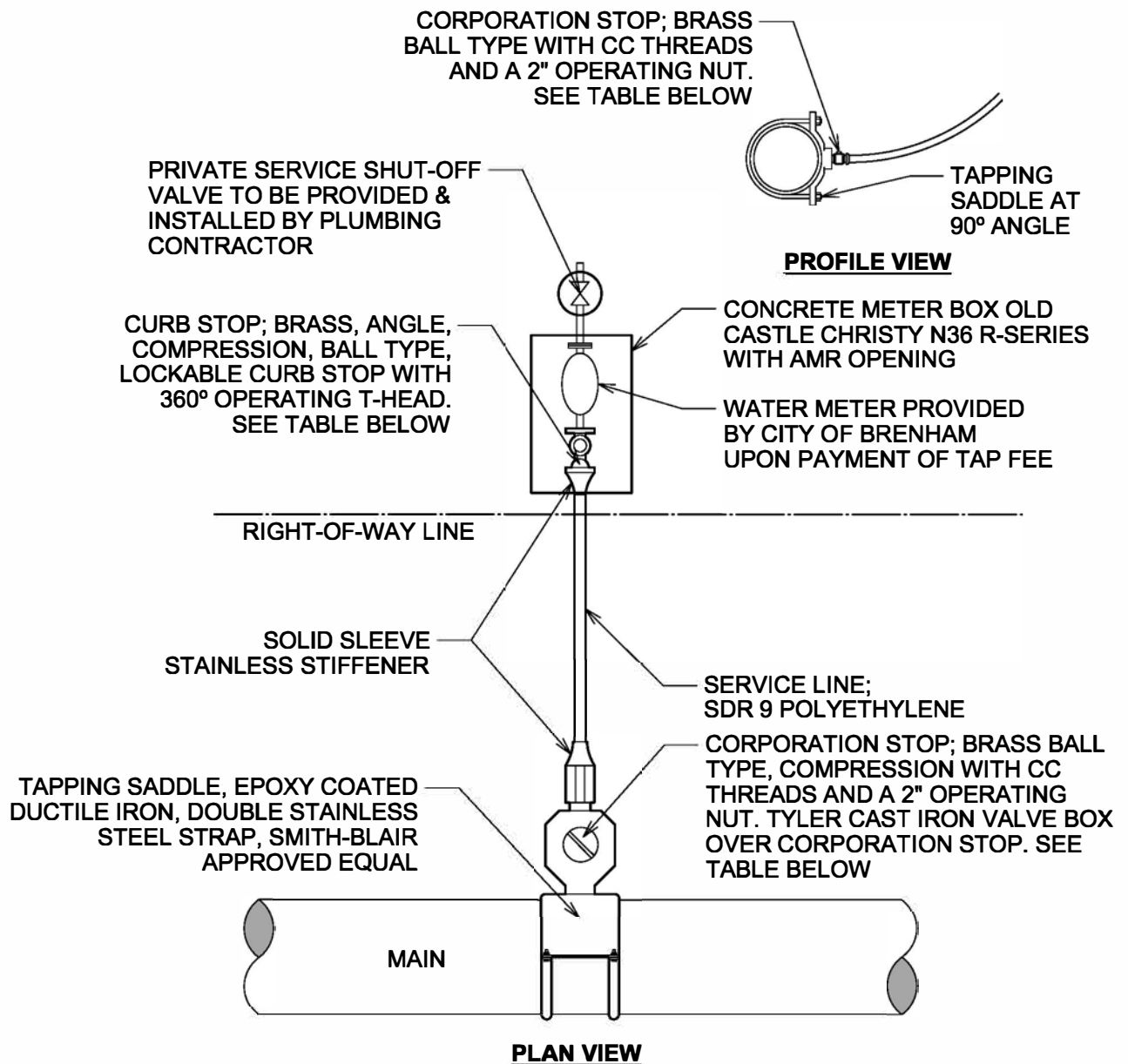
DATE: 07/20/21

REVISED
DATE: 07/20/21

WTR - 11

GENERAL NOTES

1. WATER SERVICES 2" AND SMALLER MUST BE SINGLE LOT CONNECTIONS.
2. WATER SERVICE SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AS CLOSE TO THE LOT LINE AS POSSIBLE.
3. CITY OF BRENHAM TO SUPPLY WATER METER UPON PAYMENT OF TAP FEE BY DEVELOPER OR DEVELOPER'S CONTRACTOR.



METER SIZE	CORPORATION STOP	CURB STOP
1-1/2"	FORD FB1000-6-TA-QT67-NL	FORD BFA43-666-WR-G-NL
2"	FORD FB1000-7-TA-QT67-NL	FORD BFA43-777-WR-G-NL



1 1/2" AND 2" WATER SERVICE DETAIL (SINGLE SERVICE)

STANDARD CONSTRUCTION DETAILS

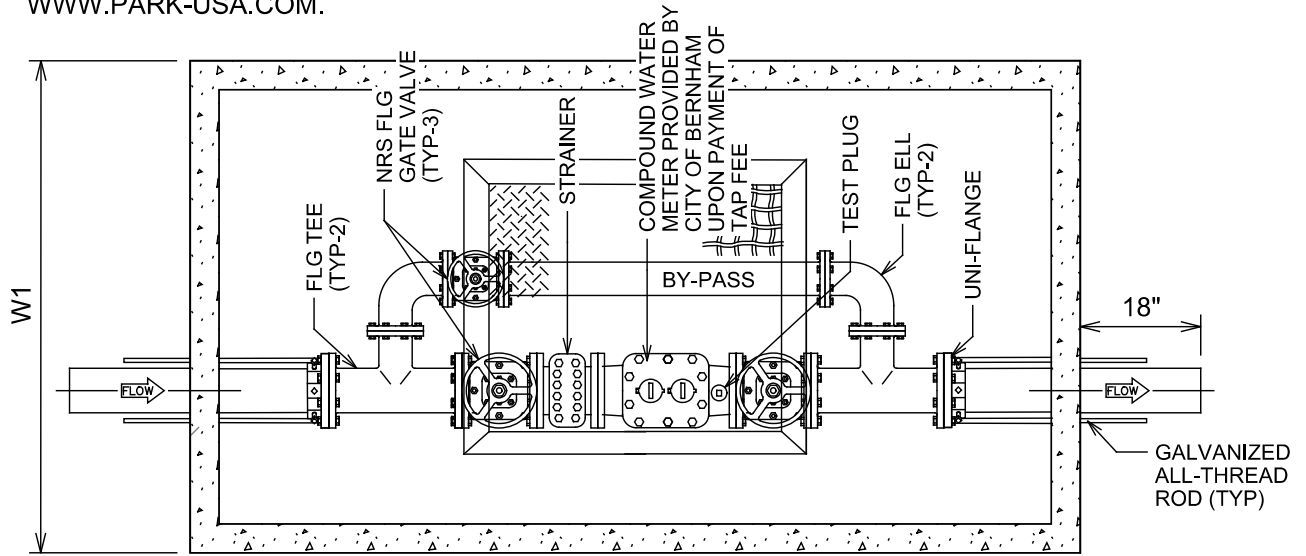
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REVISED
DATE: 07/20/21

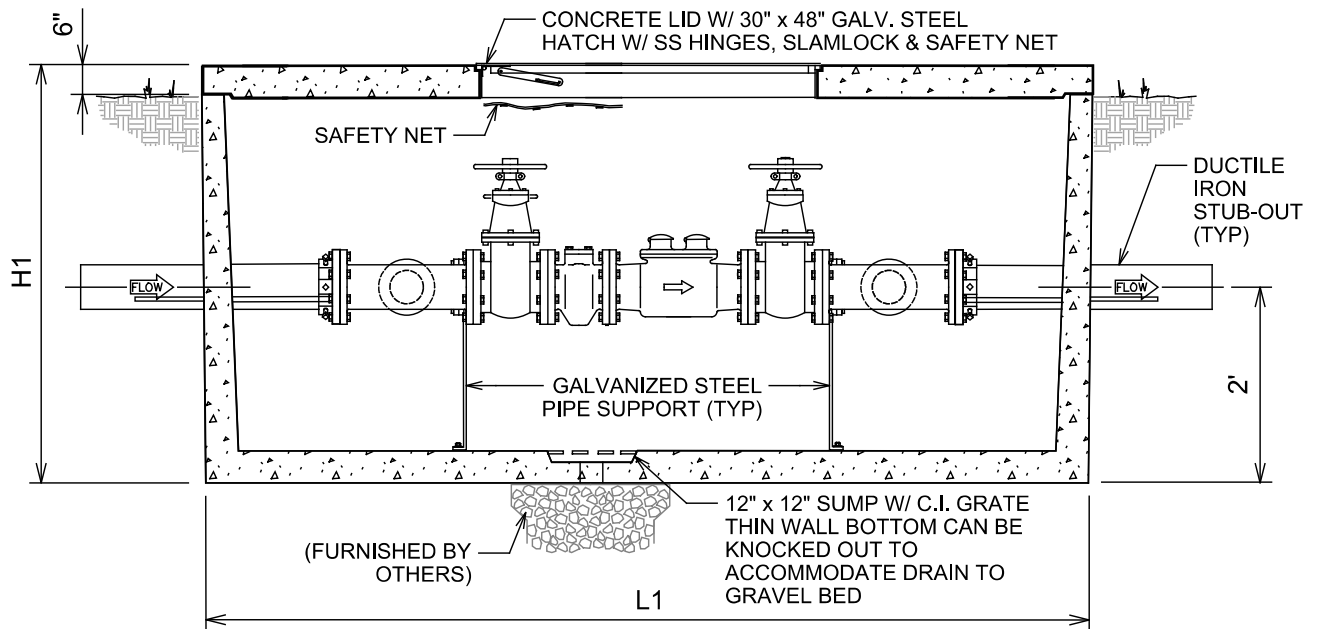
WTR - 12

GENERAL NOTES

- DOMESTIC COMPOUND WATER METER ASSEMBLY SHALL BE PARK USA MODEL DMC-BYPASS OR APPROVED EQUAL. MANUFACTURER CONTACT INFORMATION: ParkUSA, 888-611-7275, WWW.PARK-USA.COM.



PLAN VIEW



ELEVATION VIEW

MODEL No.	METER SIZE	BY-PASS	L1	W1	H1
DMC-04	4"	2"	8' - 8"	5' - 0"	4' - 6"
DMC-06	6"	4"	8' - 8"	5' - 0"	4' - 6"

CITY OF BRENHAM USES C-2 SENSUS WATER METERS



4" AND LARGER METER
SERVICE DETAIL

STANDARD CONSTRUCTION DETAILS

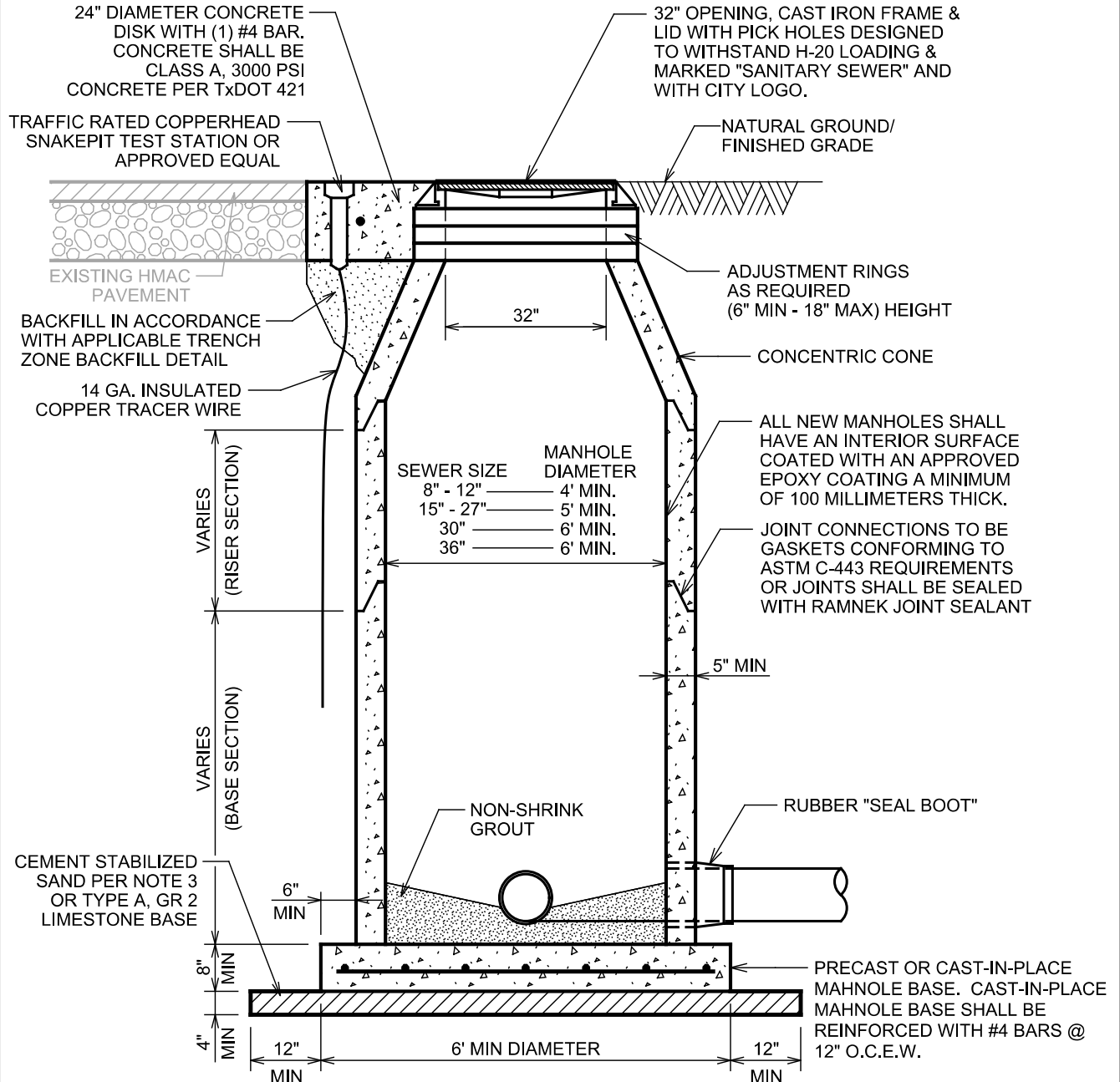
DATE: 07/20/21

REVISED
DATE: 07/20/21

WTR - 13

GENERAL NOTES

1. INSTALLATION OF PRECAST STRUCTURES SHALL BE PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRE-CAST STRUCTURES TO ENGINEER PRIOR TO ORDERING MATERIALS.
2. PRECAST STRUCTURE, RING, AND COVER SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
3. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PI <7; LL <25.
4. TRACER STATION TO BE INCLUDED AT ALL MANHOLES AT THE INTERSECTIONS AND AT 500' MAXIMUM SPACING.



SANITARY SEWER MANHOLE (PRE-CAST CONCRETE MANHOLE)

STANDARD CONSTRUCTION DETAILS

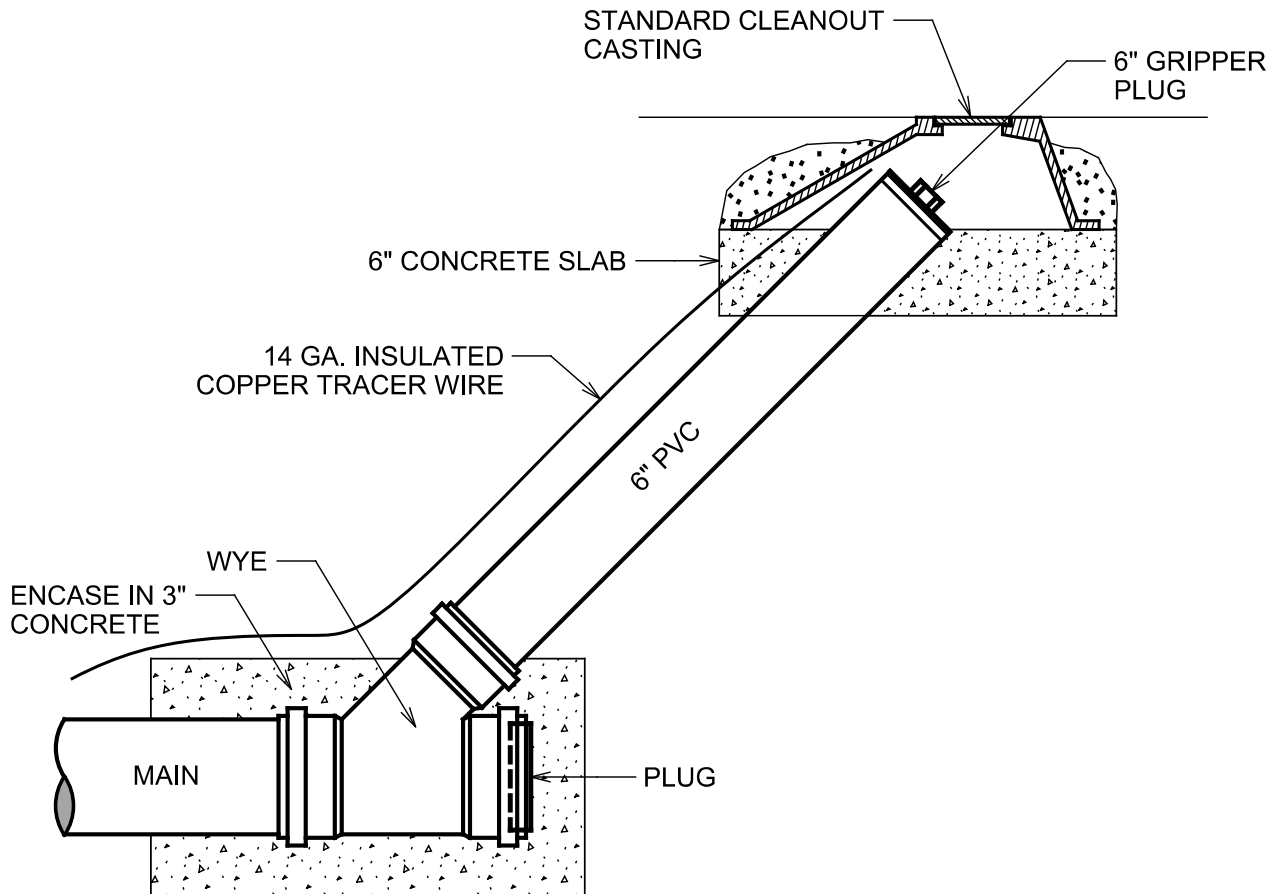
DATE: 07/16/21

REVISED
DATE: 07/16/21

SAN - 1

GENERAL NOTES

1. CLEANOUT BOOTS WILL ONLY BE ALLOWED ON A DEAD END OF A SANITARY SEWER LINE THAT IS LESS THAN 150 FEET LONG WITH SPECIFIC APPROVAL FROM THE CITY.



SANITARY SEWER CLEANOUT

STANDARD CONSTRUCTION DETAILS

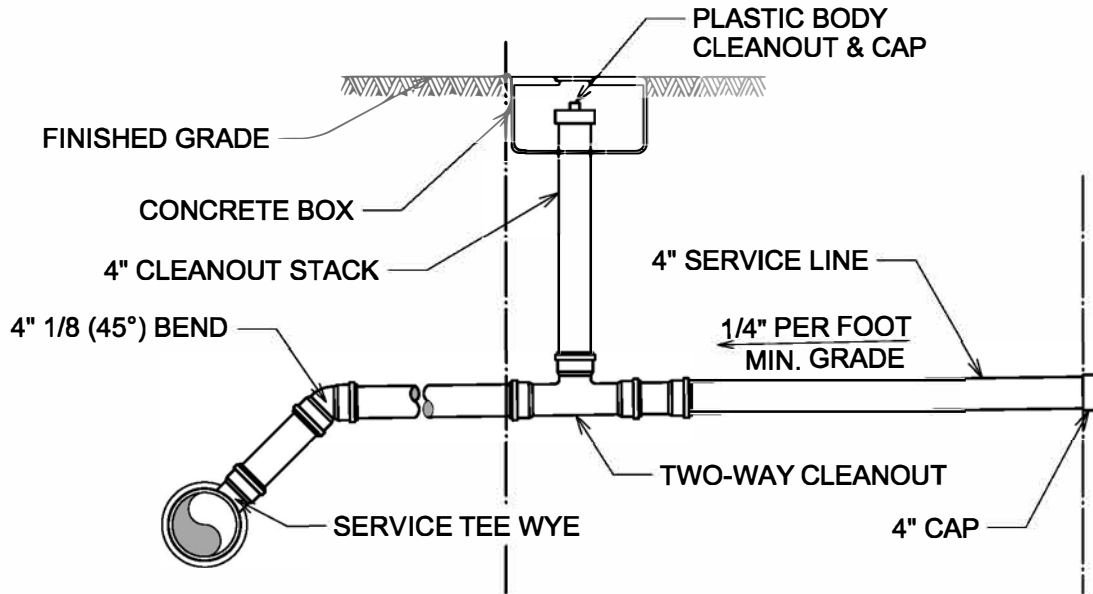
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DATE: 07/16/21

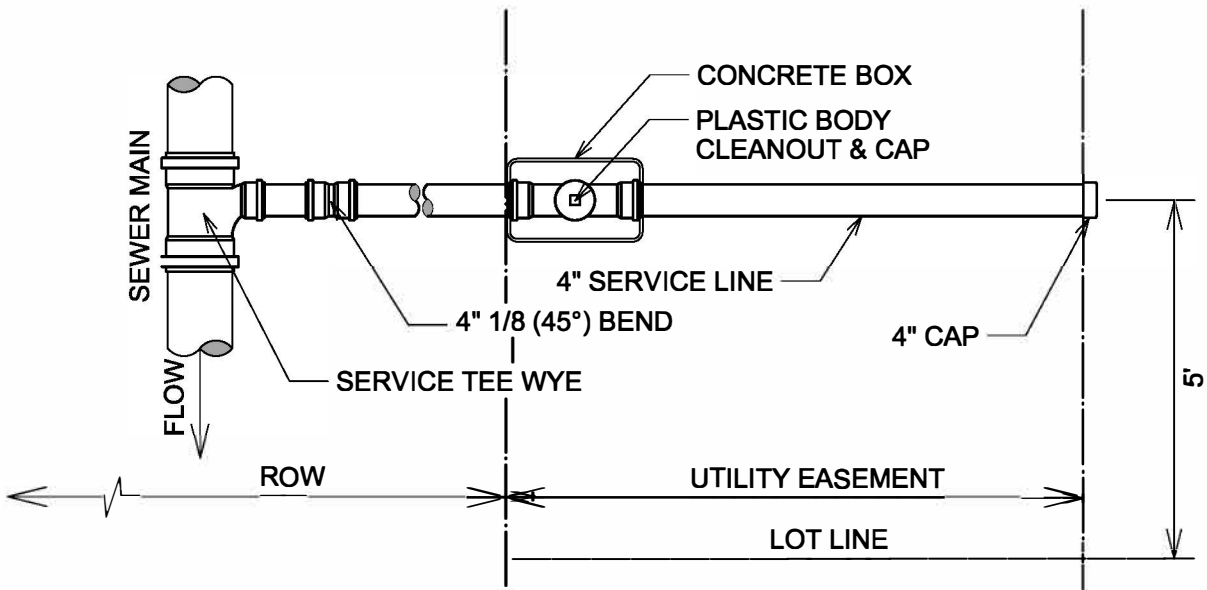
SAN - 2

GENERAL NOTES

1. SANITARY SEWER SERVICE LATERAL AND FITTINGS SHALL BE PVC - SDR 35.
2. SEWER SERVICE LEADS SHALL NOT EXCEED 125' IN LENGTH.
3. SINGLE-FAMILY RESIDENTIAL SERVICES SHOULD BE INSTALLED AT A MANHOLE WHEN POSSIBLE
4. MULTI-FAMILY RESIDENTIAL, COMMERCIAL AND OFFICE DEVELOPMENT SERVICES SHALL BE MADE AT A MANHOLE.
5. "Y" ETCHED MARK ON CURB AT SERVICE LOCATION.



ELEVATION VIEW



PLAN VIEW



SANITARY SEWER SERVICE DETAIL (SINGLE)

STANDARD CONSTRUCTION DETAILS

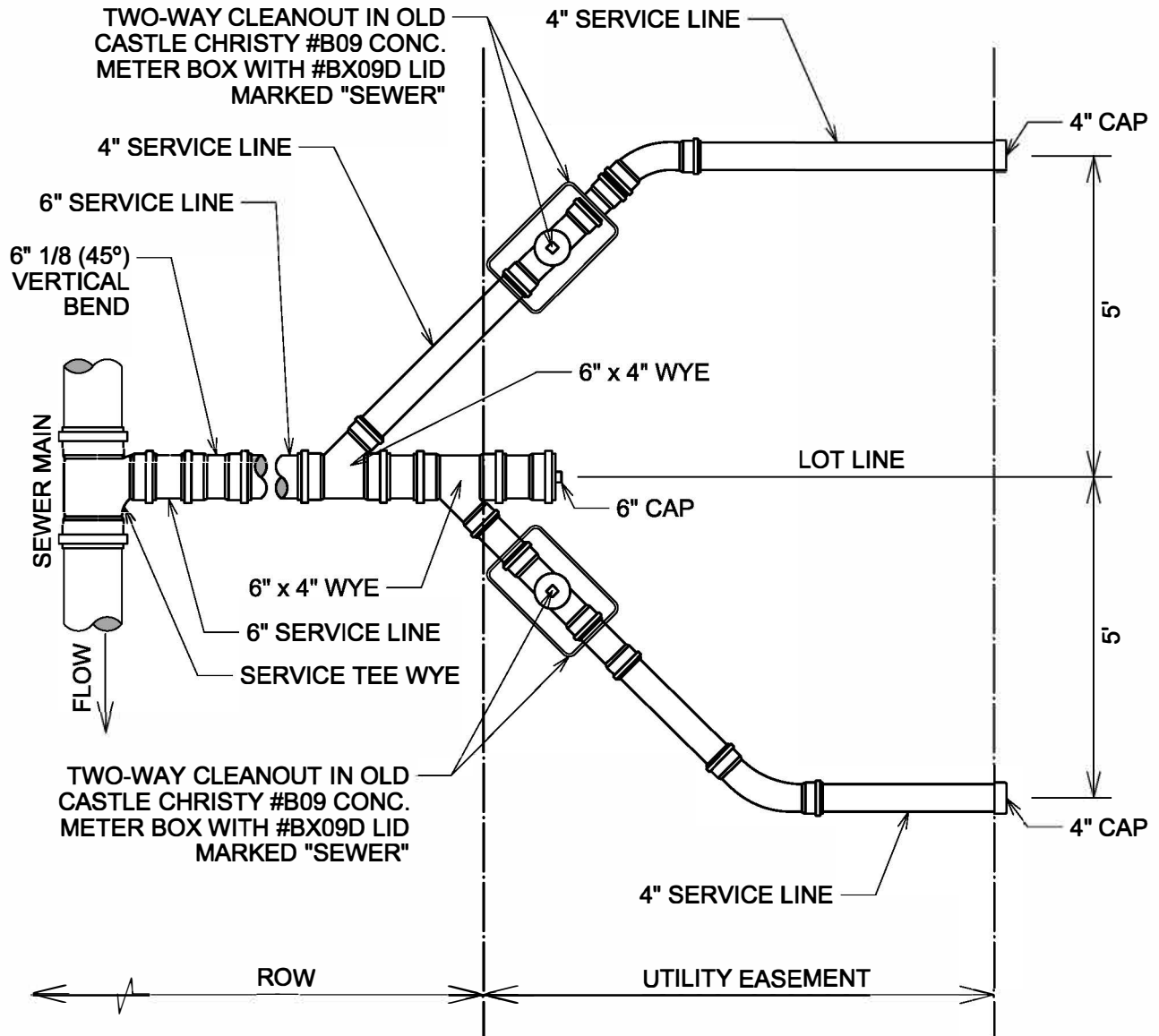
DATE: 07/20/21

REVISED
DATE: 10/05/21

SAN - 3

GENERAL NOTES

1. SANITARY SEWER SERVICE LATERAL AND FITTINGS SHALL BE PVC - SDR 35.
2. SEWER SERVICE LEADS SHALL NOT EXCEED 125' IN LENGTH.
3. SINGLE-FAMILY RESIDENTIAL SERVICES SHOULD BE INSTALLED AT A MANHOLE WHEN POSSIBLE.
4. MULTI-FAMILY RESIDENTIAL, COMMERCIAL AND OFFICE DEVELOPMENT SERVICES SHALL BE MADE AT A MANHOLE.
5. "Y" ETCHED MARK ON CURB AT SERVICE LOCATION.



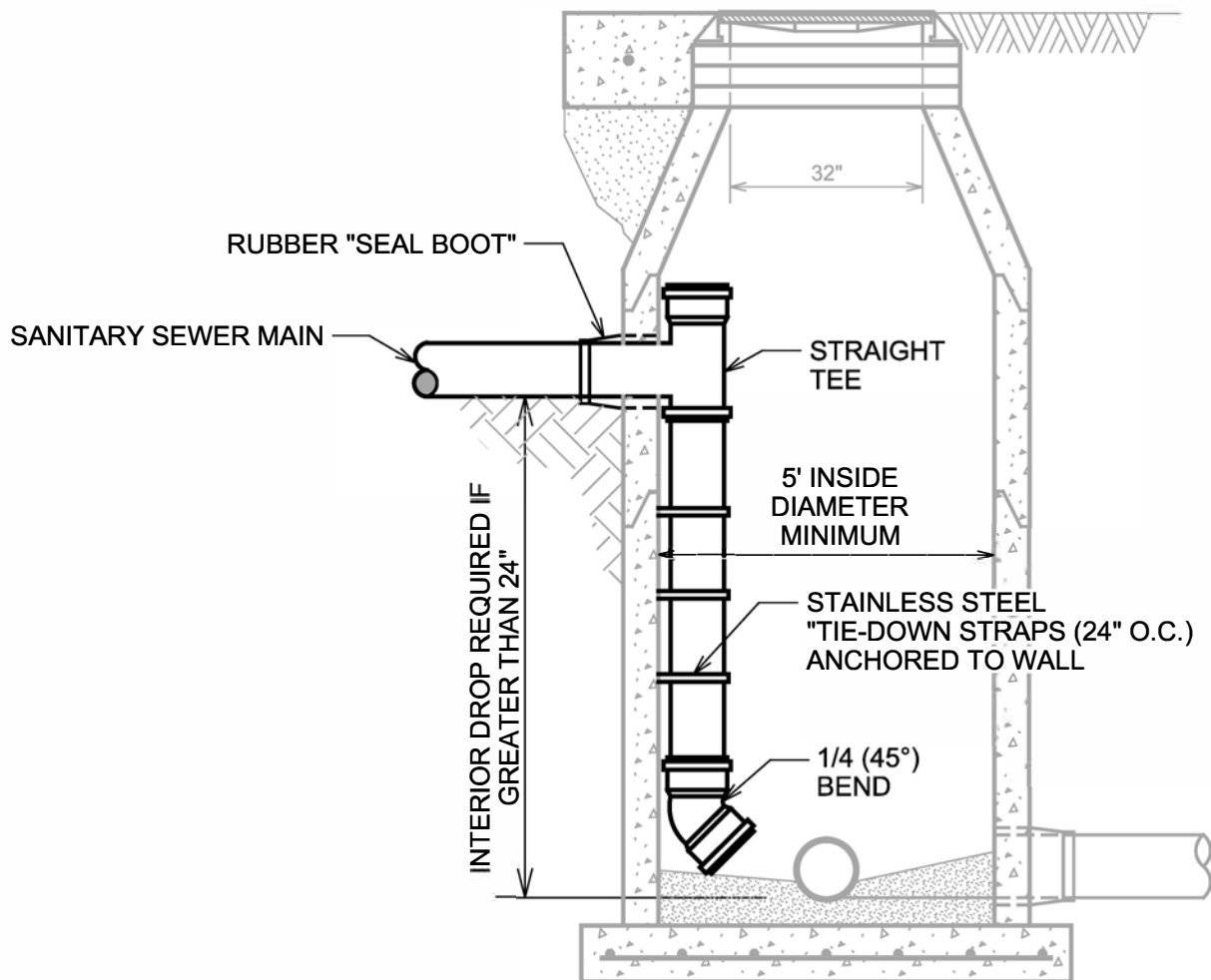
SANITARY SEWER SERVICE DETAIL (DOUBLE)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 10/05/21

SAN - 4



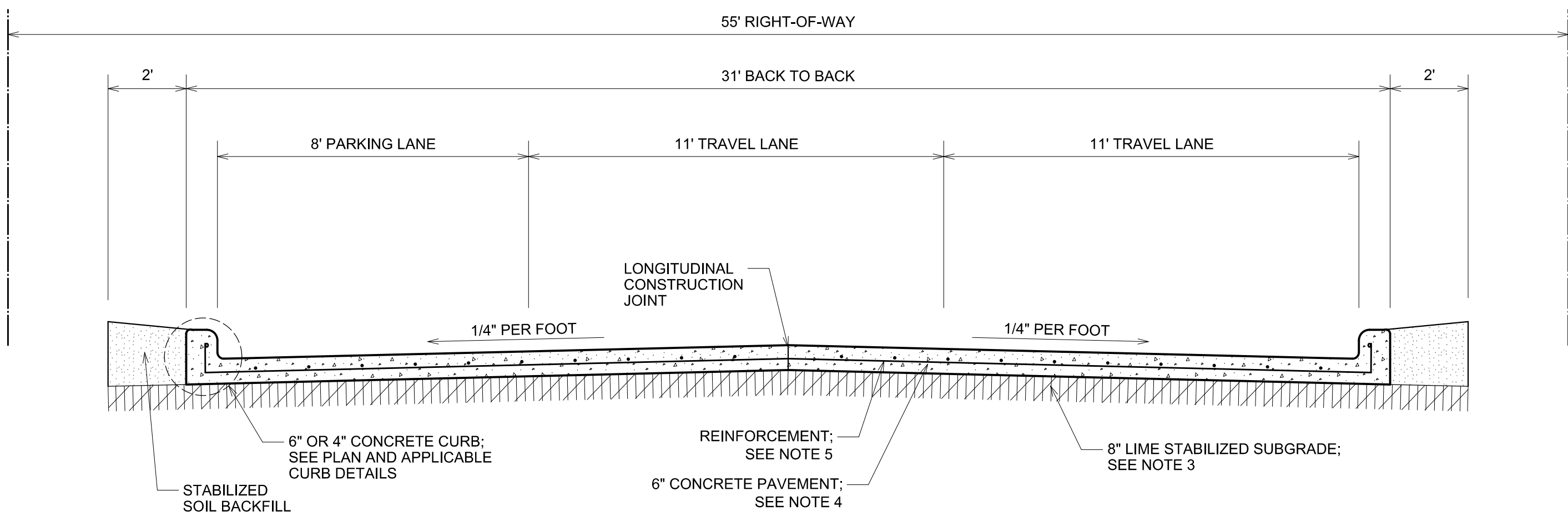
GENERAL NOTES

1. STRIP AND REMOVE ALL VEGETATION, LOOSE TOPSOIL, TREES AND ROOTS WITHIN THE CONSTRUCTION AREA.

2. SUBGRADE FILL: IMPORTED FILL MATERIALS, WHEN REQUIRED TO ACHIEVE FINAL SUBGRADE ELEVATION, SHALL BE CHOSEN THAT EXHIBIT SIMILAR CLASSIFICATION AND PHYSICAL PROPERTIES AS THE ON SITE SOILS. SAMPLES OF THE FILL MATERIAL SHALL BE MADE AVAILABLE TO THE OWNER'S TESTING LABORATORY 7 DAYS PRIOR TO PLACEMENT. SUBGRADE FILL, WHETHER IMPORTED OR EXCAVATED ON-SITE, SHALL BE PLACED IN 6" LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR (ASTM D698) AT A MOISTURE CONTENT WITHIN BETWEEN -1% DRY & +3% WET OF OPTIMUM.

3. STABILIZED SUBGRADE: SUBGRADE STABILIZATION SHALL CONSIST OF A MINIMUM OF 8" LIME TREATED SUBGRADE. THE DEVELOPER IS REQUIRED TO HIRE A TESTING LABORATORY TO ESTABLISH PROPER SUBGRADE STABILIZATION SPECIFICATIONS. SPECIFICATIONS SHALL BE SUBMITTED TO THE DIRECTOR OF PUBLIC WORKS FOR APPROVAL PRIOR TO COMPLETION OF PAVEMENT DESIGN. STABILIZED SUBGRADE SHALL EXTEND A MINIMUM OF 2' BEHIND THE CURB.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 421 - HYDRAULIC CEMENT CONCRETE, CLASS P PER TXDOT ITEM 421, TABLE 8. WITH THE FOLLOWING MODIFICATIONS: MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI; TXDOT ITEM 421, TABLE 9 REQUIRES FORMED CONCRETE PAVEMENT TO HAVE SLUMP FROM 4INCHES TO 5.5 INCHES AT THE POINT OF PLACEMENT.

5. REINFORCING STEEL SHALL BE #4 BARS @ 18" O.C. TRANSVERSE AND LONGITUDINALLY. GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.



TYPICAL CONCRETE PAVEMENT SECTION
(LOCAL STREET)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 1

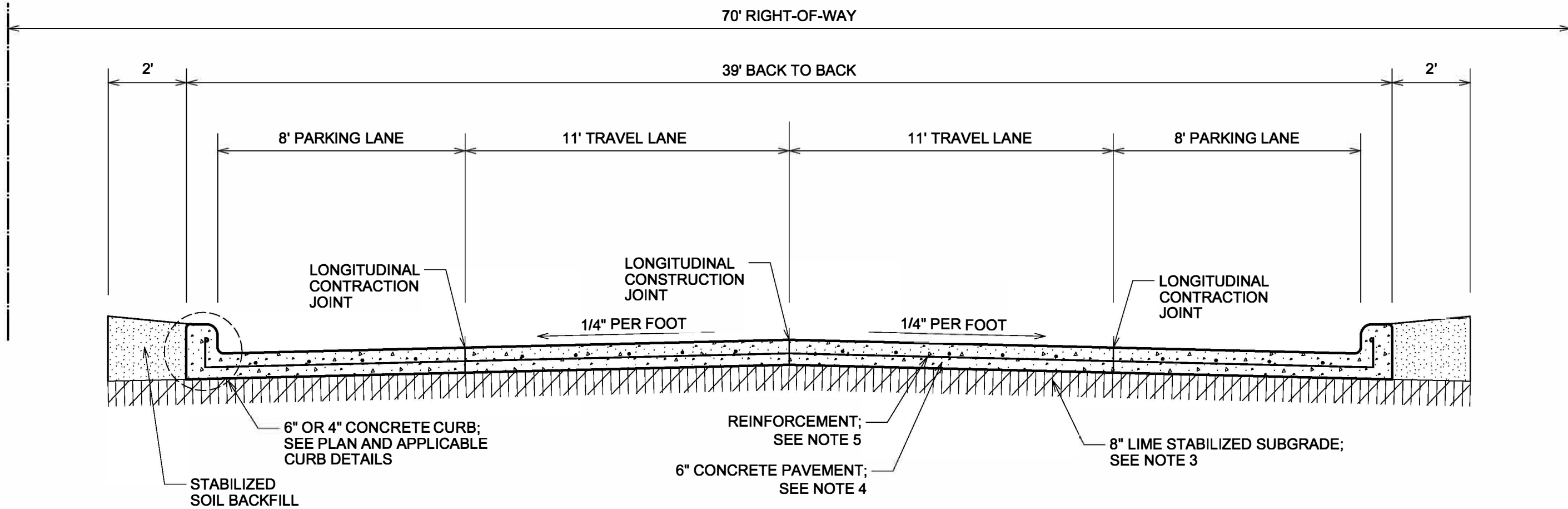
GENERAL NOTES

1. STRIP AND REMOVE ALL VEGETATION, LOOSE TOPSOIL, TREES AND ROOTS WITHIN THE CONSTRUCTION AREA.

2. SUBGRADE FILL: IMPORTED FILL MATERIALS, WHEN REQUIRED TO ACHIEVE FINAL SUBGRADE ELEVATION, SHALL BE CHOSEN THAT EXHIBIT SIMILAR CLASSIFICATION AND PHYSICAL PROPERTIES AS THE ON SITE SOILS. SAMPLES OF THE FILL MATERIAL SHALL BE MADE AVAILABLE TO THE OWNER'S TESTING LABORATORY 7 DAYS PRIOR TO PLACEMENT. SUBGRADE FILL, WHETHER IMPORTED OR EXCAVATED ON-SITE, SHALL BE PLACED IN 6" LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR (ASTM D698) AT A MOISTURE CONTENT WITHIN BETWEEN -1% DRY & +3% WET OF OPTIMUM.

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TYPICAL CONCRETE PAVEMENT SECTION
(MINOR COLLECTOR)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 2

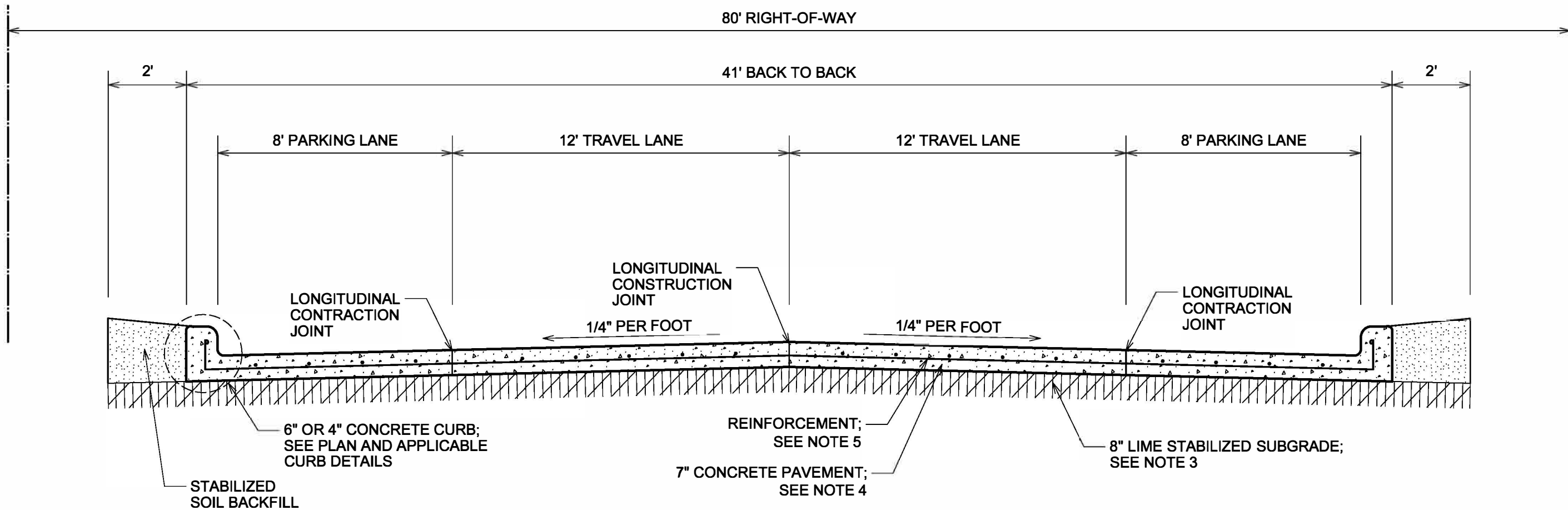
GENERAL NOTES

1. STRIP AND REMOVE ALL VEGETATION, LOOSE TOPSOIL, TREES AND ROOTS WITHIN THE CONSTRUCTION AREA.

2. SUBGRADE FILL: IMPORTED FILL MATERIALS, WHEN REQUIRED TO ACHIEVE FINAL SUBGRADE ELEVATION, SHALL BE CHOSEN THAT EXHIBIT SIMILAR CLASSIFICATION AND PHYSICAL PROPERTIES AS THE ON SITE SOILS. SAMPLES OF THE FILL MATERIAL SHALL BE MADE AVAILABLE TO THE OWNER'S TESTING LABORATORY 7 DAYS PRIOR TO PLACEMENT. SUBGRADE FILL, WHETHER IMPORTED OR EXCAVATED ON-SITE, SHALL BE PLACED IN 6" LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR (ASTM D698) AT A MOISTURE CONTENT WITHIN BETWEEN -1% DRY & +3% WET OF OPTIMUM.

3. STABILIZED SUBGRADE: SUBGRADE STABILIZATION SHALL CONSIST OF A MINIMUM OF 8" LIME TREATED SUBGRADE. THE DEVELOPER IS REQUIRED TO HIRE A TESTING LABORATORY TO ESTABLISH PROPER SUBGRADE STABILIZATION SPECIFICATIONS. SPECIFICATIONS SHALL BE SUBMITTED TO THE DIRECTOR OF PUBLIC WORKS FOR APPROVAL PRIOR TO COMPLETION OF PAVEMENT DESIGN. STABILIZED SUBGRADE SHALL EXTEND A MINIMUM OF 2' BEHIND THE CURB.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 421 - HYDRAULIC CEMENT CONCRETE, CLASS P PER TXDOT ITEM 421, TABLE 8. WITH THE FOLLOWING MODIFICATIONS: MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI; TXDOT ITEM 421, TABLE 9 REQUIRES FORMED CONCRETE PAVEMENT TO HAVE SLUMP FROM 4 INCHES TO 5.5 INCHES AT THE POINT OF PLACEMENT.

5. REINFORCING STEEL SHALL BE #4 BARS @ 18" O.C. TRANSVERSE AND LONGITUDINALLY. GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.



TYPICAL CONCRETE PAVEMENT SECTION
(MAJOR COLLECTOR)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 3

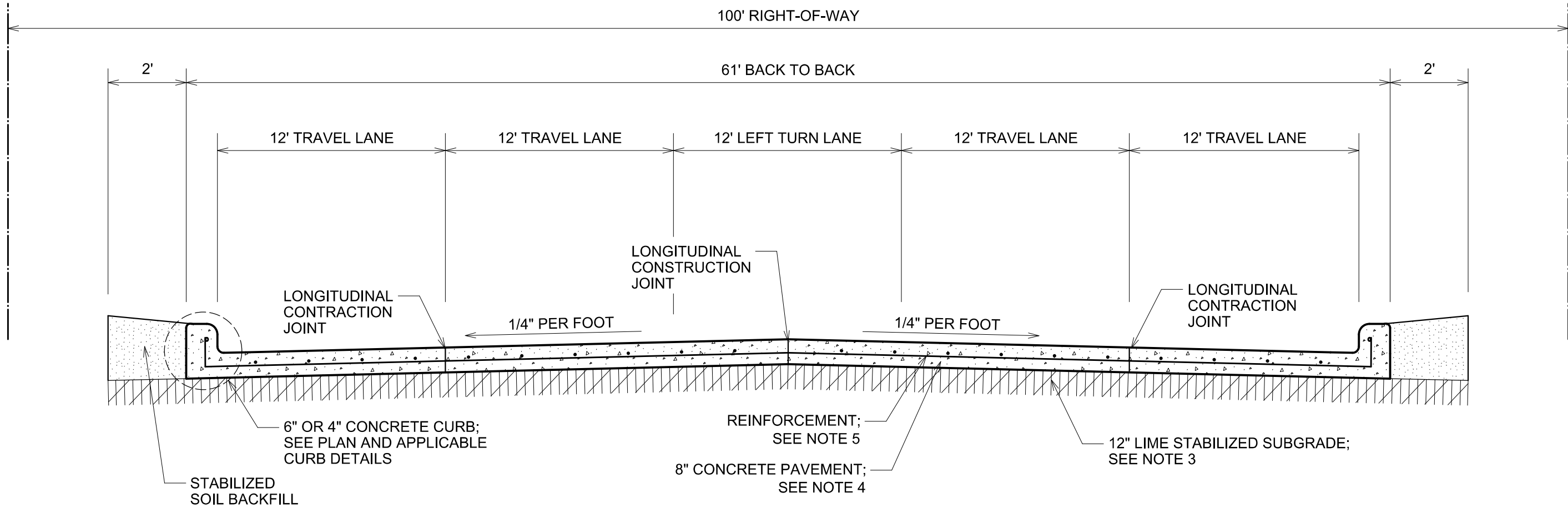
GENERAL NOTES

1. STRIP AND REMOVE ALL VEGETATION, LOOSE TOPSOIL, TREES AND ROOTS WITHIN THE CONSTRUCTION AREA.

2. SUBGRADE FILL: IMPORTED FILL MATERIALS, WHEN REQUIRED TO ACHIEVE FINAL SUBGRADE ELEVATION, SHALL BE CHOSEN THAT EXHIBIT SIMILAR CLASSIFICATION AND PHYSICAL PROPERTIES AS THE ON SITE SOILS. SAMPLES OF THE FILL MATERIAL SHALL BE MADE AVAILABLE TO THE OWNER'S TESTING LABORATORY 7 DAYS PRIOR TO PLACEMENT. SUBGRADE FILL, WHETHER IMPORTED OR EXCAVATED ON-SITE, SHALL BE PLACED IN 6" LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR (ASTM D698) AT A MOISTURE CONTENT WITHIN BETWEEN -1% DRY & +3% WET OF OPTIMUM.

3. STABILIZED SUBGRADE: SUBGRADE STABILIZATION SHALL CONSIST OF A MINIMUM OF 8" LIME TREATED SUBGRADE. THE DEVELOPER IS REQUIRED TO HIRE A TESTING LABORATORY TO ESTABLISH PROPER SUBGRADE STABILIZATION SPECIFICATIONS. SPECIFICATIONS SHALL BE SUBMITTED TO THE DIRECTOR OF PUBLIC WORKS FOR APPROVAL PRIOR TO COMPLETION OF PAVEMENT DESIGN. STABILIZED SUBGRADE SHALL EXTEND A MINIMUM OF 2' BEHIND THE CURB.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 421 - HYDRAULIC CEMENT CONCRETE, CLASS P PER TXDOT ITEM 421, TABLE 8. WITH THE FOLLOWING MODIFICATIONS: MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI; TXDOT ITEM 421, TABLE 9 REQUIRES FORMED CONCRETE PAVEMENT TO HAVE SLUMP FROM 4 TO 5-1/2 INCHES AT THE POINT OF PLACEMENT.

5. REINFORCING STEEL SHALL BE #5 BARS @ 24" O.C. TRANSVERSE AND #5 BARS @ 8" O.C. LONGITUDINAL. GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.



TYPICAL CONCRETE PAVEMENT SECTION
(ARTERIAL)

STANDARD CONSTRUCTION DETAILS

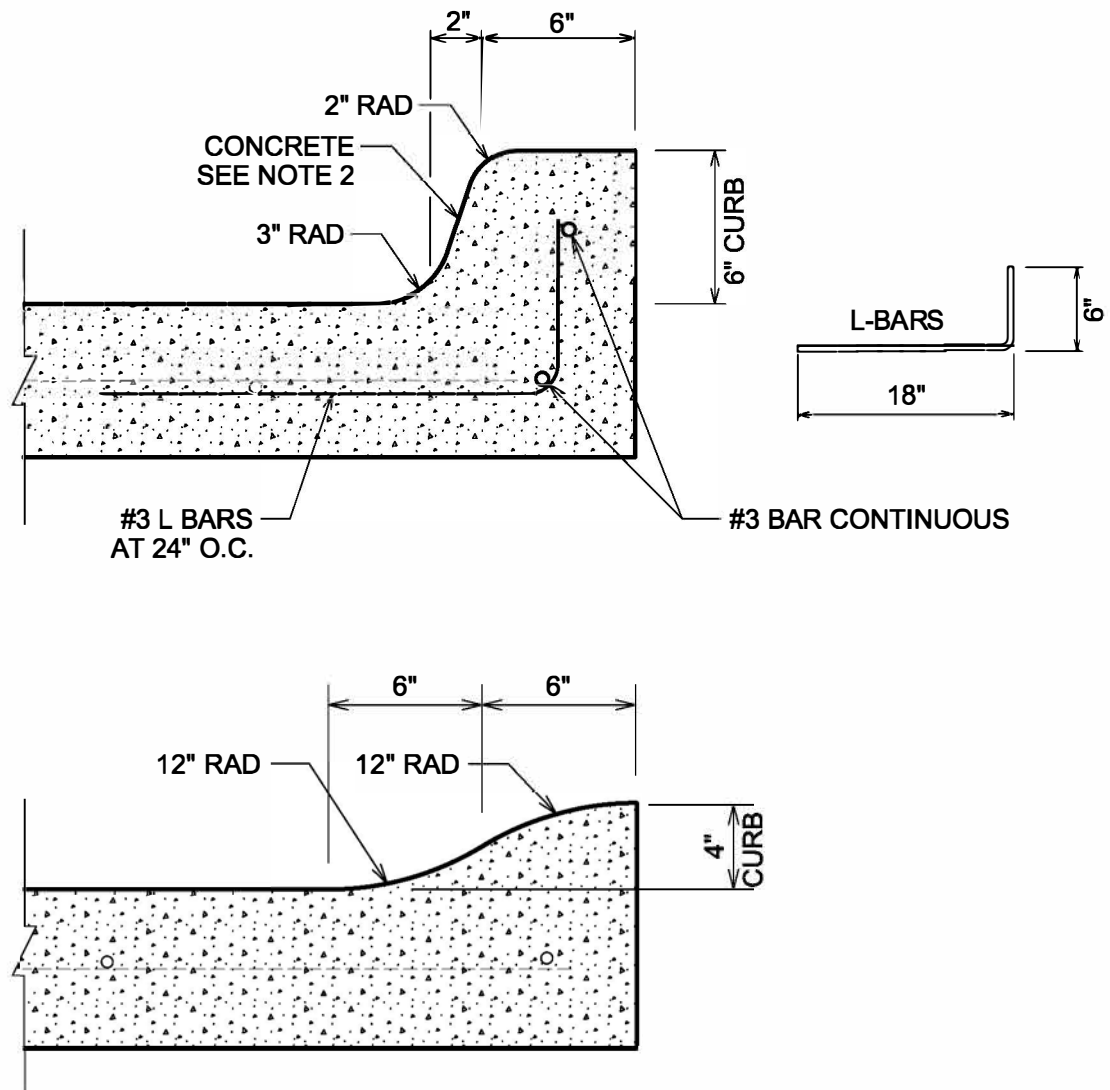
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 4

GENERAL NOTES

1. CURB SHALL BE PLACED MONOLITHICALLY WITH THE ADJACENT CONCRETE OR CONSTRUCTED AS CURB AND GUTTER.
2. CONCRETE SPECIFICATIONS SHALL BE THE SAME AS THOSE FOR THE PAVEMENT.
3. THE COMPLETED CONCRETE CURB SHALL NOT VARY FROM THE SHAPE, DIMENSION AND CONTOUR SHOWN ON THE DETAIL BY MORE THAN 1/2" AT ANY POINT ALONG THE CURB. NON-CONFORMING CURB SHALL BE REMOVED AND REPLACED BY A SAW CUTTING 6" IN FRONT OF THE DEFECTIVE CURB, THEN REMOVING AND REPLACING THE ENTIRE DEPTH OF CURB AND PAVEMENT IN THE DEFECTIVE AREA.
4. EXPANSION JOINTS IN THE PAVEMENT SHALL EXTEND THROUGH ADJACENT CURB WHEN PLACED MONOLITHICALLY WITH ADJACENT CONCRETE.



6" CONCRETE CURB
&
4" CONCRETE CURB

STANDARD CONSTRUCTION DETAILS

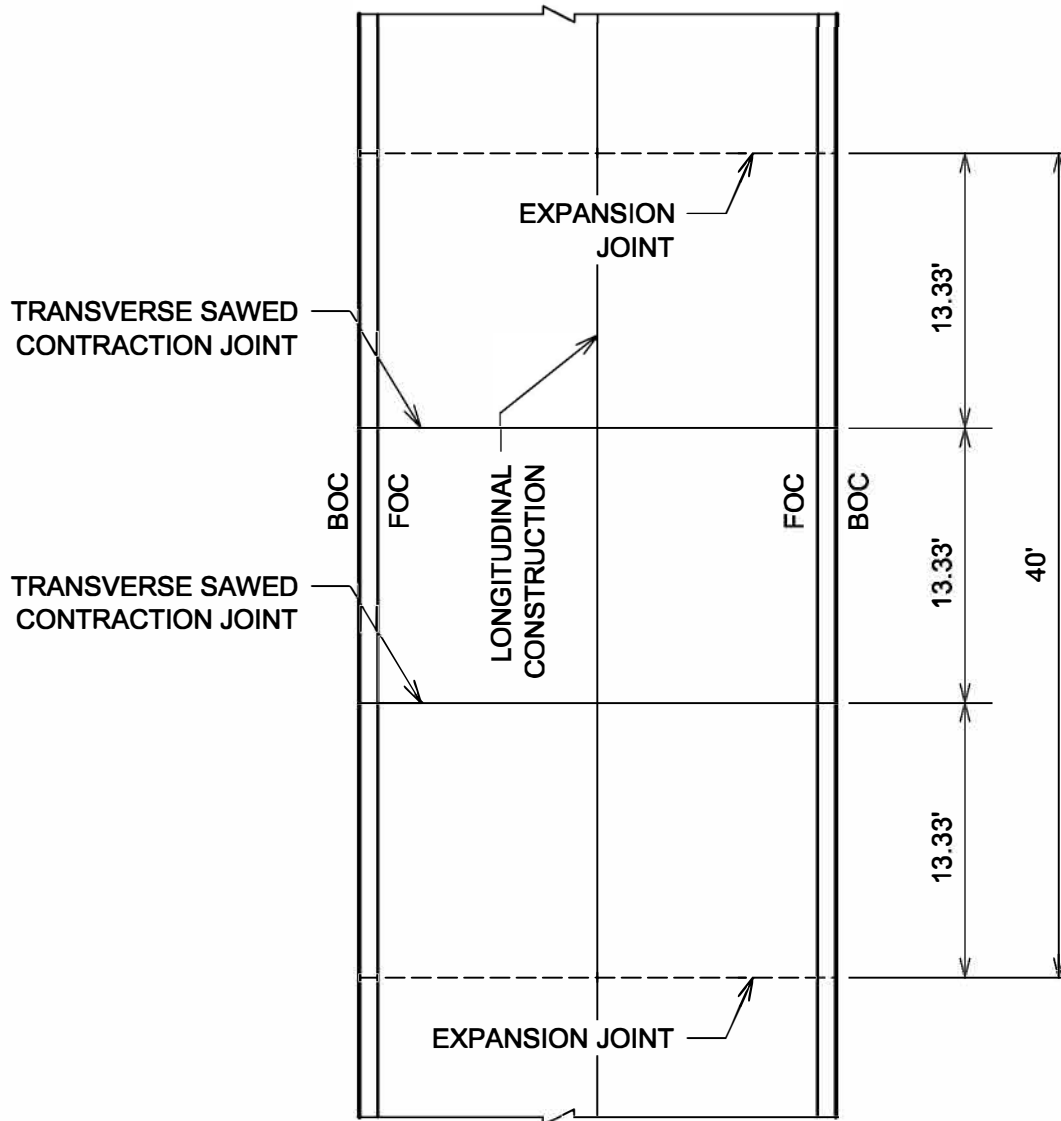
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 5

GENERAL NOTES

1. REINFORCING STEEL SHALL BE #4 BARS @ 18" O.C. TRANSVERSE AND LONGITUDINALLY.
GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.



ABBREVIATIONS:
FOC - FACE OF CURB
BOC - BACK OF CURB



CONCRETE JOINT
LAYOUT
(LOCAL STREET)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

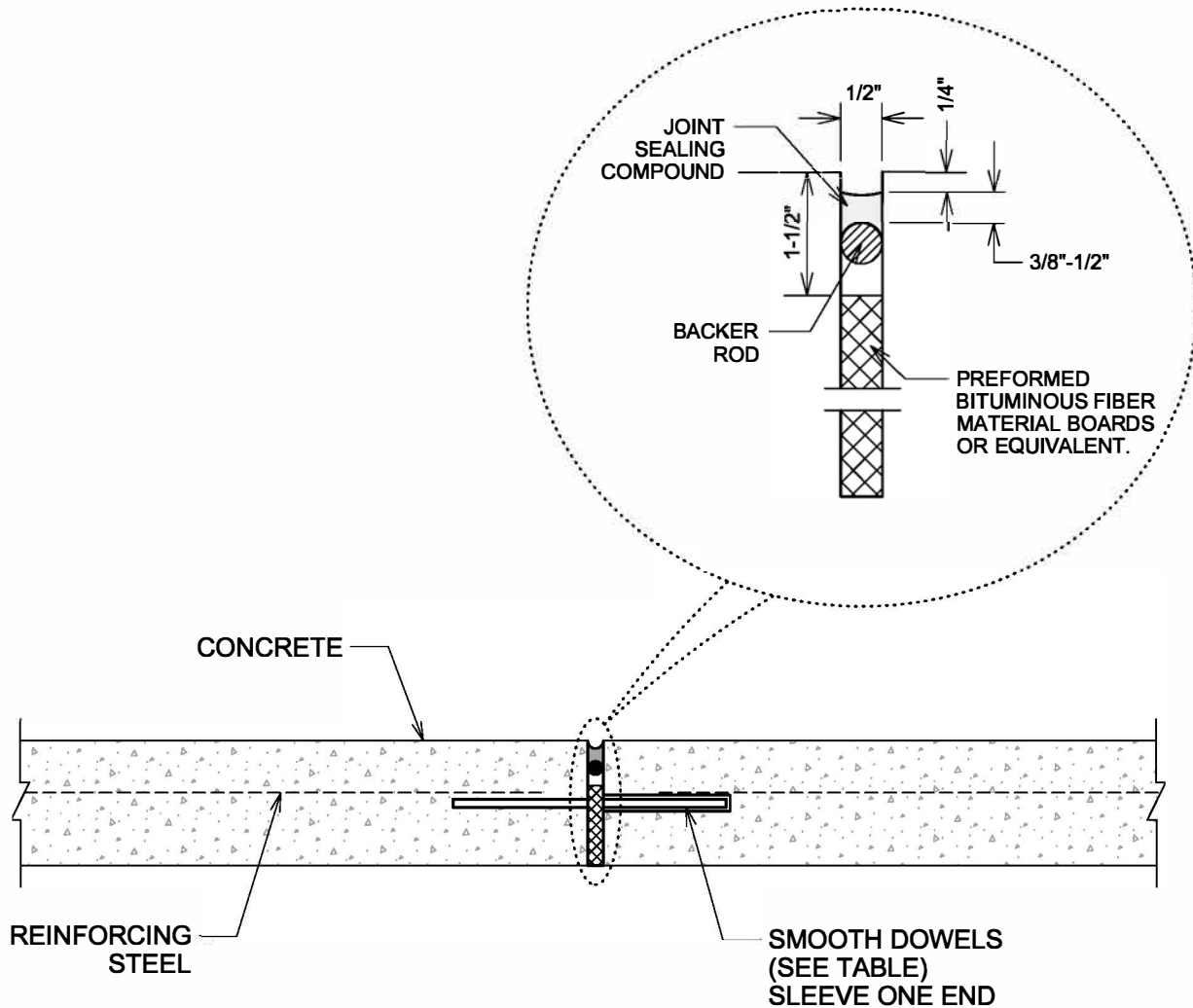
PAV - 6

GENERAL NOTES

1. PAVEMENT JOINTS SHALL BE CLEANED AND SEALED IN ACCORDANCE WITH TXDOT ITEM 438, CLEANING AND SEALING JOINTS.
2. JOINT SEALANT SHALL BE CLASS 8, SILICONE OR POLYURETHANE (ASTM D5893 TYPE SL)

DOWEL BAR TABLE

CONCRETE THICKNESS	DOWEL DIAMETER	DOWEL LENGTH	DOWEL SPACING
6"	3/4"	24"	12"
7"	7/8"	24"	12"
8"	1"	24"	12"



EXPANSION JOINT

STANDARD CONSTRUCTION DETAILS

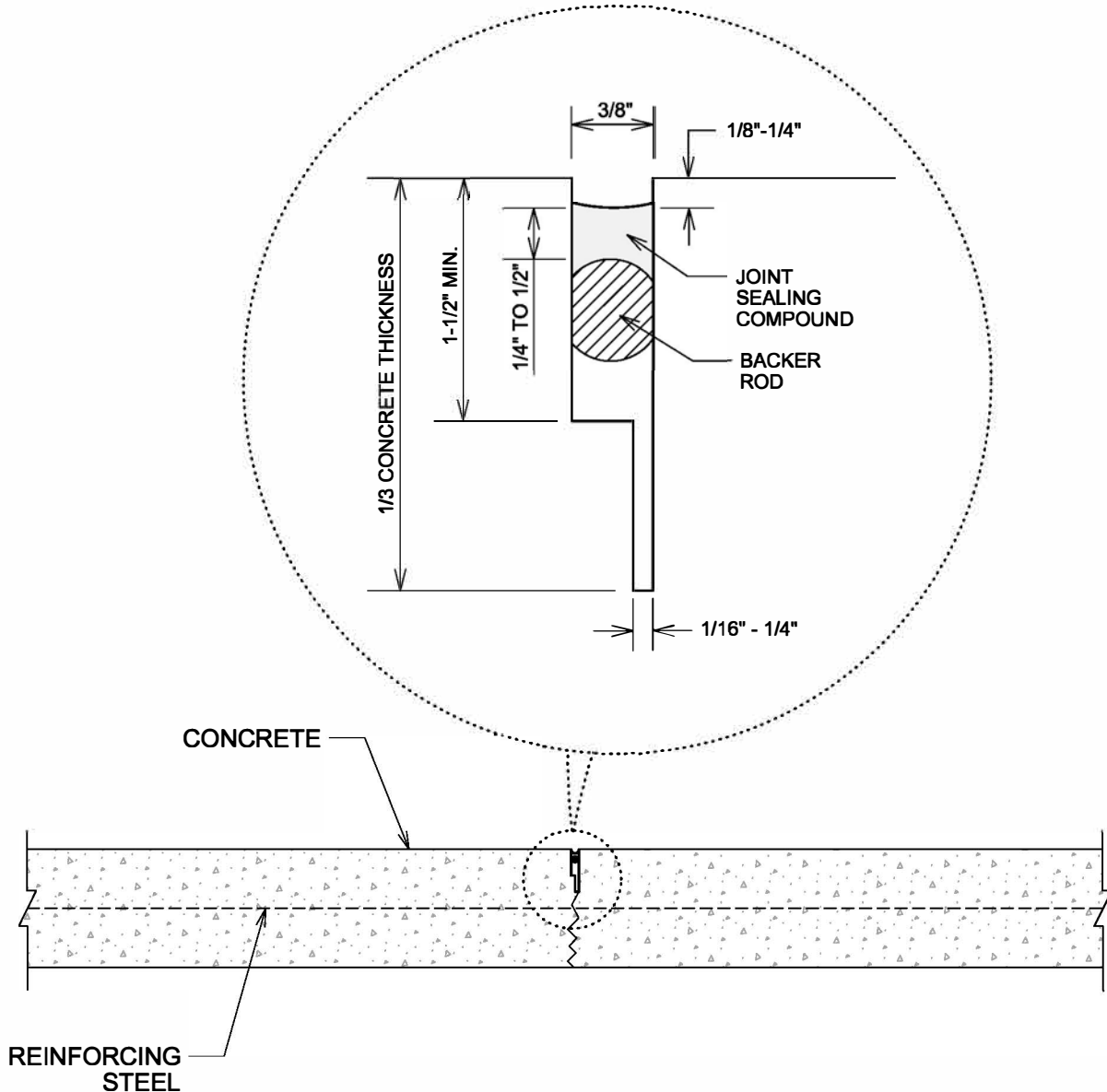
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 7

GENERAL NOTES

1. PAVEMENT JOINTS SHALL BE CLEANED AND SEALED IN ACCORDANCE WITH TXDOT ITEM 438, CLEANING AND SEALING JOINTS.
2. JOINT SEALANT SHALL BE CLASS 8, SILICONE OR POLYURETHANE (ASTM D5893 TYPE SL)



SAWED & SEALED CONTRACTION JOINT

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

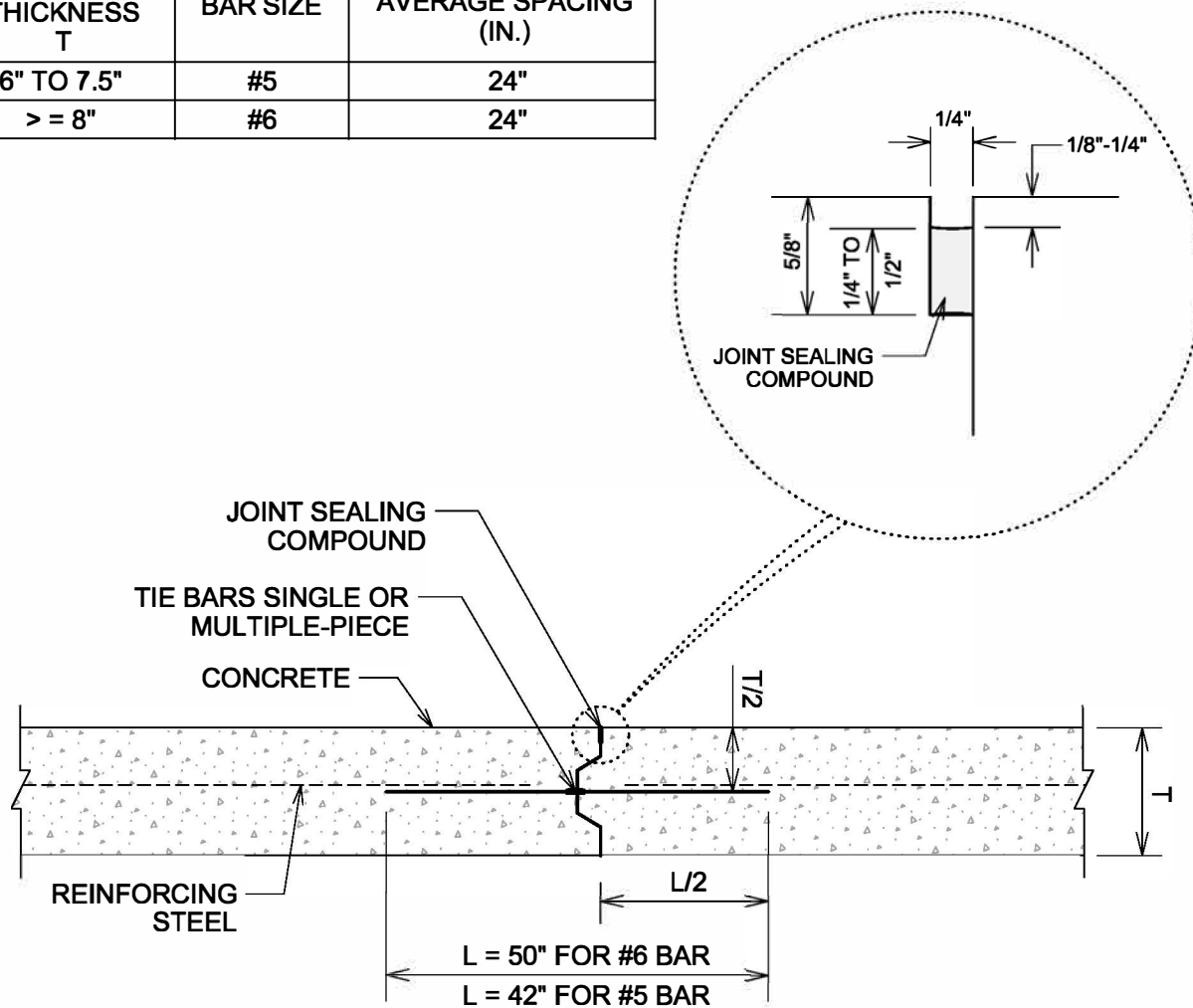
PAV - 8

GENERAL NOTES

1. PAVEMENT JOINTS SHALL BE CLEANED AND SEALED IN ACCORDANCE WITH TXDOT ITEM 438, CLEANING AND SEALING JOINTS.
2. JOINT SEALANT SHALL BE CLASS 8, SILICONE OR POLYURETHANE (ASTM D5893 TYPE SL)

TABLE TIE BARS (DEFORMED BARS)

CONCRETE THICKNESS T	BAR SIZE	AVERAGE SPACING (IN.)
6" TO 7.5"	#5	24"
> = 8"	#6	24"



METAL KEYWAY CONSTRUCTION JOINT

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

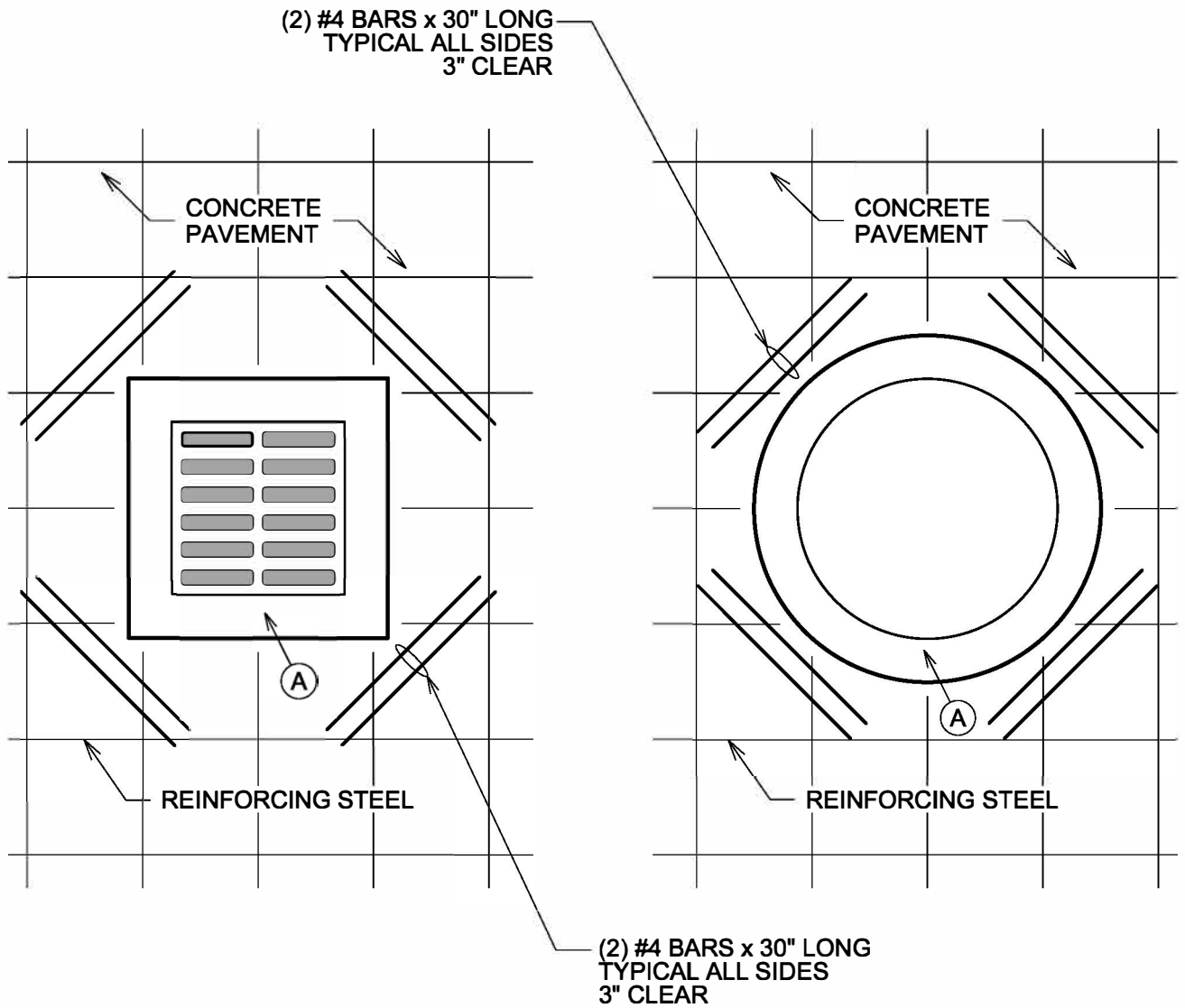
REVISED
DATE: 07/20/21

PAV - 9

GENERAL NOTES

1. REFER TO THE APPROPRIATE PAVEMENT OR SIDEWALK DETAIL FOR STRUCTURAL REQUIREMENTS.

- (A) FIXED STRUCTURE IN CONCRETE PAVEMENT INCLUDING MANHOLES, JUNCTION BOXES, VALVE BOXES, METER BOXES, CLEANOUTS, LIGHT POLES, ETC.



**FIXED STRUCTURE
REINFORCEMENT**

STANDARD CONSTRUCTION DETAILS

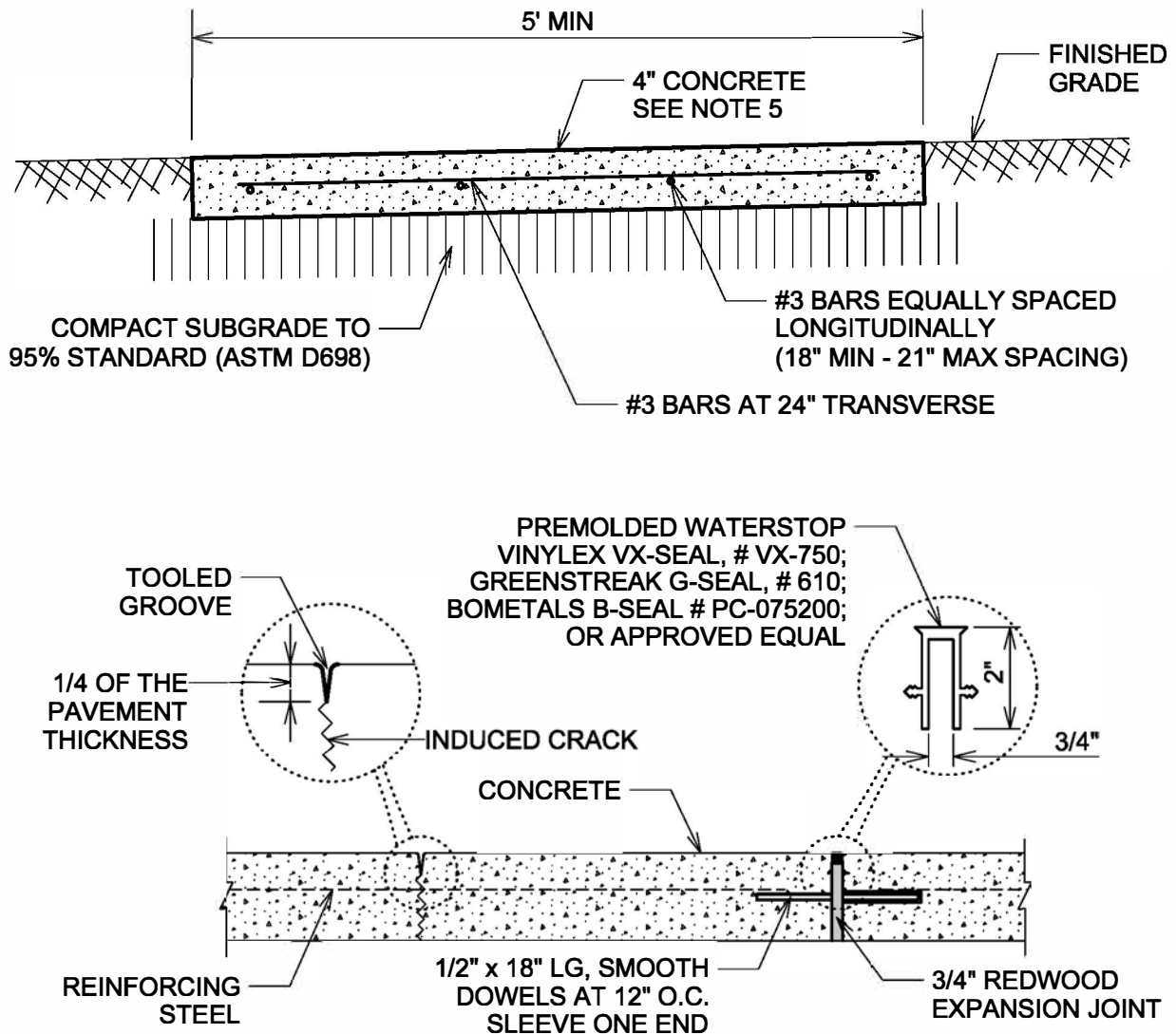
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 10

GENERAL NOTES

1. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.
2. EXPANSION JOINTS SHALL BE LOCATED AT DRIVEWAYS AND OTHER FIXED OBJECTS AND AT 40' MAXIMUM INTERVALS ALONG THE SIDEWALK.
3. TOOLED CONTRACTION JOINTS SHALL BE LOCATED AT REGULAR INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 421 - HYDRAULIC CEMENT CONCRETE, CLASS A, 3,000 PSI.
5. SIDEWALKS SHALL BE SLOPED IN ACCORDANCE WITH TEXAS ACCESSIBILITY STANDARDS.
6. ALL REBAR TO BE SET ON BAR CHAIRS. PLASTIC OR METAL BAR CHAIRS ARE ACCEPTABLE; NO BRICKS, BROKEN CONCRETE, ROCKS, ETC.



CONCRETE SIDEWALK (DETACHED FROM CURB)

STANDARD CONSTRUCTION DETAILS

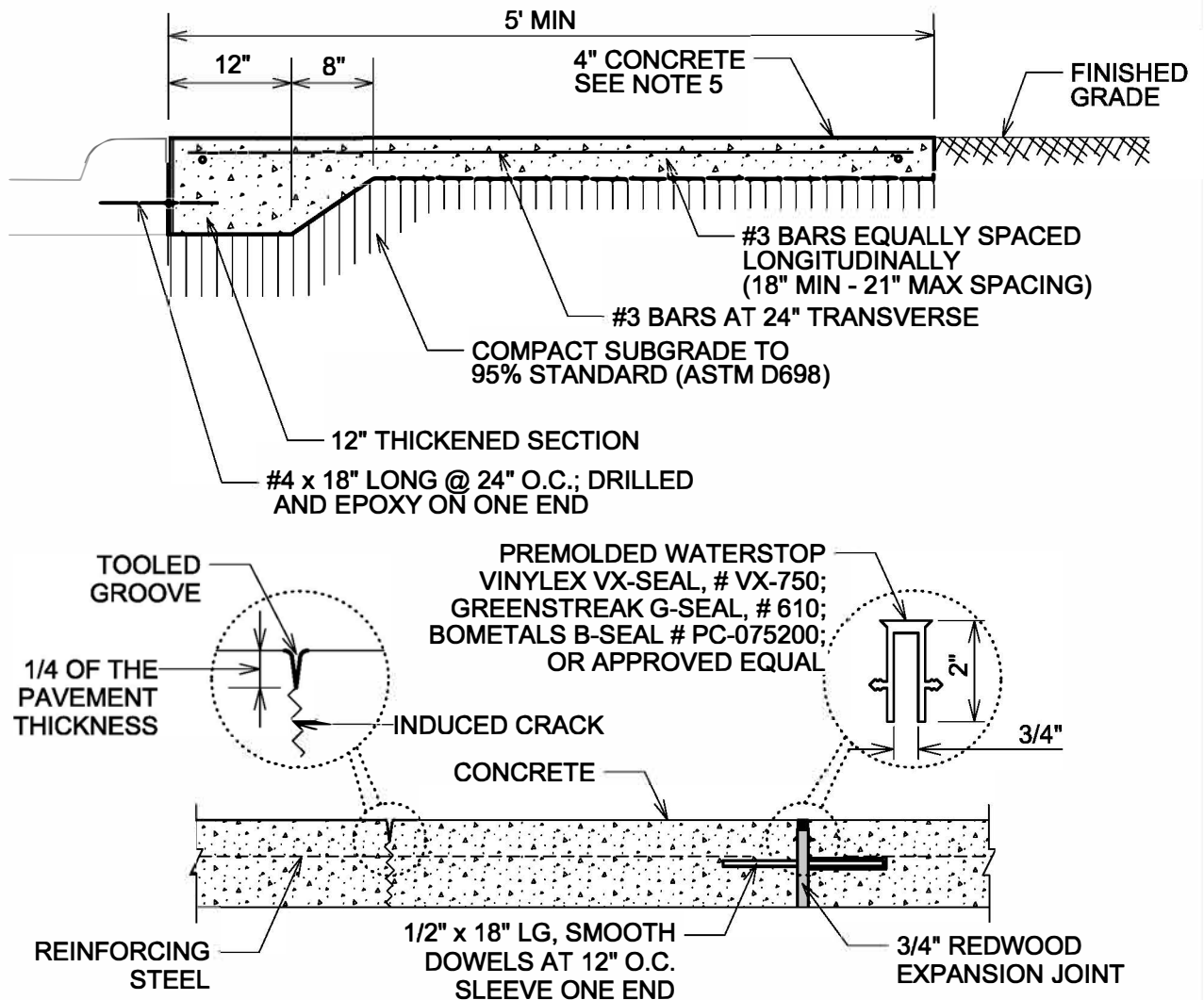
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 11

GENERAL NOTES

1. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.
2. EXPANSION JOINTS SHALL BE LOCATED AT DRIVEWAYS AND OTHER FIXED OBJECTS AND AT 40' MAXIMUM INTERVALS ALONG THE SIDEWALK.
3. TOOLED CONTRACTION JOINTS SHALL BE LOCATED AT REGULAR INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
4. CONCRETE SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 421 - HYDRAULIC CEMENT CONCRETE, CLASS A, 3,000 PSI.
5. SIDEWALKS SHALL BE SLOPED IN ACCORDANCE WITH TEXAS ACCESSIBILITY STANDARDS.
6. ALL REBAR TO BE SET ON BAR CHAIRS. PLASTIC OR METAL BAR CHAIRS ARE ACCEPTABLE; NO BRICKS, BROKEN CONCRETE, ROCKS, ETC.



CONCRETE SIDEWALK (ATTACHED TO CURB)

STANDARD CONSTRUCTION DETAILS

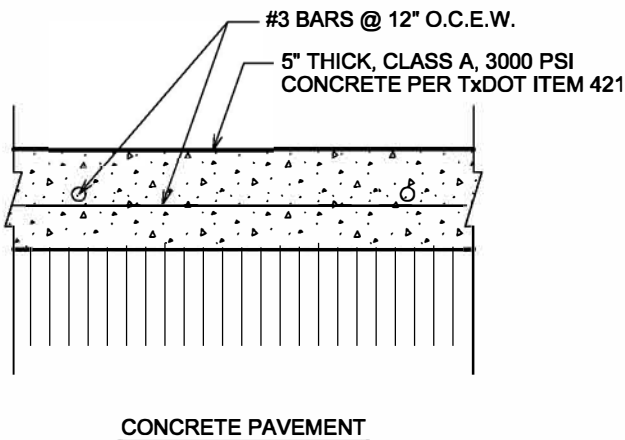
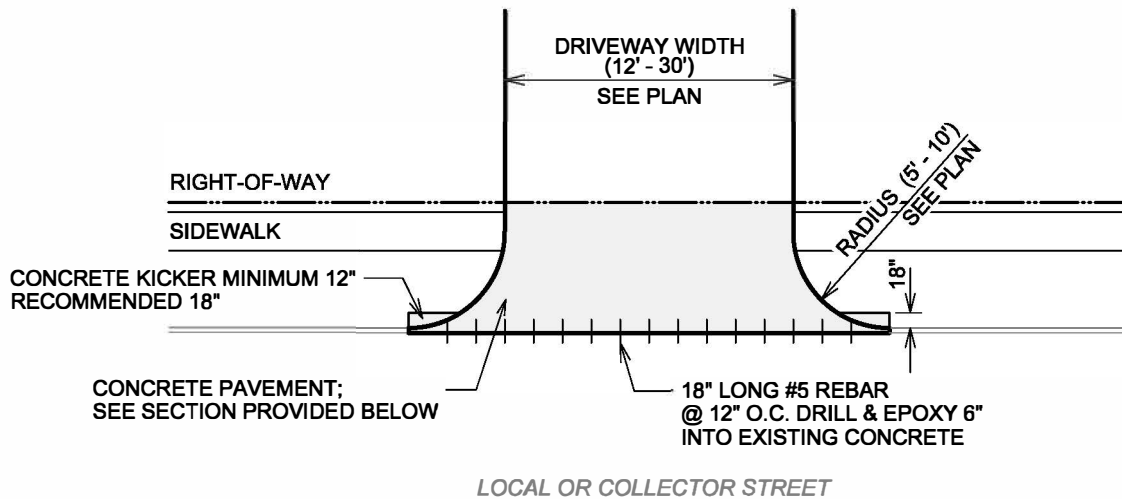
DATE: 07/20/21

REVISED
DATE: 07/20/21

PAV - 12

GENERAL NOTES

1. USE CONSTRUCTION JOINT DETAIL IF JOINING TO EXISTING CONCRETE DRIVEWAY.
USE EXPANSION JOINT DETAIL AT RIGHT-OF-WAY LINE.
2. GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.
3. ALL REBAR TO BE SET ON BAR CHAIRS. PLASTIC OR METAL BAR CHAIRS ARE ACCEPTABLE; NO BRICKS, BROKEN CONCRETE, ROCKS, ETC.
4. SUBGRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR.
5. SEE PAV - 15 FOR DRIVEWAY PROFILE REQUIREMENTS.



RESIDENTIAL DRIVEWAY (CONNECTING TO LOCAL OR COLLECTOR)

STANDARD CONSTRUCTION DETAILS

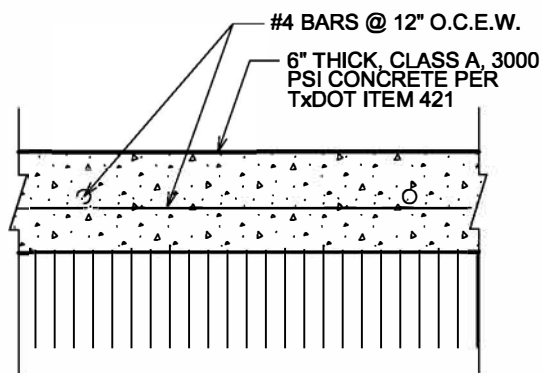
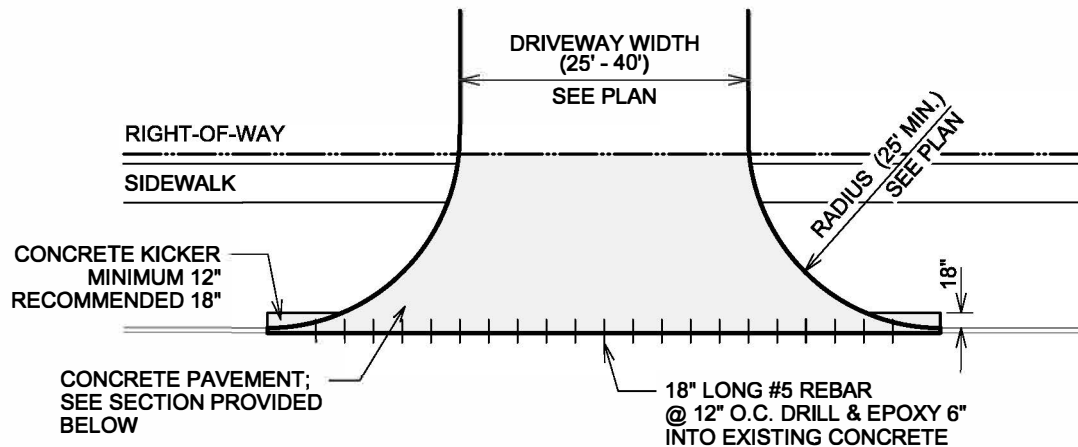
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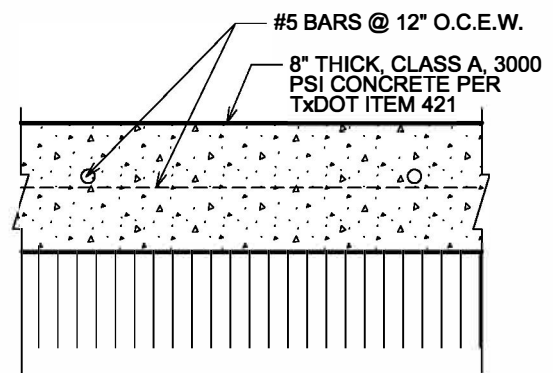
PAV - 13

GENERAL NOTES

1. USE CONSTRUCTION JOINT DETAIL IF JOINING TO EXISTING CONCRETE DRIVEWAY.
USE EXPANSION JOINT DETAIL AT RIGHT-OF-WAY LINE.
2. GRADE OF REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 IN ACCORDANCE WITH TxDOT ITEM 440.
3. ALL REBAR TO BE SET ON BAR CHAIRS. PLASTIC OR METAL BAR CHAIRS ARE ACCEPTABLE; NO BRICKS, BROKEN CONCRETE, ROCKS, ETC.
4. SUBGRADE SHALL BE COMPACTED TO 90% STANDARD PROCTOR.
5. SEE PAV - 15 FOR DRIVEWAY PROFILE REQUIREMENTS.



CONCRETE PAVEMENT FOR
MULTI-FAMILY RESIDENTIAL AND
COMMERCIAL



CONCRETE PAVEMENT FOR
INDUSTRIAL



MULTI-FAMILY
RESIDENTIAL AND
NON-RESIDENTIAL
DRIVEWAY

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

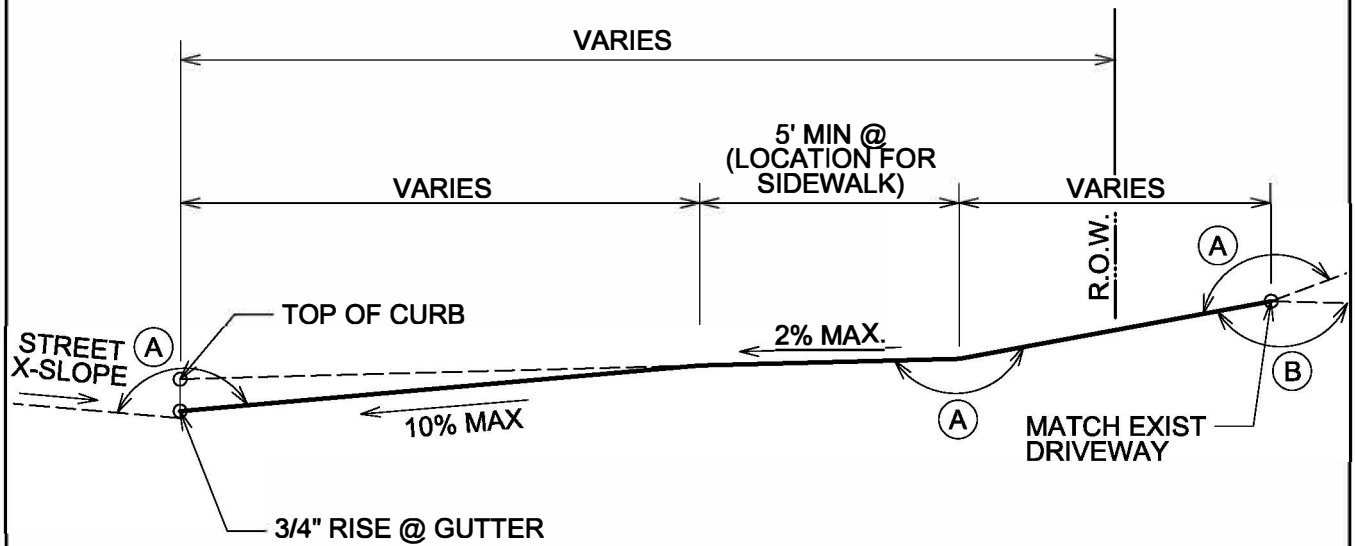
REVISED
DATE: 07/20/21

PAV - 14

GENERAL NOTES

1. DRIVEWAY GRADE MUST RISE TO TOP OF CURB ELEVATION TO CONTROL DRAINAGE IN STREET GUTTER.

- (A) 8% MAX CHANGE IN GRADE (SAG PI)
- (B) 12% MAX CHANGE IN GRADE (CREST PI)



ALLOWABLE DRIVEWAY
GRADE
(RESIDENTIAL OR
COMMERCIAL)

STANDARD CONSTRUCTION DETAILS

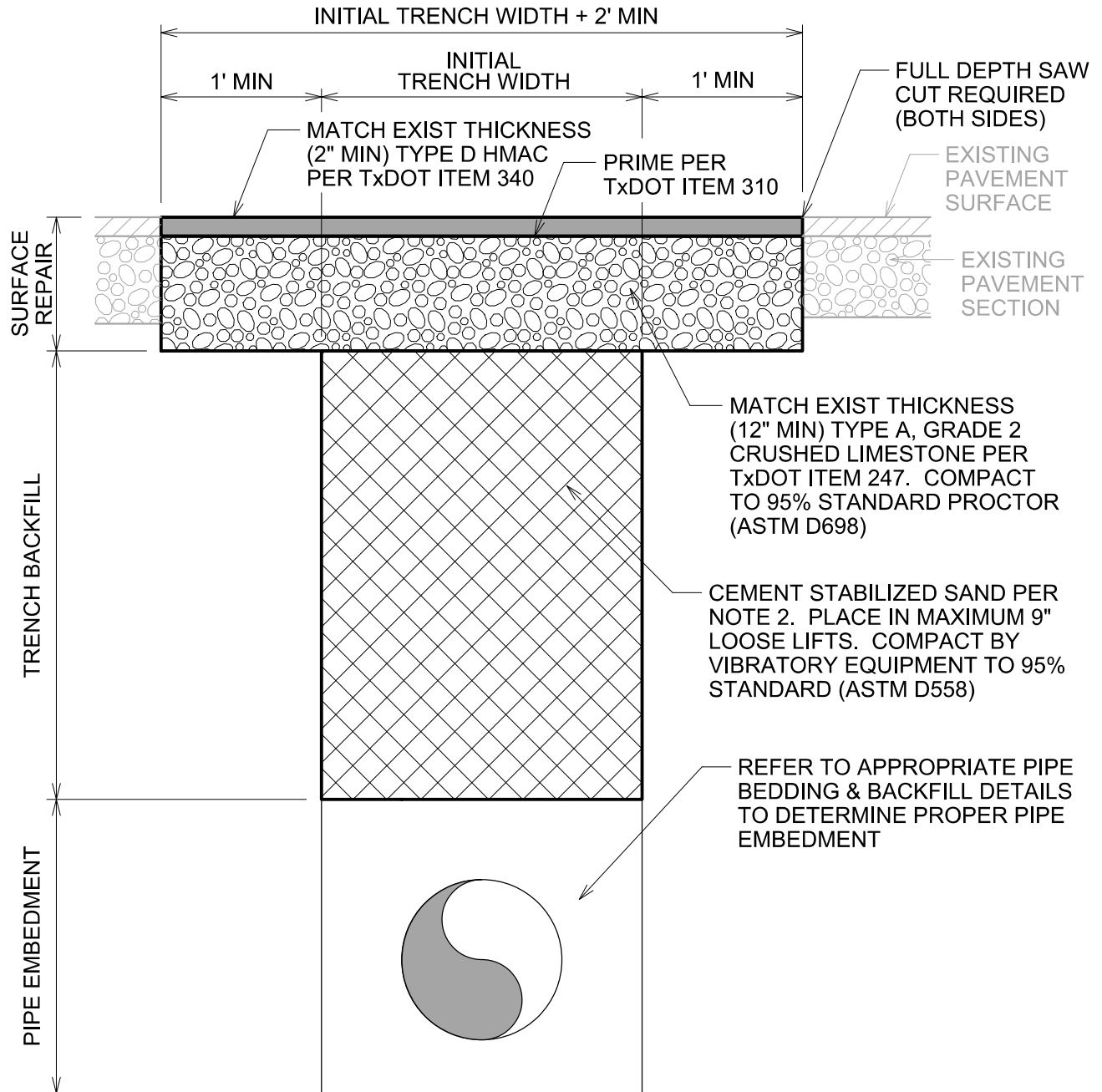
DATE: 07/20/21

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DATE: 07/20/21

PAV - 15

GENERAL NOTES

1. STANDARD DETAIL IS APPLICABLE FOR WATER, SANITARY SEWER AND STORM SEWER.
2. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; $PI < 7$; $LL < 25$.



PAVEMENT PATCH FOR
EXISTING ASPHALT
PAVED AREAS

STANDARD CONSTRUCTION DETAILS

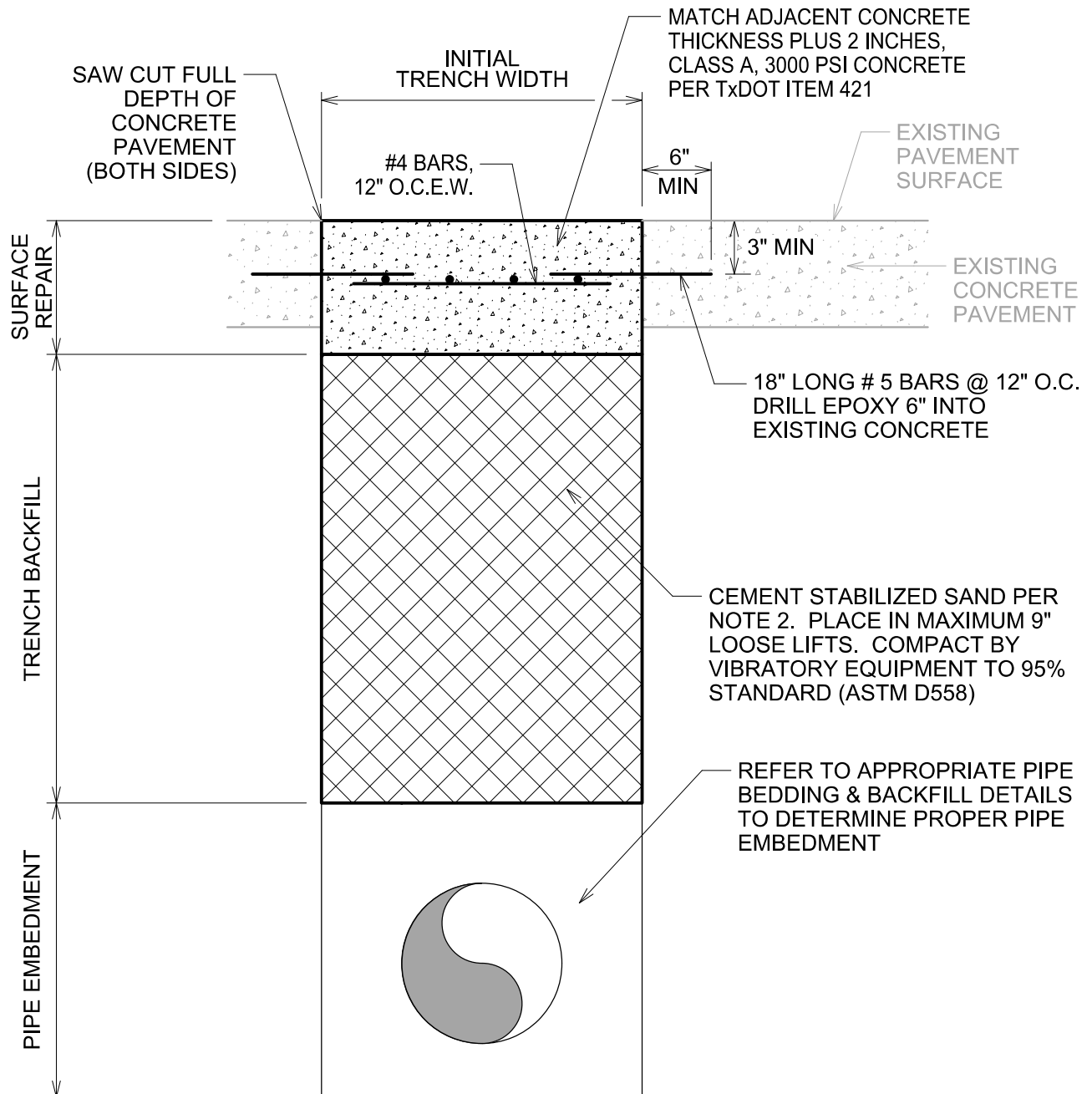
DATE: 10/08/21

REVISED
DATE: 10/08/21

PAV - 16

GENERAL NOTES

1. STANDARD DETAIL IS APPLICABLE FOR WATER, SANITARY SEWER AND STORM SEWER.
2. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PI <7; LL <25.



PAVEMENT PATCH FOR EXISTING CONCRETE PAVED AREAS

STANDARD CONSTRUCTION DETAILS

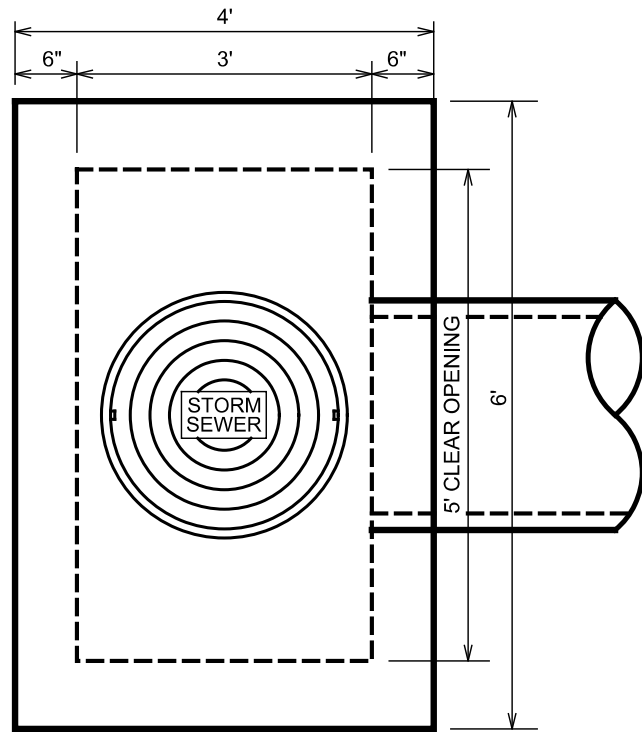
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DATE: 10/08/21

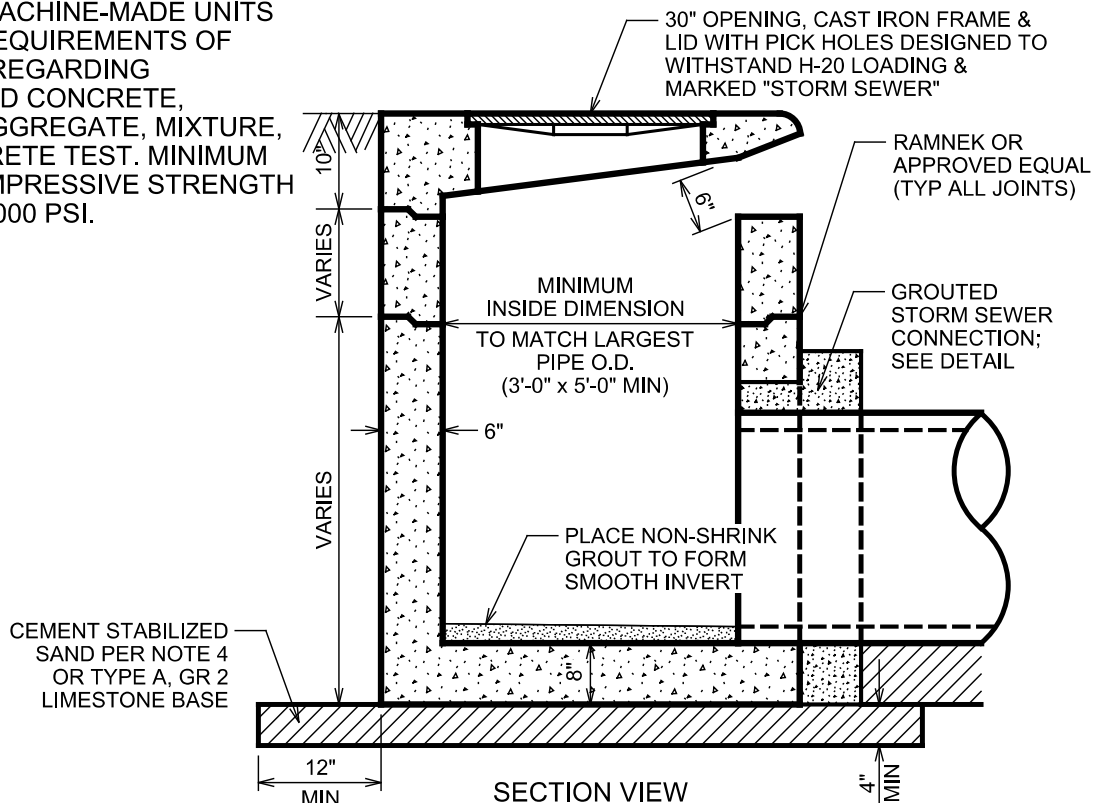
PAV - 17

GENERAL NOTES

1. INSTALLATION OF PRECAST STRUCTURES SHALL BE PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRECAST STRUCTURES TO ENGINEER PRIOR TO ORDERING MATERIALS.
2. PRECAST STRUCTURE, RING, AND COVER SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
3. PLACE RAMNEK OR EQUAL GASKET MATERIAL BETWEEN PRECAST STRUCTURE SECTIONS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PI <7; LL <25.
5. PROVIDE CONCRETE FOR PRECAST MACHINE-MADE UNITS MEETING REQUIREMENTS OF ASTM C 76 REGARDING REINFORCED CONCRETE, CEMENT, AGGREGATE, MIXTURE, AND CONCRETE TEST. MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 4000 PSI.



TOP VIEW



SECTION VIEW



5' CURB INLET

STANDARD CONSTRUCTION DETAILS

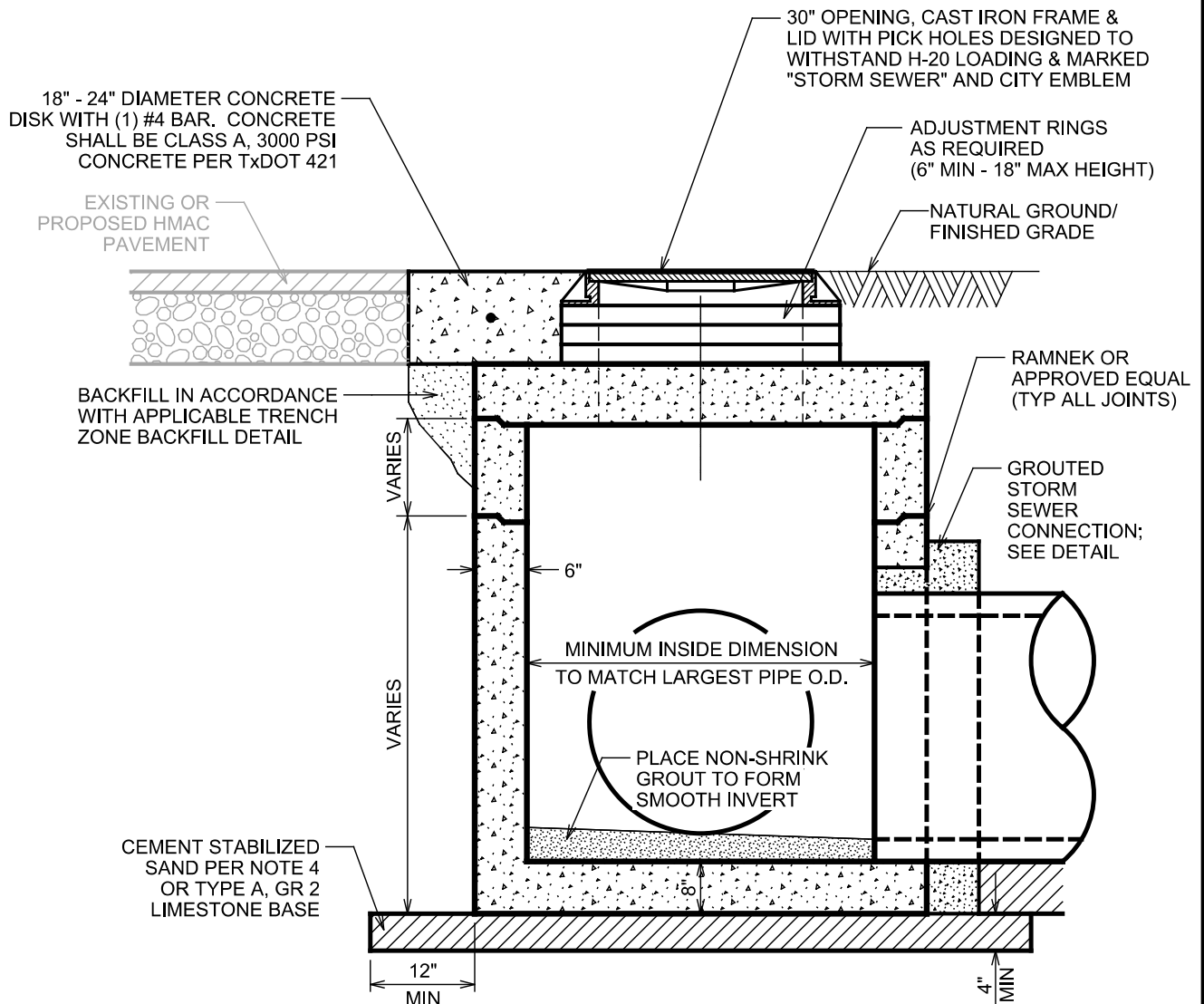
DATE: 07/20/21

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DATE: 07/20/21

STM - 1

GENERAL NOTES

1. INSTALLATION OF PRECAST STRUCTURES SHALL BE PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRE-CAST STRUCTURES TO ENGINEER PRIOR TO ORDERING MATERIALS.
2. PRECAST STRUCTURE, RING, AND COVER SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
3. PLACE RAMNEK OR EQUAL GASKET MATERIAL BETWEEN PRECAST STRUCTURE SECTIONS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; $PI < 7$; $LL < 25$.
5. PROVIDE CONCRETE FOR PRECAST MACHINE-MADE UNITS MEETING REQUIREMENTS OF ASTM C 76 REGARDING REINFORCED CONCRETE, CEMENT, AGGREGATE, MIXTURE, AND CONCRETE TEST. MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 4000 PSI.



STORM SEWER JUNCTION BOX

STANDARD CONSTRUCTION DETAILS

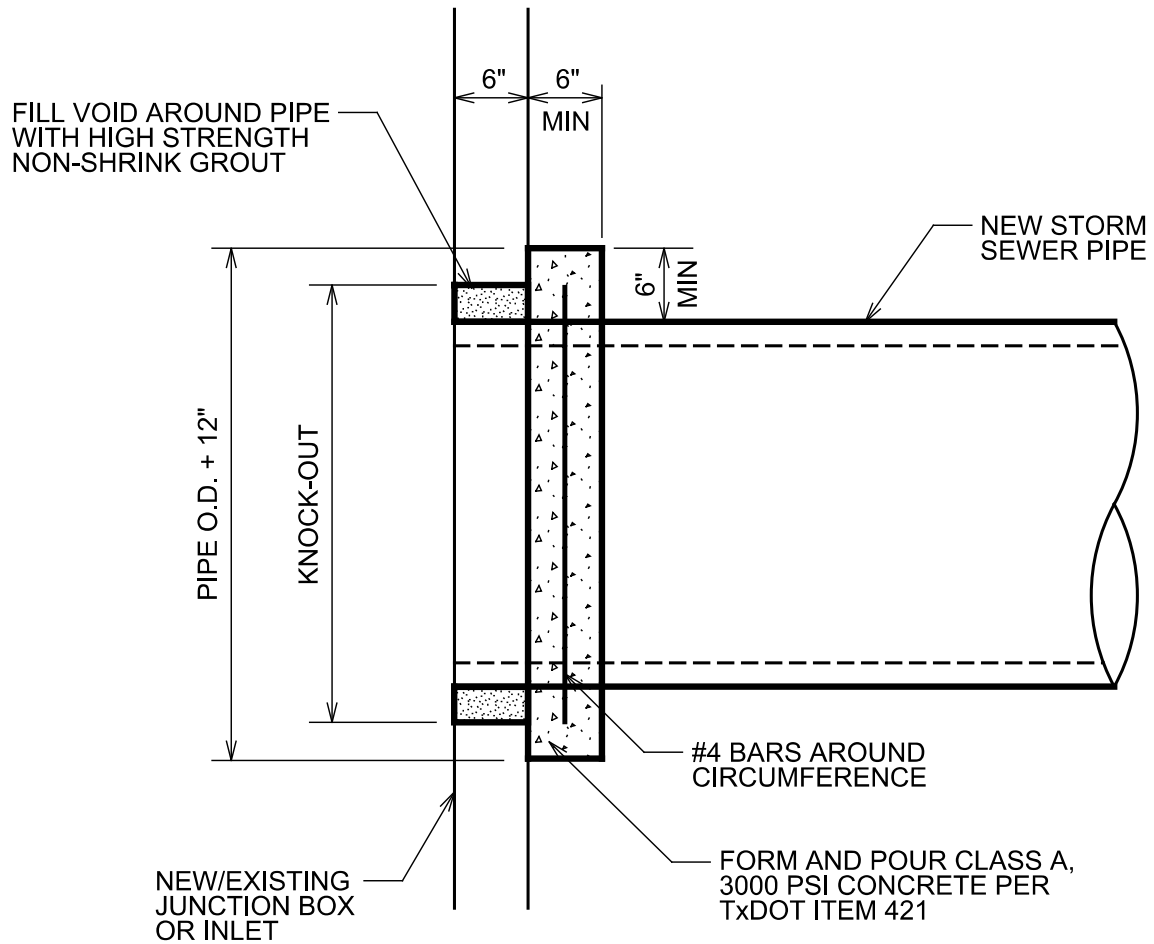
DATE: 07/20/21

REVISED
DATE: 07/20/21

STM - 2

GENERAL NOTES

1. NEW PIPE TO BE SET FLUSH WITH INSIDE WALL OF STRUCTURE.



GROUTED STORM SEWER CONNECTION DETAIL

STANDARD CONSTRUCTION DETAILS

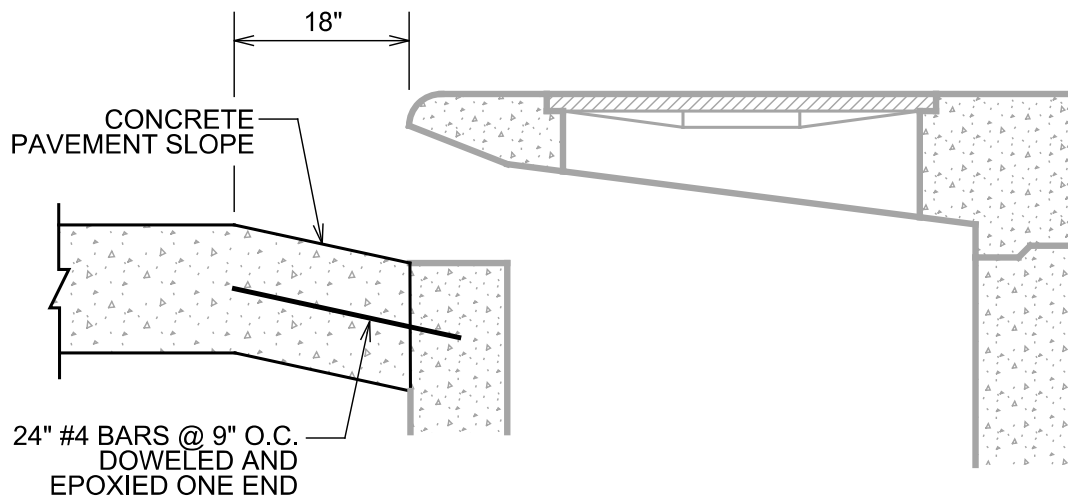
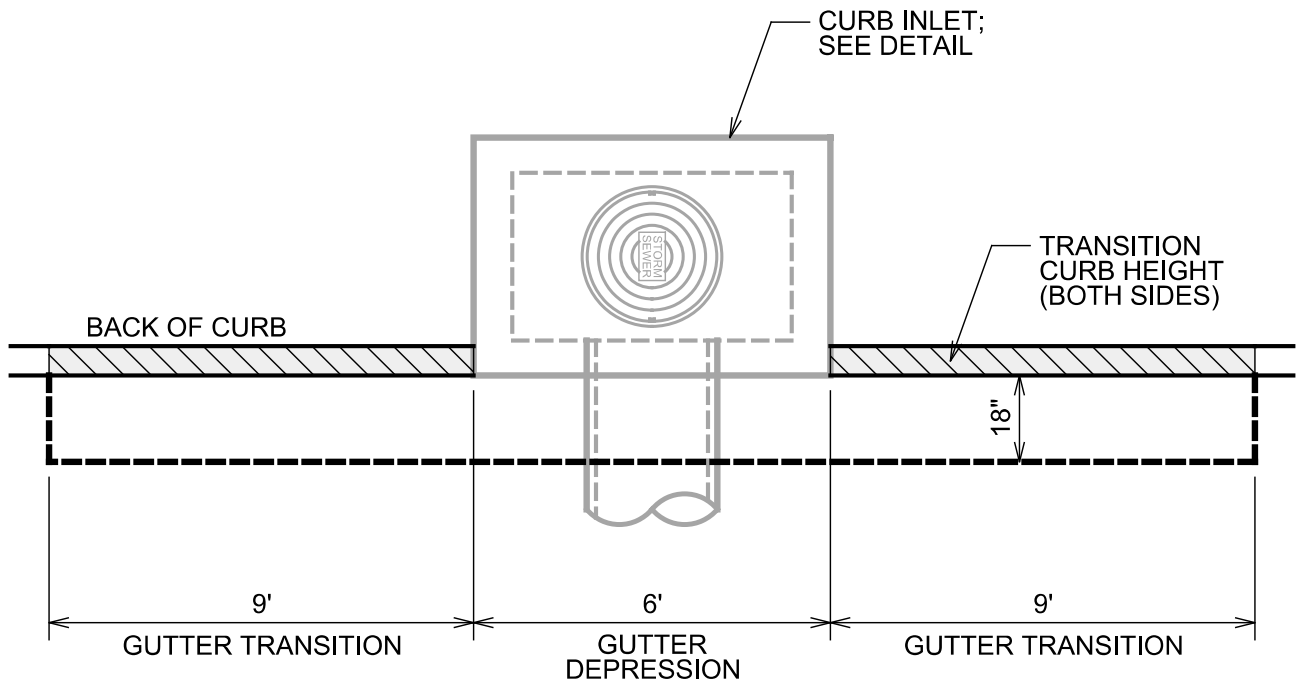
DATE: 07/20/21

REVISED
DATE: 07/20/21

STM - 3

GENERAL NOTES

1. GUTTER DEPRESSION SHALL NOT BE LOCATED WITHIN THE AREA OF A CURB RAMP/LANDING OR DRIVEWAY.



GUTTER DEPRESSION AT CURB INLET

STANDARD CONSTRUCTION DETAILS

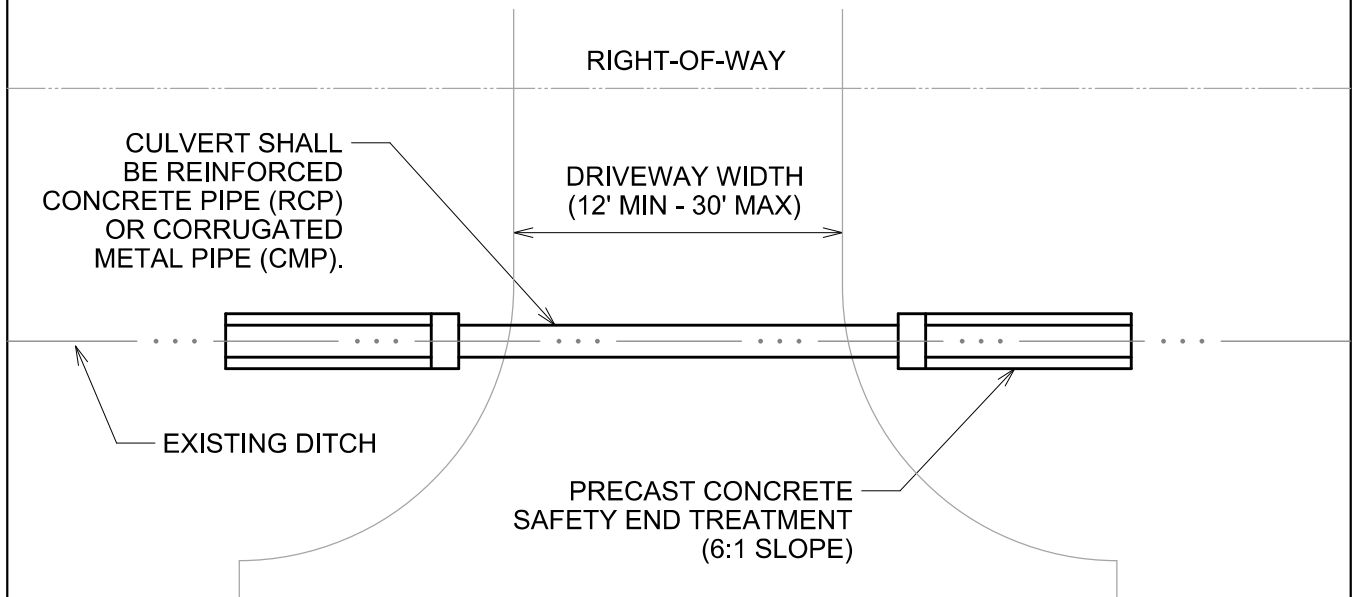
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REVISED
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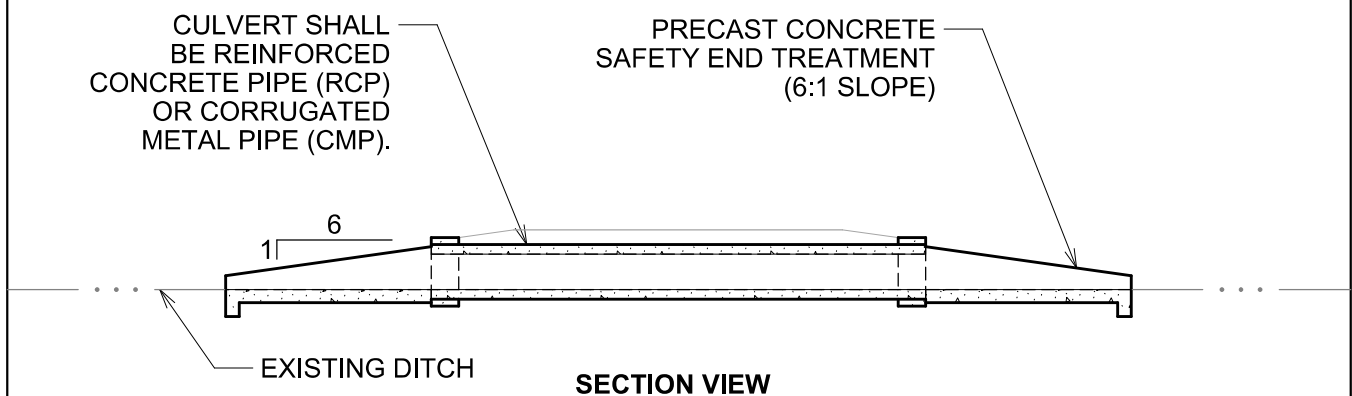
STM - 4

GENERAL NOTES

1. ADDITIONAL REQUIREMENTS APPLY FOR DRIVEWAYS ON TXDOT OWNED ROADWAYS.
2. BACKFILL WITH CEMENT STABILIZED SAND. CEMENT STABILIZED SAND SHALL CONTAIN A MINIMUM OF 1.5 SACKS OF CEMENT PER CUBIC YARD. SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487) AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PI <7; LL <25. COMPACT BY VIBRATORY EQUIPMENT TO 95% STANDARD (ASTM D558)
3. SET UPSTREAM AND DOWNSTREAM FLOW LINES TO MATCH EXISTING DITCH GRADE.
4. AFTER EXCAVATION AND PRIOR TO SETTING PIPE, CONTACT CITY TO INSPECT AND VERIFY FINAL ELEVATIONS.



PLAN VIEW



RESIDENTIAL DRIVEWAY CULVERT

STANDARD CONSTRUCTION DETAILS

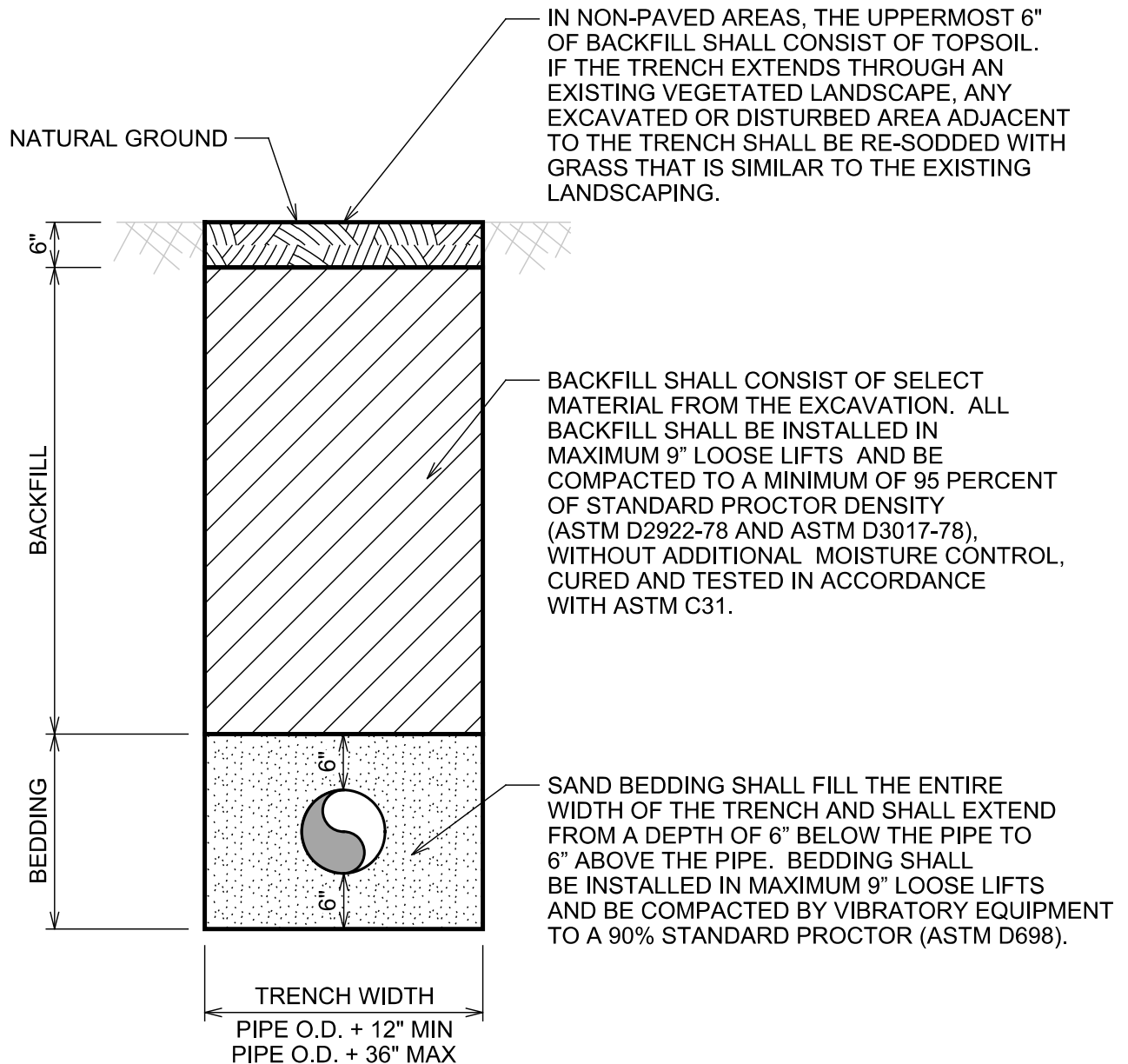
DATE: 07/20/21

REVISED
DATE: 10/07/21

STM - 5

GENERAL NOTES

1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.



WATER & SANITARY SEWER
BEDDING & BACKFILL
(NON-PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

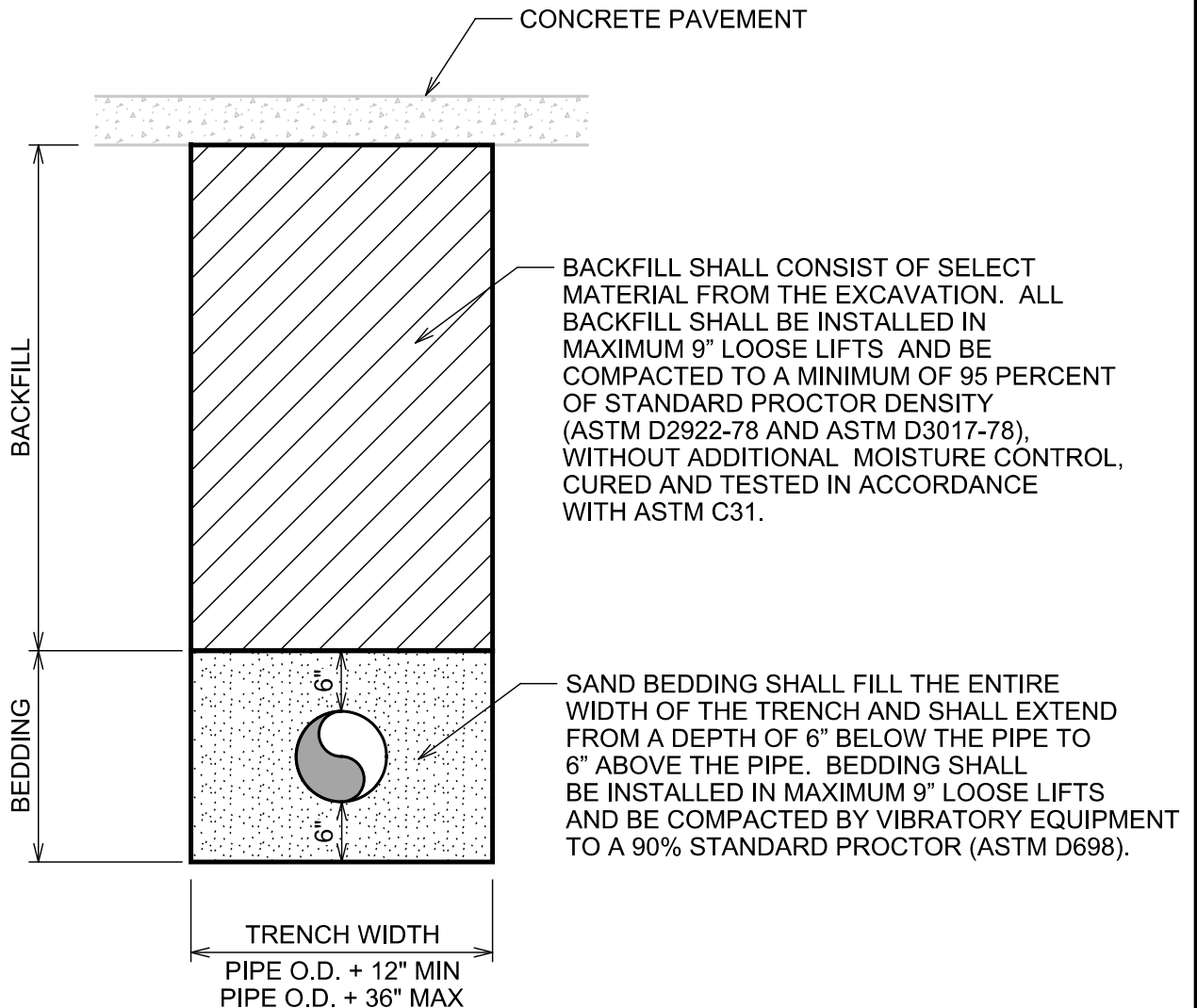
DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 1

GENERAL NOTES

1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.



WATER & SANITARY SEWER
BEDDING & BACKFILL
(CONCRETE PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 2

GENERAL NOTES

1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.

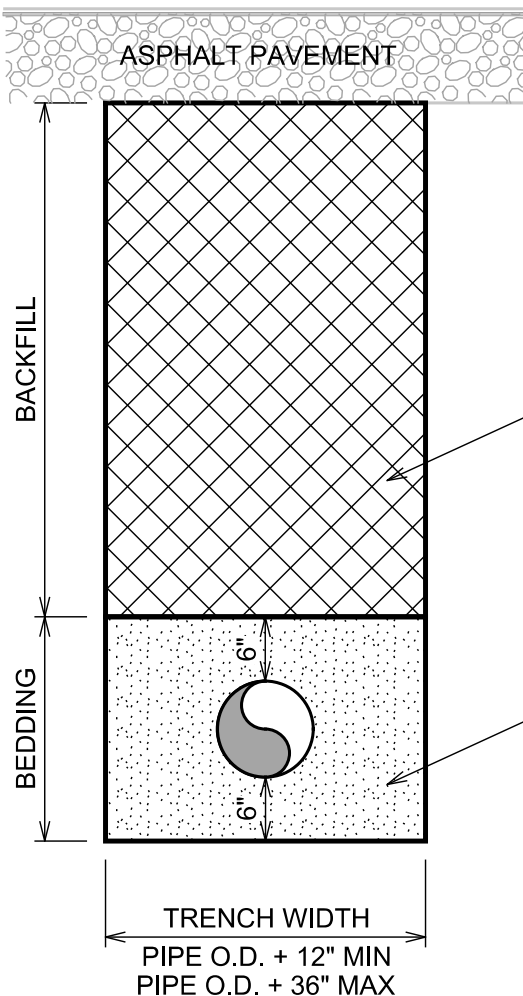
2. UNDER ASPHALT PAVING, BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL EXTEND FROM THE TOP OF THE SAND BEDDING TO THE ELEVATION OF THE BOTTOM OF THE BASE SECTION. THE CEMENT STABILIZED SAND BACKFILL SHALL MEET THE FOLLOWING REQUIREMENTS:

A. THE CEMENT SHALL BE PORTLAND CEMENT, TYPE I, ASTM C150.

B. THE SAND SHALL BE CLEAN, DURABLE SAND; LESS THAN 0.5% CLAY CLUMPS, ASTM C142; LESS THAN 0.5% LIGHTWEIGHT PIECES, ASTM C123; ORGANIC IMPURITIES, ASTM C40; NOT SHOWING A COLOR DARKER THAN STANDARD COLOR; AND PLASTICITY INDEX OF LESS THAN 6, ASTM D423 & ASTM D424.

C. CEMENT-SAND MIXTURE SHALL CONSIST OF AT LEAST 1.5 SACKS OF CEMENT PER TON OF SAND. MINIMUM UNCONFINED COMPRESSIVE STRENGTH OF 100 PSI IN 48 HOURS, WHEN COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D2922-78 & ASTM D3017-78), WITHOUT ADDITIONAL MOISTURE CONTROL, CURED & TESTED IN ACCORDANCE WITH ASTM C31.

D. CEMENT STABILIZED SAND SHALL BE PLACED & COMPACTED WITHIN 3 HOURS OF BATCHING.



CEMENT STABILIZED SAND BACKFILL SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS AND BE COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY (ASTM D2922-78 & ASTM D3017-78).

SAND BEDDING SHALL FILL THE ENTIRE WIDTH OF THE TRENCH AND SHALL EXTEND FROM A DEPTH OF 6" BELOW THE PIPE TO 6" ABOVE THE PIPE. BEDDING SHALL BE INSTALLED IN MAXIMUM 9" LOOSE LIFTS AND BE COMPACTED BY VIBRATORY EQUIPMENT TO A 90% STANDARD PROCTOR (ASTM D698).



WATER & SANITARY SEWER
BEDDING & BACKFILL
(ASPHALT PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

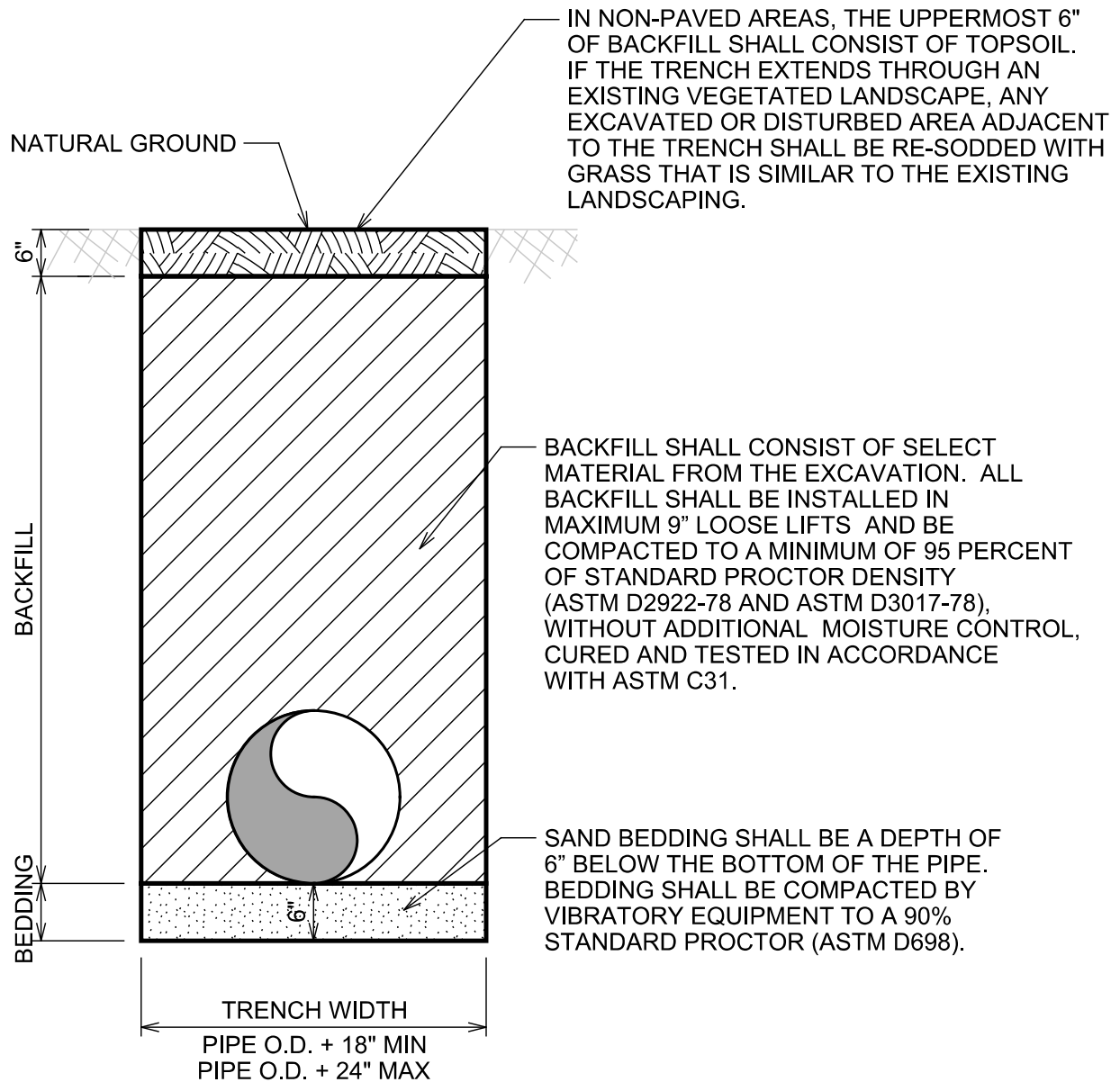
DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 3

GENERAL NOTES

1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.



STORM SEWER
BEDDING & BACKFILL
FOR RCP PIPE
(NON-PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

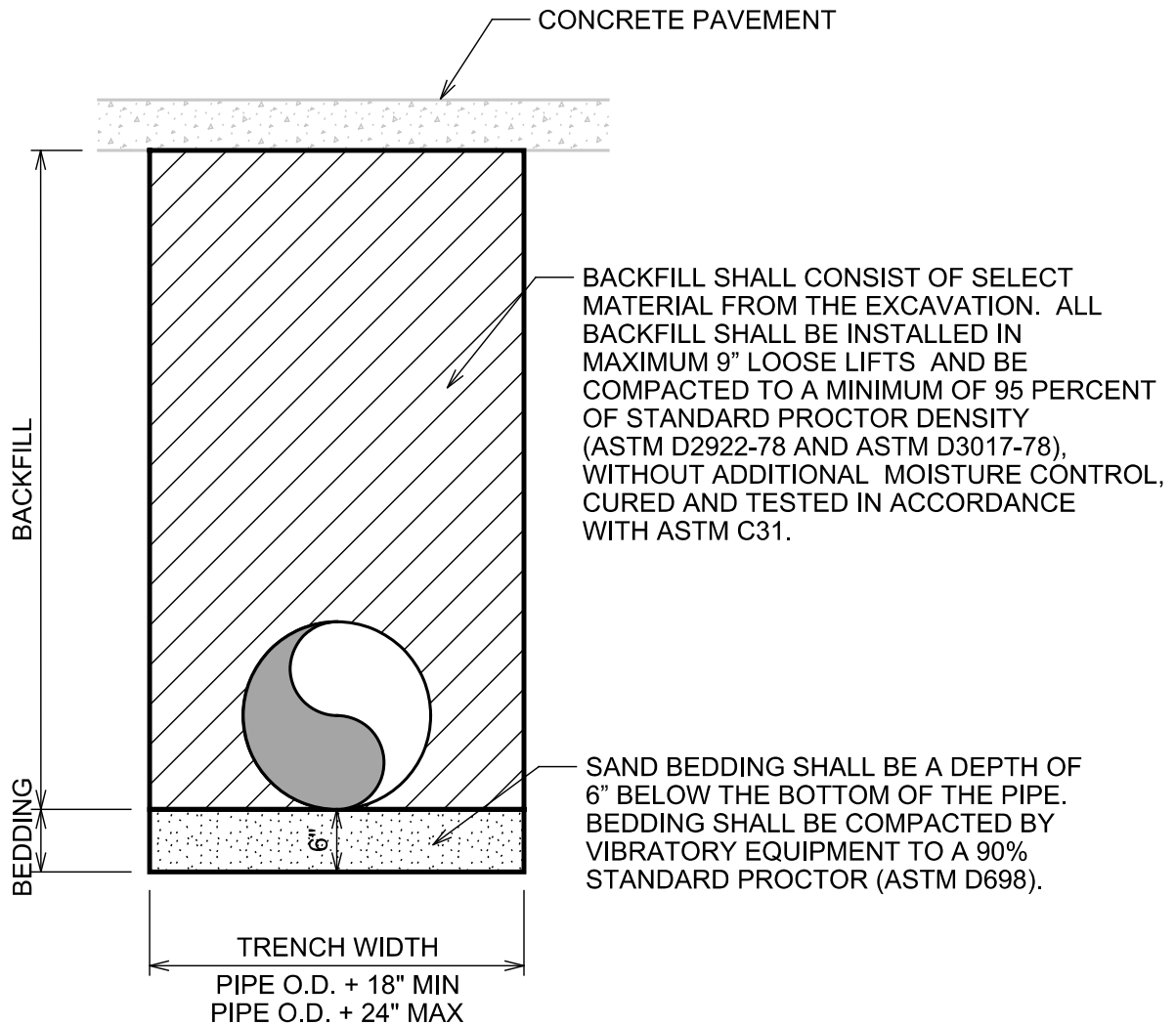
DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 4

GENERAL NOTES

1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.



STORM SEWER BEDDING & BACKFILL FOR RCP PIPE (CONCRETE PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 5

GENERAL NOTES

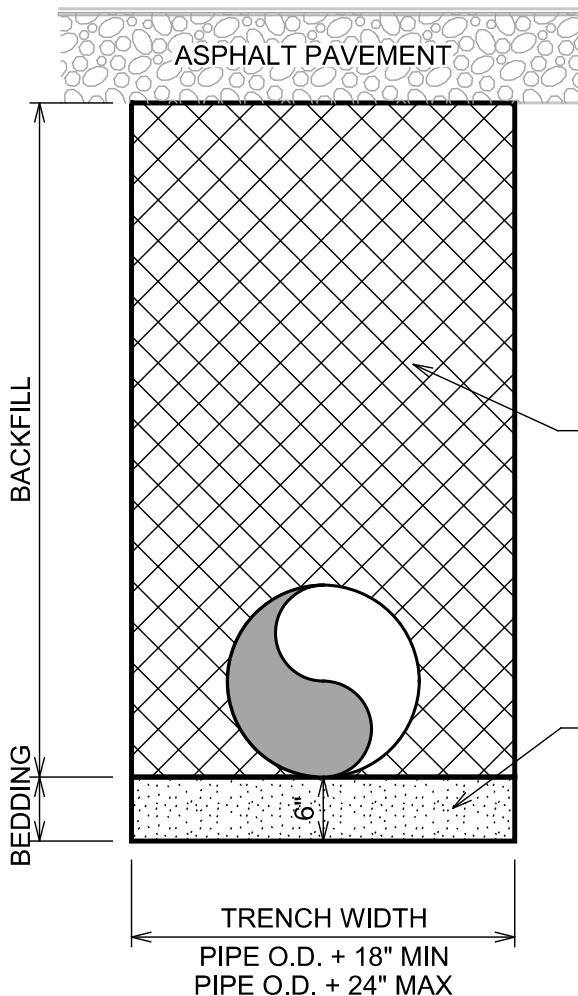
1. BANK SAND SHALL BE SP, SW OR SM PER USC (ASTM D2487 AND SHALL HAVE THE FOLLOWING PROPERTIES: LESS THAN 15% PASSING #200 SIEVE; LESS THAN 2% CLAY LUMPS; PLASTICITY INDEX LESS THAN 7; LIQUID LIMIT LESS THAN 25.

2. UNDER ASPHALT PAVING, BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL EXTEND FROM THE TOP OF THE SAND BEDDING TO THE ELEVATION OF THE BOTTOM OF THE BASE SECTION. THE CEMENT STABILIZED SAND BACKFILL SHALL MEET THE FOLLOWING REQUIREMENTS:

A. THE CEMENT SHALL BE PORTLAND CEMENT, TYPE I, ASTM C150.

B. THE SAND SHALL BE CLEAN, DURABLE SAND; LESS THAN 0.5% CLAY CLUMPS, ASTM C142; LESS THAN 0.5% LIGHTWEIGHT PIECES, ASTM C123; ORGANIC IMPURITIES, ASTM C40; NOT SHOWING A COLOR DARKER THAN STANDARD COLOR; AND PLASTICITY INDEX OF LESS THAN 6, ASTM D423 & ASTM D424.

C. CEMENT-SAND MIXTURE SHALL CONSIST OF AT LEAST 1.5 SACKS OF CEMENT PER TON OF SAND. MINIMUM UNCONFINED COMPRESSIVE STRENGTH OF 100 PSI IN 48 HOURS, WHEN COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D2922-78 & ASTM D3017-78), WITHOUT ADDITIONAL MOISTURE CONTROL, CURED & TESTED IN ACCORDANCE WITH ASTM C31.



D. CEMENT STABILIZED SAND SHALL BE PLACED & COMPACTED WITHIN 3 HOURS OF BATCHING.

CEMENT STABILIZED SAND BACKFILL SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS AND BE COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY (ASTM D2922-78 & ASTM D3017-78).

SAND BEDDING SHALL BE A DEPTH OF 6" BELOW THE BOTTOM OF THE PIPE. BEDDING SHALL BE COMPACTED BY VIBRATORY EQUIPMENT TO A 90% STANDARD PROCTOR (ASTM D698).



STORM SEWER BEDDING & BACKFILL FOR RCP PIPE (ASPHALT PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 6

GENERAL NOTES

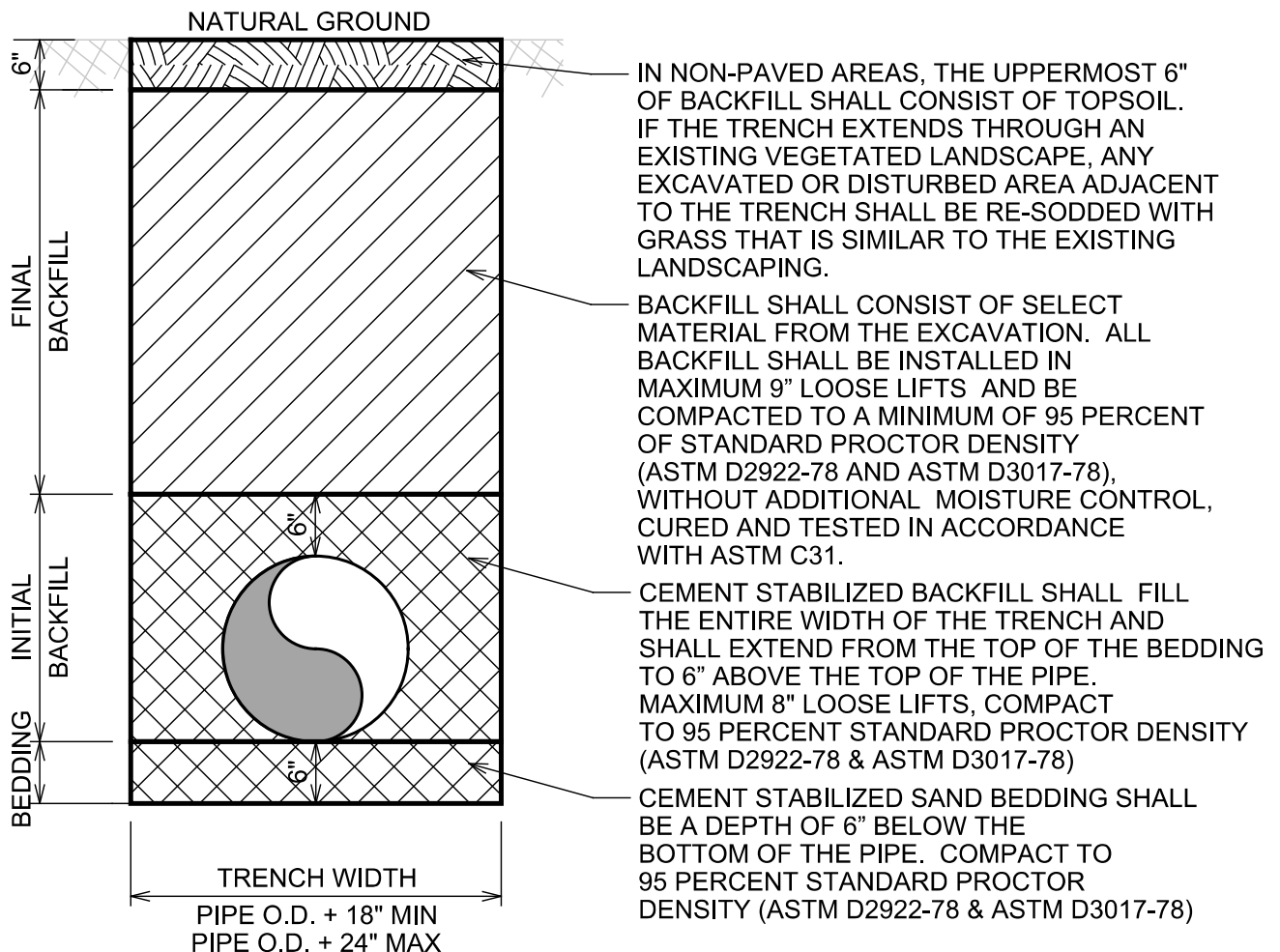
1. BEDDING AND INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL EXTEND FROM 6 INCHES BELOW THE PIPE TO 6 INCHES ABOVE THE PIPE. THE CEMENT STABILIZED SAND BACKFILL SHALL MEET THE FOLLOWING REQUIREMENTS:

A. THE CEMENT SHALL BE PORTLAND CEMENT, TYPE I, ASTM C150.

B. THE SAND SHALL BE CLEAN, DURABLE SAND; LESS THAN 0.5% CLAY CLUMPS, ASTM C142; LESS THAN 0.5% LIGHTWEIGHT PIECES, ASTM C123; ORGANIC IMPURITIES, ASTM C40; NOT SHOWING A COLOR DARKER THAN STANDARD COLOR; AND PLASTICITY INDEX OF LESS THAN 6, ASTM D423 & ASTM D424.

C. CEMENT-SAND MIXTURE SHALL CONSIST OF AT LEAST 1.5 SACKS OF CEMENT PER TON OF SAND. MINIMUM UNCONFINED COMPRESSIVE STRENGTH OF 100 PSI IN 48 HOURS, WHEN COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D2922-78 & ASTM D3017-78), WITHOUT ADDITIONAL MOISTURE CONTROL, CURED & TESTED IN ACCORDANCE WITH ASTM C31.

D. CEMENT STABILIZED SAND SHALL BE PLACED & COMPACTED WITHIN 3 HOURS OF BATCHING.



STORM SEWER
BEDDING & BACKFILL
FOR HDPE PIPE
(NON-PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 7

GENERAL NOTES

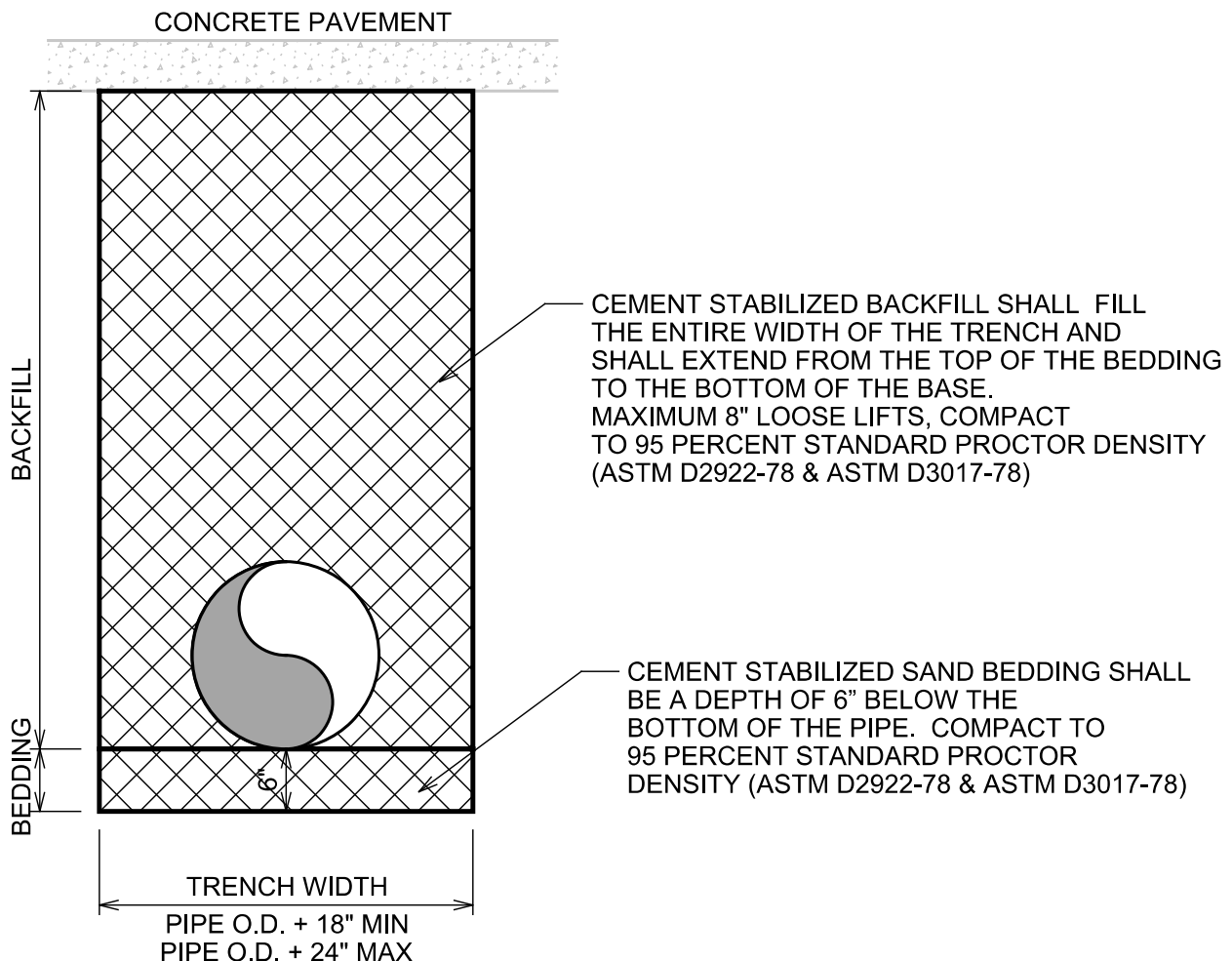
1. UNDER CONCRETE PAVING, BEDDING AND BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL EXTEND FROM 6 INCHES BELOW THE PIPE TO THE BOTTOM OF THE BASE SECTION. THE CEMENT STABILIZED SAND BACKFILL SHALL MEET THE FOLLOWING REQUIREMENTS:

A. THE CEMENT SHALL BE PORTLAND CEMENT, TYPE I, ASTM C150.

B. THE SAND SHALL BE CLEAN, DURABLE SAND; LESS THAN 0.5% CLAY CLUMPS, ASTM C142; LESS THAN 0.5% LIGHTWEIGHT PIECES, ASTM C123; ORGANIC IMPURITIES, ASTM C40; NOT SHOWING A COLOR DARKER THAN STANDARD COLOR; AND PLASTICITY INDEX OF LESS THAN 6, ASTM D423 & ASTM D424.

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D. CEMENT STABILIZED SAND SHALL BE PLACED & COMPACTED WITHIN 3 HOURS OF BATCHING.



**STORM SEWER
BEDDING & BACKFILL
FOR HDPE PIPE
(CONCRETE PAVED AREAS)**

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 8

GENERAL NOTES

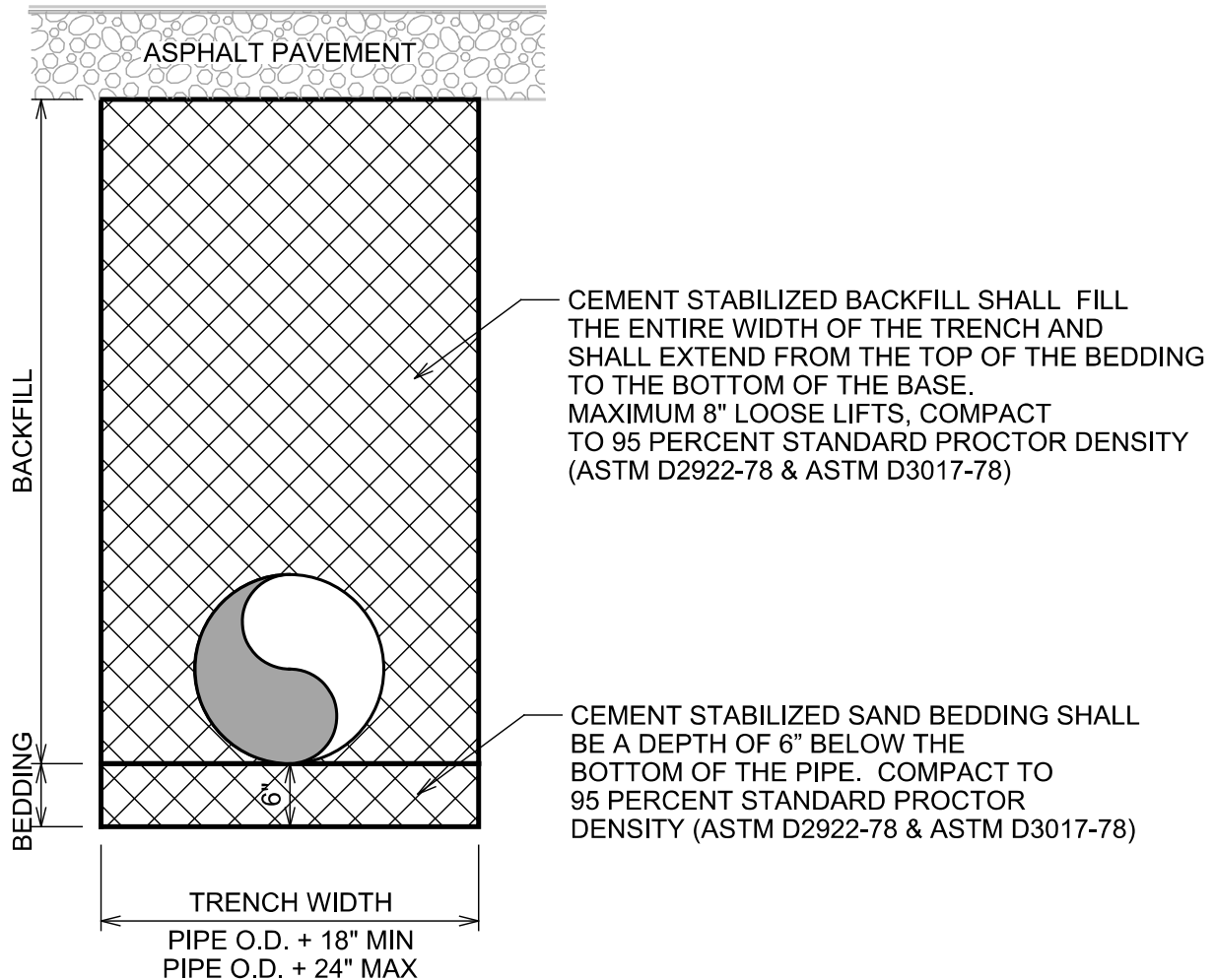
1. UNDER ASPHALT PAVING, BEDDING AND BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL EXTEND FROM 6 INCHES BELOW THE PIPE TO THE BOTTOM OF THE BASE SECTION. THE CEMENT STABILIZED SAND BACKFILL SHALL MEET THE FOLLOWING REQUIREMENTS:

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D. CEMENT STABILIZED SAND SHALL BE PLACED & COMPACTED WITHIN 3 HOURS OF BATCHING.



STORM SEWER
BEDDING & BACKFILL
FOR HDPE PIPE
(ASPHALT PAVED AREAS)

STANDARD CONSTRUCTION DETAILS

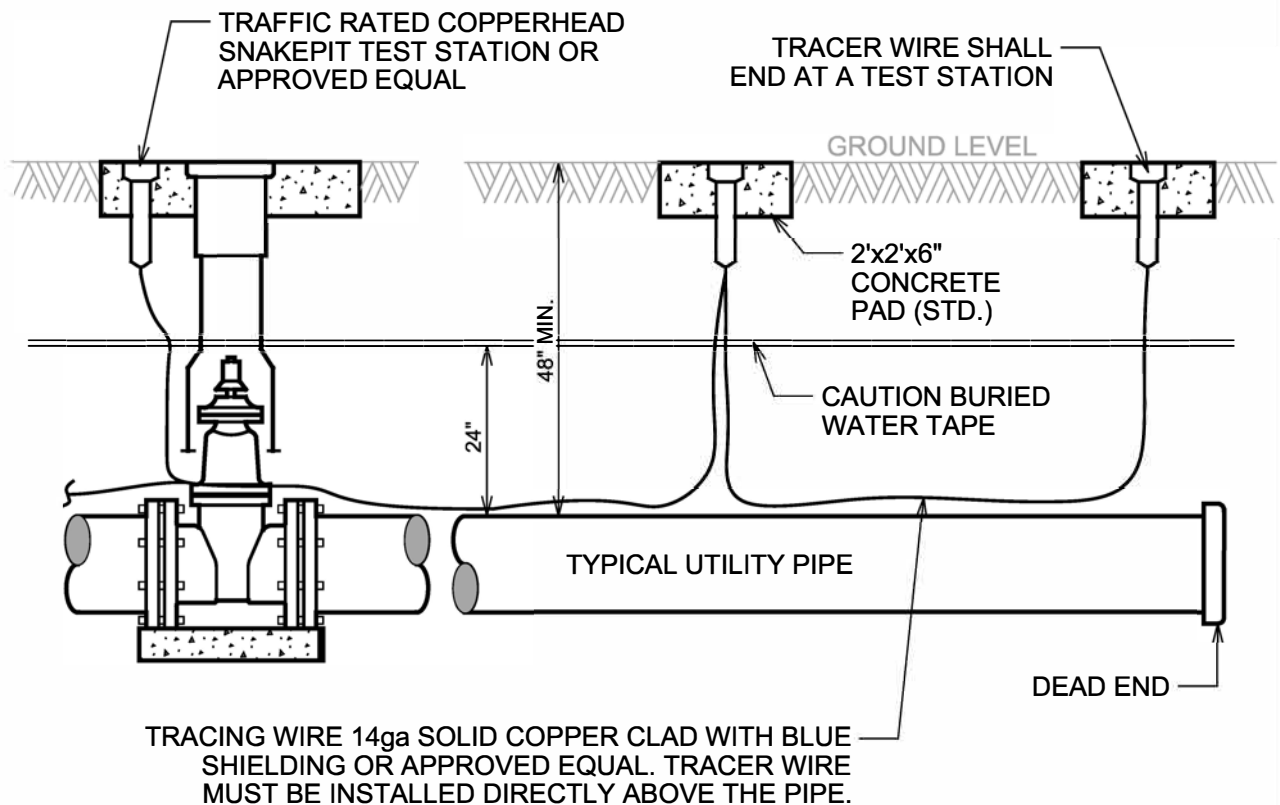
DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 9

GENERAL NOTES

1. A CONTINUOUS TRACER WIRE, SUCH AS A SOLID 14-GUAGE COPPER CLAD WIRE WITH BLUE SHIELDING OR APPROVED EQUAL, SHALL BE AFFIXED TO THE TOP OF THE NEW WASTEWATER MAIN PRIOR TO BURY AND SHALL HAVE A SNAKE PIT TRACER STATION INSTALLED AT A MAXIMUM OF 500 FEET.
2. THE TRACER STATION SHALL HAVE A 2' X 2' CONCRETE PAD AROUND IT AND SHALL BE SHOWN ON THE PLANS.
3. TRACER WIRE SHALL BE CONNECTED TO ALL WATER METER ANGLE STOPS, FIRE HYDRANTS, AND VALVE BOX RISERS. WIRE SPLICES SHALL BE COMPLETED USING APPROVED, UNDERGROUND CONNECTORS. SOLDERED CONNECTIONS ARE NOT PERMITTED. A CONTINUITY TEST SHALL BE COMPLETED PRIOR TO ACCEPTANCE.



PIPE LOCATION MARKING (ALL UTILITIES)

STANDARD CONSTRUCTION DETAILS

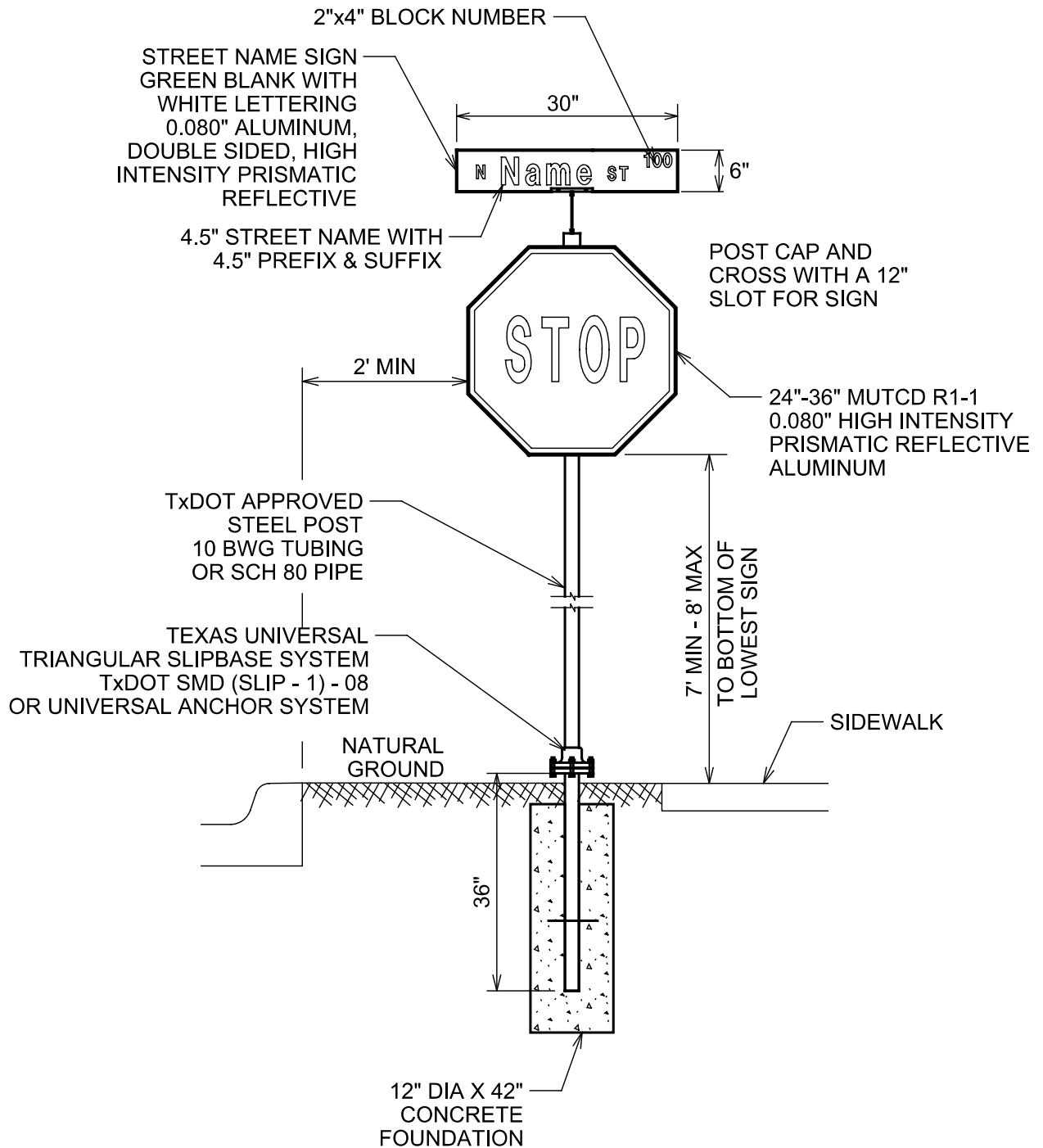
DATE: 07/20/21

REVISED
DATE: 07/20/21

BBF - 10

GENERAL NOTES

- SIGNS SHALL MEET MUTCD AND TxDOT STANDARDS.



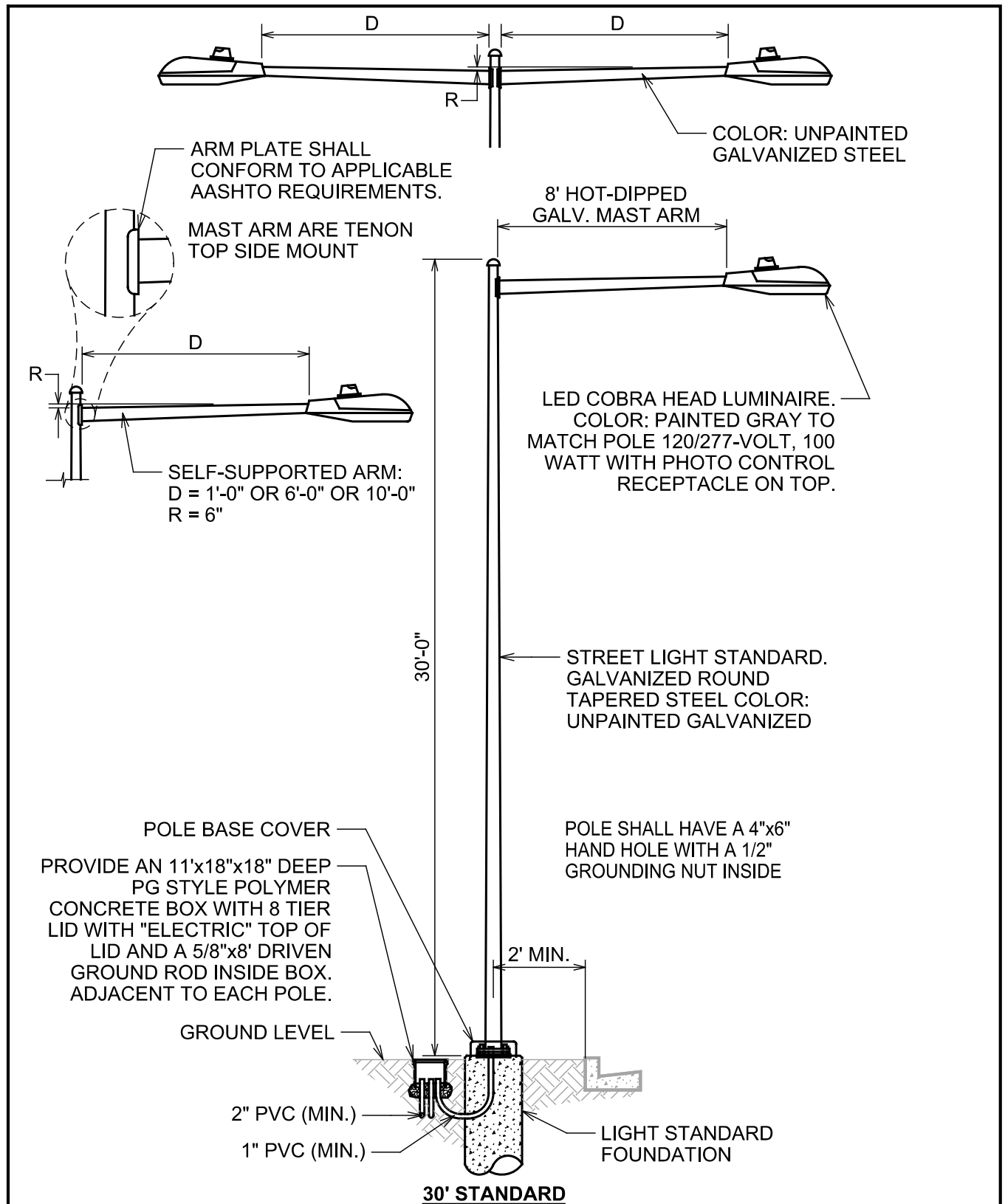
STREET
NAME/STOP SIGN

STANDARD CONSTRUCTION DETAILS

DATE: 07/20/21

REVISED
DATE: 07/20/21

SGN - 1



TYPICAL STREET LIGHT STANDARD DETAILS

STANDARD CONSTRUCTION DETAILS

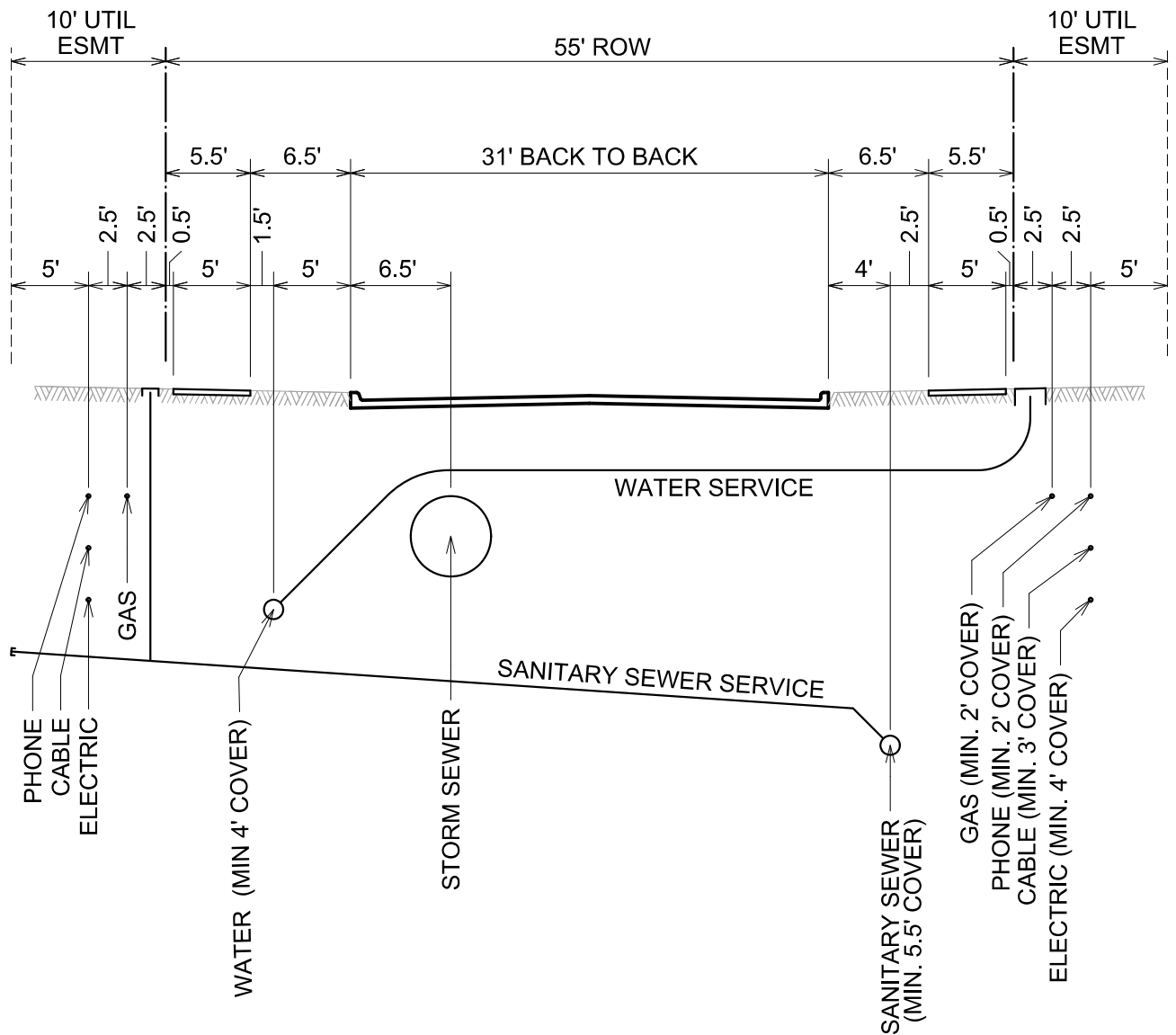
DATE: 07/20/21

REVISED
DATE: 07/20/21

SGN - 2

GENERAL NOTES

1. THIS DETAIL SERVES AS A GENERAL GUIDE ONLY. CITY ENGINEER AND UTILITY PROVIDERS WILL DETERMINE FINAL LOCATION.



TYPICAL UTILITY LAYOUT (LOCAL STREET)

STANDARD CONSTRUCTION DETAILS

DATE: 09/21/21

REVISED
DATE: 09/21/21

ROW - 1



Regular City Council
AGENDA ITEM 5-F.

Agenda Item: Approve the Selection of Kimberly Meismer (Place 6), Mary Dennis (Place 7), Chris Coffman (Place 8), and Opal Mauldin-Jones (Place 9) for TML Intergovernmental Risk Pool Board of Trustees and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Administration

Staff Contact: Carolyn Miller

SUMMARY STATEMENT:

As a member of the Texas Municipal League Intergovernmental Risk Pool, the City of Brenham may participate in the election of members to the Board of Trustees. The votes cast on the ballot for Trustee must be certified that the ballot was cast in accordance with official action of the City Council at a regularly called meeting. Also, as noted on the ballot, each Trustee will serve for a term of six (6) years. Staff would like to recommend the following persons to serve on the Risk Pool Board:

- Place 1: Robert Herrerra, City Manager for the City of Cibolo. Mr. Herrerra is the incumbent; having served on the Board since 1993.
- Place 2: John Fullen: Mayor of the City of Henderson. Since 2010, Mayor Fullen has served on the Board.
- Place 3: Jeffrey Snyder: City Manager for the City Plainview. Mr. Snyder has been on the Board since 2018.
- Place 4: Kimberly Meismer: Executive Director for General Operations for the City of Kerrville. Ms. Meismer has over 23 years experience in public service. This would be her first time to serve on the Board.

ATTACHMENTS:

(1) TML IRP Ballot

RECOMMENDED ACTION:

Approve the selection of Kimberly Meismer (Place 6), Mary Dennis (Place 7), Chris Coffman (Place 8), and Opal Mauldin-Jones (Place 9) for TML Intergovernmental Risk Pool Board of Trustees and authorize the Mayor to execute any necessary documentation.

OFFICIAL BALLOT

Texas Municipal League Intergovernmental Risk Pool Board of Trustees Election

This is the official ballot for the election of Places 6 – 9 of the Board of Trustees for the Texas Municipal League Intergovernmental Risk Pool. Each Member of the Pool is entitled to vote for Board of Trustee members. Please record your organization's choices by placing an "X" in the square beside the candidate's name or writing in the name of an eligible person in the space provided. You can only vote for one candidate for each place.

The officials listed on this ballot have been nominated to serve a six-year term on the TML Intergovernmental Risk Pool (Workers' Compensation, Property and Liability) Board of Trustees. The names of the candidates for each Place on the Board of Trustees are listed in alphabetical order on this ballot.

Ballots must reach the office of David Reagan, Secretary of the Board, no later than September 30, 2022. Ballots received after September 30, 2022, cannot be counted. **The ballot must be properly signed and all pages of the ballot must be mailed to: Trustee Election, David Reagan, Secretary of the Board, P.O. Box 149194, Austin, Texas 78714-9194. If the ballot is not signed, it will not be counted.**

PLACE 6

- ☐ **Allison Heyward.** Councilmember for the City of Schertz (Region 7) since 2018. She also serves as the Mayor Pro Tem. Mrs. Heyward was appointed to represent the Texas Municipal League Board of Directors as an ex-officio non-voting member of the Board of Trustees of the Texas Municipal League Intergovernmental Risk Pool. She earned a Bachelor's Degree in Accounting from Texas Southern University in 1990 and is a 2020 graduate of the Chamber Leadership Core Program. She is a TML Leadership Fellow, a Certified Municipal Officer (CMO), as well as a member of the TMRS Advisory Board on Benefit Design.
- ☐ **Kimberly Meismer.** Assistant City Manager for the City of Kerrville (Region 7). Ms. Meismer has over 25 years of public service, which includes serving Kerrville and La Porte. She earned a Master's Degree in Public Administration from the University of Texas at Arlington and a Bachelor's Degree in Human Resource Management from Columbia Southern University. She is a member of TCMA and serves on the Ethics Committee as the Region 8 Representative. She is also serving a second year as the Chair of the Ethics and Integrity Award subcommittee.

WRITE IN CANDIDATE:

PLACE 7

- ☐ **Mary Dennis (Incumbent).** Mayor for the City of Live Oak (Region 7) since 2010. Mayor Dennis has served on the TML Risk Pool Board since 2018. She is currently Vice-Chair of the TML Risk Pool Board, and on October 1, 2022, will begin a two-year term as Chair. Among her numerous civic activities are serving as 2016/2017 President for the Texas Municipal League, 2021-2023 NLC Board Director, Treasurer of the Greater Bexar County Council of Governments, Chair of the Judson ISD Facilities Committee, Chair of the Bexar County Suburban Cities Committee, and President of the Live Oak Economic Development Corporation. She is also a 2019 Inductee of the San Antonio Women's Hall of Fame and the 2019 San Antonio Women's Chamber of Commerce "Comet Award."
- ☐ **James A. Douglas, Ph.D.** City Councilmember for the City of Kenedy (Region 7). Dr. Douglas is a current criminal justice instructor at Kenedy ISD. He is a national Law and Public Safety Education Network (LAPSEN) Honor Teacher who, along with some of his students, recently participated in the Washington, D.C. National Academy of Law and Justice. The LAPSEN Honor Teachers were identified from a national application process to identify educators with a passion for law and justice, excellence in leadership and teaching.
- ☐ **Rebecca (Becky) Haas.** Mayor of Richmond (Region 14). Mayor Haas is a business-owner in the historic downtown district of Richmond. She is a direct descendant of one of Stephen F. Austin's first settlers in Texas who are known as the Old Three Hundred. She is Chaplain for and a charter board member of the Descendants of Austin's Old Three Hundred organization. She is passionate about Texas history, a member of the Fort Bend County Historical Commission, a former member of the Richmond Historical Commission, a member of the Fort Bend County Museum, a board member of the Black Cowboy Museum, member of Historic Richmond Association, and is a Fort Bend Docent.
- ☐ **James Hotopp.** City Manager for Weatherford (Region 8) since 2019. Mr. Hotopp joined the City in 2007 as its Director of Water/Wastewater and Engineering and served the City in several capacities, including Utility Engineer, Director of Planning and Development, and Assistant City Manager. He serves as a voting member of Region C Water Planning Group for Texas, which prepares a regional water plan for a 16-county group in North Texas. Mr. Hotopp is a member of the North Texas City Manager's Association, the North Texas Commission, and a board member of the Texas Public Power Association. Previously, he worked in consulting engineering where he designed water treatment plants, wastewater treatment plants, water pump stations, wastewater lift stations, and distribution/collection lines.

WRITE IN CANDIDATE:

PLACE 8

- ☐ **Chris Coffman.** City Manager of Granbury (Region 8). Mr. Coffman has 24 years in public management. He has served as City Manager for Sealy, Borger, the Village of Timbercreek Canyon, and Panhandle. He has also served as the Director of Local Government Services of the Panhandle Regional Planning Commission and served as Interim City Manager for the Cities of Fritch and Stratford. During his time at the Panhandle Regional Planning Commission, he served 26 counties and 62 cities in the Panhandle. He is a past President of the TCMA. Mr. Coffman holds a Bachelor of Science Degree in Public Administration from West Texas A&M University and has a Certified Public Manager designation through Texas Tech University.
- ☐ **Brett Haney.** City Administrator for the City of Cockrell Hill (Region 13) since 2015. Mr. Haney has been with Cockrell Hill since 2006 and was promoted to Assistant City Administrator in 2011. He is originally from Southern California and moved to North Texas in 2000. Mr. Haney earned Bachelor of Applied Arts and Sciences and Master of Public Administration degrees from the University of North Texas. He is a member of TCMA and currently serves on the Public Policy Committee and has served on the TCMA Advocacy Committee in recent years. He is very active as Cubmaster and Den Leader for Cub Scout Pack 717 in Keller, Texas.
- ☐ **Mike Land.** City Manager for the City of Coppell (Region 13) since 2017, and Deputy City Manager from 2012-2017. Previously, he was Town Manager for Prosper, City Manager for Gainesville, and Executive Director for the Southwestern Diabetic Foundation. Mr. Land has served on the International City/County Management (ICMA) Board of Directors, ICMA's Advisory Board on Graduate Education, Texas A&M University's Development Industry Advisory Council, School Board Trustee for Gainesville Independent School District, and President of TCMA. Currently, he serves on the Texas Women's Leadership Institute Advisory Board and the UTA MPA Advisory Board.
- ☐ **Marian Mendoza.** City Administrator for the City of Helotes (Region 7) since 2020. Ms. Mendoza has held positions with the City of Alamo Heights, as Assistant to the City Manager (2005-2020), and with the City of San Antonio as a Management Analyst (2003-2005). Previously she served as a Director overseeing homeless transition housing programs for the Salvation Army. She also serves as the Ex-Officio Board Member of the Helotes Economic Development Corporation. Ms. Mendoza earned a Bachelor's Degree from St. Mary's University and is part of the Certified Public Management program at Texas State University. She is a member of the ICMA, TCMA, and the International Hispanic Network.
- ☐ **Louis R. Rigby.** Mayor of the City of La Porte (Region 14) since 2010. Mayor Rigby previously served as the District 5 Councilperson from 2004 until 2010, before being elected Mayor. He is a member and past Director of the La Porte-Bayshore Chamber of Commerce and has held the offices of Treasurer, Vice-President, and President of the Harris County Mayors and Councils Association. He graduated from San Jacinto College and the University of Houston before earning an MPA from the University of Houston-Clear Lake. Mayor Rigby served in the U.S. Airforce from 1968-1972. He has actively advocated for the La Porte region on issues including heavy haul and solutions for hurricane damage and management.

WRITE IN CANDIDATE:

PLACE 9

- ☐ **Barry Beard.** Commissioner for the City of Richmond (Region 14) since 2016. Mr. Beard retired from Moody National Bank where he was the Senior Vice President. He has served on many civic and community boards. He was President of the Board for Oak Bend Hospital, past Chair of the Central Fort Bend Chamber Alliance, past Chair of Arc of Fort Bend, Congressman Olson's Service Academy Interview Committee and Fort Bend Partnership for Youth. He also served on the original Richmond Charter Commission, Richmond Parks Commission, Richmond Development Corporation, Richmond Historical Commission, Richmond Comprehensive Planning Advisory Committee, and the Richmond Rosenberg Local Government Corporation.
- ☐ **Stephanie Fisher.** Councilmember for Johnson City (Region 7). In 2021, she was appointed as the Johnson City representative to the General Assembly of the Capital Area Council of Governments. The Executive Committee of the Capital Area COG appointed her to represent the COG on the Unified Scoring Committee of the Texas Department of Agriculture's Community Block Grant program. She serves on the Board of Directors for the Hill Country 100 Club and the Johnson City Community Education Foundation. She also is the Commissioner for the Johnson City Youth Football program and sits on an advisory committee for the Johnson City Youth Sports Association. She is active in her church, as well as multiple activities within Johnson City ISD, and is a member of the Blanco County Eclipse Task Force.
- ☐ **Carl Joiner.** Mayor for the City of Kemah (Region 14) since 2015. Prior to that, he served as a Kemah City Councilmember for three years. He has served as President of the Kemah Community Development Corporation, Chairman of the Bay Area Houston Transportation Partnership, member of the Convention and Visitors Bureau Board, Chairman of the Clear Creek Education Foundation, board member of the Chris Reed Foundation, Chairman of the Clear Lake Area Chamber, and Treasurer of the League City Regional Chamber of Commerce. He has received awards such as the Chairman's Award in 2020 for the League City Regional Chamber of Commerce and the Sam Walton Award for Integrity in Business.
- ☐ **Opal Mauldin-Jones (Incumbent).** City Manager for the City of Lancaster (Region 13) since 2011, and in various other roles for Lancaster since 2003. Under her leadership, the City has experienced two consecutive bond rating increases without issuing debt. The City has been designated a 2019 All-America City and received the CiCi Award. It is one of less than 25 communities with all five Transparency Stars awarded by the Texas Comptroller. Ms. Mauldin-Jones earned her Bachelor Business Administration and Master Public Administration degrees from the University of Texas at Arlington. She currently serves on the TCMA Board as Director-at-Large and as Vice President-Elect, and on the Board of the TML Intergovernmental Risk Pool.
- ☐ **William Linn.** City Manager of Kenedy (Region 7). Mr. Linn is a member of TCMA and ICMA. He earned a Bachelor of Science Degree in Business from Indiana University's Southeast campus. Thereafter, he was accepted to several law schools where he intended to specialize in business and intellectual property law. However, Mr. Linn opted to enroll in Southern New Hampshire University where he earned a Master of Business Administration and Master of Science in Organizational Leadership concurrently. He is a Certified Fraud Examiner and a Certified Public Manager. He is working to complete the Lean Six Sigma Black Belt and Project Manager Professional Certifications.

WRITE IN CANDIDATE:

Certificate

I certify that the vote cast above has been cast in accordance with the will of the majority of the governing body of the public entity named below.

Witness my hand, this _____ day of _____, 2022.

Signature of Authorized Official

Title

Printed Name of Authorized Official

Printed Name of Political Entity



Regular City Council
AGENDA ITEM 5-G.

Agenda Item: Approve a Noise Variance for Women's Reproductive Rights Brenham, Texas for a March to be Held on October 8, 2022 on the Washington County Courthouse Square from 10:00 a.m. to 12:00 p.m.

Meeting Type: Regular Meeting-September 15, 2022

Department: Public Works

Staff Contact: JoAnne Hynes

SUMMARY STATEMENT:

Women's Reproductive Rights Brenham, TX will be holding a March at the Washington County Courthouse Square on Saturday, October 8, 2022, from 10 a.m.-12 p.m. Up to 150 attendees are expected. The group will be marching around the Washington County Courthouse Square holding signs and chanting. Organizers will emphasize to all participants to be non-confrontational and not to engage in any verbal confrontation. A permit has been obtained from the County for the use of the courthouse lawn and gazebo. Last year's March was held without incident. Loudspeakers, bluetooth speakers and bullhorns will be in use; therefore, a noise variance is required.

ATTACHMENTS:

- (1) Noise Variance Request
- (2) March Flyer

RECOMMENDED ACTION:

Approve a Noise Variance for Women's Reproductive Rights Brenham, Tx for a March to be held on October 8, 2022, at the Washington County Courthouse Square from 10:00 A.M. to 12:00 P.M.

NOISE VARIANCE REQUEST

Application Fee \$10.00

1. Name of sponsoring organization: Women's March
2. Name and address of individual making application on behalf of sponsoring organization: Tammy Johnson
4954 Schoenau Road Brenham TX
3. Purpose of the Event: Reproductive Rights March
4. Location of Event: Washington County Courthouse square
5. Date of the event: 10/08/2022
6. Time of Event: 10am-12pm
7. Event Set-up: From: 9:15am To: 10am
Event Clean-up: From: 12pm To: 1pm
8. You are required to describe the following:
 - a) Types of Activities Planned and any additional information specific to this event: We will be marching around the courthouse square, holding signs & chanting. We may have speakers, a microphone, & bullhorn. We will have a table w/ posters displayed @ Gazebo for sign-up.
 - b) Bands/Musical Instruments: —
 - c) Sound amplification equipment: 1-2 loud speakers, microphone, bull horns, bluetooth speaker
 - d) Cleanup provisions: We will bag up and remove any trash.

Tammy Johnson
Name of Applicant (Printed or Typed)

Date: 08/31/2022

Tammy Johnson
Applicant or Authorized Person's Signature

Phone: 979-877-5170

Have you ever been found guilty of a criminal offense involving crimes against property, moral turpitude, and/or a felony by any Court? Yes X No. If "Yes", please identify the offense, State of conviction and penalty imposed (attach additional sheets if necessary):

March for Reproductive Rights

Saturday, October 8th 9:30am-noon

Washington County Courthouse

100 East Main Street

Brenham, Texas



If you are someone who wants their voice to be heard in response to Texas' anti-abortion laws and if you support body autonomy and reproductive rights for all, we need your help! This fight goes way beyond just going to vote in November. We are **ANGRY** that these rights have been taken away from us. These are unjust laws regulating our bodies, violating our privacy, and go way beyond just pushing the evangelical pro-life agenda. We are protesting to have our voices and opinions heard, to say that we disagree with the decision to strike down *Roe v. Wade*, and that we want to push the extreme conservative and religious opinions of sitting politicians **OUT** of **OUR** government.

If you believe that the current anti-abortion laws are only meant to be another corrupt way for politicians to control us by controlling our bodies, then please join us! We will be walking or sitting and holding signs in protest around the local courthouse in Brenham. We will have water and snacks for participants and encourage you to lift your voice and join us in this fight.

Our Facebook group is called 'Women's Reproductive Rights Brenham, TX' and can be found here: <https://www.facebook.com/groups/4334711013278052/?ref=share>



You can join the Facebook group and then RSVP to attend our march protest event on Saturday, October 8th. Or just show up. All are welcome!

If you can't make it that day but would like to donate towards supplies needed on the day of the march: https://www.facebook.com/donate/438191695003543/?fundraiser_source=messages



Regular City Council
AGENDA ITEM 5-H.

Agenda Item: Approve a Noise Variance for the Zythological Society of North America, Texas Chapter, for the Brewstep 0.1K Saunter for a Cause to be Held on Saturday, October 15, 2022 in Downtown Brenham from 1:00 p.m. to 4:00 p.m.

Meeting Type: Regular Meeting-September 15, 2022

Department: Public Works

Staff Contact: JoAnne Hynes

SUMMARY STATEMENT:

The Zythological Society of North America, Texas Chapter will be hosting the Brewstep 0.1K Saunter for a Cause which is to be held Saturday, October 15, 2022, from 1-4 p.m. The event is a fundraiser supporting the Blessing Box. Approximately 500-600 attendees are expected. The event will feature beer tasting with multiple breweries being represented. A PA system will be used to make announcements during the event; therefore, a noise variance is required.

ATTACHMENTS:

(1) Noise Variance Request

RECOMMENDED ACTION:

Approve a Noise Variance for the Zythological Society of North America, Texas Chapter for the Brewstep 0.1K Saunter for a Cause to be held Saturday, October 15, 2022, in Downtown Brenham from 1:00 p.m. to 4:00 p.m.



Noise Variance Request

For: Brewstep 0.1K Saunter For a Cause

Name of sponsoring organization: Zythological Society of North America, Texas Chapter

Your Contact Information

Name: Austin Taylor

Phone: 936-218-0138

Email: ataylor7376@gmail.com

Event Details

Event Name: Brewstep 0.1K Saunter For a Cause

Purpose:

Location: South end of St Charles Street between Commerce and the end of the street.

Date: 2022-10-15

Time: 1pm - 4pm

Setup From: 9am **To:** 12:30pm

Clean up From: 4:30pm **To:** 7pm

Types of activities planned and any additional information specific to this event: We are hosting a 0.1k Saunter beer tasting fundraiser. We are a 501(c)3 non-profit charity raising funds for the Blessing Box here in Brenham through charging attendees a fee to enter the Saunter and taste beers from 10-15 different breweries, similar to our beer tasting events at Maifest. The tasting will extend a total of 328' by using both sides of St Charles St between Commerce and the dead end in front of Las Americas. We will have tables set up along the sidewalks in the street for a total of 328' that each attendee will walk around from one end to the other tasting different beers. There will be no connection to the Texas Arts and Music Fest other than it will be on the same day.

Describe activities at this event that require the variance to the noise ordinance: We plan on having a PA in use for making announcements during the event. There will be no music played.

Will you use sound amplification equipment? Yes

Cleanup Provisions: All trash will be disposed of off-site along with any spills of food will be cleaned up. There will not be any paint or staining type materials used for this event. All the tables will be removed after the event.

Approved by City Council on the _____ day of _____, 2022

Have you ever been found guilty of a criminal offense involving crimes against property, moral turpitude, and/or a felony by any court? No

Please identify the offence, State of conviction and penalty imposed:

Approved by City Council on the day of , 2022



Regular City Council
AGENDA ITEM 5-I.

Agenda Item: Approve a Noise Variance for the Texas Arts and Music Festival to be Held on Saturday, October 15, 2022 from 10:00 a.m. to 10:30 p.m. and Sunday, October 16, 2022 from 11:00 a.m. to 3:00 p.m.

Meeting Type: Regular Meeting-September 15, 2022

Department: Public Works

Staff Contact: JoAnne Hynes

SUMMARY STATEMENT:

The Texas Arts & Music Festival is holding a Public Festival celebrating artwork and music in Downtown Brenham which will be held Saturday, October 15th and Sunday, October 16th. Approximately 3,000 attendees are expected. The event will feature food vendors, an art village, muralist, and art duel. Live music will be taking place on the main stage located on Commerce Street from 4:30 p.m. to 10:30 p.m. on the 15th and tentatively scheduled for the 16th from 12:00 p.m. to 2:00 p.m., therefore, a noise variance is required.

ATTACHMENTS:

(1) Noise Variance Request

RECOMMENDED ACTION:

Approve a Noise Variance for the Texas Arts and Music Festival to be held on Saturday, October 15, 2022 from 10:00 a.m. to 10:30 p.m. and Sunday, October 16, 2022 from 11:00 a.m. to 3:00 p.m.



Noise Variance Request

For: Texas Arts and Music Festival

Name of sponsoring organization: Texas Arts and Music Festival

Your Contact Information

Name: Jenny Van Dorf

Phone: 3253703122

Email: jennyvandorf@gmail.com

Event Details

Event Name: Texas Arts and Music Festival

Purpose: Public festival celebrating artwork and music

Location: Downtown Brenham

Date: 2022-10-15 Sunday, October 16

Time: Saturday, October 15 at 10am

Setup From: 6am **To:** 10am

Clean up From: Sunday, October 16 at 3pm **To:** Sunday, October 16 at 4pm

Types of activities planned and any additional information specific to this event: Live music, art village, muralist, art dual, food vendors

Describe activities at this event that require the variance to the noise ordinance: Bands on main stage at Commerce Street, music until 10:30pm Saturday, October 15

Will you use sound amplification equipment? Yes

Cleanup Provisions: Art vendors are responsible for cleaning up their area, and TAMF board members and volunteers will pick up remaining items to ensure streets are accessible and clean.

Have you ever been found guilty of a criminal offense involving crimes against property, moral turpitude, and/or a felony by any court? No

Please identify the offence, State of conviction and penalty imposed:

Approved by City Council on the day of , 2022



Regular City Council
AGENDA ITEM 5-J.

Agenda Item: Approve a Noise Variance for St. Mary Immaculate Conception Catholic Church for the St. Mary's Catholic Church Street Dance to be Held on Saturday, October 22, 2022, at 701 Church Street, from 4:00 p.m. to 11: p.m.

Meeting Type: Regular Meeting-September 15, 2022

Department: Public Works

Staff Contact: JoAnne Hynes

SUMMARY STATEMENT:

St Mary Immaculate Conception Catholic Church is hosting a Street Dance at 701 Church Street on Saturday, October 22, 2022, from 4-11 p.m. Approximately 150 attendees are expected. The event will feature a kids train, food/drink, live auction, raffle, live band, and dancing in the street. Due to the live band and auction, a noise variance is required.

ATTACHMENTS:

(1) Noise Variance Request

RECOMMENDED ACTION:

Approve a Noise Variance for St. Mary Immaculate Conception Catholic Church for the St. Mary Catholic Church Street Dance to be held on October 22, 2022, at 701 Church Street from 4:00 P.M. to 11:00 P.M.



Noise Variance Request

For: Click or tap here to enter text.

Name of sponsoring organization: St. Mary Immaculate Conception Catholic Church

Your Contact Information

Name: Joel Whitehead

Phone: 210.872.9699

Email: joel@mhdinc.net

Event Details

Event Name: St. Mary Catholic Church – Street Dance

Purpose: Annual Fundraising Social Event

Location: 701 Church Street, Brenham, Texas 77833

Date: October 22, 2022

Time: 4pm to 11pm

Setup From: 8am

To: 2pm

Clean up From: 10pm

To: 11pm

Types of activities planned and any additional information specific to this event: Kid train, food & drink, live auction, raffle, live band, dancing in the street

Describe activities at this event that require the variance to the noise ordinance: Live band and auction

Will you use sound amplification equipment? Yes, amps / speakers for guitars / bass / drums

Cleanup Provisions: Handled by band

Have you ever been found guilty of a criminal offense involving crimes against property, moral turpitude, and/or a felony by any court? No

Please identify the offence, State of conviction and penalty imposed: N/A

Approved by City Council on the **day of** **, 2022**

2020 djk
Approved
8/26/22
YES
246



Regular City Council
AGENDA ITEM 6.

Agenda Item: Discuss and Possibly Act Upon the Purchase of Audio Visual Equipment for the Brenham Police Department and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Brenham Police Department

Staff Contact: Ron Parker

SUMMARY STATEMENT:

The current audio/visual (AV) systems in the Police Station Training Room and Community Room were installed in 2009 and are no longer functional due to obsolete and failed components. A commercial AV installer has provided a budgetary quote to replace the outdated systems and add web conferencing capabilities to the Training Room.

The attached quote includes a 3-year add-on warranty in the amount of \$8,191.00, which is not being purchased at this time. This warranty can be purchased within one-year of the installation of the new system. The estimated cost of this AV upgrade, without the 3-year warranty, is \$67,334.00.

ATTACHMENTS:

- (1) Avinext Project Summary
- (2) Avinext Quote

RECOMMENDED ACTION:

Approve the purchase of audio visual equipment for the Brenham Police Department from Avinext, in an amount not-to-exceed \$67,334.00, and authorize the Mayor to execute any necessary documentation.

PROPOSAL

PD Building AV Upgrades City Of Brenham

Revision: 1
Modified: 9/2/2022



Presented By:

Matt Castillo

1400 University Drive East
College Station, TX 77840 USA
979-846-9727
<http://www.avinext.com>

Avinext
AV SAVVY. NETWORK SMART.

<http://www.avinext.com>

PROJECT SUMMARY

City of Brenham: Police Department Building AV Upgrades

The goal of this project is to update 2 spaces in the PD building with modern and more advanced AV equipment allowing web-based video conferencing and to improve the overall AV experience in the spaces.

Training Room

Video System:

(2) 5200-lumen laser projectors will replace the OFE projectors. The OFE projection screens will be reused in the updated system. Two 65" displays will be wall mounted in the coordinated location to act as confidence monitors. A wall mounted PTZ camera will be mounted center of the room to capture as much of the room as possible. This camera will enable web conferencing through the OFE PC.

Video Inputs:

- OFE PC located at lectern (This device will drive web conferencing)
- Laptop HDMI connection at lectern (Presentation only)
- OFE Cable box located at the lectern

Video Outputs:

- Dual projection system with two new laser projectors
- Two 65" displays used as confidence monitors
- SMART Podium Monitor at lectern (Connected to OFE PC)

Audio System:

- A distributed audio system will be installed in the ceiling for the training room. The existing equipment will be removed and left with the client.
- It was requested that Avinext removed all the existing wireless receivers from the rack/room. In their place, Avinext will install ceiling mics that will offer coverage for most of the room for VC / teleconferencing capabilities. These mics will not be used for voice lift. Audio will be routed with video to the OFE PC for VC capabilities.

Control System:

- A 7" wall mounted touch panel will be installed to replace to OFE button pad control. This touch panel will be used for basic functionality including power control, source selection, volume control, phone controls, and camera controls.
- The system will have the ability to display different inputs at each display location.
- X panel will be provided for PC control (If still supported)

Furniture:

- AV equipment will be installed in the OFE Rack located in the server room..

OFE Equipment:

- PC
- Cable box
- Projection screens

Avinext will be responsible for removing:

- Existing unused cabling
- Projectors (They will be repurposed in a different space)

Community Room

Video System:

- An OFE Ricoh board on a rolling stand will be moved to the room by the City of Brenham prior to Avinext arrival in the room.
- A 15' whip will be installed at the OFE display containing a USB connection as well as an HDMI connection with an adapter ring. This whip will allow a guest device to mirror onto the OFE display as well as enabling touch capabilities for the secondary input.
- OFE Projection screen will be abandoned in place. All unused video cabling and wall plates will be removed/blanked.

Audio System:

- A new distributed audio system will be installed in the ceiling.
- The audio out of the display will be connected into a wall plate.
- A wall mounted volume knob will control the level of audio distributed through the audio system.

Avinext is responsible for removing the following equipment:

- Existing Wireless Microphone system
- Ceiling Speakers
- Speaker cabling
- Amp in rack

Control System:

- The OFE display remote will be used for basic functions

AVINEXT LIMITED INSTALLATION WARRANTY

This warranty covers all cables, plates, projectors, displays, codecs, interactive whiteboards, speakers, microphones, distribution amplifiers, switchers, scalers, control systems, and/or other equipment sold and installed by Avinext as part of the original installation. The limited warranty covers parts, labor, and standard shipping required to return the system to proper working condition.

The limited warranty covers the following:

- Improper workmanship directly associated with the installation of equipment by Avinext personnel
- Premature failure of equipment due to normal operation (as determined by Avinext and/or the manufacturer)
- Labor to repair the system, components and parts in order to restore the system to original operating condition
- The limited warranty does not cover the following:
 - Consumable items such as projector lamps and batteries for remotes
 - Ground loop problems caused by faulty or dirty power
 - Projector issues such as dirty lens, alignment, focus, dust and/or heat build-up caused by dust
 - Routine maintenance as recommended by the manufacturer or as conditions require
 - Programming changes including, but not limited to, user interface (UI) changes, operation of preset controls (i.e. macros), and addition of buttons or pages to UI
 - Firmware or software updates made available by the manufacturer after the original installation
 - Requests for service due to operator error
 - Service required as a result of negligence, misuse, or attempted repairs by anyone other than Avinext or the manufacturer
 - Connections or dis-connections made by others
 - Removal or reinstallation of equipment
 - Damage caused by lightning, electrical surges, brownouts, overloaded circuits, or acts of God

The warranty statement above describes the Avinext Limited Installation Warranty and begins at substantial completion. However, this warranty does not change or modify the manufacturer's warranty in any way. Consult the owner's manual for details about the manufacturer limited warranty.



HOW DO I GET SUPPORT?

Contact our AV Service Department at (800) 946-9727 ext. 291 or email AVTicket@Avinext.com.

Please include the following information in your service request to expedite the processing of service:

- Organization or department name
- Primary contact name, number and email
- Equipment model and serial number
- Location, including building and room number and/or physical address
- A detailed problem description, including what you were doing when the issue occurred
- Provide room availability or contact information for the facilities coordinator to speed up scheduling and insure access to the equipment

For incidents where warranty status can only be determined by a service visit, Avinext will send a technician onsite to diagnose the problem. If the problem is determined to be a non-warranty issue, Avinext will provide a quote for repair before completing the work. The customer will be responsible for paying for the initial service event to diagnose the problem regardless of whether or not they chose to repair the system. Avinext will require a Purchase Order to complete the service work for problems deemed non-warranty. Standard service and travel rates apply. Response time for warranty service is 8 business hours during standard business hours. Actual repair times will vary depending on access to the equipment, shipping times, manufacturer repair times, parts availability, etc. However, Avinext will make a best effort to restore system functionality as quickly as possible.



AV SAVVY. NETWORK SMART.

The Personal Computer Store, Inc.
1400 University Drive East - College Station, TX 77840
Phone 979-846-9727 Fax 979-268-1017
www.Avinext.com

Quotation

Quote #	Date
193871	03/18/22
Sales Rep	
Matthew Castillo 979-846-9727 Ext. 280 castillo@avinext.com	

For	Phones			
Kevin Schmidt City of Brenham PO BOX 1059 BRENHAM, TX 77833	(979) 337-7288			
	PO #	Terms	Ship Date	Ship Via
		Net 30 days	7/1/2022	Will Call STD

	Part	Description	Qty	Price	Ext. Price
1		D-Tools Project <PD Building AV Upgrades>.			
2	SERMISC	Miscellaneous Parts	1	\$500.00	\$500.00
3	HDWMOUNT	Mounting Hardware	1	\$500.00	\$500.00
4	SERMISC	Miscellaneous Parts	1	\$325.00	\$325.00
5	SER100014	Avinext Project Manager	36	\$125.00	\$4,500.00
6	SER10007	Avinext A/V Technician	47	\$95.00	\$4,465.00
7	SER10008	Avinext Lead A/V Technician	47	\$125.00	\$5,875.00
8	SER100080	Avinext Lead A/V Programmer	36	\$160.00	\$5,760.00
9	SER10009	Avinext Lead A/V Designer	7	\$160.00	\$1,120.00
10	SHP10010	Freight	1	\$723.00	\$723.00
11	SER70000	Avinext Training Service	1	\$125.00	\$125.00
12	SER10016	Avinext Travel Expenses	1	\$650.00	\$650.00
13		Community Room			
14	AT35	Atlas AT35 ATTENUATOR COMMERCIAL 35W SS	1	\$28.49	\$28.49
15	HDWMOUNT	Mounting Hardware	1	\$200.00	\$200.00
16	AMP-X300	Crestron AMP-X300 X-Series Amplifier	1	\$550.00	\$550.00
17	DL-AR2804	LWC DL-AR2804 DIGITALINX SECURE ADAPTER RING	1	\$226.00	\$226.00
18	EVID C8.2	Electro-Voice F.01U.117.587 EVID C8.2 8" Coaxial speaker with horn loaded Ti coated tweeter - complete with back can enclosure, tile rails, and mounting ring - for 70v/100v or 8-ohm operation. Taps at 30, 15, 7.5, 3.75, and 1.88 watts (sold and priced per pair)	6	\$198.00	\$1,188.00
19	26-663-15	Extron 26-663-15 4K Premium High Speed HDMI Ultra-Flexible Cable - 15' (4.5 m)	1	\$80.60	\$80.60
20	16-2C-P-BLK	LWC 16-2C-P-BLK COMMERCIAL 16/2 CMP BLACK	300	\$0.33	\$99.00
21	22-1P-CMP-EZ-BLK	LWC 22-1P-CMP-EZ-BLK QWIKSTRIP 22/1P AUDIO CMP BLK	100	\$0.29	\$29.00

	Part	Description	Qty	Price	Ext. Price
22	E-USBAB-15	LWC E-USBAB-15 USB 2.0 MOLDED AM-BM 15' BLACK	1	\$14.73	\$14.73
23	TX-8A	RDL TX-8A 4 Ohm / 8 Ohm Input Interface - Unbalanced/Balanced Line Out	1	\$84.97	\$84.97
24		Training Room			
25	HDWRACKMED	Miscellaneous Rack Hardware - Medium	1	\$175.00	\$175.00
26	CD-MX915H	LWC CD-MX915H HOOD PLASTIC FOR MAXBLOX DSUB	4	\$4.45	\$17.80
27	CD-MX9M	LWC CD-MX9M DSUB PLUG DB9M-PHX IN-LINE	4	\$22.90	\$91.60
28	CMS003	Chief CMS003 FIXED PIPE 3"	2	\$18.00	\$36.00
29	CMS003W	Chief CMS003W FIXED PIPE 3" WHITE	2	\$18.00	\$36.00
30	CMS440	Chief CMS440 8" CEILING PLATE WITH ONE SLOT	2	\$123.75	\$247.50
31	FSB1U	Chief FSB1U UNIV. VESA INTERFACE BLK	1	\$47.23	\$47.23
32	K1D120B	Chief K1D120B K1 DESK MNT SINGLE DISPLAY 2L ARM BLK	1	\$228.00	\$228.00
33	LTM1U	Chief LTM1U Micro-Adjust Tilt Wall Mount Large	2	\$288.00	\$576.00
34	RPMAU	Chief RPMAU UNIVERSAL RPMA	2	\$243.00	\$486.00
35	AMP-X300	Crestron AMP-X300 X-Series Amplifier	1	\$550.00	\$550.00
36	CBL-HD-12	Crestron CBL-HD-12 Crestron® Certified HDMI® Interface Cable, 18 Gbps, 12 ft (3.6 m)	1	\$49.00	\$49.00
37	CBL-HD-6	Crestron CBL-HD-6 Crestron® Certified HDMI® Interface Cable, 18 Gbps, 6 ft (1.8 m)	7	\$35.00	\$245.00
38	CP4N	Crestron CP4N 4-Series™ Control System	1	\$1,925.00	\$1,925.00
39	DM-NVX-360	Crestron DM-NVX-360 DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder	7	\$1,238.00	\$8,666.00
40	TSW-770-B-S	Crestron TSW-770-B-S 7 in. Wall Mount Touch Screen, Black Smooth	1	\$1,238.00	\$1,238.00
41	DL-AR2804	LWC DL-AR2804 DIGITALINX SECURE ADAPTER RING	1	\$226.00	\$226.00
42	EVID C8.2	Electro-Voice F.01U.117.587 EVID C8.2 8" Coaxial speaker with horn loaded Ti coated tweeter - complete with back can enclosure, tile rails, and mounting ring - for 70v/100v or 8-ohm operation. Taps at 30, 15, 7.5, 3.75, and 1.88 watts (sold and priced per pair)	8	\$198.00	\$1,584.00
43	100036	LWC 100036 EZ-RJ45 BOOT CAT6 CLEAR	18	\$0.17	\$3.06
44	11108080034	LWC 11108080034 RJ45 PLUG 8P8C CAT6 CLEAR	18	\$0.45	\$8.10
45	112627	LWC 112627 BNC PLUG RG8 PLN CRIMP 3-PC	2	\$3.96	\$7.92
46	16-2C-P-BLK	LWC 16-2C-P-BLK COMMERCIAL 16/2 CMP BLACK	600	\$0.33	\$198.00
47	22-1P-CMP-EZ-BLK	LWC 22-1P-CMP-EZ-BLK QWIKSTRIP 22/1P AUDIO CMP BLK	20	\$0.29	\$5.80
48	24-4P-P-L6-EN-BLK	LWC 24-4P-P-L6-EN-BLK CAT6 550 23/4P UTP CMP BLACK	1300	\$0.50	\$650.00
49	RG8-CMP-BLK	LWC RG8-CMP-BLK RG8 DUAL SHIELD CMP BLACK	100	\$5.68	\$568.00
50	PD-915RV-RN	Middle Atlantic PD-915RV-RN 9 VERT OUTLET 15A RCKMT	1	\$244.20	\$244.20
51	PT-FRZ50WU7	5200 LUMENS 1DLP WUXGA 4K INPUT LASER PROJECTOR WHITE	2	\$2,999.00	\$5,998.00
52	SLQUD-110-P	QSC SLQUD-110-P Q-SYS Core 110 UCI Deployment Software License, Perpetual.	1	\$171.00	\$171.00
53	CORE 110f		1	\$3,169.00	\$3,169.00

	Part	Description	Qty	Price	Ext. Price
		QSC CORE 110f Unified Core with 24 local audio I/O channels, 128x128 total network I/O channels with 8x8 Software-based Dante license included, USB AV bridging, dual LAN ports, POTS and VoIP telephony, 16x16 GPIO, 16 next-generation AEC processors, 1RU.			
54	NC-12x80	QSC NC-12x80 12x Optical Zoom 80° Horizontal Field of View, PTZ Network Camera, PoE, with HDMI and SDI output. Includes PTZ-WMB1 wall mount bracket	1	\$3,416.00	\$3,416.00
55	QB65R	65-inch Commercial 4K (3,840 x 2,160) UHD LED LCD Display, 350 NIT. Contrast Ratio 4,000:1. Response Time 8ms. Viewing Angle 178/178. Pixel Pitch 0.124 x 0.372 (mm).	2	\$1,385.00	\$2,770.00
56	A710-TB	Shure A710-TB TILE BRIDGE FOR 2 FT MXA710	2	\$120.00	\$240.00
57	MXA710W-2FT	Shure MXA710W-2FT LINEAR ARRAY MIC, WHITE, 2 FT	2	\$2,299.00	\$4,598.00
58	SP624	SMART Podium interactive pen display SP624	1	\$1,819.00	\$1,819.00
59		SubTotal			\$67,334.00
60	WARO3	3 Year On-Site Warranty	1	\$8,191.00	\$8,191.00
SubTotal					\$75,525.00
Sales Tax					\$0.00
Shipping					\$0.00
Total					\$75,525.00

QUOTES ARE VALID FOR 30 DAYS FROM THE DATE SHOWN ABOVE. PRICES SUBJECT TO CHANGE - PRICES BASED UPON TOTAL PURCHASE - ALL SERVICES TO BE BILLED AT PUBLISHED RATES



Regular City Council
AGENDA ITEM 7.

Agenda Item: Discuss and Possibly Act Upon a Professional Services Agreement Between the City of Brenham and Strand Associates, Inc. Related to FY2022-23 On-Call Engineering Services and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Public Utilities

Staff Contact: Shawn Bolenbarr

SUMMARY STATEMENT:

The City of Brenham wishes to obtain engineering services from Strand Associates, Inc. to provide 'On-Call' engineering support services to the City. These services would include, but are not limited to, General Engineering Services, Development Review Services, Floodplain Administration Services, and Part-Time Resident Project Representative Services for Developments.

In general, the services will be to attend meetings to discuss engineering-related matters, prepare opinions of probable construction costs for budgetary purposes, review preliminary and final plats submitted by developers, review water, sanitary sewer, paving, and drainage construction plans in accordance with the Code of Ordinances and Design Standards, communicate with City regarding its floodplain administration, and part-time observation of development construction. All services to be provided by Strand Associates, Inc. are further detailed in Exhibit A of the Agreement. The City will pay Engineer only for actual services performed. The cost to provide those services is not to exceed \$120,000.00.

Please see the attached PDF that details the FY 2022 expenditures that were related to the FY 2022 "On-Call" Engineering contract with Strand Associates, Inc. Total amount invoiced in FY 2022 from October 2021 through July 2022 was \$110,525.00.

ATTACHMENTS:

- (1) Summary of FY2022 On-Call Engineering Services (Oct 2021 thru July 2022)
- (2) Professional Services Agreement

RECOMMENDED ACTION:

Approve a Professional Services Agreement between the City of Brenham and Strand Associates, Inc. for FY2022-23 On-Call Engineering Services, in an amount not to exceed \$120,000.00 and authorize the Mayor to execute any necessary documentation.

City of Brenham - FY 2022 On-Call Engineering Services

Strand Associates - Annual Summary Breakdown (October 2021 through July 2022)

Development Services

1. General Tasks - \$4,886.25

- a. Brenham Airport, Pond Filling Permit and Survey
- b. Brenham Airport, South Hangar Development OPCC
- c. Infrastructure Design Manual-Utility Locations in ROW
- d. Mariachi's Mexican Restaurant, Research Drainage Patterns
- e. South Park Street Improvements at Home Sweet Farm
- f. St. Charles Station Parking Lot
- g. Tim Bushcha (IDS), Potential Development Discussion

2. Plan Reviews and Meetings - \$46,551.25

- a. Weekly Plan Review Meetings - Preparation and Attendance
- b. Alliance Medical Addition
- c. Appel Business Park
- d. Brand It Graphix
- e. Brenham Community Development Corporation, Tracts 1 and 2
- f. Brenham Family Park
- g. Brenham Food Store No. 3, South Blue Bell Road
- h. Brianna's Warehouse Addition
- i. Brion Web Spotless Carwash
- j. C-Store, South Blue Bell Road
- k. Duncan and Roberts Subdivision, Lot 2A Replat
- l. Fairview Terrace Storm Sewer and Retaining Wall
- m. Goodwill Subdivision
- n. Hillside Acres Subdivision
- o. Hyundai of Brenham
- p. Kiecke & Krenek Division, Minor Replat
- q. Liberty Village Subdivision, Phase 1
- r. Liberty Village Subdivision, Phase 3
- s. Lofts at Mill Creek
- t. Mariachi's Mexican Restaurant
- u. Market Square Brenham, Phase 1
- v. Market Square Brenham, Phase 2
- w. Market Square Brenham, Phase 5
- x. Parkview Addition
- y. Pecan Glen Replat (Lot 33)
- z. Prairie View Apartments
- aa. REM Surface Engineering Warehouse
- bb. Scenic Estates, Section 3
- cc. Select Furnishings
- dd. Timber Oaks Subdivision
- ee. Valmont Subdivision, Section 1, Replat
- ff. Vintage Farms Subdivision, Phase 4
- gg. Vintage Farms Subdivision, Phase 5
- hh. Vintage Farms Subdivision, Townhomes
- ii. Zoo Hollow Subdivision

3. Pre-Development Meetings - \$3,612.50

- a. Brannon Industrial Group
- b. Brenham Bible Church
- c. Center Stage Dance and Fitness
- d. C-Store, South Blue Bell Road
- e. C-Store, SH 36 & FM 577
- f. Eric Benitez Single Family Development
- g. Hampton Suites Hotel
- h. Hilton TRU Hotel
- i. Hyundai of Brenham
- j. Lofts at Mill Creek
- k. Mariachi's Mexican Restaurant
- l. Market Square Brenham
- m. Rattlers Gas Station, 1804 South Blue Bell Road
- n. Retirement Community on Swede Street
- o. Salon Suites
- p. The Blue Bonnet Apartments
- q. Townplace Suites by Marriott
- r. Velocity Church

4. Pre-Submittal Questions - \$352.50

- a. C-Store, South Blue Bell Road
- b. C-Store, Vaquero Ventures
- c. Potential Development, Barron Engineering
- d. Potential Development, Houtex Engineering

5. Construction Meetings and Observation - \$26,802.50

- a. Baker Katz Development
- b. Blinn College Student Housing
- c. Brent Nedbalek Hangar, 3195 Aviation Way
- d. Fairview Terrace Multi-Family, Brenham Housing Authority
- e. Liberty Village Subdivision, Phase 1
- f. Liberty Village Subdivision, Phase 2
- g. Liberty Village Subdivision, Phase 3
- h. Market Square Brenham, Phase 1
- i. Market Square Brenham, Phase 2
- j. Overlook Estates, Section 4
- k. Sandalwood Manufactured Home Park Expansion
- l. Vintage Farms Subdivision, Phase 4
- m. Vintage Farms Subdivision, Phase 5
- n. Vintage Farms Subdivision, Townhomes

Public Utilities

1. General Tasks - \$4,572.50

- a. Mariachi's Utility Extension Design and Survey

2. Water Utility - \$10,152.50

- a. FY Water Main Replacements (18 locations) - Meeting, Alignments, and Cost Opinions
- b. Highway 36 Utility Extensions to Tegler Tract OPCC
- c. Mariachi's Water Main Extension OPCC
- d. Raw Water Main Air Release Valves OPCC
- e. Raw Water Main Exposure on Highway 36
- f. TCEQ Coagulant Change Submittal
- g. TCEQ Alternative Capacity Requirement Request

3. Wastewater Utility - \$3,588.75

- a. Blue Bell Sanitary Sewer Replacement OPCC
- b. FY Sanitary Sewer Replacements (7 locations) - Meeting, Alignments, and Cost Opinions
- c. Highway 36 Utility Extension to Tegler Tract OPCC
- d. Mariachi's Sanitary Sewer Extension OPCC
- e. Wastewater Treatment Plant Generator Sizing for TCEQ Requirements

4. Natural Gas Utility - \$0.00

5. Electric Utility - \$0.00

Public Works

1. General Tasks - \$0.00

2. Streets Tasks - \$1,130.00

- a. Washington County Courthouse and Annex - Prepare ADA Parking Layouts and Cost Opinions

3. Drainage Tasks - \$8,876.25

- a. FM 577 Throat Inlet at Brenham Middle School
- b. Old Mill Creek Road Culvert Replacement OPCC
- c. Post Office & North Market Street Drainage
- d. Progress Drive-Valley Drive Drainage Improvements OPCC

4. Parks Tasks - \$0.00

**PROFESSIONAL SERVICES AGREEMENT
FOR
ENGINEERING SERVICES
RELATED TO
CITY OF BRENHAM
PROJECT NO. _____
FY 2023 ON-CALL ENGINEERING SERVICES**

**THE STATE OF TEXAS §
 §
COUNTY OF WASHINGTON §**

THIS AGREEMENT made on the _____ day of _____, 20____, entered into, and executed by and between the City of Brenham, Texas (the "City"), a municipal corporation of the State of Texas, and Strand Associates, Inc.® ("Engineer").

WITNESSETH:

WHEREAS, the City desires to obtain on-call engineering services, as further described in Part A of Attachment "A" (the "Project"); and

WHEREAS, the services of a professional engineering firm are necessary to provide on-call engineering services, and

WHEREAS, the Engineer represents that it is fully capable and qualified to provide professional engineering services to the City;

NOW, THEREFORE, the City and Engineer, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

**SECTION I
SCOPE OF AGREEMENT**

Engineer agrees to perform certain professional engineering services as defined in Attachment "A" attached hereto and made a part hereof for all purposes, hereinafter sometimes referred to as "Scope of Services," and for having rendered such services, the City agrees to pay Engineer compensation as stated in Section VII.

**SECTION II
CHARACTER AND EXTENT OF SERVICES**

Engineer shall do all things necessary to render the engineering services and perform the Scope of Services with the professional skill and care ordinarily provided by competent engineers practicing in the same or similar locality and under the same or similar circumstances and professional license. It is expressly understood and agreed

that Engineer is an Independent Contractor in the performance of the services agreed to herein. It is further understood and agreed that Engineer shall not have the authority to obligate or bind the City, or make representations or commitments on behalf of the City or its officers or employees without the express prior written approval of the City. The City shall be under no obligation to pay for services rendered not identified in Attachment "A" without prior written authorization from the City.

SECTION III OWNERSHIP OF WORK PRODUCT

Engineer agrees that the City shall have the right to use all exhibits, maps, reports, analyses and other documents prepared or compiled by Engineer pursuant to this Agreement. The City shall be the absolute and unqualified owner of all studies, exhibits, maps, reports, analyses, determinations, recommendations, computer files, and other documents prepared or acquired pursuant to this Agreement with the same force and effect as if the City had prepared or acquired the same. The City's use of any work product prepared by the Engineer for purposes other than for the intended project shall be at the City's sole risk and without liability to the Engineer.

SECTION IV TIME FOR PERFORMANCE

The time for performance shall begin on October 1, 2022. Services are scheduled for completion on September 30, 2023.

SECTION V COMPLIANCE AND STANDARDS

Engineer agrees to perform the services hereunder in accordance with generally accepted standards applicable thereto and shall use that degree of care and skill commensurate with the applicable profession to comply with all applicable state, federal, and local laws, ordinances, rules, and regulations relating to the services to be performed hereunder and Engineer's performance.

SECTION VI INDEMNIFICATION

To the fullest extent permitted by Texas Local Government Code Section 271.904, Engineer shall and does hereby agree to indemnify, hold harmless and defend the City, its officers, agents, and employees against liability for damage caused by or resulting from an act of negligence, intentional tort, intellectual property infringement, or failure to pay a subcontractor or supplier committed by the Engineer, the Engineer's agent, consultant under contract, or another entity over which the Engineer exercises control.

SECTION VII ENGINEER'S COMPENSATION

For and in consideration of the services rendered by Engineer pursuant to this Agreement, the City shall pay Engineer only for the actual services performed under the Scope of Services, on the basis set forth in Attachment "A," up to an amount not to exceed \$120,000, as identified in Attachment "A."

SECTION VIII TERMINATION

The City may terminate this Agreement at any time by giving written notice to Engineer. Upon receipt of such notice, Engineer shall discontinue all services in connection with the performance of this Agreement and shall proceed to promptly cancel all existing orders and contracts insofar as such orders or contracts are chargeable to the Agreement. As soon as practicable after receipt of notice of termination, Engineer shall submit a sworn statement, showing in detail the services performed under this Agreement to the date of termination. The City shall then pay Engineer for such services performed under this Agreement as those services bear to the total services called for under this Agreement, less such payments on account of the charges as have been previously made. Copies of all completed or partially completed designs, maps, studies, documents and other work product prepared under this Agreement shall be delivered to the City when and if this Agreement is terminated.

SECTION IX ADDRESSES, NOTICES AND COMMUNICATIONS

All notices and communications under this Agreement shall be mailed by certified mail, return receipt requested, to Engineer at the following address:

Strand Associates, Inc.®
1906 Niebuhr Street
Brenham, TX 77833
Attn: Ryan D. Tinsley, P.E., ENV SP

All notices and communications under this Agreement shall be mailed by certified mail, return receipt requested, to the City at the following address:

City of Brenham
P.O. Box 1059
Brenham, TX 77834
Attn: City Manager

SECTION X LIMIT OF APPROPRIATION

Prior to the execution of this Agreement, Engineer has been advised by the City and Engineer clearly understands and agrees, such understanding and agreement being of the absolute essence to this Agreement, that the City shall have available only those sums as expressly provided for under this Agreement to discharge any and all liabilities which may be incurred by the City and that the total compensation that Engineer may become entitled to hereunder and the total sum that the City shall become liable to pay to Engineer hereunder shall not under any conditions, circumstances, or interpretations hereof exceed the amounts as provided for in this Agreement.

SECTION XI SUCCESSORS AND ASSIGNS

The City and Engineer bind themselves and their successors and assigns to the other party of this Agreement and to the successors and assigns of such other party, in respect to all covenants of this Agreement. Engineer shall not assign, sublet, or transfer its interest in this Agreement without the written consent of the City. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of the City or any public body which may be a party hereto.

SECTION XII MODIFICATIONS

This instrument, including Attachment "A," contains the entire Agreement between the parties relating to the rights herein granted and the obligations herein assumed. To the extent there is a conflict between the provisions of this Agreement and the provisions of Attachment "A," this Agreement shall control. Any oral or written representations or modifications concerning this instrument shall be of no force and effect excepting a subsequent modification in writing signed by both parties hereto.

SECTION XIII ADDITIONAL SERVICES OF ENGINEER

If authorized in writing by the City Manager, Engineer shall furnish, or obtain from others, Additional Services that may be required because of significant changes in the scope, extent or character of the portions of the Project designed or specified by the Engineer, as defined in Attachment "A." These Additional Services, plus reimbursable expenses, will be paid for by the City on the basis set forth in Attachment "A," up to the amount authorized in writing by the City.

SECTION XIV CONFLICTS OF INTEREST

Pursuant to the requirements of the Chapter 176 of the Texas Local Government Code, Engineer shall fully complete and file with the City Secretary a Conflict of Interest Questionnaire.

SECTION XV PAYMENT TO ENGINEER FOR SERVICES AND REIMBURSABLE EXPENSES

Invoices for Basic and Additional Services and reimbursable expenses will be prepared in accordance with Engineer's standard invoicing practices and will be submitted to the City by Engineer at least monthly. Invoices are due and payable thirty (30) days after receipt by the City. Non-payment within 45 days of receipt of invoice by the City, may at Engineers option, result in suspension of services upon 5 days written notice to the City. Upon receipt of payment in full Engineer will resume services without liability to City for such suspension.

SECTION XVI INSURANCE

Engineer shall procure and maintain insurance in accordance with the terms and conditions set forth in Attachment "B," for protection from workers' compensation claims, claims for damages because of bodily injury, including personal injury, sickness or disease or death, claims or damages because of injury to or destruction of property including loss of use resulting therefrom, and claims of errors and omissions.

SECTION XVII MISCELLANEOUS PROVISIONS

A. This Agreement is subject to the provisions of the Texas Prompt Payment Act, Chapter 2251 of the Texas Government Code. The approval or payment of any invoice shall not be considered to be evidence of performance by Engineer or of the receipt of or acceptance by the City of the services covered by such invoice.

B. Venue for any legal actions arising out of this Agreement shall lie exclusively in the federal and state courts of Washington County, Texas.

C. This Agreement is for sole benefit of the City and Engineer, and no provision of this Agreement shall be interpreted to grant or convey to any other person any benefits or rights.

D. Engineer further covenants and agrees that it does not and will not knowingly employ an undocumented worker. An "undocumented worker" shall mean an individual who, at the time of employment, is not (a) lawfully admitted for permanent residence to the United States, or (b) authorized by law to be employed in that manner in the United States.

IN WITNESS WHEREOF, the City of Brenham has lawfully caused this Agreement to be executed by the Mayor of said City and attested by the City Secretary and Strand Associates, Inc.[®], acting by and through its duly authorized officer/representative, does now sign, execute, and deliver this instrument.

EXECUTED on this _____ day of _____, 20____.

ENGINEER:

STRAND ASSOCIATES, INC.[®]



Joseph M. Bunker
Corporate Secretary

8/15/22
Date

ATTEST:

CITY OF BRENHAM, TEXAS

Jeana Bellinger
City Secretary

Date

Milton Y. Tate Jr.
Mayor

Date

ATTACHMENT "A"

PART A--SCOPE OF SERVICES

CITY OF BRENHAM
PROJECT NO. _____
FY 2023 ON-CALL ENGINEERING SERVICES

Description of Project

Engineer will provide on-call engineering support services to the City as directed and authorized by the City Manager in writing. City may request that Engineer establish a scope and fee for specific services for review and approval prior to starting services or may direct Engineer in writing to proceed with defined services without preset limits.

General Engineering Services

1. Attend meetings with City to discuss engineering-related matters.
2. Respond to City's engineering-related questions.
3. Prepare opinions of probable construction costs for budgetary purposes.
4. Provide engineering, scientific, hydraulic modeling, and computer-aided design services.

Development Review Services

1. Communicate with City, the developer, and developer's engineer.
2. Review preliminary and final plats submitted by developer in accordance with the City's Code of Ordinances and Design Standards and Specifications.
3. Review water, sanitary sewer, paving, and drainage construction drawings in accordance with the City's Code of Ordinances and Design Standards and Specifications.
4. Provide written comments on plats, construction drawings, and drainage reports to the City's Development Services Director.

Floodplain Administration Services

1. Communicate with City regarding its floodplain administration.

2. Provide floodplain administration services, including review of floodplain permits for new construction and substantial improvements in accordance with the City's Code of Ordinances and Design Standards and Specifications.

Part-Time Resident Project Representative (RPR) Services for Developments

Upon written request of the City, provide RPR for part-time observation of development construction. In furnishing observation services, Engineer's efforts will be directed toward determining for City that the completed project will, in general, conform to the Contract Documents; but Engineer will not supervise, direct, or have control over the contractor's work and will not be responsible for the contractor's construction means, methods, techniques, sequences, procedures, or health and safety precautions or programs, or for the contractor's failure to perform the construction work in accordance with the Contract Documents. Engineer will communicate with the City on the progress of the work, will document visits to the project site, and will furnish copies of such documentation to the City.

PART B–BASIS OF COMPENSATION AND REIMBURSABLE EXPENSES

CITY OF BRENHAM PROJECT NO. _____ FY 2023 ON-CALL ENGINEERING SERVICES

The following represents the estimated maximum compensation for the scope of services documented in Attachment A, Part A of this Agreement. If services beyond those specifically identified are determined necessary during the Project, Engineer shall not proceed with those services until such time written approval of the scope and any additional fees are approved by the City Manager.

City shall compensate Engineer for on-call engineering services on an hourly rate basis at the rates shown in the Schedule of Charges, not to exceed \$120,000.

SCHEDULE OF CHARGES

Compensation for engineering services shall be on an hourly basis at the rates set forth below which are subject to change annually on July 1.

Engineering Services Classification	Hourly Billing Rates*
Principal Engineer	\$325
Senior Associate	\$280
Senior Project Manager	\$235
Project Manager	\$190
Senior Project Engineer	\$160
Project Engineer	\$145
Graduate Engineer 2	\$135
Graduate Engineer 1	\$130
Senior Engineering Technician	\$145
Engineering Technician	\$135
Junior Engineering Technician	\$ 70
Project Representative	\$115
Senior Computer-Aided Design and Drafting (CADD) Operator	\$110
CADD Operator	\$ 75
Administrative	\$ 95

* Updated annually on July 1

Compensation for surveying services shall be on an hourly basis at the rates set forth below which are subject to change annually on July 1.

Surveying Services Classification	Hourly Billing Rates*
Registered Professional Land Surveyor	\$ 240
Surveying Technician	\$ 115
Three-Man Field Party	\$ 255
Two-Man Field Party	\$ 185
One-Man Field Party	\$ 115
Laser Scanner (Half Day)	\$1,000
Laser Scanner (Full Day)	\$1,800
Global Positioning System (GPS) Equipment (Half Day)	\$ 210
GPS Equipment (Full Day)	\$ 325
Robotic Total Station (Half Day)	\$ 135
Robotic Total Station (Full Day)	\$ 220

* Updated annually on July 1

Subcontract costs shall be billed at invoice cost plus ten percent for handling.

ATTACHMENT "B"

INSURANCE

CITY OF BRENHAM

PROJECT NO. _____

FY 2023 ON-CALL ENGINEERING SERVICES



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

8/16/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Ansay & Associates, LLC. MSN 2901 W. Beltline Hwy. Suite 202 Madison WI 53713	CONTACT NAME: Joe Keal		
	PHONE (A/C, No, Ext): 800-643-6133	FAX (A/C, No): 608-831-4777	
	E-MAIL ADDRESS: joe.keal@ansay.com		
INSURED Strand Associates, Inc. 910 W. Wingra Drive Madison WI 53715	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A : CNA Insurance Companies		35289
	INSURER B :		
	INSURER C :		
	INSURER D :		
	INSURER E :		
		INSURER F :	

COVERAGES**CERTIFICATE NUMBER:** 73137709**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY ☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ 1,000 ☒ XCU cov. incl. GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC			5099170076	1/1/2022	1/1/2023	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 900,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ ALL OWNED AUTOS ☒ HIRED AUTOS ☐ SCHEDULED AUTOS ☒ NON-OWNED AUTOS			5099170062	1/1/2022	1/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☒ RETENTION \$ 10,000			5099170059	1/1/2022	1/1/2023	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below Y/N ☐ N/A		N/A	WC695126844	1/1/2022	1/1/2023	☒ WC STATU-TORY LIMITS ☐ OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Professional Liability Full Prior Acts			AEH113974097	7/11/2022	7/11/2023	Each Claim 2,000,000 Aggregate 2,000,000 Full Prior Acts

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

PROJECT: 2023 On-Call Engineering Services
Strand Project #: 3900.245**CERTIFICATE HOLDER****CANCELLATION**City of Brenham
Attn: City Manager
PO Box 1059
Brenham TX 77834

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Regular City Council
AGENDA ITEM 8.

Agenda Item: Discuss and Possibly Act Upon the Approval of the Routine Airport Maintenance Program (RAMP) Grant Agreement No. M2317BREN with TxDOT for FY 2023 and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Airport

Staff Contact: Stephanie Doland / Kim Hodde

SUMMARY STATEMENT:

Included on the Agenda for Thursday's Council meeting is consideration of the annual grant agreement with TxDOT for participation in the Routine Airport Maintenance Program (RAMP) for September 1, 2022 through August 31, 2023. As with prior years, this agreement allows the Airport to be reimbursed for 50% of the cost of the monthly AWOS monitoring (AviMet Data Link connection fees and continued scheduled maintenance), annual AWOS maintenance contract, as well as 50% of our replacement lamps for the airport lighting system, herbicides, general maintenance, and a contingency for emergency repairs. The maximum for the grant is \$100,000 total (50/50 match) for the fiscal year. Included in the upcoming proposed FY 23 Budget is a total of \$100,000 (\$50,000 City match and \$50,000 TxDOT match) that will enable \$100,000 worth of maintenance at half the cost to the City of Brenham. Maintenance improvements are reviewed by City Staff and the Airport Liaison based on priority of needs with Airside needs being the highest priority. A copy of eligible RAMP grant projects is attached for reference.

The current grant agreement expired August 31, 2022 and the FY 2022 grant agreement does not go into effect until signed by the City and TxDOT. Staff recommends approval of this annual grant agreement.

ATTACHMENTS:

- (1) M2317 BREN Ramp agreement
- (2) List of RAMP Grant eligible items

RECOMMENDED ACTION:

Approve the Routine Airport Maintenance Program Grant Agreement No. M2317BREN with TxDOT for FY 2023 and Authorize the Mayor to sign the necessary documentation.

**TEXAS DEPARTMENT OF TRANSPORTATION
GRANT FOR ROUTINE AIRPORT MAINTENANCE PROGRAM
(State Assisted Airport Routine Maintenance)**

TxDOT Project ID: M2317BREN

Part I - Identification of the Project

TO: The City of Brenham, Texas

FROM: The State of Texas, acting through the Texas Department of Transportation

This Grant is made between the Texas Department of Transportation, (hereinafter referred to as the "State"), on behalf of the State of Texas, and the City of Brenham, Texas, (hereinafter referred to as the "Sponsor").

This Grant Agreement is entered into between the State and the Sponsor shown above, under the authority granted and in compliance with the provisions of the Transportation Code Chapter 21.

The project is for **airport maintenance** at the BRENHAM - BRENHAM MUNI Airport.

Part II - Offer of Financial Assistance

1. For the purposes of this Grant, the annual routine maintenance project cost, Amount A, is estimated as found on Attachment A, Scope of Services, attached hereto and made a part of this grant agreement.

State financial assistance granted will be used solely and exclusively for airport maintenance and other incidental items as approved by the State. Actual work to be performed under this agreement is found on Attachment A, Scope of Services. State financial assistance, Amount B, will be for fifty percent (50%) of the eligible project costs for this project or \$50,000.00, whichever is less, per fiscal year and subject to availability of state appropriations.

Scope of Services, Attachment A, of this Grant, may be amended, subject to availability of state funds, to include additional approved airport maintenance work. Scope amendments require submittal of an Amended Scope of Services, Attachment A.

Services will not be accomplished by the State until receipt of Sponsor's share of project costs.

Only work items as described in Attachment A, Scope of Services of this Grant are reimbursable under this grant.

Work shall be accomplished by August 31, 2023, unless otherwise approved by the State.

2. The State shall determine fair and eligible project costs for work scope. Sponsor's share of estimated project costs, Amount C, shall be as found on Attachment A and any amendments.

It is mutually understood and agreed that if, during the term of this agreement, the State determines that there is an overrun in the estimated annual routine maintenance costs, the State may increase the grant to cover the amount of the overrun within the above stated percentages and subject to the maximum amount of state funding.

The State will not authorize expenditures in excess of the dollar amounts identified in this Agreement and any amendments, without the consent of the Sponsor.

3. Sponsor, by accepting this Grant certifies and, upon request, shall furnish proof to the State that it has sufficient funds to meet its share of the costs. The Sponsor grants to the State the right to audit any books and records of the Sponsor to verify expended funds.

Upon execution of this Agreement and written demand by the State, the Sponsor's financial obligation (Amount C) shall be due in cash and payable in full to the State. State may request the Sponsor's financial obligation in partial payments. Should the Sponsor fail to pay their obligation, either in whole or in part, within 30 days of written demand, the State may exercise its rights under Paragraph V-3. Likewise, should the State be unwilling or unable to pay its obligation in a timely manner, the failure to pay shall be considered a breach and the Sponsor may exercise any rights and remedies it has at law or equity.

The State shall reimburse or credit the Sponsor, at the financial closure of the project, any excess funds provided by the Sponsor which exceed Sponsor's share (Amount C).

4. The Sponsor specifically agrees that it shall pay any project costs which exceed the amount of financial participation agreed to by the State. It is further agreed that the Sponsor will reimburse the State for any payment or payments made by the State which are in excess of the percentage of financial assistance (Amount B) as stated in Paragraph II-1.

5. Scope of Services may be accomplished by State contracts or through local contracts of the Sponsor as determined appropriate by the State. All locally contracted work must be approved by the State for scope and reasonable cost. Reimbursement requests for locally contracted work shall be submitted on forms provided by the State and shall include copies of the invoices for materials or services. Payment shall be made for no more than 50% of allowable charges.

The State will not participate in funding for force account work conducted by the Sponsor.

6. This Grant shall terminate upon completion of the scope of services.

Part III - Sponsor Responsibilities

1. In accepting this Grant, if applicable, the Sponsor guarantees that:
 - a. it will, in the operation of the facility, comply with all applicable state and federal laws, rules, regulations, procedures, covenants and assurances required by the State in connection with this Grant; and
 - b. the Airport or navigational facility which is the subject of this Grant shall be controlled by the Sponsor for a period of at least 20 years; and
 - c. consistent with safety and security requirements, it shall make the airport or air navigational facility available to all types, kinds and classes of aeronautical use without discrimination between such types, kinds and classes and shall provide adequate public access during the period of this Grant; and
 - d. it shall not grant or permit anyone to exercise an exclusive right for the conduct of aeronautical activity on or about an airport landing area. Aeronautical activities include, but are not limited to scheduled airline flights, charter flights, flight instruction, aircraft sales, rental and repair, sale of aviation petroleum products and aerial applications. The landing area consists of runways or landing strips, taxiways, parking aprons, roads, airport lighting and navigational aids; and
 - e. through the fence access shall be reviewed and approved by the State; and

- f. it shall not permit non-aeronautical use of airport facilities, unless noted on an approved Airport Layout Plan, without prior approval of the State/FAA. This includes but is not limited to: the process of land disposal, any changes to the aeronautical or non-aeronautical land uses of the airport, land's deeded use from non-aeronautical to aeronautical, requests of concurrent use of land, interim use of land, approval of a release from obligations from the State/FAA, any of which will require 18 months, or longer; and
- g. the Sponsor shall submit to the State annual statements of airport revenues and expenses when requested; and
- h. all fees collected for the use of the airport shall be reasonable and nondiscriminatory. The proceeds from such fees shall be used solely for the development, operation and maintenance of the airport or navigational facility; and
- i. an Airport Fund shall be established by resolution, order or ordinance in the treasury of the Sponsor, or evidence of the prior creation of an existing airport fund or properly executed copy of the resolution, order, or ordinance creating such a fund, shall be submitted to the State. The fund may be an account as part of another fund, but must be accounted for in such a manner that all revenues, expenses, retained earnings, and balances in the account are discernible from other types of moneys identified in the fund as a whole. All fees, charges, rents, and money from any source derived from airport operations must be deposited in the Airport Fund and shall not be diverted to the general revenue fund or another revenue fund of the Sponsor. All expenditures from the Airport Fund shall be solely for airport purposes. Sponsor shall be ineligible for a subsequent grant or loan by the State unless, prior to such subsequent grant or loan, Sponsor has complied with the requirements of this subparagraph; and
- j. the Sponsor shall operate runway lighting at least at low intensity from sunset to sunrise; and
- k. insofar as it is reasonable and within its power, Sponsor shall adopt and enforce zoning regulations to restrict the height of structures and use of land adjacent to or in the immediate vicinity of the airport to heights and activities compatible with normal airport operations as provided in Tex. Loc. Govt. Code Ann. Sections 241.001 et seq. (Vernon and Vernon Supp.). Sponsor shall also acquire and retain aviation easements or other property interests in or rights to use of land or airspace, unless sponsor can show that acquisition and retention of such interest will be impractical or will result in undue hardship to Sponsor. Sponsor shall be ineligible for a subsequent grant or loan by the State unless Sponsor has, prior to subsequent approval of a grant or loan, adopted and passed an airport hazard zoning ordinance or order approved by the State.

1. mowing services will not be eligible for state financial assistance. Sponsor will be responsible for 100% of any mowing services.
2. The Sponsor, to the extent of its legal authority to do so, shall save harmless the State, the State's agents, employees or contractors from all claims and liability due to activities of the Sponsor, the Sponsor's agents or employees performed under this agreement. The Sponsor, to the extent of its legal authority to do so, shall also save harmless the State, the State's agents, employees or contractors from any and all expenses, including attorney fees which might be incurred by the State in litigation or otherwise resisting claim or liabilities which might be imposed on the State as the result of those activities by the Sponsor, the Sponsor's agents or employees.
3. The Sponsor's acceptance of this Offer and ratification and adoption of this Grant shall be evidenced by execution of this Grant by the Sponsor. The Grant shall comprise a contract, constituting the obligations and rights of the State of Texas and the Sponsor with respect to the accomplishment of the project and the operation and maintenance of the airport.

If it becomes unreasonable or impractical to complete the project, the State may void this agreement and release the Sponsor from any further obligation of project costs.

4. Upon entering into this Grant, Sponsor agrees to name an individual, as the Sponsor's Authorized Representative, who shall be the State's contact with regard to this project. The Representative shall receive all correspondence and documents associated with this grant and shall make or shall acquire approvals and disapprovals for this grant as required on behalf of the Sponsor, and coordinate schedule for work items as required.
5. By the acceptance of grant funds for the maintenance of eligible airport buildings, the Sponsor certifies that the buildings are owned by the Sponsor. The buildings may be leased but if the lease agreement specifies that the lessee is responsible for the upkeep and repairs of the building no state funds shall be used for that purpose.
6. Sponsor shall request reimbursement of eligible project costs on forms provided by the State. All reimbursement requests are required to include a copy of the invoices for the materials or services. The reimbursement request will be submitted no more than once a month.
7. The Sponsor's acceptance of this Agreement shall comprise a Grant Agreement, as provided by the Transportation Code, Chapter 21, constituting the contractual obligations and rights of the State of Texas and the Sponsor with respect to the accomplishment of the airport maintenance and compliance with the assurances and conditions as provided. Such Grant Agreement shall become effective upon the State's written Notice to Proceed issued following execution of this agreement.

Part IV - Nomination of the Agent

1. The Sponsor designates the State as the party to receive and disburse all funds used, or to be used, in payment of the costs of the project, or in reimbursement to either of the parties for costs incurred.
2. The State shall, for all purposes in connection with the project identified above, be the Agent of the Sponsor. The Sponsor grants the State a power of attorney to act as its agent to perform the following services:
 - a. accept, receive, and deposit with the State any and all project funds granted, allowed, and paid or made available by the Sponsor, the State of Texas, or any other entity;
 - b. enter into contracts as necessary for execution of scope of services;
 - c. if State enters into a contract as Agent: exercise supervision and direction of the project work as the State reasonably finds appropriate. Where there is an irreconcilable conflict or difference of opinion, judgment, order or direction between the State and the Sponsor or any service provider, the State shall issue a written order which shall prevail and be controlling;
 - d. receive, review, approve and pay invoices and payment requests for services and materials supplied in accordance with the State approved contracts;
 - e. obtain an audit as may be required by state regulations; the State Auditor may conduct an audit or investigation of any entity receiving funds from TxDOT directly under this contract or indirectly through a subcontract under this contract. Acceptance of funds directly under this contract or indirectly through a subcontract under this contract acts as acceptance of the authority of the State Auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.
 - f. reimburse sponsor for approved contract maintenance costs no more than once a month.

Part V - Recitals

1. This Grant is executed for the sole benefit of the contracting parties and is not intended or executed for the direct or incidental benefit of any third party.
2. It is the intent of this grant to not supplant local funds normally utilized for airport maintenance, and that any state financial assistance offered under this grant be in addition to those local funds normally dedicated for airport maintenance.

3. This Grant is subject to the applicable provisions of the Transportation Code, Chapters 21 and 22, and the Airport Zoning Act, Tex. Loc. Govt. Code Ann. Sections 241.001 et seq. (Vernon and Vernon Supp.). Failure to comply with the terms of this Grant or with the rules and statutes shall be considered a breach of this contract and will allow the State to pursue the remedies for breach as stated below.
 - a. Of primary importance to the State is compliance with the terms and conditions of this Grant. If, however, after all reasonable attempts to require compliance have failed, the State finds that the Sponsor is unwilling and/or unable to comply with any of the terms of this Grant, the State, may pursue any of the following remedies: (1) require a refund of any financial assistance money expended pursuant to this Grant, (2) deny Sponsor's future requests for aid, (3) request the Attorney General to bring suit seeking reimbursement of any financial assistance money expended on the project pursuant to this Grant, provided however, these remedies shall not limit the State's authority to enforce its rules, regulations or orders as otherwise provided by law, (4) declare this Grant null and void, or (5) any other remedy available at law or in equity.
 - b. Venue for resolution by a court of competent jurisdiction of any dispute arising under the terms of this Grant, or for enforcement of any of the provisions of this Grant, is specifically set by Grant of the parties in Travis County, Texas.
4. The State reserves the right to amend or withdraw this Grant at any time prior to acceptance by the Sponsor. The acceptance period cannot be greater than 30 days after issuance unless extended by the State.
5. This Grant constitutes the full and total understanding of the parties concerning their rights and responsibilities in regard to this project and shall not be modified, amended, rescinded or revoked unless such modification, amendment, rescission or revocation is agreed to by both parties in writing and executed by both parties.
6. All commitments by the Sponsor and the State are subject to constitutional and statutory limitations and restrictions binding upon the Sponsor and the State (including Sections 5 and 7 of Article 11 of the Texas Constitution, if applicable) and to the availability of funds which lawfully may be applied.

Part VI - Acceptances

Sponsor

The City of Brenham, Texas, does ratify and adopt all statements, representations, warranties, covenants, agreements, and all terms and conditions of this Grant.

The City of Brenham, Texas

Sponsor

Sponsor Signature - Milton Y. Tate, Jr.

Sponsor Title: Mayor

Date

Acceptance of the State

Executed by and approved for the Texas Transportation Commission for the purpose and effect of activating and/or carrying out the orders, established policies or work programs and grants heretofore approved and authorized by the Texas Transportation Commission.

STATE OF TEXAS

TEXAS DEPARTMENT OF TRANSPORTATION

Signature

Title

Date

Attachment A

Scope of Services
TxDOT Project ID: M2317BREN

Eligible Scope Item	Estimated Costs Amount A	State Share Amount B	Sponsor Share Amount C
GENERAL MAINTENANCE	\$100,000.00	\$50,000.00	\$50,000.00
TOTAL	\$100,000.00	\$50,000.00	\$50,000.00

Sponsor Signature - Milton Y. Tate, Jr.

Sponsor Title : Mayor

Date

GENERAL MAINTENANCE: As needed, Sponsor may contract for services / purchase materials for routine maintenance / improvement of airport pavements, signage, drainage, AWOS systems, approach aids, lighting systems, utility infrastructure, fencing, herbicide / application, sponsor owned and operated fuel systems, hangars, terminal buildings and security systems; professional services for environmental compliance, approved project design. Special projects to be determined and added by amendment.

Only work items as described in Attachment A, Scope of Services of this Grant are reimbursable under this grant.

CERTIFICATION OF AIRPORT FUND

TxDOT Project ID:

M2317BREN

The City of Brenham, Texas, does certify that an Airport Fund has been established for the Sponsor, and that all fees, charges, rents, and money from any source derived from airport operations will be deposited for the benefit of the Airport Fund and will not be diverted for other general revenue fund expenditures or any other special fund of the Sponsor and that all expenditures from the Fund will be solely for airport purposes. The fund may be an account as part of another fund, but must be accounted for in such a manner that all revenues, expenses, retained earnings, and balances in the account are discernible from other types of moneys identified in the fund as a whole.

Sponsor Signature - Stacy Hardy

Sponsor Title: Director of Finance

Date

Certification of State Single Audit Requirements

I, STACY HARDY, do certify that the City of Brenham, Texas, will comply with all requirements of the State of Texas Single Audit Act if the City of Brenham, Texas, spends or receives more than the threshold amount in any grant funding sources during the most recently audited fiscal year. And in following those requirements, the City of Brenham, Texas, will submit the report to the audit division of the Texas Department of Transportation. If your entity did not meet the threshold in grant receivables or expenditures, please submit a letter indicating that your entity is not required to have a State Single Audit performed for the most recent audited fiscal year.

Sponsor Signature - Stacy Hardy

Sponsor Title: Director of Finance

Date

DESIGNATION OF SPONSOR'S AUTHORIZED REPRESENTATIVE

TxDOT Project ID: M2317BREN

The City of Brenham, Texas, designates,
KIM HODDE, Airport Coordinator, as the Sponsor's authorized

(Name, Title)

representative, who shall receive all correspondence and documents associated with this grant and who shall make or shall acquire approvals and disapprovals for this grant as required on behalf of the Sponsor.

Sponsor Signature - Milton Y. Tate, Jr.

Sponsor Title: Mayor

Date

DESIGNATED REPRESENTATIVE

First Name, Last Name:

Kim Hodde

Title:

Airport Coordinator

Address:

P.O. Box 1059, Brenham, Texas 77834-1059

Phone Number:

979-337-7212

Email Address:

khodde@cityofbrenham.org

9/2/2022

ELIGIBLE WORK ITEMS UNDER RAMP GRANTS

AIRSIDE MAINTENANCE
Pavement crack sealing/Pavement Slurry Seal/Fog Seal/Rejuvenator
Pavement markings
Drainage maintenance
Sweeping
Herbicide on airside pavement
Replacement bulbs/lamps for airside lighting fixtures and approach aids
Repair and maintenance for beacon, lighting, approach and navigational aids
Parts replacement for Automated Weather Observation System (AWOS) not covered under warranty
AFTER AIRSIDE MAINTENANCE HAS BEEN ADDRESSED
Seal coats/chip seal/crack seal for non-airside pavement
Hangar/terminal building painting and repairs -sponsor owned facilities only
Security camera systems excluding monitoring fees
Game proof or security fencing and gates, electric gate openers
Access roads for AWOS installations/AWOS NADIN interface monthly charge
Airport entrance signs
Repairs to airport owned fuel systems, including replacement of tanks
Professional Services for preparation of Storm Water Pollution Prevention, Spill Prevention Control & Countermeasure Plans and maintenance/update of these plans
Airfield FOD sweeper
HVAC repairs in terminal building and/or control tower
SMALL CAPITAL IMPROVEMENT PROJECTS – with guidance from TxDOT Aviation
Design and construct new concrete/asphalt public auto parking areas
Design and construct new entrance roads and hangar access roads
Design and construction of aircraft wash racks as indicated by SWPPP
Design and construct expansion of apron areas or new apron areas
Design and construct runway lighting system extensions
Design and construct drainage improvements
Pilot lounge/small general aviation terminal buildings
Beacon/tower replacements
Preparation of FAA form 7460-1 “Notice of Proposed Construction or Alteration” for RAMP projects
INELIGIBLE WORK ITEMS UNDER RAMP GRANTS
Purchase of a courtesy vehicle and/or maintenance to any vehicle or equipment including tractors and mowers
Purchase of capital equipment including aircraft dolly, lawn mower, golf carts, snow/ice removal equipment, striping machines and power washers
Operating expenditures including carpet cleaning, monthly utility bills, tree trimming/mowing services, trash collection/recycling
Force Account work by sponsor
Consumables including batteries (except for AWOS), air and water filters, interior light bulbs, cleaning supplies, replacement plants, credit card paper, replacement monitors/computer equipment for AWOS
<i>Work performed or purchases made prior to the grant being fully executed</i>



Regular City Council
AGENDA ITEM 9.

Agenda Item: Discuss and Possibly Act Upon Resolution No. R-22-028
Authorizing the Acceptance of Public Infrastructure
Improvements on Chappell Hill Road

Meeting Type: Regular Meeting-September 15, 2022

Department: Development Services

Staff Contact: Stephanie Doland

SUMMARY STATEMENT:

On November 2020 the City of Brenham Development Services Department issued a permit for the construction of approximately 120,000 square feet of retail development and associated utilities, access, parking, landscaping and lighting for the development named Brenham Crossing and commonly known as Baker Katz. Included in the approved civil site construction was the design and specifications for the widening of Chappell Hill Street, specifically for the addition of two turn lanes, one on each side of Chappell Hill Street. The widening of Chappell Hill street via the two turn lanes would allow for improved traffic movement and circulation for patrons to and from the large retail development.

The developer completed the construction of the widening and the overall site construction in December 2021. Attached for reference are two Daily Observation Reports from Strand Associates who performed the inspections of said road improvements to confirm the improvements were constructed in accordance with City of Brenham standards and specifications. Strand Associates serves as the City's On-Call Engineer for services such as inspections and plan reviews associated with street and drainage improvements within the City of Brenham.

Attached for reference please find the record (as-built) construction drawings noting the turn lane into the Brenham Crossing development on the westbound side of Chappell Hill and the turn lane onto the US 290 feeder road along the eastbound side of Chappell Hill Road. The turn lanes and overall right-of-way improvements to Chappell Hill Road have been inspected and are now ready for acceptance by the City of Brenham.

In accordance with the Chapter 380 Agreement with Baker Katz, the Chappell Hill Road widening improvements are eligible for reimbursement from the City following completion, inspection, review of paid invoices and lastly acceptance of said improvements.

Included for Council review and acceptance is a Resolution accepting the Chappell Hill Road widening improvements. Included as a later companion item on the City Council Meeting agenda is the proposed payment to BK Stringer, Ltd. (Baker Katz) to reimburse design and construction costs associated with the Chappell Hill Road widening.

ATTACHMENTS:

- | |
|---|
| (1) Resolution
(2) PE Letter of Substantial Completion
(3) Strand DOR #11
(4) Strand DOR #12 |
|---|

RECOMMENDED ACTION:

Approve Resolution No. R-22-028 authorizing the acceptance of public infrastructure improvements on Chappell Hill Street.

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRENHAM, TEXAS, AUTHORIZING THE ACCEPTANCE OF CERTAIN PUBLIC INFRASTRUCTURE IMPROVEMENTS WITHIN THE CHAPPELL HILL ROAD RIGHT-OF-WAY AS CONSTRUCTED BY BK STRINGER, LTD. IN ACCORDANCE WITH ADOPTED CITY OF BRENHAM STANDARDS AND SPECIFICATIONS; AND AUTHORIZING THE MAYOR TO EXECUTE ANY NECESSARY DOCUMENTATION.

WHEREAS, the BK Stringer Development Subdivision is adjacent to the Chappell Hill Road right-of-way and consists of two (2) commercial tracts, Lot 1 being approximately 38 acres of land and Lot 2 being approximately 9 acres of land for a total of 47 acre subdivision to be developed by BK Stringer, Ltd. with retail uses; and

WHEREAS, in conjunction with the more than 120,000 square feet of retail development, a Traffic Impact Analysis was conducted and determined that the adjacent City right-of-way known as Chappell Hill Road was required to be widened specifically for the construction of two turn lanes including a turn lane along the eastern side of Chappell Hill Road onto U.S. Highway 290 East feeder road and a second turn lane along the western side of Chappell Hill Road into the retail development constructed by BK Stringer, Ltd.; and

WHEREAS, the required Chappell Hill Road widening public infrastructure improvements were constructed by the developer, BK Stringer, Ltd.; and

WHEREAS, said public infrastructure improvements have been inspected by the City of Brenham and its representatives and found to be constructed in accordance with the City's applicable development standards and specifications; and

WHEREAS, the City of Brenham desires to formally accept the right-of-way improvements constructed by BK Stringer, Ltd. within the Chappell Hill Road right-of-way, being more specifically depicted in Exhibit "A" attached hereto and incorporated herein for all pertinent purposes.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BRENHAM, TEXAS:

The City of Brenham hereby accepts the Chappell Hill Road turn lane improvements constructed by BK Stringer, Ltd. in the right-of-way of Chappell Hill Road, in the City of Brenham, Texas as further described in Exhibit “A” attached hereto and incorporated herein for all pertinent purposes and authorizes the Mayor to execute any necessary documentation.

RESOLVED this 15th day of September 2022.

Milton Y. Tate, Jr.
Mayor

ATTEST:

Jeana Bellinger, TRMC, CMC
City Secretary



July 11, 2022

Stephanie Doland
City of Brenham
200 W Vulcan St
Brenham, TX 77833

**RE: *Baker Katz Brenham-Chappell Hill Roadway Improvements
Chappell Hill Road South of US 290, Brenham Tx 77833***

Ms. Stephanie Doland:

This is to declare, to the best of our knowledge and belief, based on a site visit and photos taken by Kimley-Horn of the site on January 14, 2022 in accordance with our agreement as to the extent of our specified services in this regard, that the construction of the Chappell Hill Roadway Improvements adjacent to the Baker Katz site is substantially in accordance with the contract documents (including as amended by change order or change directive by the client) and this certification does not relieve any party of their contractual or other responsibilities.

Please contact me at (281) 920-6304 or kenneth.cargill@kimley-horn.com should you have any questions or concerns about this project.

Sincerely,

A handwritten signature in black ink that reads "Kenneth Cargill".

Kenneth Cargill P.E.
Associate





DAILY OBSERVATION REPORT

Date: 11/2/21 1:15 pm

Daily Report No.: 11

Weather A.M.: Partly Cloudy

Weather P.M.: Partly Cloudy

Temperature High: 76°F

Temperature Low: 91°F

Project Representative: Dwayne Gajewski with Strand Associates

Owner: Baker-Katz Contract: PR 19-45

Project Name: Baker-Katz Brenham Southeast Corner of U.S. 290 Frontage Rd & Chappell Hill St.

Contractor: Rick and Ruben with Arch-Con

Present

at the

Site: Arch-Con 12 - Representatives on site

Copy to: Kim Hodde, City of Brenham Stephanie Doland, City of Brenham

Sarah Hill, City of Brenham

Strand Associates is providing site observation of the street paving for the City of Brenham.

Rick with ArchCon reached out to the City for observation services on 11/2/21. He and his crews had the forms, rebar, chairs, etc ready on the west side of Chappell Hill St for the turn lane into Baker-Katz. Rebar was doveled and epoxied into existing pavement. The design is shown on plan sheet C13.3 signed and dated by Austin S. Helton on 3/16/20. Paving limits are from STA. 1+46.51 to 4+36.46. According to Rick, subgrade passed compaction. Concrete is scheduled for first thing in the morning, weather permitting. A lab is scheduled to be on site to collect samples. The materials being installed were checked against the approved drawings and appeared to be in accordance.

Equipment on Site:

- Front end loader
- Excavators



FIGURE 1 - TYPE C CURB INLET
STA. 2+31.31, 31.27' RT
CHAPPELL HILL ST, PLAN SHEET C15.1



FIGURE 2 - REBAR DOWELED AND
EPOXIED INTO EXISTING CURB



DAILY OBSERVATION REPORT

Date: 11/5/21 3:00 pm

Daily Report No.: 12

Weather A.M.: Sunny

Weather P.M.: Sunny

Temperature High: 63°F

Temperature Low: 38°F

Project Representative: Dwayne Gajewski with Strand Associates

Owner: Baker-Katz Contract: PR 19-45

Project Name: Baker-Katz Brenham Southeast Corner of U.S. 290 Frontage Rd & Chappell Hill St.

Contractor: Ruben with Arch-Con

Present

at the

Site: Arch-Con 12 - Representatives on site

Copy to: Kim Hodde, City of Brenham Stephanie Doland, City of Brenham

Sarah Hill, City of Brenham

Strand Associates is providing site observation of the street paving for the City of Brenham.

Rick with ArchCon reached out to the City for observation services on 11/4/21. He and his crews had the forms, rebar, chairs, etc ready on the east side of Chappell Hill St for the turn lane out of Baker-Katz onto the Hwy 290 eastbound feeder. Rebar was doveled and epoxied into existing pavement. The design is shown on plan sheet C13.3 signed and dated by Austin S. Helton on 3/16/20. Paving limits are from STA. 0+53.65 to 3+02.21. Concrete is scheduled for 8am Monday morning Nov. 8, 2021, weather permitting. A lab is scheduled to be on site to collect samples. This new pavement will tie into the existing pavement in TxDOT right-of-way so I recommended they reach out to the local TxDOT contact to let them know about the pour so they would have a chance to look at the tie-in. The materials being installed were checked against the approved drawings and appeared to be in accordance.

Equipment on Site:

- Skidsteer
- Generator
- 1/2" drill for doweling rebar





Regular City Council
AGENDA ITEM 10.

Agenda Item: Discuss and Possibly Act Upon a Chapter 380 Agreement Between the City of Brenham and Brenham CFA Series, LLC and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Economic Development

Staff Contact: Susan Cates

SUMMARY STATEMENT:

The Economic Development Joint Sub-committee met on September 8, 2021 and discussed a total incentive to bring this project to Brenham of a community investment totaling \$250,000 upon completion of the facility and receipt of the Certificate of Occupancy by the developer. Both the City and County will recognize the tax benefits from this project, therefore the Economic Development Joint Sub-committee recommended that the \$250,000 incentive be shared between the City and County with the City funding \$200,000 (\$150,000 by Brenham Community Development Corporation and \$50,000 by City general fund) and the County funding \$50,000.

This item was discussed with the City Council in Executive Session on October 21, 2021 at which time I was directed to pursue the agreement under these terms.

ATTACHMENTS:

- (1) Memo Regarding Chapter 380 Agreement with Brenham CFA
- (2) Chapter 380 Agreement

RECOMMENDED ACTION:

Approve a Chapter 380 Agreement between the City of Brenham and Brenham CFA Series LLC. and authorize the Mayor to execute any necessary documentation.

MEMORANDUM

To: Mayor Milton Tate
Brenham City Council

From: Susan Cates, Director of Economic Development

Subject: Chapter 380 Agreement with Brenham CFA Series LLC

Date: September 8, 2022

For consideration at your September 15, 2022 meeting is a Chapter 380 Agreement between Brenham CFA Series LLC and the City of Brenham for the development of a Chick fil A restaurant located on US290 between Cantey and Chappell Hill on the westbound service road in the Market Square Development. This is a project with significant community support in Brenham.

The Economic Development Joint Sub-committee met on September 8, 2021 and discussed a total incentive to bring this project to Brenham of a community investment totaling \$250,000 upon completion of the facility and receipt of the Certificate of Occupancy by the developer. Both the City and County will recognize the tax benefits from this project, therefore the Economic Development Joint Sub-committee recommended that the \$250,000 incentive be shared between the City and County with the City funding \$200,000 (\$150,000 by Brenham Community Development Corporation and \$50,000 by City general fund) and the County funding \$50,000. This item was discussed with the City Council in Executive Session on October 21, 2021 at which time I was directed to pursue the agreement under these terms.

Mr. Lisciotti and his attorney have reviewed and agreed to the terms as outlined in the proposed Chapter 380 Agreement. The Chapter 380 Agreement requires that the project receive Certificate of Occupancy by December 31, 2023 and that the investment of Brenham CFA will be a minimum of \$2.5 million exclusive of land acquisition. In 2020, Fox Business estimated the median sales volume of a Chick Fil A restaurant at \$6,884,271. With this estimate the sales tax revenue to City and County will be \$137,685 annually. This means that considering only sales tax revenue the community will reach our return on investment in less than two years.

Companion items were approved by BCDC at their September 8, 2022 meeting and is on the Washington County Commissioners Court agenda September 13th.

CHAPTER 380 ECONOMIC DEVELOPMENT AGREEMENT
BETWEEN THE CITY OF BRENHAM
AND BRENHAM CFA SERIES LLC

This Chapter 380 Economic Development Agreement (the “Agreement”) is entered into as of _____, 2022 (the “Effective Date”) by and between the City of Brenham, a Texas home-rule municipal corporation located in Washington County, State of Texas (the “City”), by and through its Mayor, and Brenham CFA Series LLC, a Delaware series limited liability company (“Brenham CFA”), collectively sometimes referred to herein as the “Parties.”

WITNESSETH:

WHEREAS, Chapter 380 of the Texas Local Government Code permits cities to make loans or grants of public funds for the purpose of promoting economic development and stimulating business and commercial activity within the City; and

WHEREAS, Brenham CFA seeks to construct and develop approximately 4,947 square feet of commercial space as a freestanding building with associated improvements (the “Project”) approximately as shown on the site plan attached hereto Exhibit “A” and incorporated herein for all purposes pertinent, on approximately 1.796 acres of land located at the northwest corner of west bound U.S. Highway 290E Service Road and Ryan Street in the City of Brenham (the “Property”); and

WHEREAS, Brenham CFA has presented an economic assistance request to the City that will facilitate design and construction of the Project in a specified time described herein and according to all City development and design ordinances, guidelines, rules, and regulations; and

WHEREAS, the development of this Project by Brenham CFA will involve a capital investment of approximately Two Million Five Hundred Thousand Dollars (\$2,500,000) exclusive of land acquisition costs, but including development, construction costs, and furniture, fixtures and equipment (“FF&E”).

WHEREAS, the Property, once completed will be initially leased to Chick-fil-A, Inc. to be operated as a quick serve restaurant open to the public; and

WHEREAS, based on correspondence the City received from Chick-fil-A, Inc., the City estimates that the economic benefit to the Brenham community from the development of the restaurant will consist of:

- Approximately three (3) manager level jobs
- Approximately 45 to 55 additional employees (a combination of full-time and part-time positions), or approximately 30 additional full-time equivalent (“FTE”) employee positions
- Additional sales tax collected and remitted each year during the restaurant’s operation
- Additional sales tax paid in the first year on new equipment; and

WHEREAS, the City has determined that construction of the Project will positively impact the local economy through expansion of the City’s ad valorem tax base, sales tax revenue, and creation of jobs in the community; and

WHEREAS, the City Council of the City of Brenham supports the continued growth and expansion of economic development in the City by entering into this Agreement to promote and expand desirable commercial growth within the City;

NOW, THEREFORE, in consideration of the mutual benefits and promises contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

ARTICLE 1.
AUTHORIZATION AND PROGRAM ESTABLISHMENT

- 1.01 The City Council of the City hereby establishes a Chapter 380 economic development program (the “Program”) to encourage economic development within the City and promote new businesses, and the City Council finds and determines that this Agreement will effectuate the purposes of the Program, and that Brenham CFA’s performance of its obligations herein will promote local economic development and stimulate business and commercial activity in the City.

ARTICLE 2.
DEFINITIONS

- 2.01 The terms “Agreement,” “Effective Date,” “City,” “Brenham CFA,” “Project,” “Property,” “Parties,” and “Program” shall have the meanings provided herein above.
- 2.02 “Substantial Completion” shall mean the point that a Certificate of Occupancy is issued for the Project by the City.
- 2.03 “Grant Payment” shall mean the payment to Brenham CFA in the amount of Fifty Thousand Dollars (\$50,000.00) upon Substantial Completion of the Project.

ARTICLE 3.
TERM

- 3.01 The term (“Term”) of this Agreement shall commence on the Effective Date herein above and, unless otherwise terminated earlier in accordance with this Agreement, shall terminate on the date Grant Payment is issued to Brenham CFA or December 31, 2023 whichever is earlier. Notwithstanding the preceding sentence in this Section 3.01, or any other provision of this Agreement, this Agreement shall terminate no later than December 31, 2023; provided however, in the event Brenham CFA achieves Substantial Completion on or prior to December 31, 2023, this Agreement shall be automatically extended until the date the Grant Payment is issued to Brenham CFA.

ARTICLE 4.
COVENANTS OF BRENHAM CFA

- 4.01 Covenants Regarding Construction and Development. In consideration of City agreeing to pay Brenham CFA the Grant Payment in accordance with the terms, provisions, and conditions of this Agreement, Brenham CFA agrees to the following obligations that must be fulfilled in order to receive the Grant Payment:
- (A) Complete construction of the building and associated improvements to be occupied by the tenant, Chick-fil-A, Inc., or its operator, in the Project and obtain a Certificate of Occupancy issued by the City no later than December 31, 2023.
 - (B) Design and construct the Project in accordance with the statutes, ordinances, rules, and regulations of the City of Brenham, as well as applicable local, County, state, and federal laws. Further, Brenham CFA will design and construct the Project in accordance with the Brenham Market Square – Architectural Enhancement Requirements set forth in Exhibit “B” attached hereto and incorporated herein for all purposes pertinent. Brenham CFA shall be deemed a “Developer” as that term is used in Exhibit “B.”
 - (C) The total investment by Brenham CFA in Project design, development, installation, construction and FF&E shall be at least approximately Two Million Five Hundred Thousand Dollars (\$2,500,000). For the purposes of this Section 4.01(C), expenditures made by Brenham CFA for the acquisition of the Property shall be excluded in calculating the total amount of investment by Brenham CFA in the Project.
 - (D) Brenham CFA shall timely pay and remain current on all property taxes imposed on the Project or any portion thereof, subject to appeal rights in accordance with applicable law, and subject to a right to cure any delinquency.
 - 1. Brenham CFA shall have the right to protest, contest, or litigate: (a) any assessment of the value of the Project by the Washington County Appraisal District which appraises real or personal property on all or any part of the Project; and, (b) any tax imposed on the Project by any taxing authority with jurisdiction that includes the Project.

ARTICLE 5.
COVENANTS OF THE CITY OF BRENHAM

- 5.01 Subject to Brenham CFA complying with all of its duties and obligations in this Agreement, the City agrees to pay Brenham CFA a Grant Payment in the amount of Fifty Thousand and No/100 Dollars (\$50,000.00) upon Brenham CFA’s compliance with Section 4.01 and reaching Substantial Completion on the Project.
- 5.02 The City agrees to pay the Grant Payment, in the amount specified in Section 5.01, within thirty (30) days of Brenham CFA reaching Substantial Completion in accordance with Section 4.01(A) herein above, and the City’s receipt of Brenham CFA’s written

certification that (a) Brenham CFA has completed the Project in accordance with Section 4.01(A), Section 4.01(B) and Section 4.01(C) of the Agreement, and (b) as of the date of certification, Brenham CFA is in compliance with the requirements of Section 4.01(D) of the Agreement, using the form attached hereto as Exhibit “C” and incorporated herein for all purposes pertinent.

ARTICLE 6.
AUTHORITY; COMPLIANCE WITH LAW

- 6.01 Brenham CFA hereby represents and warrants to the City that it has full lawful right, power and authority to execute and deliver and perform the terms and obligations of this Agreement and that the execution and delivery of this Agreement has been duly authorized by all necessary action by Brenham CFA and this Agreement constitutes the legal, valid, and binding obligation of Brenham CFA, and is enforceable in accordance with its terms and provisions.
- 6.02 Notwithstanding any other provision of this Agreement, Brenham CFA shall comply with all federal, state, and local laws and regulations.
- 6.03 Brenham CFA certifies that Brenham CFA does not and will not knowingly employ an undocumented worker in accordance with Chapter 2264 of the Texas Government Code, as amended. If Brenham CFA is convicted of a violation under 8 U.S.C. § 1324a(f), that is proven to have occurred during the term of this Agreement, Brenham CFA shall repay the full amount of the public Grant Money provided under this Agreement plus interest, at the rate of the prime rate plus two percent (2%) per annum, not later than the 120th day after the date the City notifies Brenham CFA of the violation.

ARTICLE 7.
BREACH AND REMEDY; TERMINATION; ADDITIONAL REMEDIES

- 7.01 Except as otherwise provided in this Section 7.01 and Subsection 7.03(E), should either party fail to comply with any of the material terms or conditions of this Agreement, and any such failure (hereinafter, a “breach”) specified, remains uncured for ninety (90) days following the breaching party’s receipt of written notice (the “Breach Notice”) from the non-breaching party, delivered in accordance with Section 12.09 herein below, of the event and nature of such breach; provided, however, that if such breach is not reasonably susceptible of cure within such ninety (90) day period and the breaching party has commenced and is continuing to diligently pursue the cure of such breach, then after first advising the non-breaching party of such cure efforts, the breaching party shall automatically receive an additional ninety (90) day period within which to cure such breach. The non-breaching party may authorize additional time to cure any such breach but is not obligated to grant such additional time. Notwithstanding anything expressed or implied herein to the contrary, no breach shall exist if the failure of either party to fully perform its obligations hereunder is the result of a force majeure event as defined in Article 8 herein below. Further time for cure of a breach by the breaching party shall be extended by the reasonable time the breaching party is delayed by a force majeure event. The

provisions of this Section 7.01 providing the parties hereto with a right to cure a breach are not applicable to Subsection 7.03(E) of this Agreement.

7.02 Upon the occurrence and during the continuation of any uncured breach, the City shall have the right to suspend the Grant Payment specified in Article 5 herein above, pursuant to a notice (the “Suspension Notice”) delivered in accordance with Section 12.09 herein below. If the City delivers a Suspension Notice pursuant to this Section 7.02, then Brenham CFA shall thereafter have no right to receive the Grant Payment specified in Article 5 herein above unless and until Brenham CFA has cured the breach or breaches specified in the Breach Notice.

7.03 This Agreement shall terminate upon any one of the following:

- (A) Except as set forth in Section 3.01 above, on December 31, 2023; unless mutually extended by Brenham CFA and the City acting through its City Council, or at such time when the City has paid a Grant Payment totaling Fifty Thousand and No/100 Dollars (\$50,000.00), whichever occurs first.
- (B) Subject to the right to cure described in this Article 7, upon written notice from Brenham CFA to the City, upon any breach by the City of its obligations specified in this Agreement.
- (D) Subject to the right to cure described in this Article 7, upon written notice from the City to Brenham CFA, upon a breach by Brenham CFA of its obligations specified in this Agreement.
- (E) By the City, immediately upon written notice to Brenham CFA, with no right to cure as described in this Article 7, if Brenham CFA: 1) has not completed the Project and obtained a Certificate of Occupancy to be occupied by the tenant, Chick-fil-A, Inc. or its operator, by December 31, 2023.

ARTICLE 8.

FORCE MAJEURE

Performance of the parties’ obligations under this Agreement shall be subject to extension due to delay by reason of events of force majeure, and the parties’ obligations shall be abated during any period of force majeure. Force majeure shall include, without limitation, damage or destruction by fire or other casualty, condemnation, strike, lockout, civil disorder, war, unreasonable delay in issuance of any permit and/or legal authorization (including engineering approvals by any governmental entity), unreasonable delay in governmental approvals and permits, shortage or delay in shipment of materials or fuel occasioned by any event referenced herein, acts of God, unusually adverse weather or wet soil conditions, pandemic, epidemic or other public health emergency, or other causes beyond the parties’ reasonable control, including but not limited to, any governmental order or restriction, or any court order or judgment resulting from any litigation affecting the Project, Property or this Agreement.

ARTICLE 9.

GIFT TO PUBLIC SERVANT OR TO BRENHAM CFA REPRESENTATIVE

- 9.01 **No Benefit.** Each party hereto represents to the other that it has not offered, conferred, or agreed to confer and that it will not offer, confer or agree to confer in the future any benefit upon an employee or official of the other party. For purposes of this section, “benefit” means anything reasonably regarded as economic advantage, including benefit to any other person in whose welfare the beneficiary is interested, but does not include a contribution or expenditure made and reported in accordance with law.
- 9.02 **Right of Reimbursement.** Notwithstanding any other legal remedies, City may obtain reimbursement for any expenditure or Grant Payment made to Brenham CFA as a result of the improper offer, agreement to confer, or conferring of a benefit to a City employee or official.

ARTICLE 10. **ASSIGNMENT**

Brenham CFA may not assign any part of this Agreement without express written approval by the City Council of the City of Brenham, which approval will not be unreasonably withheld, provided that any approved assignee assumes, in writing, all of Brenham CFA’s obligations under this Agreement.

ARTICLE 11. **INDEMNIFICATION**

- 11.01 BRENHAM CFA EXPRESSLY AGREES TO FULLY AND COMPLETELY DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY, AND ITS OFFICIALS, OFFICERS, EMPLOYEES, AGENTS, CONTRACTORS AND VOLUNTEERS AGAINST ANY AND ALL CLAIMS, LAWSUITS, LIABILITIES, JUDGMENTS, COSTS, AND EXPENSES FOR PERSONAL INJURY (INCLUDING DEATH), PROPERTY DAMAGE OR OTHER HARM, DAMAGES OR LIABILITY FOR WHICH RECOVERY OF DAMAGES IS SOUGHT, SUFFERED BY ANY PERSON OR PERSONS, THAT MAY ARISE OUT OF OR BE OCCASIONED BY ANY NEGLIGENT, GROSSLY NEGLIGENT, WRONGFUL, OR STRICTLY LIABLE ACT OR OMISSION OF BRENHAM CFA OR ITS OFFICERS, AGENTS, EMPLOYEES, OR CONTRACTORS, ARISING OUT OF THE PERFORMANCE OF THIS AGREEMENT, EXCEPT TO THE EXTENT CAUSED BY THE CITY, OR ITS OFFICIALS, OFFICERS, EMPLOYEES, AGENTS, CONTRACTORS OR VOLUNTEERS.** Nothing in this paragraph may be construed as waiving any governmental immunity or other defense available to the City under state or federal law except as expressly provided herein. This provision is solely for the benefit of Brenham CFA and the City and is not intended to create or grant any rights, contractual or otherwise, in or to any other person.

- 11.02 It is acknowledged and agreed by the parties that the terms hereof are not intended to and shall not be deemed to create a partnership or joint venture among the parties. The City (including its past, present and future officers, elected officials, directors, employees and agents of the City) does not assume any responsibility to any third party in connection with Brenham CFA's construction of the Development.

ARTICLE 12.
MISCELLANEOUS MATTERS

- 12.01 Time is of Essence. Time is of the essence in this Agreement. The Parties hereto will make every reasonable effort to expedite the subject matters hereof and acknowledge that the successful performance of this Agreement requires their continued cooperation.
- 12.02 Applicable Law and Venue. This Agreement is made subject to and in accordance with the City of Brenham Home Rule Charter and ordinances of City, as amended, and all applicable local, state and federal laws and regulations. This Agreement is performable in Washington County, Texas. Exclusive venue for any action arising under or involving this Agreement shall lie in the State District Courts of Washington County or if in federal court, the United States District Court for the Western District of Texas.
- 12.03 Interpretation. Each of the Parties has been represented by counsel of their choosing in the negotiation and preparation of this Agreement. In the event of any dispute regarding the interpretation of this Agreement, this Agreement will be interpreted fairly and reasonably and neither more strongly for nor against any Party based on draftsmanship.
- 12.04 Counterparts Deemed Original. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original and constitute one and the same instrument.
- 12.05 Relationship of Parties. The Parties shall not be deemed in a relationship of partners or joint ventures by virtue of this Agreement, nor shall either Party be an agent, representative, trustee or fiduciary of the other. Neither Party shall have any authority to bind the other to any agreement.
- 12.06 Governmental Powers. By execution of this Agreement, the City does not waive or surrender any governmental immunities, powers or rights, except as provided in Chapter 271, Texas Local Government Code.
- 12.07 Captions. The captions to the various clauses of this Agreement are for informational purposes only and shall not alter the substance of the terms and conditions of this Agreement.
- 12.08 Complete Agreement. This Agreement embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties and relating to matters in the Agreement, and except as otherwise provided herein

cannot be modified without mutual written agreement of the parties to be attached and made a part of this Agreement.

- 12.09 Notice. Any notice to be given or served hereunder or under any document or instrument executed pursuant hereto shall be in writing and shall be (i) delivered personally, with a receipt requested therefore; or (ii) sent by a nationally recognized overnight courier service; or (iii) delivered by United States certified mail, return receipt requested, postage prepaid. All notices shall be addressed to the respective party at its address set forth below and shall be effective (a) upon receipt or refusal if delivered personally; (b) one business day after depositing, with such an overnight courier service or (c) three business days after deposit in the United States mails, if mailed. Any party hereto may change its address for receipt of notices by service of a notice of such change in accordance with this subsection.

Brenham CFA: Brenham CFA Series LLC
c/o Lisciotti Development Corp.
83 Orchard Hill Park Drive
Leominster, MA 01453
ATTN: Gregg P. Lisciotti

With a copy to: Fellman Kapilian Law, P.C.
54 Jaconnet Street, Suite 300
Newton, MA 02461
ATTN: Scott H. Kapilian, Esq.
skapilian@fellmankapilian.com

City: City of Brenham, Texas
200 W. Vulcan St.
Brenham, TX 77833
ATTN: Carolyn D. Miller, City Manager

With a copy to: Cary L. Bovey
Bovey & Cochran, PLLC
2251 Double Creek Dr., Suite 204
Round Rock, Texas 78664
(512) 904-9441
Fax (512) 904-9445
cary@boveycochran.com

- 12.10 Amendment. This Agreement may only be amended by the mutual written agreement of the parties.

- 12.11 Severability. In the event any section, subsection, paragraph, subparagraph, sentence, phrase, or word herein is held invalid, illegal, or unenforceable, the balance of this Agreement shall stand, shall be enforceable, and shall be read as if the parties intended at

all times to delete said invalid section, subsection, paragraph, subparagraph, sentence, phrase, or word. In the event there shall be substituted for such deleted provision a provision as similar in terms and in effect to such deleted provision as may be valid, legal and enforceable.

- 12.12 Attorney's Fees. The parties hereto agree that the prevailing party in any dispute, lawsuit or other legal proceeding between the parties arising out of this Agreement shall be entitled to recover its reasonable attorney's fees and costs.

EXECUTED on the respective dates of acknowledgement, to be effective as of the date first set forth above.

CITY OF BRENHAM, TEXAS

By: _____

Name: Milton Y. Tate, Jr.

Title: Mayor

STATE OF TEXAS

COUNTY OF WASHINGTON

This instrument was acknowledged before me on the ____ day of _____, 2022 by Milton Y. Tate, Jr., Mayor of the City of Brenham, a Texas home-rule municipal corporation, on behalf of said municipal corporation.

[Notary Seal]

Notary Public, State of Texas

APPROVED AS TO FORM

By: _____

Cary L. Bovey, City Attorney

BRENHAM CFA SERIES LLC,
a Delaware series limited liability company

By: _____

Name: Gregg P. Lisciotti

Title: Manager

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on the ____ day of _____, 2022
by Gregg P. Lisciotti, the Manager of Brenham CFA Series LLC, a Delaware series limited liability
company .

[Notary Seal]

Notary Public, State of _____

Exhibit "A"

BLEYL ENGINEERING

BLEYL ENGINEERING



LEGEND

—

DRAINAGE AREA
BOUNDARY

NAME
ACRES
DESCRIPTION

DRAFT FOR AGENCY REVIEW ONLY

THIS SET OF PLANS AND SPECIFICATIONS IS THE PROPERTY OF BLEYL ENGINEERING, P.C. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. NO PART OF THIS DOCUMENT IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM BLEYL ENGINEERING, P.C.

DESIGN: SHARICE ROBINSON
CADD: SBR
INCH: 1/8" = 1'-0"
SHEET: 3 OF 3

DRAINAGE AREAS

BRENHAM MARKET SQUARE MASTER PLAN

CITY OF BRENHAM
WASHINGTON COUNTY, TEXAS

BLEYL ENGINEERING

PLANNING • DESIGN • MANAGEMENT
1722 Broadmoor, Suite 210, Bryan Tx 77802
Texas Firm Registration No. F-678
Tel. 979-268-1125 Fax 979-260-3849
www.bleylengineering.com

AUSTIN BRYAN CONROE HOUSTON

PREPARED FOR:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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EXHIBIT “B”

Developer shall design and construct all structures located within the Brenham Market Square Development in accordance with adopted City of Brenham Codes and Ordinances. Additionally, the Developer shall construct all structures within the subject tract in accordance with the following architectural enhancements which provide greater variations in material, color, and texture to the exterior walls (elevations) of each façade.

Said architectural enhancements are collectively referred to herein as the “Decorative Elements Threshold” and the elevations of *each* Building in the Project must include and satisfy *all* of the following elements:

1. “Primary Building Materials” (only brick, natural stone, fiber cement nichiha panels, glass or glazing) shall cover at least fifty-five percent (55%) of each Building elevation;
2. “Secondary Building Materials” (only concrete masonry unit, concrete panel construction (tilt wall) stucco, cement board siding, EIFS or architectural metal pan) shall cover no more than thirty percent (30%) of each Building elevation; and
3. “Accent Materials” such as door and window frames, lintels, canopies, cornices, architectural metalwork, glass block, copper flashing, EIFS accent features such as cornices, or similar materials may be used on no more than fifteen percent (15%) of each Building elevation.

The Developer shall have the option to elect to forego the Decorative Elements Threshold for each elevation *not* visible from a public right-of way (existing or planned), provided that the Primary Building Materials percentage shall increase in the following manner on all remaining elevations visible from the public right-of-way. Any facades not visible from the public right-of-way and applicable to the exception shall be painted an inconspicuous natural color (such as a shade of tan, brown or green).

1. “Primary Building Materials” (only brick, natural stone, fiber cement nichiha panels, glass or glazing) shall cover at least sixty-five percent (65%) of each Building elevation;
2. “Secondary Building Materials” (only concrete masonry unit, concrete panel construction (tilt wall) stucco, cement board siding, EIFS or architectural metal pan) shall cover no more than twenty-five percent (25%) of each Building elevation; and
3. “Accent Materials” such as door and window frames, lintels, canopies, cornices, architectural metalwork, glass block, copper flashing, EIFS accent features such as cornices, or similar materials may be used on no more than ten percent (10%) of each Building elevation.

Within thirty (30) days after completion of construction of all buildings within the subject tract, the Developer shall deliver a written certification to the City Manager, with sufficient supporting documentation, that the Decorative Elements Threshold has been satisfied in the construction of the buildings. Within thirty (30) days after the City Manager’s receipt of the written certification from the Developer, the City Manager shall provide a written notice approving the certification or stating the specific item(s) within the certification of which the City Manager does not approve based on the as-built construction of the buildings on the subject tract, such approval of the City Manager not to be unreasonably withheld, conditioned or delayed.

The following words, terms and phrases, when used in this agreement shall have the meanings ascribed to them in this exhibit, except where the context clearly indicates a different meaning.

Words and terms that are not expressly defined in this exhibit have their ordinary dictionary meanings, based on the latest edition of Merriam-Webster's Unabridged Dictionary. When not inconsistent with the context, words used in the present tense include the future; words used in the singular number include the plural; and words used in the plural number include the singular.

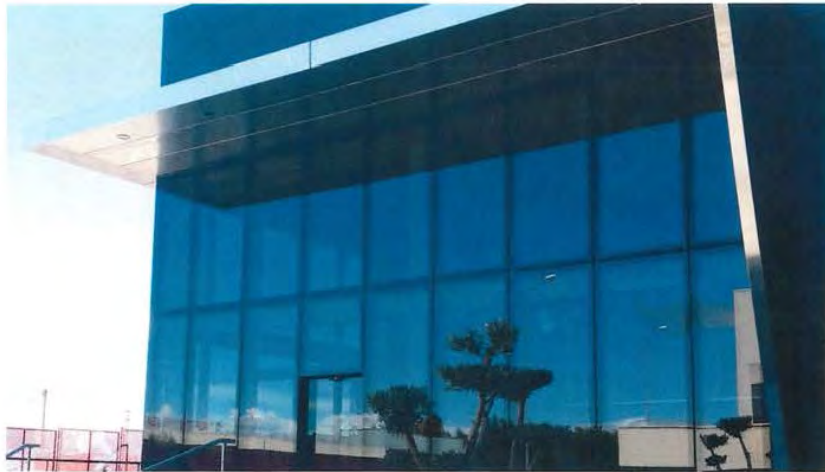
BRICK: A masonry building block of clay baked in a kiln until hard.



NATURAL STONE: Masonry construction using stone material may consist of granite, marble, limestone, slate, river rock, and other hard and durable naturally occurring all weather stone. Cut stone and dimensioned stone techniques are acceptable.



GLASS WALLS. An exterior wall with a maximum reflectance of twenty (20) percent, which carries no structural loads and consists of a combination of metal, glass, or other surfacing material supported in a metal framework. Glass walls include glass curtain walls.



CONCRETE MASONRY UNIT: Concrete masonry units used for masonry construction shall meet the latest standard contained within the building code. Concrete masonry units shall have an indented, hammered, split face finish or other similar architectural finish, and be integrally colored. Lightweight concrete block or cinder block construction is not acceptable as an exterior finish.



CONCRETE PANEL CONSTRUCTION (TILT WALL): Concrete finish, pre-cast panel or tilt wall construction shall be painted, fluted, or exposed aggregate. Smooth or untextured concrete finishes are not acceptable unless painted.



STUCCO: An approximately 7/8-inch, cement-based, three-coat system that is applied over an approved, weather-resistive barrier and metal lath by spraying or troweling. The three-coat system is comprised of a scratch coat, brown coat and a finish coat that is color integrated and sealed.



CEMENT BOARD SIDING (OR PANELS): Shall be fiber cement composite material made of cement reinforced with cellulose fibers.



EXHIBIT “C”

AFFIDAVIT OF PROJECT COMPLETION

THE STATE OF TEXAS

COUNTY OF _____

BEFORE ME, the undersigned authority, on this day personally appeared GREGG P. LISCIOTTI, “Affiant” herein, who being first by me duly sworn, deposed and stated as follows:

1. My name is GREGG P. LISCIOTTI. I am over the age of eighteen years and have personal knowledge of the facts herein set forth, and am competent to give this Affidavit. I am not disqualified by law for any reason to give this Affidavit.
2. Affiant is the Manager of Brenham CFA Series LLC, a Delaware series limited liability company (“Brenham CFA”), which entered in to a Chapter 380 Economic Development Agreement (the “Agreement”) with the City of Brenham, Texas, having an effective date of _____, 2022. Pursuant Section 5.02 of the Agreement, Brenham CFA is required to submit written certification that it has completed the “Project,” as that term is defined in the Agreement, in accordance with Section 4.01 of the Agreement.
3. I hereby certify that (a) the Project has been completed in compliance with Section 4.01(A), Section 4.01(B) and Section 4.01(C) of the Agreement, and (b) as of the date hereof, Brenham CFA is in compliance with the requirements of Section 4.01(D) of the Agreement.

Further Affiant sayeth not.

GREGG P. LISCIOTTI

SUBSCRIBED AND SWORN TO before me by the said GREGG P. LISCIOTTI on this _____ day of _____, 20__.

Notary Public of the State of Texas

My commission expires: _____



Regular City Council
AGENDA ITEM 11.

Agenda Item: Discuss and Possibly Act Upon Payment to BK Stringer, Ltd. for the Design and Construction of Chappell Hill Road Improvements and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Economic Development

Staff Contact: Susan Cates

SUMMARY STATEMENT:

Section 5.04 of the Second Amendment to the Chapter 380 Agreement (excerpt of full agreement showing this section attached to the agenda item) between BK Stringer Ltd. and the City of Brenham stipulates that the City will reimburse BK Stringer for expenses related to the widening of Chappell Hill Street up to \$520,000. Further, the section stipulates that if the road project does not meet the \$520,000, any difference in the cost of the road infrastructure will be reimbursed to BK Stringer for the costs of purchasing and installing Primary Building Materials on the Anchor Buildings.

The costs associated with Chappell Hill widening are \$145,620.93. These funds were reserved by Resolution from 2012 and 2017 Certificates of Obligation.

ATTACHMENTS:

- (1) Memo Regarding Reimbursement to BK Stringer Ltd.
- (2) Section 5.04 of the Chapter 380 Agreement and Amendment

RECOMMENDED ACTION:

Approve payment to BK Stringer Ltd. in the amount of \$145,620.93 for the design and construction of Chappell Hill Road improvements and authorize the Mayor to execute any necessary documentation.



MEMORANDUM

To: Mayor and City Council
City Manager Carolyn Miller

From: Susan Cates, Director of Economic Development

Subject: Reimbursement to BK Stringer Ltd.

Date: September 8, 2022

Per Section 5.04 of the Second Amendment to the Chapter 380 Economic Development Agreement Between the City of Brenham and BK Stringer, Ltd., the City shall reimburse BK Stringer (Baker Katz) an “Adjusted Reimbursement Amount” of \$520,000 for the design and construction of the widening of Chappell Hill Road. In a previous item on the agenda the Council will be presented with information regarding the completion of the Chappell Hill Widening project and be asked to consider acceptance of the public infrastructure improvements.

The cost for Chappell Hill widening as presented by Baker Katz from their engineer, Kimley Horn totals \$40,000 and from their general contractor, Arch-Con totals \$105,620.93. The total expenses for Chappell Hill Widening are then \$145,620.93. These funds were reserved by City Council Resolution R-19-006 from 2012 and 2017 Certificates of Obligation for road infrastructure. It was initially projected that the costs for the Chappell Hill widening project would cost just under \$600,000. However, information from Traffic Impact Analysis and Thoroughfare Plans significantly revised the project from a four-lane road with a boulevard, to simply adding a deceleration lane and dedicated turn lane.

The provisions of Section 5.04 of the Chapter 380 stipulate that the City agrees to use the Remaining Amount of the Adjusted Reimbursement Amount (\$520,000 less \$145,620.93 or \$374,379.07) to reimburse Baker Katz for the costs of purchasing and installing Primary Building Materials on the Anchor Buildings. This was intended assist during the construction phase of the project as an incentive to enhance the facades of the anchor buildings. Expenditures for Primary Building Materials on the Anchor Buildings in excess of \$374,379.07 have been verified by Baker Katz submittal of certificates of payment to their general contractor, Arch-Con. However, as this construction is not related to road infrastructure, it may not be paid with Certificate of Obligation funds. Payment of this balance must come from the General Fund.

Section 5.04 further notes that the total amount of Program Grant Payments payable to Baker Katz pursuant to the Chapter 380 Agreement shall be reduced in an amount equal to the Remaining Amount. Therefore, the sales tax reimbursement portion of the Chapter 380 Agreement paid by the City of Brenham will be reduced by \$374,379.07. In conversation with Kenneth Katz on September 6, 2022, City Attorney Cary Bovey and I informed Mr. Katz that it was the intent of the City to reduce City Sales Tax Reimbursement payments, which are scheduled to commence on December 1, 2023 for Fiscal Year 2022-23 sales tax receipts from retailers within Brenham Crossing, by the full amount of \$374,379.07 until that amount has been satisfied.

**Excerpt from Chapter 380 Agreement Between the City of Brenham, Texas
and Baker Katz, LLC**

Passed and Approved January 17, 2019

the City shall be satisfied by the percentage contribution established in this Agreement and not by the Estimated Annual or Cumulative Grant dollars produced. The cumulative total Program Grant Payments of the City shall not exceed six million dollars (\$6,000,000).

- 5.02 The percentage share of the Sales Tax Revenue for years 1 through 5 shall be 90%, as depicted on the following Estimated Program Grant Schedule. The percentage share of the Sales Tax Revenue shall remain at 90% for additional 1 year increments for each additional 20,000 square feet of retail space constructed on the Property as part of the Project. For example, 165,000 square feet constructed no later than December 31, 2026 shall result in two (2) additional years of 90% City contribution percentage amount of Sales Tax Revenue occurring in years 6 and 7. In the first year in which Baker Katz is not entitled to 90% of the Sales Tax Revenue, the City's contribution shall be 80% for the following four (4) years; provided that in any year thereafter in which Baker Katz constructs additional retail space in increments of additional 20,000, the percentage share of the Sales Tax Revenue shall be 90% accordingly.
- 5.03 Grant Payments to Baker Katz shall be paid annually according to the Sales Tax Grant Payment Due Date as defined herein above in Article 2 and shall continue throughout the Term of this Agreement or until the cumulative Sales Tax Grant Payments to Baker Katz total six million dollars (\$6,000,000), whichever occurs first.

Estimated Program Grant Schedule							
Year	SF Built	City 1% Sales Tax Contribution		County 0.5% Sales Tax Contribution		ESTIMATED	Cumulative
		%	\$	%	\$	Annual Grant	ESTIMATED Annual Grant
0	-	0%	-	0%	-	-	-
1	125,000	90%	220,510	90%	110,255	330,764	330,764
2	125,000	90%	220,510	90%	110,255	330,764	661,529
3	125,000	90%	220,510	90%	110,255	330,764	992,293
4	125,000	90%	220,510	90%	110,255	330,764	1,323,057
5	125,000	90%	220,510	90%	110,255	330,764	1,653,822
6	125,000	80%	196,008	80%	98,004	294,013	1,947,834
7	125,000	80%	196,008	80%	98,004	294,013	2,241,847
8	125,000	80%	196,008	80%	98,004	294,013	2,535,860
9	125,000	80%	196,008	80%	98,004	294,013	2,829,872
10	125,000	70%	171,507	70%	85,754	257,261	3,087,133
11	125,000	70%	171,507	70%	85,754	257,261	3,344,395
12	125,000	70%	171,507	70%	85,754	257,261	3,601,656

5.04 Chappell Hill Road Widening

The City shall reimburse Baker Katz up to six hundred thousand dollars (\$600,000) for the design and construction of the widening of Chappell Hill Road as described in detail in Attachment II. If the cost to design and construct Chappell Hill Drive exceeds \$600,000

as approved by the City Manager, the reimbursement amount will be amended to include the actual costs as supported by design and construction invoices paid by Baker Katz. The City will reimburse actual costs incurred by Baker Katz for construction of the Chappell Hill Road widening within ninety (90) days after completion of construction, written acceptance of the improvements by the City Engineer, and the City's receipt and approval of associated invoices.

- 5.05 The City agrees to begin the construction and installation of the public utilities of sufficient size and capacity necessary to serve the Project as shown on the attached **Attachment III** within three (3) months after the Effective Date of this Agreement. The City further agrees to complete the construction and installation of said public utilities within twelve (12) months after the City begins construction. The City further agrees to bring the connections for such utilities to a mutually agreed upon location(s) at both the southeast and southwest corners of Highway 290 and Chappell Hill Drive. The utilities shall be located and designed by the City in such a manner that Baker Katz will not need to construct a lift station or force main. Baker Katz, at no cost to the City, shall grant to City any and all public utility easements (for gas, electric, water, wastewater, and other utilities) necessary to serve the Project with public utilities of sufficient size and capacity. Additional easements for installation, construction and maintenance of utilities, drainage and storm water detention facilities shall be dedicated as shown on the plat(s) of all or portions of the Property as the Project is developed and as part of the City's platting process.

ARTICLE 6.

AUTHORITY; COMPLIANCE WITH LAW

- 6.01 Baker Katz hereby represents and warrants to the City that it has full lawful right, power and authority to execute and deliver and perform the terms and obligations of this Agreement and that the execution and delivery of this Agreement has been duly authorized by all necessary action by Baker Katz and this Agreement constitutes the legal, valid and binding obligation of Baker Katz, and is enforceable in accordance with its terms and provisions.
- 6.02 Notwithstanding any other provision of this Agreement, Baker Katz shall comply with all federal, state, and local laws and regulations.
- 6.03 Baker Katz certifies that Baker Katz does not and will not knowingly employ an undocumented worker in accordance with Chapter 2264 of the Texas Government Code, as amended. If during the term of this Agreement, Baker Katz is convicted of a violation under 8 U.S.C. § 1324a(f), Baker Katz shall repay the amount of the public subsidy provided under this Agreement plus interest, at the rate of the prime rate plus two percent (2%) per annum, not later than the 120th day after the date the City notifies Baker Katz of the violation.

**Excerpt from Second Amendment to the Chapter 380 Agreement Between
the City of Brenham, Texas and Baker Katz, LLC
Passed and Approved November 5, 2020**

5. Section 5.02 of the 380 Agreement shall be amended and revised to read as follows:

5.02 The percentage share of the Sales Tax Revenue for years 1 through 5 shall be 90%, as depicted on the following Estimated Program Grant Schedule. The percentage share of the Sales Tax Revenue shall remain at 90% for additional 1 year increments for each additional 20,000 square feet of retail space constructed on the Property as part of the Project. For example, 165,000 square feet constructed no later than December 31, 2028 shall result in two (2) additional years of 90% City contribution percentage amount of Sales Tax Revenue occurring in years 6 and 7. In the first year in which Baker Katz is not entitled to 90% of the Sales Tax Revenue, the City's contribution shall be 80% for the following four (4) years; provided that in any year thereafter in which Baker Katz constructs additional retail space in increments of additional 20,000, the percentage share of the Sales Tax Revenue shall be 90% accordingly.

6. Section 5.04 of the 380 Agreement shall be amended and revised to read as follows:

5.04 Chappell Hill Road Widening

The City shall reimburse Baker Katz six hundred thousand dollars (\$600,000) (the "Reimbursement Amount"), or the Adjusted Reimbursement Amount (defined herein below) of \$520,000, as applicable, for the design and construction of the widening of Chappell Hill Road as described in detail in Attachment II. If the cost to design and construct Chappell Hill Road exceeds either the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, as approved by the City Manager, the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, will be amended to include the actual costs as supported by design and construction invoices paid by Baker Katz. In the event that Baker Katz does not exhaust the full Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, in connection with the construction of the widening of Chappell Hill Road, then the City agrees to use the remaining amount of the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable ("Remaining Amount"), to reimburse Baker Katz for the costs of purchasing and installing the Primary Building Materials on the Anchor Buildings. The City will pay the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, to Baker Katz for construction of the Chappell Hill Road widening, or in connection with the costs of purchasing and installing the Primary Building Materials on the Anchor Buildings (if applicable), within ninety (90) days after completion of construction, written acceptance of the improvements by the City Engineer, and the City's receipt and approval of associated invoices. The total amount of Program Grant Payments payable to Baker Katz pursuant to this Agreement shall be reduced in an amount equal to the "Remaining Amount" as said term is defined in this Section 5.04. Notwithstanding any other provision of this Agreement to the contrary, Baker Katz shall contribute the total sum of \$80,000.00 to the City, which represents (i) \$50,000 for the costs incurred by the City for the underground installation of the electric lines associated with the Chappell Hill Road widening

project, and (ii) \$30,000 Baker Katz would have incurred in constructing the utility lines overhead. The contribution of Baker Katz set forth in the preceding sentence shall be in the form of an \$80,000 reduction in the Reimbursement Amount, resulting in an Adjusted Reimbursement Amount total of \$520,000 ("Adjusted Reimbursement Amount"), and said \$80,000 shall be deemed contributed as of the date of this Second Amendment. The City shall use commercially reasonable efforts to cause Bluebonnet Electric Cooperative to complete the underground installation of the electrical lines along the west side of Chappell Hill Street, from Hwy 290 to the south of the southern property line of the 39.57 Acre Tract by June 1, 2021.

7. Section 5.05 of the 380 Agreement shall be amended and revised to read as follows:

5.05 The City agrees to begin the construction and installation of the public utilities of sufficient size and capacity necessary to serve the Project as shown on the attached **Attachment III** within three (3) months after the Effective Date of this Agreement. The City further agrees to complete the construction and installation of said public utilities within eighteen (18) months after the City begins construction. The City further agrees to bring the connections for such utilities to a mutually agreed upon location(s) at both the southeast and southwest corners of Highway 290 and Chappell Hill Drive. The utilities shall be located and designed by the City in such a manner that Baker Katz will not need to construct a lift station or force main. Baker Katz, at no cost to the City, shall grant to City any and all public utility easements (for gas, electric, water, wastewater, and other utilities) necessary to serve the Project with public utilities of sufficient size and capacity. Additional easements for installation, construction and maintenance of utilities, drainage and storm water detention facilities shall be dedicated by separate instrument or as shown on the replat(s) of all or portions of the Property as the Project is developed and as part of the City's platting process.

8. Section 7.03(A) and (F) of the 380 Agreement shall be amended and revised to read as follows:

7.03 This Agreement shall terminate upon any one of the following:

(A) On December 31, 2034; unless mutually extended by Baker Katz and the City acting through its City Council, or at such time when the City has paid cumulative Grant Payments totaling six million dollars (\$6,000,000) (unless Baker Katz is entitled to an increase in said total amount of Program Grant Payments in accordance with the provisions set forth in Section 5.01 of this Agreement), whichever occurs first.

...

(F) By the City, immediately upon written notice to Baker Katz, with no right to cure as described in this Article 7, if one hundred twenty five thousand (125,000) square feet of improvements in the Project are not completed and have received a Certificate of Occupancy from the City by January 1, 2024. Additionally, sixty-two thousand five hundred (62,500) square feet of said



Regular City Council
AGENDA ITEM 12.

Agenda Item: Discuss and Possibly Act Upon Payment to BK Stringer, Ltd. Related to Masonry and Facade Improvements and Authorize the Mayor to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Economic Development

Staff Contact: Susan Cates

SUMMARY STATEMENT:

Section 5.04 of the Second Amendment (excerpt of full agreement showing this section attached to the agenda item) to the Chapter 380 Agreement between BK Stringer Ltd. and the City of Brenham stipulates that the City will reimburse BK Stringer for expenses related to the widening of Chappell Hill Street up to \$520,000. Further, the section stipulates that if the road project does not meet the \$520,000, any difference in the cost of the road infrastructure will be reimbursed to BK Stringer for the costs of purchasing and installing Primary Building Materials on the Anchor Buildings.

The costs associated with Chappell Hill widening are \$145,620.93. These funds were reserved by Resolution from 2012 and 2017 Certificates of Obligation. The balance of \$374,379.07 may not be disbursed from Certificates of Obligation and will be paid from City General Fund.

It is further noted in Section 5.04 that the total Program Grant amount will be reduced by this Remaining Amount of \$374,379.07. Therefore, it is the City's intent to reduce the annual Sales Tax Reimbursement payments to BK Stringer until the \$374,379.07 has been satisfied.

ATTACHMENTS:

- (1) Section 5.04 of the Chapter 380 and Amendment
- (2) Memo Regarding Reimbursement to BK Stringer Memo

RECOMMENDED ACTION:

Approve payment to BK Stringer Ltd. in the amount of \$374,379.07 related to masonry and facade improvements and authorize the Mayor to execute any necessary documentation.

**Excerpt from Chapter 380 Agreement Between the City of Brenham, Texas
and Baker Katz, LLC**

Passed and Approved January 17, 2019

the City shall be satisfied by the percentage contribution established in this Agreement and not by the Estimated Annual or Cumulative Grant dollars produced. The cumulative total Program Grant Payments of the City shall not exceed six million dollars (\$6,000,000).

- 5.02 The percentage share of the Sales Tax Revenue for years 1 through 5 shall be 90%, as depicted on the following Estimated Program Grant Schedule. The percentage share of the Sales Tax Revenue shall remain at 90% for additional 1 year increments for each additional 20,000 square feet of retail space constructed on the Property as part of the Project. For example, 165,000 square feet constructed no later than December 31, 2026 shall result in two (2) additional years of 90% City contribution percentage amount of Sales Tax Revenue occurring in years 6 and 7. In the first year in which Baker Katz is not entitled to 90% of the Sales Tax Revenue, the City's contribution shall be 80% for the following four (4) years; provided that in any year thereafter in which Baker Katz constructs additional retail space in increments of additional 20,000, the percentage share of the Sales Tax Revenue shall be 90% accordingly.
- 5.03 Grant Payments to Baker Katz shall be paid annually according to the Sales Tax Grant Payment Due Date as defined herein above in Article 2 and shall continue throughout the Term of this Agreement or until the cumulative Sales Tax Grant Payments to Baker Katz total six million dollars (\$6,000,000), whichever occurs first.

Estimated Program Grant Schedule							
Year	SF Built	City 1% Sales Tax Contribution		County 0.5% Sales Tax Contribution		ESTIMATED	Cumulative
		%	\$	%	\$	Annual Grant	ESTIMATED Annual Grant
0	-	0%	-	0%	-	-	-
1	125,000	90%	220,510	90%	110,255	330,764	330,764
2	125,000	90%	220,510	90%	110,255	330,764	661,529
3	125,000	90%	220,510	90%	110,255	330,764	992,293
4	125,000	90%	220,510	90%	110,255	330,764	1,323,057
5	125,000	90%	220,510	90%	110,255	330,764	1,653,822
6	125,000	80%	196,008	80%	98,004	294,013	1,947,834
7	125,000	80%	196,008	80%	98,004	294,013	2,241,847
8	125,000	80%	196,008	80%	98,004	294,013	2,535,860
9	125,000	80%	196,008	80%	98,004	294,013	2,829,872
10	125,000	70%	171,507	70%	85,754	257,261	3,087,133
11	125,000	70%	171,507	70%	85,754	257,261	3,344,395
12	125,000	70%	171,507	70%	85,754	257,261	3,601,656

5.04 Chappell Hill Road Widening

The City shall reimburse Baker Katz up to six hundred thousand dollars (\$600,000) for the design and construction of the widening of Chappell Hill Road as described in detail in Attachment II. If the cost to design and construct Chappell Hill Drive exceeds \$600,000

as approved by the City Manager, the reimbursement amount will be amended to include the actual costs as supported by design and construction invoices paid by Baker Katz. The City will reimburse actual costs incurred by Baker Katz for construction of the Chappell Hill Road widening within ninety (90) days after completion of construction, written acceptance of the improvements by the City Engineer, and the City's receipt and approval of associated invoices.

- 5.05 The City agrees to begin the construction and installation of the public utilities of sufficient size and capacity necessary to serve the Project as shown on the attached **Attachment III** within three (3) months after the Effective Date of this Agreement. The City further agrees to complete the construction and installation of said public utilities within twelve (12) months after the City begins construction. The City further agrees to bring the connections for such utilities to a mutually agreed upon location(s) at both the southeast and southwest corners of Highway 290 and Chappell Hill Drive. The utilities shall be located and designed by the City in such a manner that Baker Katz will not need to construct a lift station or force main. Baker Katz, at no cost to the City, shall grant to City any and all public utility easements (for gas, electric, water, wastewater, and other utilities) necessary to serve the Project with public utilities of sufficient size and capacity. Additional easements for installation, construction and maintenance of utilities, drainage and storm water detention facilities shall be dedicated as shown on the plat(s) of all or portions of the Property as the Project is developed and as part of the City's platting process.

ARTICLE 6.

AUTHORITY; COMPLIANCE WITH LAW

- 6.01 Baker Katz hereby represents and warrants to the City that it has full lawful right, power and authority to execute and deliver and perform the terms and obligations of this Agreement and that the execution and delivery of this Agreement has been duly authorized by all necessary action by Baker Katz and this Agreement constitutes the legal, valid and binding obligation of Baker Katz, and is enforceable in accordance with its terms and provisions.
- 6.02 Notwithstanding any other provision of this Agreement, Baker Katz shall comply with all federal, state, and local laws and regulations.
- 6.03 Baker Katz certifies that Baker Katz does not and will not knowingly employ an undocumented worker in accordance with Chapter 2264 of the Texas Government Code, as amended. If during the term of this Agreement, Baker Katz is convicted of a violation under 8 U.S.C. § 1324a(f), Baker Katz shall repay the amount of the public subsidy provided under this Agreement plus interest, at the rate of the prime rate plus two percent (2%) per annum, not later than the 120th day after the date the City notifies Baker Katz of the violation.

**Excerpt from Second Amendment to the Chapter 380 Agreement Between
the City of Brenham, Texas and Baker Katz, LLC
Passed and Approved November 5, 2020**

5. Section 5.02 of the 380 Agreement shall be amended and revised to read as follows:

5.02 The percentage share of the Sales Tax Revenue for years 1 through 5 shall be 90%, as depicted on the following Estimated Program Grant Schedule. The percentage share of the Sales Tax Revenue shall remain at 90% for additional 1 year increments for each additional 20,000 square feet of retail space constructed on the Property as part of the Project. For example, 165,000 square feet constructed no later than December 31, 2028 shall result in two (2) additional years of 90% City contribution percentage amount of Sales Tax Revenue occurring in years 6 and 7. In the first year in which Baker Katz is not entitled to 90% of the Sales Tax Revenue, the City's contribution shall be 80% for the following four (4) years; provided that in any year thereafter in which Baker Katz constructs additional retail space in increments of additional 20,000, the percentage share of the Sales Tax Revenue shall be 90% accordingly.

6. Section 5.04 of the 380 Agreement shall be amended and revised to read as follows:

5.04 Chappell Hill Road Widening

The City shall reimburse Baker Katz six hundred thousand dollars (\$600,000) (the "Reimbursement Amount"), or the Adjusted Reimbursement Amount (defined herein below) of \$520,000, as applicable, for the design and construction of the widening of Chappell Hill Road as described in detail in Attachment II. If the cost to design and construct Chappell Hill Road exceeds either the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, as approved by the City Manager, the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, will be amended to include the actual costs as supported by design and construction invoices paid by Baker Katz. In the event that Baker Katz does not exhaust the full Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, in connection with the construction of the widening of Chappell Hill Road, then the City agrees to use the remaining amount of the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable ("Remaining Amount"), to reimburse Baker Katz for the costs of purchasing and installing the Primary Building Materials on the Anchor Buildings. The City will pay the Reimbursement Amount or Adjusted Reimbursement Amount, as applicable, to Baker Katz for construction of the Chappell Hill Road widening, or in connection with the costs of purchasing and installing the Primary Building Materials on the Anchor Buildings (if applicable), within ninety (90) days after completion of construction, written acceptance of the improvements by the City Engineer, and the City's receipt and approval of associated invoices. The total amount of Program Grant Payments payable to Baker Katz pursuant to this Agreement shall be reduced in an amount equal to the "Remaining Amount" as said term is defined in this Section 5.04. Notwithstanding any other provision of this Agreement to the contrary, Baker Katz shall contribute the total sum of \$80,000.00 to the City, which represents (i) \$50,000 for the costs incurred by the City for the underground installation of the electric lines associated with the Chappell Hill Road widening

project, and (ii) \$30,000 Baker Katz would have incurred in constructing the utility lines overhead. The contribution of Baker Katz set forth in the preceding sentence shall be in the form of an \$80,000 reduction in the Reimbursement Amount, resulting in an Adjusted Reimbursement Amount total of \$520,000 ("Adjusted Reimbursement Amount"), and said \$80,000 shall be deemed contributed as of the date of this Second Amendment. The City shall use commercially reasonable efforts to cause Bluebonnet Electric Cooperative to complete the underground installation of the electrical lines along the west side of Chappell Hill Street, from Hwy 290 to the south of the southern property line of the 39.57 Acre Tract by June 1, 2021.

7. Section 5.05 of the 380 Agreement shall be amended and revised to read as follows:

5.05 The City agrees to begin the construction and installation of the public utilities of sufficient size and capacity necessary to serve the Project as shown on the attached **Attachment III** within three (3) months after the Effective Date of this Agreement. The City further agrees to complete the construction and installation of said public utilities within eighteen (18) months after the City begins construction. The City further agrees to bring the connections for such utilities to a mutually agreed upon location(s) at both the southeast and southwest corners of Highway 290 and Chappell Hill Drive. The utilities shall be located and designed by the City in such a manner that Baker Katz will not need to construct a lift station or force main. Baker Katz, at no cost to the City, shall grant to City any and all public utility easements (for gas, electric, water, wastewater, and other utilities) necessary to serve the Project with public utilities of sufficient size and capacity. Additional easements for installation, construction and maintenance of utilities, drainage and storm water detention facilities shall be dedicated by separate instrument or as shown on the replat(s) of all or portions of the Property as the Project is developed and as part of the City's platting process.

8. Section 7.03(A) and (F) of the 380 Agreement shall be amended and revised to read as follows:

7.03 This Agreement shall terminate upon any one of the following:

(A) On December 31, 2034; unless mutually extended by Baker Katz and the City acting through its City Council, or at such time when the City has paid cumulative Grant Payments totaling six million dollars (\$6,000,000) (unless Baker Katz is entitled to an increase in said total amount of Program Grant Payments in accordance with the provisions set forth in Section 5.01 of this Agreement), whichever occurs first.

...

(F) By the City, immediately upon written notice to Baker Katz, with no right to cure as described in this Article 7, if one hundred twenty five thousand (125,000) square feet of improvements in the Project are not completed and have received a Certificate of Occupancy from the City by January 1, 2024. Additionally, sixty-two thousand five hundred (62,500) square feet of said



MEMORANDUM

To: Mayor and City Council
City Manager Carolyn Miller

From: Susan Cates, Director of Economic Development

Subject: Reimbursement to BK Stringer Ltd.

Date: September 8, 2022

Per Section 5.04 of the Second Amendment to the Chapter 380 Economic Development Agreement Between the City of Brenham and BK Stringer, Ltd., the City shall reimburse BK Stringer (Baker Katz) an “Adjusted Reimbursement Amount” of \$520,000 for the design and construction of the widening of Chappell Hill Road. In a previous item on the agenda the Council will be presented with information regarding the completion of the Chappell Hill Widening project and be asked to consider acceptance of the public infrastructure improvements.

The cost for Chappell Hill widening as presented by Baker Katz from their engineer, Kimley Horn totals \$40,000 and from their general contractor, Arch-Con totals \$105,620.93. The total expenses for Chappell Hill Widening are then \$145,620.93. These funds were reserved by City Council Resolution R-19-006 from 2012 and 2017 Certificates of Obligation for road infrastructure. It was initially projected that the costs for the Chappell Hill widening project would cost just under \$600,000. However, information from Traffic Impact Analysis and Thoroughfare Plans significantly revised the project from a four-lane road with a boulevard, to simply adding a deceleration lane and dedicated turn lane.

The provisions of Section 5.04 of the Chapter 380 stipulate that the City agrees to use the Remaining Amount of the Adjusted Reimbursement Amount (\$520,000 less \$145,620.93 or \$374,379.07) to reimburse Baker Katz for the costs of purchasing and installing Primary Building Materials on the Anchor Buildings. This was intended assist during the construction phase of the project as an incentive to enhance the facades of the anchor buildings. Expenditures for Primary Building Materials on the Anchor Buildings in excess of \$374,379.07 have been verified by Baker Katz submittal of certificates of payment to their general contractor, Arch-Con. However, as this construction is not related to road infrastructure, it may not be paid with Certificate of Obligation funds. Payment of this balance must come from the General Fund.

Section 5.04 further notes that the total amount of Program Grant Payments payable to Baker Katz pursuant to the Chapter 380 Agreement shall be reduced in an amount equal to the Remaining Amount. Therefore, the sales tax reimbursement portion of the Chapter 380 Agreement paid by the City of Brenham will be reduced by \$374,379.07. In conversation with Kenneth Katz on September 6, 2022, City Attorney Cary Bovey and I informed Mr. Katz that it was the intent of the City to reduce City Sales Tax Reimbursement payments, which are scheduled to commence on December 1, 2023 for Fiscal Year 2022-23 sales tax receipts from retailers within Brenham Crossing, by the full amount of \$374,379.07 until that amount has been satisfied.



Regular City Council
AGENDA ITEM 14.

Agenda Item: Section 551.071 Texas Government Code - Consultation with Attorney - Consultation with City Attorney Regarding Aviators Plus, LLC v. City of Brenham, Texas; Cause No. 37896; 21st Judicial District Court, Washington County, Texas

Meeting Type: Regular Meeting-September 15, 2022

Department: Administration

Staff Contact: Carolyn Miller

SUMMARY STATEMENT:

To be discussed in Executive Session.

ATTACHMENTS:

None

RECOMMENDED ACTION:

No action - Executive Session discussion only.



Regular City Council
AGENDA ITEM 15.

Agenda Item: Section 551.071 and Section 551.072, Texas Government Code - Consultation with City Attorney and Deliberation Regarding Real Property - Discussion and Deliberation, and Consultation with City Attorney, Regarding the Lease Between the City of Brenham and Washington County Concerning the Real Property Located at 301 N. Baylor Street, Brenham, Texas and Associated Issues

Meeting Type: Regular Meeting-September 15, 2022

Department: Administration

Staff Contact: Carolyn Miller

SUMMARY STATEMENT:

To be discussed in Executive Session.

ATTACHMENTS:

None

RECOMMENDED ACTION:

No action - Executive Session item.



Regular City Council
AGENDA ITEM 16.

Agenda Item: Discuss and Possibly Act Upon Matters Related to Aviators Plus, LLC v. City of Brenham, Texas; Cause No. 37896; 21st Judicial District Court; Washington County, Texas and Associated Issues, and Authorize the Mayor or the City Manager to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Administration

Staff Contact: Carolyn Miller

SUMMARY STATEMENT:

To be discussed in Executive Session.

ATTACHMENTS:

None

RECOMMENDED ACTION:

As discussed in Executive Session.



Regular City Council
AGENDA ITEM 17.

Agenda Item: Discuss and Possibly Act Upon a Lease Agreement Between the City of Brenham and Washington County Related to the 9-1-1 Communications Facility, Being the Real Property Located at 301 N. Baylor Street, Brenham, Texas and Authorize the Mayor or the City Manager to Execute Any Necessary Documentation

Meeting Type: Regular Meeting-September 15, 2022

Department: Administration

Staff Contact: Carolyn Miller

SUMMARY STATEMENT:

As discussed in Executive Session.

ATTACHMENTS:

None

RECOMMENDED ACTION:

Approve a Lease Agreement between the City of Brenham and Washington County related to the 9-1-1 Communications Facility, being the real property located at 301 N. Baylor Street, Brenham, Texas and authorize the Mayor to execute any necessary documentation.