



## CITY COUNCIL REGULAR AGENDA

Tuesday, February 22, 2022

Notice is hereby given that the City Council of the City of Big Spring, Texas will meet in Regular Session on Tuesday, February 22, 2022, at 5:30 pm at the City Council Chambers Located at 307 East 4<sup>th</sup> Street, Big Spring, Texas. **We welcome the public to attend the meeting via telecommunication. Citizens will be able to view the City Council Meeting on Our Local Channel 17 through Suddenlink or on Our Website <http://mybigspring.com/224/Channel-17-Live>.**

### CITY COUNCIL MEETING ETIQUETTE

Gentlemen are requested to remove their hats inside the City Council Chambers. As a courtesy to those in attendance, please place your cell phone on “Silent” or “Vibrate.” Please, no Talking during the meetings. Take all conversations outside so that others can hear.

### Open Session

1. Call to Order Thomason
2. Invocation Thomason
3. Pledge of Allegiance to the United States Flag and to the Texas State Flag Thomason

### Public Comment

**Public Comment** – Members of the public are entitled to speak on any topic. Additionally, members of the public may comment on any action item before or during its consideration. Speakers are Requested to Stand at the Podium and State Their Name and Address. Speakers Should Fill out the Form at the Podium and Turn it into the City Secretary. Please Do Not Exceed Five (5) Minutes.

4. **Public Comment – If you have public comments, please call 432-264-2411.** Thomason

**Announcements, Presentations and Public Hearings**

**Public Hearings – The Council will take Input on Items Requiring Public Hearing Items Prior to any Action.**

5.

**City Manager’s Report**

- 6. Update on Large Item Pickup for District 2 – February 16, 2022 Darden
- 7. Board Appointments – Adjustments & Appeals, CVB Darden
- 8. Update on ARPA (American Recue Plan Act) Funds Darden
- 9. Westside Community Center Darden
- 10. Fire Station Bathroom Update Darden

**Consent Items**

- 11. Approval of the City Council Minutes of the Regular Meeting of February 8, 2022 7-12 Davis
- 12. Final Reading of an Ordinance Amending Ordinance Number 039-2021 Which Adopted the Annual Budget for the City of Big Spring, Texas for the Fiscal Year Beginning October 1, 2021 and Ending September 30, 2022 by Increasing the General Fund Budget by Accepting a Donation to be Used for Additional Equipment for the Fire Department; Providing for Repeal of Ordinances in Conflict Herewith; Providing for Publication; and Providing an Effective Date 13-14 Ferguson
- 13. Final Reading of an Ordinance Amending Ordinance Number 039-2021 Which Adopted the Annual Budget for the City of Big Spring, Texas for the Fiscal Year Beginning October 1, 2021 and Ending September 30, 2022; Transferring Funds Within the Sanitation Department; Providing for Repeal of Ordinances in Conflict Herewith; Providing for Publication; and Providing an Effective Date 15-16 Bowles
- 14. Final Reading of an Ordinance Amending Chapter 2 of the Big Spring City Code Entitled “Administration,” Article VII “Boards and Commissions,” Division 9 “Zoning Board of Adjustment,” Section 2-314 “Organization and Procedure” to Create Seven Alternate Board Positions for the Zoning Board of Adjustment; Requiring that Each Member Possess the Same Qualifications as Regular Board Members; and Establishing Requirements Under Which Alternate Members 17-19 Darden

Shall Serve in Place of a Regular Board Member; Providing for Removal of Alternate Members for Just Cause After a Public Hearing; Providing for Severability; and Providing an Effective Date

- |     |  |       |       |
|-----|--|-------|-------|
| 15. | Final Reading of an Ordinance Amending Chapter 40 of the Big Spring City Code Entitled "Parks, Recreation, and Cultural Affairs," Article II, "Parks and Recreational Facilities," Division 2, "Pavilion Areas," by Adding a New Section 40-54 Entitled "Stewart Pavilion" to Rename "Buffalo Pavilion," also Known as "2 <sup>nd</sup> Pavilion," to Stewart Pavilion" in Honor of Howard and Vicki Stewart; Amending Section 40-58 "Use of Facilities; Unusual Noise, Etc." for Consistency; Providing for Severability; and Providing an Effective Date | 20-21 | Lewis |
|-----|--|-------|-------|

**Vouchers**

- |     |                         |                 |       |
|-----|-------------------------|-----------------|-------|
| 16. | Vouchers for 02/04/2022 | \$ 389,968.68   | Yanez |
|     | Vouchers for 02/10/2022 | \$ 1,282,788.54 |       |
|     | Vouchers for 02/17/2022 | \$ 744,130.83   |       |

**Bids**

- |     |   |       |        |
|-----|---|-------|--------|
| 17. | Consideration and Possible Action to Accept a Bid Award for the 2021 Water Line Replacements and Authorizing the City Manager or His Designee to Execute any Necessary Documents            | 22-23 | Medina |
| 18. | Consideration and Possible Action to Accept a Bid Award for a Batwing Mower for the Street Department and Authorizing the City Manager or His Designee to Execute any Necessary Documents   | 24    | Medina |
| 19. | Consideration and Possible Action to Accept a Bid Award for a Zero Turn Mower for the Park's Department and Authorizing the City Manager or His Designee to Execute any Necessary Documents | 25    | Medina |
| 20. | Consideration and Possible Action to Accept a Bid Award for a Greens Mower for the Golf Course and Authorizing the City Manager or His Designee to Execute any Necessary Documents          | 26    | Medina |

**New Business**

- |     |  |         |             |
|-----|--|---------|-------------|
| 21. | Acknowledge Receipt of the Big Spring Economic Development Corporation Board of Director's Minutes for the Regular Meeting of January 18, 2022 and for the Special Meeting of January 25, 2022 | 27-29   | Mark Willis |
| 22. | Report on the Racial Profiling Analysis 2021   | Handout | Williams    |

- |     |  |         |          |
|-----|--|---------|----------|
| 23. | Emergency Reading of a Resolution Supporting Either or Both of the Proposed Projects for the Texas Department of Housing and Community Affairs 2022 Competitive (9%) Housing Tax Credit (“HTC”) Beals Creek Manor Project and/or the Trails at Big Spring Project and Pledging \$500 in Permit Fees Towards the Project(s); and Providing an Effective Date  | 30-31   | Hagen    |
| 24. | First Reading of a Resolution Withdrawing Consent to the Declaration of a Public Health Disaster Relating to the Coronavirus Issued by the Mayor on March 18, 2020 and Continued by City Council by Resolution 004-2020 on March 26, 2020; Rescinding all Orders Previously Made Under Resolution 004-2020; and Providing an Effective Date  | 32-33   | Hughes   |
| 25. | First Reading of a Resolution Adopting the Drainage Design Criteria Manual for the Design and Construction of Stormwater Drainage Systems Within the City and Its ETJ; and Providing an Effective Date   | 34-84   | Bowles   |
| 26. | First Reading of an Ordinance Amending Ordinance Number 039-2021 Which Adopted the Annual Budget for the City of Big Spring, Texas for the Fiscal Year Beginning October 1, 2021 and Ending September 30, 2022 by Increasing the General Fund Budget for the Purpose of Lighting Replacements at the Roy Anderson Sports Complex; Providing for Severability; Providing for Publication; and Providing an Effective Date | 85-86   | Lewis    |
| 27. | First Reading of an Ordinance Amending Ordinance Number 039-2021 Which Adopted the Annual Budget for the City of Big Spring, Texas for the Fiscal Year Beginning October 1, 2021 and Ending September 30, 2022 by Increasing the General Fund Budget to Purchase Equipment for Various Departments; Providing for Severability; Providing for Publication; and Providing an Effective Date                               | 87-88   | S. Smith |
| 28. | Consideration and Possible Action of an Agreement with Fincher Engineering, LLC for Auditorium Heating and Upgrades and Authorizing the City Manager or His Designee to Execute any Necessary Documents  | 89-100  | Lewis    |
| 29. | <u>Boards and Committees</u>   | 101-104 |          |

**Board of Adjustments & Appeals**

One (1) Position Open (Engineer or Master Plumber Needed)

**Convention & Visitors Bureau Board**

Three (3) Positions Open (Districts 3, 4 & 6)

**Parks & Recreation Board**

One (1) Position Open (District 6)

**Planning & Zoning Commission**

One (1) Position Open (District 3)

**Traffic Commission**

One Nominee (District 2) & One Position Open (District 3)

**Rhonda Paredez – Nominated by Councilmember Yanez**

**Zoning Board of Adjustments**

One (1) Position Open (District 6)

**Zoning Board of Adjustments - Alternates**

Six (6) Positions Open

**Animal Rescue & Adoption Committee**

One (1) Position Open (District 6)

**Council Input**

30. Input Thomason

31. **Adjourn** Thomason

The City Council reserves the right to meet in executive session on any agenda item should the need arise pursuant to Chapter 551, Subchapter D of the Texas Government Code, or the Texas Disciplinary Rules of Professional Conduct.

**Sec. 551.144. CLOSED MEETING; OFFENSE; PENALTY.**

(a) A member of a governmental body commits an offense if a closed meeting is not permitted under this chapter and the member knowingly:

- (1) calls or aids in calling or organizing the closed meeting, whether it is a special or called closed meeting;
- (2) closes or aids in closing the meeting to the public, if it is a regular meeting; or
- (3) participates in the closed meeting, whether it is a regular, special, or called meeting.

(b) An offense under Subsection (a) is a misdemeanor punishable by:

- (1) a fine of not less than \$100 or more than \$500;
- (2) confinement in the county jail for not less than one month or more than six months; or
- (3) both the fine and confinement.

I hereby certify that this agenda was posted on the official bulletin board at the City of Big Spring, City Hall Building, located outside 310 Nolan Street. Given by order of the City Council and Posted on Friday, February 18, 2022 at 5:00 p.m. in accordance with Title 5, Texas Government Code and Chapter 551.

In addition, this agenda and supporting documents are posted on the City of Big Spring's Website, [www.mybigspring.com](http://www.mybigspring.com), in accordance with legal requirements.

  
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Tami L. Davis, City Secretary

PERSONS WISHING TO HAVE AN INTERPRETER SHOULD CONTACT TAMI DAVIS AT 264-2513 or [tdavis@mybigspring.com](mailto:tdavis@mybigspring.com). REQUESTS FOR AN INTERPRETER SHOULD BE MADE AT LEAST 72 HOURS IN ADVANCE OF THE MEETING TIME.

STATE OF TEXAS :  
COUNTY OF HOWARD :  
CITY OF BIG SPRING :

The City Council of the City of Big Spring, Texas, met in a regular meeting in the City Council Chambers located at 307 E. 4<sup>th</sup> St., Big Spring, Texas, at 5:30 p.m., February 8, 2022, with the following members present in person:

SHANNON THOMASON	Mayor
NICK ORNELAS	Mayor Pro Tem
DIANE YANEZ	Councilmember
CODY HUGHES	Councilmember
GLORIA MCDONALD	Councilmember
MAURY SMITH	Councilmember

(Councilmember Tompkins was not present at this meeting.)

Same and constituting a quorum, for which four Councilmembers must be present; and the following staff in person;

TODD DARDEN	City Manager
JOHN MEDINA	Assistant City Manager
ANDREW HAGEN	City Attorney
CRAIG FERGUSON	Fire Chief
CHAD WILLIAMS	Police Chief
SHANE BOWLES	Public Works Director
MIKE FEELEY	Airpark Director
SANDY SMITH	Finance Director
HAYLEY HERRERA	Community Services Director
TAMI DAVIS	City Secretary
TIM GREEN	Municipal Judge

## **INVOCATION & PLEDGE OF ALLEGIANCE**

Councilmember McDonald gave the invocation and Mayor Thomason led the Pledge of Allegiance to the American and Texas Flags.

## **PUBLIC COMMENT**

One citizens spoke on a few issues with the City.

## **ANNOUNCEMENTS, PRESENTATIONS AND PUBLIC HEARINGS**

No announcements, presentations or public hearings at this time.

## **CITY MANAGER'S REPORT**

Todd Darden, City Manager, gave an update on the following:

- Large Item Pickup Reminder for District 2 – February 16, 2022
- City Holiday on February 21, 2022 for President's Day
- Update on the Bond Refunding – 9% Savings
- Update on Vector Profit Sharing - \$72,000 Refund for the City

## **CONSENT ITEMS**

**APPROVAL OF THE CITY COUNCIL MINUTES OF THE REGULAR MEETING OF JANUARY 25, 2022**

**FINAL READING OF AN ORDINANCE AMENDING CHAPTER 2 OF THE BIG SPRING CITY CODE ENTITLED "ADMINISTRATION," SECTION 2-196 "PAYMENT CARD FEES AND SERVICE CHARGES" BY ADDING A NEW SUBSECTION (C-2) ESTABLISHING THAT CARD REIMBURSEMENT FEES SHALL BE ENACTED BY OFFICIAL ACTION OF THE CITY COUNCIL; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE**

**FINAL READING OF AN ORDINANCE AMENDING CHAPTER 32 OF THE BIG SPRING CITY CODE ENTITLED "LICENSES, TAXATION, AND MISCELLANEOUS BUSINESS REGULATIONS," ARTICLE 5, SECTION 32-356 BY ADDING A NEW SUBSECTION (E) TO AUTHORIZE THE CITY MANAGER TO WAIVE FEES FOR PRODUCTIONS THAT ADVANCE A PUBLIC PURPOSE; AMENDING SECTION 32-258 TO CLARIFY APPLICATION REQUIREMENTS; AND BY ADDING A NEW SECTION 32-263 ENTITLED "LIMITATION OF PERMIT" TO PROHIBIT THE ISSUANCE OF PERMITS OTHERWISE ILLEGAL UNDER STATE OR FEDERAL LAW, INCLUDING FEDERAL AVIATION REGULATIONS ON DRONE OPERATIONS; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE**

**FINAL READING OF A RESOLUTION CALLING FOR A GENERAL ELECTION TO BE HELD ON MAY 7, 2022 FOR THE PURPOSE OF ELECTING ONE PERSON TO SERVE AS MAYOR OF THE CITY OF BIG SPRING AND ONE PERSON TO SERVE AS CITY COUNCILMEMBER FOR DISTRICT FIVE; PROVIDING FOR THE CONDUCT OF THE ELECTION; DESIGNATING SEVERAL POLLING PLACES WITHIN THE CITY; AUTHORIZING THE MAYOR TO EXECUTE NOTICE AND HAVE THE NOTICE POSTED FOR THE PURPOSE OF NOTIFYING THE PUBLIC OF SAID ELECTION; AND PROVIDING FOR SEVERABILITY**

Motion was made by Councilmember McDonald to approve the above captioned minutes, resolution and ordinances, seconded by Mayor Pro Tem Ornelas, with all members of the Council present voting "aye."

## **VOUCHERS**

Mayor Pro Tem Ornelas reviewed the following vouchers:

VOUCHERS FOR 01/27/2022 \$ 764,108.63

Motion was made by Mayor Pro Tem Ornelas to approve the above captioned vouchers, seconded by Councilmember Yanez, with all members of the Council present voting "aye."

VOUCHERS FOR 02/08/2022 \$ 389,968.68

Motion was made by Councilmember Yanez to table the above captioned vouchers, seconded by Mayor Pro Tem Ornelas, with all members of the Council present voting "aye."

## **BIDS**

**CONSIDERATION AND POSSIBLE ACTION TO ACCEPT A BID AWARD FOR 30 YARD TRASH CONTAINERS AND AUTHORIZING THE CITY MANAGER OR HIS DESIGNEE TO EXECUTE ANY NECESSARY DOCUMENTS**

Motion was made by Councilmember Hughes awarding a bid for ten (10) 30 Yard Trash Containers to Roll-Offs USA with a total amount of \$71,256.00, seconded by Councilmember McDonald, with all members of the Council present voting "aye."

**CONSIDERATION AND POSSIBLE ACTION TO REJECT ALL BIDS FOR LEASE PURCHASE FINANCING FOR CAPITAL ITEM PURCHASES**

Motion was made by Mayor Thomason to reject all bids for the lease purchase financing, seconded by Councilmember Hughes, with all members of the Council present voting "aye."

## **NEW BUSINESS**

**EMERGENCY READING OF A RESOLUTION CONSENTING TO THE CITY ATTORNEY ACTING AS AN INTERMEDIARY BETWEEN THE CITY OF BIG SPRING AND THE BIG SPRING HOUSING AUTHORITY FOR THE SOLE PURPOSES OF NEGOTIATING A LEASE OF REAL PROPERTY FROM THE CITY OF BIG SPRING TO THE BIG SPRING HOUSING AUTHORITY FOR AN OFFICE FOR THE BIG SPRING HOUSING AUTHORITY, ADVISING THE CITY AND THE HOUSING AUTHORITY AS TO SAID LEASE, AND NEGOTIATION ONE OF MORE AGREEMENTS BETWEEN THE CITY OF BIG SPRING NAD THE HOUSING AUTORITY OF BIG SPRING, AND PROVIDING AN EFFECTIVE DATE**

Motion was made by Mayor Pro Tem Ornelas to approve the above captioned resolution, seconded by Councilmember McDonald, with all members of the Council present voting "aye."

FIRST READING OF AN ORDINANCE AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022 BY INCREASING THE GENERAL FUND BUDGET BY ACCEPTING A DONATION TO BE USED FOR ADDITIONAL EQUIPMENT FOR THE FIRE DEPARTMENT; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE

Motion was made by Councilmember McDonald to approve the above captioned ordinance, seconded by Councilmember Yanez, with all members of the council present voting "aye."

FIRST READING OF AN ORDINANCE AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022; TRANSFERRING FUNDS WITHIN THE SANITATION DEPARTMENT; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE

Motion was made by Councilmember Smith to approve the above captioned ordinance, seconded by Councilmember Hughes, with all members of the Council present voting "aye."

FIRST READING OF AN ORDINANCE AMENDING CHAPTER 2 OF THE BIG SPRING CITY CODE ENTITLED "ADMINISTRATION," ARTICLE VII "BOARDS AND COMMISSIONS," DIVISION "ZONING BOARD OF ADJUSTMENT," SECTION 2-314 "ORGANIZATION AND PROCEDURE" TO CREATE SEVEN ALTERNATE BOARD POSITIONS FOR THE ZONING BOARD OF ADJUSTMENT; REQUIRING THAT EACH MEMBER POSSESS THE SAME QUALIFICATIONS AS REGULAR BOARD MEMBERS; AND ESTABLISHING REQUIREMENTS UNDER WHICH ALTERNATE MEMBERS SHALL SERVE IN PLACE OF A REGULAR BOARD MEMBER; PROVIDING FOR REMOVAL OF ALTERNATE MEMBERS FOR JUST CAUSE AFTER A PUBLIC HEARING; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE

Motion was made by Councilmember Yanez to approve the above captioned ordinance, seconded by Councilmember Hughes, with all members of the Council present voting "aye."

FIRST READING OF AN ORDINANCE AMENDING CHAPTER 40 OF THE BIG SPRING CITY CODE ENTITLED "PARKS, RECREATION, AND CULTURAL AFFAIRS," ARTICLE II, "PARKS AND RECREATIONAL FACILITIES," DIVISION 2, "PAVILION AREAS," BY ADDING A NEW SECTION 40-54 ENTITLED "STEWART PAVILION" TO RENAME "BUFFALO PAVILION," ALSO KNOWN AS "2<sup>ND</sup> PAVILION," TO "STEWART PAVILION" IN HONOR OF HOWARD AND VICKI STEWART; AMENDING SECTION 40-58 "USE OF FACILITIES; UNUSUAL NOISE, ETC." FOR CONSISTENCY; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE

Motion was made by Councilmember McDonald to approve the above captioned ordinance, seconded by Councilmember Hughes, with all members of the Council present voting "aye."

**CONSIDERATION AND POSSIBLE ACTION OF A PUBLIC WATER LINE EASEMENT  
LOCATED AT 1409 HARDING STREET**

No action taken on the above captioned item.

**CONSIDERATION AND POSSIBLE ACTION OF AN INTERLOCAL AGREEMENT WITH  
SOUTH PLAINS ASSOCIATION OF GOVERNMENTS (SPAG) FOR THE BIG SPRING  
DOWNTOWN REVITALIZATION PROGRAM GRANT AWARD AND AUTHORIZING  
THE MAYOR TO EXECUTE ANY NECESSARY DOCUMENTS**

Motion was made by Councilmember Hughes to approve the above captioned agreement,  
seconded by Mayor Pro Tem Ornelas, with all members of the Council present voting “aye.”

**COUNCIL INPUT**

All Councilmembers thanked staff.

Mayor Thomason gave a COVID update and strongly recommends that everyone keep taking precautions such as social distancing, wash hands, etc. and also gave an update on the Animal Shelter. Mayor Thomason asked the staff to conduct a traffic study on the corner of NE 9<sup>th</sup> and Nolan St. regarding a complaint at that intersection. Mayor Thomason also asked the staff to create a Good Samaritan ordinance. Mayor Thomason closed by reminded everyone to help control the pet population by having their pets spayed or neutered.

**EXECUTIVE SESSION**

**ADJOURN INTO EXECUTIVE SESSION IN ACCORDANCE WITH THE PURPOSES PERMITTED BY THE OPEN MEETINGS ACT, SECTION 551.071(11)-(2), TEXAS GOVERNMENT CODE, “CONSULTATION WITH ATTORNEY; CLOSED MEETING,” AND THE TEXAS DISCIPLINARY RULES OF PROFESSIONAL CONDUCT TO PROVIDE LEGAL ADVICE AND COUNSEL WITH RESPECT TO (1) PENDING OR CONTEMPLATED LITIGATION; AND (2) THE CITY’S RIGHTS, DUTIES, PRIVILEGES, AND OPTIONS; ALL ARISING OUT OF THE EXISTING LEASES, OPERATIONS AGREEMENTS, AND OTHER MATTERS GOVERNING THE CITY OF BIG SPRING’S AGREEMENTS WITH GEO GROUP REGARDING THE BIG SPRING CORRECTIONAL CENTER; AND**

**ADJOURN INTO EXECUTIVE SESSION IN ACCORDANCE WITH THE PURPOSES PERMITTED BY THE OPEN MEETINGS ACT, SECTION 551.071, TEXAS GOVERNMENT CODE, “CONSULTATION WITH ATTORNEY; CLOSED MEETING,” AND THE TEXAS DISCIPLINARY RULES OF PROFESSIONAL CONDUCT TO DISCUSS LITIGATION AND ANTICIPATED LITIGATION;**

- CITY OF BIG SPRING V. JAKE TINER CONSTRUCTION, LLC, NO. 54929 (118<sup>TH</sup> DISTRICT COURT)
- SHORT-TERM RENTALS AND INTERNET BOOKING AGENTS SUCH AS AIRBNB AND VRBO

Motion was made by Mayor Pro Tem Ornelas to adjourn into the above captioned executive sessions at 6:28 p.m., seconded by Councilmember McDonald, with all members of the Council present voting “aye.”

**RECONVENE INTO OPEN SESSION AND TAKE ANY NECESSARY ACTION ON EXECUTIVE SESSION ITEMS AT 8:32 P.M.**

No action was taken on the agreements with GEO Group regarding the Big Spring Correctional Center or the Litigation regarding Jake Tiner Construction, LLC, No. 54929.

Motion was made by Mayor Thomason directing the City Attorney to negotiate and settle as directed by council regarding the VRBO and the AirBnB, seconded by Councilmember McDonald, with all members of the Council present, voting “aye.”

**ADJOURN**

Mayor Thomason adjourned the meeting at 8:32 p.m.

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Shannon D. Thomason, Mayor

ATTEST:

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Tami L. Davis, City Secretary

**ORDINANCE NO. \_\_\_\_\_**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022 BY INCREASING THE GENERAL FUND BUDGET BY ACCEPTING A DONATION TO BE USED FOR ADDITIONAL EQUIPMENT FOR THE FIRE DEPARTMENT; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT HERewith; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS** the City Council adopted the annual 2021-22 budget for the City of Big Spring, Texas on September 28, 2021 (“Budget”); and

**WHEREAS** a donation has been received from Oxy Petroleum Corporation to be used for additional equipment which was not included in such Budget; and

**WHEREAS** the City Manager and Fire Chief recommend that the City Council accept this donation and amend the Budget previously approved; and

**WHEREAS** the City Council desires to accept the donation from Oxy Petroleum Corporation and to designate the funds for the purchase of additional equipment for the Fire Department.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS AS FOLLOWS:**

**SECTION 1.** The General Fund Budget of the Annual Budget for the City of Big Spring, Texas for the Fiscal Year beginning October 1, 2021 and ending September 30, 2022 is hereby increased by the amount of \$10,000.00 from the revenue account number 002-4925 and to the expense account number 002-012-210-5117 for the purpose of purchasing additional equipment within the Fire Department.

**SECTION 2.** The remaining portions of Ordinance Number 039-2021 shall remain in full force and effect.

**SECTION 3.** Should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby.

**SECTION 4.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 5.** The City Secretary is hereby authorized and directed to cause the publication of this ordinance in accordance with law.

**SECTION 6.** This ordinance shall be in full force and effective from and after its publication as required by law.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the 8<sup>th</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second reading at a regular meeting of the City Council on the 22<sup>nd</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

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Shannon D. Thomason, Mayor

ATTEST:

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Tami L. Davis, City Secretary

**ORDINANCE NO. \_\_\_\_\_**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022; TRANSFERRING FUNDS WITHIN THE SANITATION DEPARTMENT; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS** the City Council adopted the annual 2021-22 budget for the City of Big Spring, Texas on September 28, 2021 (“Budget”); and

**WHEREAS** the increased price of each container will classify it as a capital expense and was not included in such Budget; and

**WHEREAS** the City Manager and Finance Director recommend that the City Council transfer the amount from an expense account to a capital account and amend the Budget previously approved; and

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS AS FOLLOWS:**

**SECTION 1.** The General Fund Budget of the Annual Budget for the City of Big Spring, Texas for the Fiscal Year beginning October 1, 2021 and ending September 30, 2022 is hereby increasing the amount of \$80,000.00 to the capital account number 445-025-330-6312 and decreasing the same amount in the expense account number 445-025-330-5123.

**SECTION 2.** The remaining portions of Ordinance Number 039-2021 shall remain in full force and effect.

**SECTION 3.** Should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby.

**SECTION 4.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 5.** The City Secretary is hereby authorized and directed to cause the publication of this ordinance in accordance with law.

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**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the 8<sup>th</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second reading at a regular meeting of the City Council on the 22<sup>nd</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

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Shannon D. Thomason, Mayor

ATTEST:

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Tami L. Davis, City Secretary

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS AMENDING CHAPTER 2 OF THE BIG SPRING CITY CODE ENTITLED "ADMINISTRATION," ARTICLE VII, "BOARDS AND COMMISSIONS," DIVISION 9, "ZONING BOARD OF ADJUSTMENT," SECTION 2-314, "ORGANIZATION AND PROCEDURE" TO CREATE SEVEN ALTERNATE BOARD POSITIONS FOR THE ZONING BOARD OF ADJUSTMENT; REQUIRING THAT EACH MEMBER POSSESS THE SAME QUALIFICATIONS AS REGULAR BOARD MEMBERS; AND ESTABLISHING REQUIREMENTS UNDER WHICH ALTERNATE MEMBERS SHALL SERVE IN PLACE OF A REGULAR BOARD MEMBER; PROVIDING FOR REMOVAL OF ALTERNATE MEMBERS FOR JUST CAUSE AFTER A PUBLIC HEARING; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE**

**WHEREAS**, City Council, being the governing body of the City of Big Spring, has delegated to the Zoning Board of Adjustment the duty of hearing and deciding zoning adjustments and appeals for the City under Section 2-314, Big Spring City Code and Section 5-2, Zoning Ordinance; and

**WHEREAS**, By state law, a member of the body that hears and decides zoning adjustments and appeals may only be removed for cause, Section 211.008(b), Texas Local Government Code; and

**WHEREAS**, The Texas Legislature has enacted a statute allowing for the appointment of alternate members to the board that hears and decides zoning adjustments and appeals as follows, "The governing body, by charter or ordinance, may provide for the appointment of alternate board members to serve in the absence of one or more regular members when requested to do so by the mayor or city manager. An alternate member serves for the same period as a regular member and is subject to removal in the same manner as a regular member. A vacancy among the alternate members is filled in the same manner as a vacancy among the regular members," Section 211.008(c), Texas Local Government Code; and

**WHEREAS**, City Council finds that a need exists to appoint alternate members of the Zoning Board of Adjustment to facilitate the Board's ability to meet regularly while honoring the representation of the Board membership by City Council District and the at-large Member nominated by the Mayor;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, THAT:**

**SECTION 1.** Big Spring City Code, Chapter 2 entitled “Administration,” Article VII entitled “Boards and Commissions,” Division 9, “Zoning Board of Adjustment,” Section 2-314 entitled “Organization and Procedure” is hereby amended to add new subsections (d), (e), and (f) to read in their entirety as follows:

**Section 2-314.**

...

(d) There shall be seven alternate members for the Zoning Board of Adjustment. Each alternate member shall be nominated and appointed in the same manner as a regular member. An alternate member is subject to the same eligibility requirements as a regular member. An alternate member serves for the same period as a regular member and is subject to removal in the same manner as a regular member. A vacancy among the alternate members is filled in the same manner as a vacancy among the regular members.

(e) An alternate member of the Zoning Board of Adjustment shall only serve in the place of a regular member upon:

- (1) the absence of the regular member of the Board who was nominated from the same Council Member seat as was the alternate, and
- (2) the request of the Mayor or the City Manager.

(f) A regular or alternate member of the Zoning Board of Adjustment may only be removed for cause, as found by City Council, on a written charge after a public hearing.

**NOTE\*** Language to be added appears underlined and language to be deleted is ~~stricken~~.

**SECTION 2.** Should any section, paragraph, sentence, clause, phrase, or word of this ordinance be declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby.

**SECTION 3.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 4.** This Ordinance shall take effect immediately after passage in accordance with the provisions of the Charter of the City of Big Spring, and it is accordingly so ordained.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the **8th** day of **February, 2022** with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second and final reading at a regular meeting of the City Council on the **22nd** day of **February, 2022** with all members of the Council voting “aye” for the passage of same.

---

Shannon D. Thomason, Mayor

ATTEST:

---

Tami L. Davis, City Secretary

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING AMENDING CHAPTER 40 OF THE BIG SPRING CITY CODE ENTITLED “PARKS, RECREATION, AND CULTURAL AFFAIRS,” ARTICLE II, “PARKS AND RECREATION FACILITIES,” DIVISION 2, “PAVILION AREAS,” BY ADDING A NEW SECTION 40-54 ENTITLED “STEWART PAVILION” TO RENAME “BUFFALO PAVILION,” ALSO KNOWN AS “2<sup>ND</sup> PAVILION,” TO “STEWART PAVILION” IN HONOR OF HOWARD AND VICKI STEWART; AMENDING SECTION 40-58 “USE OF FACILITIES; UNUSUAL NOISE, ETC.” FOR CONSISTENCY; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE**

**WHEREAS**, the City Council finds it to be in the best interest of the citizens of the city to provide for the proper designation of the Comanche Trail Park facilities; and

**WHEREAS**, Howard and Vicki Stewart dedicated themselves to putting community first which is exemplified by their years of volunteering to multiple organizations including the Trail of Lights program within Comanche Trail Park; and

**WHEREAS**, Howard and Vicki Stewart put many volunteer hours into multiple worthy programs to help others but dedicated most of their spare time from October through January to the Trail of Lights; and

**WHEREAS**, Howard Stewart was Golf Course Superintendent for the City of Big Spring for his last two years at the Comanche Trail Golf Course during the day and gave his free time in the evenings and on weekends to the Trail of Lights; and

**WHEREAS**, Howard Stewart served the City of Big Spring as a Member of City Council from 2017 to 2019; and

**WHEREAS**, the City of Big Spring, City Council, City Administration, City Staff, and citizens of the community stand and recognize the community service of Howard and Vicky Stewart in their lifetime and posthumously recognize the community support that Howard and Vicki Stewart performed in their lifetime and show their appreciation through renaming 2<sup>nd</sup> Pavilion/Buffalo Pavilion to the Stewart Pavilion in honor of Howard and Vicki Stewart;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS AS FOLLOWS, THAT:**

**SECTION 1.** Chapter 40 of the Big Spring City Code entitled “Parks and Recreation Facilities,” Division II “Pavilion Areas,” is hereby amended to add a new Section 40-54 entitled “Stewart Pavilion” to read in its entirety as follows:

**Sec. 40-54. - Stewart Pavilion.**

The Comanche Trail Park Pavilion known as “Buffalo Pavilion” or “2<sup>nd</sup> Pavilion” is hereby renamed to “Stewart Pavilion” in memoriam of Harold and Vicki Stewart.

**SECTION 2.** Chapter 40 of the Big Spring City Code entitled “Parks and Recreation Facilities,” Article II, Division 2, Section 40-58 “Use of Facilities” is hereby amended to read as follows:

**Sec. 40-58. - Use of facilities; unusual noise, etc.**

It shall be unlawful for any occupant of any rented city pavilion to fail to yield and vacate said pavilion, its immediate environs and appurtenant facilities, upon request of a person or group having a bona fide reservation provided for in this division. No person may interfere with the peaceable enjoyment of the pavilion facilities by the person or group having reserved the same. Furthermore, persons using first come, first served city pavilions such as Cactus Pavilion and ~~Buffalo~~ Stewart Pavilion shall be subject to the same rules and terms of use as reservable city pavilions.

**NOTE\*** Language to be added appears underlined and language to be deleted is ~~stricken~~.

**SECTION 3.** Should any section, paragraph, sentence, clause, phrase, or word of this ordinance be declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby.

**SECTION 4.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 5.** This Ordinance shall take effect immediately after passage in accordance with the provisions of the Charter of the City of Big Spring, and it is accordingly so ordained.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the 8<sup>th</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second and final reading at a regular meeting of the City Council on the 22<sup>nd</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

\_\_\_\_\_  
Shannon D. Thomason, Mayor

ATTEST:

\_\_\_\_\_  
Tami L. Davis, City Secretary



INTEGRITY  
EXCELLENCE  
TRUST

February 11, 2022

Mr. John Medina  
Assistant City Manager  
City of Big Spring  
310 Nolan Street  
Big Spring, Texas 79720

Re: 2021 Water and Line Replacements  
Letter of Recommendation for Award

Sent: Via Email

Dear Mr. Medina:

On February 9, 2022 the City of Big Spring received bids for the 2021 Water Line Replacements project. Four bids were received for this project. A bid tabulation sheet summarizing the bids is included as an attachment to this letter. The low total base bid was \$1,298,288.00 submitted by Whitewater Construction, Inc. out of Waco, Texas. Jacob and Martin has evaluated the low bid for conformity with the advertisement for bids and checked the references of the apparent low bidder. Based on our evaluation of the bids, it is recommended that the contract be awarded to Whitewater Construction for the total amount of \$1,298,288.00. If the City Council agrees with the recommendation for award, Jacob and Martin will prepare contract documents for execution by the Contractor and the City. Feel free to contact me if you have any questions.

Sincerely,

Kirt Harle, P.E.

**JACOB | MARTIN**



325.695.1070  
817.594.9880

TBPE Firm #: 2448



info@jacobmartin.com  
www.jacobmartin.com

TBAE Firm #: BR 2261



3465 Curry Lane  
Abilene, TX 76906

TBPLS Firm #: 10024300 - Abilene

1508 Santa Fe, Suite 203  
Weatherford, TX 76086

TBPLS Firm #: 10193993 - Weatherford

City of Big Spring  
 2021 Water Line Replacements  
 Bid Date: February 9, 2022 at 3:00 PM  
 JM Project Number: 21274  
 Local and ARPA Funding



**Bid Tabulation**

Engineer: Jacob & Martin, LLC  
 Abilene, Texas

For all Labor, Materials, Equipment, and Incidentals to Furnish and Install the Following:

	Whitewater Construction, Inc. 6640 Old Mexia Road Waco, TX 76705	Bolar Equipment Service, Inc. 4611 Sinclair Avenue Midland, TX 79707	Lupe Rubio Construction Co., Inc. 981 Dilley Street Kingsland, TX 78639	R Construction Civil PO Box 189 Buffalo, TX 75831
	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>
<b>TOTAL BASE BID</b>	<b>\$ 1,298,288.00</b>	<b>\$ 1,455,960.00</b>	<b>\$ 1,794,767.27</b>	<b>\$ 1,837,637.60</b>



## *Purchasing and Material Control Memorandum*

**To:** City Council, City Manager and Assistant City Manager

**From:** Albert Belez, Purchasing Agent

**Date:** February 17, 2022

**Subject:** Request for Bid Award 15 Foot Flex Wing Rotary Mower

---

On January 12, 2022, at the request of City of Big Spring’s Street Department, the City’s Purchasing department requested bids on a 15-foot rotary cutting mower (Batwing). The Purchasing Department received bids from 2 (two) vendors and 1 “NO BID”. The lowest quote is in the amount of \$24,892.28 and was submitted by South Plains Implement of Tornillo, TX.

**Recommendation:** Currently, it is the recommendation of the staff, that the bid for the 15-foot rotary cutting mower (Batwing) be awarded to South Plains Implement of Tornillo, TX.

**Note:** It is important to note, the quote from South Plains Implement, of Tornillo, TX is \$ 6,911.72 lower than the second submitted bid. It is also important to note, the quote from Austin Turf and Tractor is a Sourcewell cooperative price.

A bid tabulation is included in this memo for your review.

### *15-FT. Rotary Cutting Mower (Batwing)/ Streets Department*

COMPANY NAME	PRODUCT	LOCATION	QUOTED PRICE
South Plains Implement	FC15R Flex Wing John Deere	Tornillo, TX	\$24,892.28
Wylie Implement	BUSH HOG 3815 FLEX-WING ROTARY CUTTERS	Lamesa, TX	NO BID
South Plains Implement	FC15R Flex Wing John Deere	Big Spring, TX	\$31,804.00



## *Purchasing and Material Control Memorandum*

**To:** City Council, City Manager and Assistant City Manager

**From:** Albert Belez, Purchasing Agent

**Date:** February 14, 2022

**Subject:** Request for Bid Award 72" Zero-Turn Mower

On January 12, 2022, at the request of City of Big Spring's Parks Department, the City's Purchasing department requested bids on a 72" zero turn gas powered mower. The Purchasing Department received bids from 3 (three) vendors. The lowest quote is in the amount of \$10,952.48 and was submitted by South Plains Implement of Big Spring, TX.

**Recommendation:** Currently, it is the recommendation of the staff, that the bid from South Plains Implement be award.

**Note:** It is important to note, the South Plains Implement's bid is \$784.26 lower than the second submitted bid and \$6,252.52 lower than the highest submitted bid.

A bid tabulation is included in this memo for your review.

### *72" Zero-Turn Gas Powered Mower*

COMPANY NAME	PRODUCT	LOCATION	QUOTED PRICE
South Plains Implement	John Deere 950M	Big Spring, TX	\$ 10,952.48
Grasshopper	Grasshopper 337G5EFI	San Angelo, TX	\$11,736.74
Bobcat of Midland	Bobcat ZT7072SS	Midland, TX	\$17,205.00



## *Purchasing and Material Control Memorandum*

**To:** City Council, City Manager and Assistant City Manager

**From:** Albert Belez, Purchasing Agent

**Date:** February 17, 2022

**Subject:** Request for Bid Award Greens mower

On January 12, 2022, at the request of City of Big Spring’s Golf Course, the City’s Purchasing department requested bids on a Greens mower. The Purchasing Department received bids from 2 (two) vendors and 1 “NO BID”. The lowest quote is in the amount of \$42,012.68 and was submitted by Austin Turf and Tractor of Farmer’s Branch, TX.

**Recommendation:** Currently, it is the recommendation of the staff, that the bid for the Greens mower be awarded to Austin Turf and Tractor of Farmer’s Branch, TX.

**Note:** It is important to note, the quote from Austin Turf and Tractor of Farmer’s Branch, TX is \$2,197.62 lower than the second submitted bid. It is also important to note, the quote from Austin Turf and Tractor is a Sourcewell cooperative price.

A bid tabulation is included in this memo for your review.

### *Greens mower/ Golf Course*

COMPANY NAME	PRODUCT	LOCATION	QUOTED PRICE
Austin Turf & Tractor / Farmer’s Branch	John Deere 2550 Precision Cut	Farmer’s Branch, TX	\$ 42,012.68
Professional Turf Products, L.P	Toro Greens master 3300	Eules, TX	\$44,210.30
Austin Turf & Tractor / Bernalillo NM	John Deere 2550 Precision Cut	Bernalillo, NM	NO BID

**Minutes of the Board of Director's Regular Meeting**  
**BIG SPRING ECONOMIC DEVELOPMENT CORPORATION**  
**Tuesday, January 18, 2022, 5:15 p.m.**  
**Offices of the Big Spring Economic Development Corporation**  
**215 West Third Street, Big Spring, Texas**

The Regular Meeting of the Board of Directors of the Big Spring Economic Development Corporation was called to order at 5:18 p.m. Tuesday, January 18, 2022, in the offices of the Big Spring Economic Development Corporation. The following notice was sent on January 14, 2022, to all Directors, the news media, and duly posted on January 14, 2022, by Teresa Morris in compliance with the Open Meeting's Act by posting it on the outside door of the Big Spring Economic Development Corporation and on the inside and outside of City Hall.

"The Board of Directors of the Big Spring Economic Development Corporation will hold a Regular Board Meeting on Tuesday January 18, 2022, at 5:15p.m. in the offices of the Big Spring Economic Development Corporation, 215 West Third Street, Big Spring, Texas. The purpose of the meeting is: Public Comment, Action on Minutes of the December 21, 2021, Regular Meeting, Action to Approve December Investment and Financials Report, Directors Report, Board Comment, and Adjourn".

**Directors Present:**

Mr. Shane Seaton- President  
Mr. Jeff Ward- Vice President  
Mr. Raul Benavides- Secretary/Treasurer  
Mr. Cody Williams  
Mr. Paschal Odom

**Directors Absent:**

**Staff Present:**

Ms. Teresa Morris

**Guests that signed in:** Roger Cline, TJ Stewart, Raul Marquez Jr.

**AGENDA ITEM #1 – Call to Order/Invocation and Pledge:**

Mr. Seaton called the meeting to order at 5:17 p.m. Mr. Ward led the invocation and pledge.

**ACTION ITEM #2- Public Comment:**

None

**AGENDA ITEM #3- Action on Minutes of the December 21, 2021, Regular Meeting:**

Mr. Seaton presented the Minutes. Motion to accept the Minutes was made by Mr. Ward seconded by Mr. Benavides. The motion passed 5 to 0 with all members present voting "aye" in favor of the motion.

**AGENDA ITEM #4- Action to Approve December Investment & Financial Report:**

Mr. Benavides presented the Investment and Financials. Motion to approve the Investment & Financial Report was made by Mr. Benavides seconded by Mr. Williams. The motion passed 5 to 0 with all members present voting "aye" in favor of the motion.

**ACTION ITEM #5- Directors Report:**

Projects: The Big Spring \$1.5million revised EDA grant application will be submitted January 24th. The deadline was extended to Feb. 1st due to the holidays. CeRam Kote Coatings has begun making payments on loan balance. Owner of property west of town is still in negotiations with the travel center prospect. The City is in negotiations with a couple of companies interested in Building 75, the most promising of which is a company the EDC has been working with for almost a year. EDC staff has shared an initial analysis with City to consider in negotiations and expects to be engaged in the lease discussions.

Meetings: Director went to Austin with the High Ground group to meet with agencies. First reading of the Resolution to change the number of Board members and qualifications was passed at the city council meeting on Jan. 11th. Second reading should be on Jan. 25<sup>th</sup>. Meeting with UP was successful and very encouraging. The next Board meeting will be February 15, 2022.

**AGENDA ITEM #6- Board Comments:**

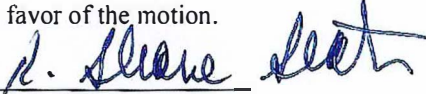
Mr. Williams and Mr. Ward discussed promotion possibilities

**AGENDA ITEM #7- Adjourn:**


Mr. Ward made a motion to adjourn, seconded by Mr. Benavides

The motion passed 5 to 0 with all members present voting "aye" in favor of the motion.

Meeting adjourned at 5:40 pm on January 18, 2022.

  
\_\_\_\_\_  
Mr. Shane Seaton, President

ATTEST:

  
\_\_\_\_\_  
Mr. Raul Benavides, Secretary/Treasurer

**Minutes of the Board of Director's Special Meeting**  
**BIG SPRING ECONOMIC DEVELOPMENT CORPORATION**  
**Tuesday, January 25, 2022, 12:00 p.m.**  
**Offices of the Big Spring Economic Development Corporation**  
**215 West Third Street, Big Spring, Texas**

The Special Meeting of the Board of Directors of the Big Spring Economic Development Corporation was called to order at 12:00 p.m. Tuesday, January 25, 2022 in the offices of the Big Spring Economic Development Corporation. The following notice was sent on January 21, 2022 to all Directors, the news media, and duly posted on January 21, 2022, by Teresa Morris in compliance with the Open Meeting's Act by posting it on the outside door of the Big Spring Economic Development Corporation and on the inside and outside of City Hall.

"The Board of Directors of the Big Spring Economic Development Corporation will hold a Special Board Meeting on Tuesday, January 25, 2022, at 12:00 p.m. in the offices of the Big Spring Economic Development Corporation, 215 West Third Street, Big Spring, Texas. The purpose of the meeting is: Public Comment, Executive Session, Action as a Result of Executive Session, Board Comment, and Adjourn".

**Directors Present:**

Mr. Jeff Ward- Vice President  
Mr. Raul Benavides- Secretary/Treasurer  
Mr. Paschal Odom  
Mr. Cody Williams

**Directors Absent:**

Mr. Shane Seaton- President

**Staff Present:**

Mr. Mark Willis, Ms. Teresa Morris

**Guests that signed in:** Roger Cline

**AGENDA ITEM #1 – Call to Order/Invocation and Pledge:**

Mr. Ward called the meeting to order at 12:00 p.m. Mr. Benavides led the invocation and pledge.

**ACTION ITEM #2- Public Comment:**

None

**AGENDA ITEM #3- Executive Session in accordance with Texas Government Code, Section 551.087 to discuss or deliberate regarding prospect activity:**

Mr. Ward adjourned the Board into Executive Session at 12:01 pm., January 25, 2022. Mr. Ward called the Executive Session to order at 12:02 pm., January 25, 2022. Mr. Ward adjourned out of executive session at 12:18 pm., January 25, 2022. Mr. Ward reconvened into open session at 12:19 pm., January 25, 2022

**AGENDA ITEM #4- Action as a Result of Executive Session:**

Motion to approve the resolution to match up to \$400,000 for the EDA grant only upon receipt of the grant, and upon receipt of the grant receiving approval by the Board of Directors of the EDC and City Council for a budget amendment for the EDA grant fund match up to \$400,000 was made by Mr. Benavides, seconded by Mr. Odom. The motion passed 4 to 0 with all members present voting "aye" in favor of the motion.

**AGENDA ITEM #5- Board Comment:**

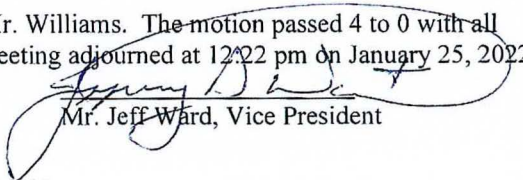
None

**AGENDA ITEM #6- Adjourn:**

Mr. Benavides made a motion to adjourn, seconded by Mr. Williams. The motion passed 4 to 0 with all members present voting "aye" in favor of the motion. Meeting adjourned at 12:22 pm on January 25, 2022.

ATTEST:

  
Mr. Raul Benavides, Secretary/Treasurer

  
Mr. Jeff Ward, Vice President

**RESOLUTION NO. \_\_\_\_\_**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS SUPPORTING EITHER OR BOTH OF THE PROPOSED PROJECTS FOR THE TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS 2022 COMPETITIVE (9%) HOUSING TAX CREDIT (“HTC”) BEALS CREEK MANOR PROJECT AND/OR THE TRAILS AT BIG SPRING PROJECT AND PLEDGING \$500 IN PERMIT FEES TOWARDS THE PROJECT(S); PROVIDING AND EFFECTIVE DATE; AND DECLARING AN EMERGENCY**

**WHEREAS**, The City of Big Spring, Texas is home rule city; and

**WHEREAS**, The City Council of Big Spring is the governing body of the City of Big Spring; and

**WHEREAS**, Due to the timing of the application process for the low-income housing tax credit, time is of the essence, and the City Council considers this as an emergency measure so as to not require two readings before the resolution is adopted; and

**WHEREAS**, City Council finds it advisable to adopt the following resolution;

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AS FOLLOWS, THAT:**

**SECTION 1:** That the City of Big Spring, Texas, acting through its governing body, hereby declares its support for either or both the proposed projects for the Texas Department of Housing and Community Affairs 2022 Competitive (9%) Housing Tax Credit (“HTC”) Program of application number 22155, Beals Creek Manor, located at 500 West I-20, Big Spring, Texas 79720; and/or the proposed project of application number 22246, The Trails at Big Spring, located at NEC Airbase Rd and W 13th St, Big Spring, Texas 79720. City Council confirms that these projects are located in the city limits of the City of Big Spring.

**SECTION 2:** The City of Big Spring, Texas, acting through its governing body, hereby commits to the developer of either or both projects stated in Section 1 a waiver of \$500.00 in permit fees, which shall be used for the project or projects stated above.

**SECTION 3.** This Resolution shall become effective immediately upon its passage.

**SECTION 4.** If any provision of this Resolution or the application thereof to any person or circumstance shall be held to be invalid, the remainder of this Resolution and the application of such provision to other persons and circumstances shall nevertheless be

valid, and the City Council hereby declares that this Resolution would have been enacted without such invalid provision.

**SECTION 5.** The City Council finds that the passage of this resolution constitutes an emergency and an imperative public necessity that the Charter Rule requiring that City resolutions must be read at two separate meetings of the City Council be suspended and said rule is hereby suspended, and this resolution shall be effective upon its publication as required by law.

**PASSED AND APPROVED** on emergency reading at a regular meeting of the City Council on the 22<sup>nd</sup> day of February, 2022, with all members present voting “aye” for passage of the same.

---

Shannon D. Thomason, Mayor

ATTEST:

---

Tami L. Davis, City Secretary

**RESOLUTION NO. \_\_\_\_\_**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, WITHDRAWING CONSENT TO THE DECLARATION OF A PUBLIC HEALTH DISASTER RELATING TO THE CORONAVIRUS ISSUED BY THE MAYOR ON MARCH 18, 2020 AND CONTINUED BY CITY COUNCIL BY RESOLUTION 004-2020 ON MARCH 26, 2020; RESCINDING ALL ORDERS PREVIOUSLY MADE UNDER RESOLUTION 004-2020; AND PROVIDING FOR AN EFFECTIVE DATE**

**WHEREAS**, on March 18, 2020, Mayor Shannon D. Thomason, Mayor of the City of Big Spring declared that a state of public health disaster exists in the City of Big Spring due to the coronavirus and COVID-19; and

**WHEREAS**, on March 26, 2020, the City Council of Big Spring adopted Resolution 004-2020 consenting to the Mayor’s Declaration of Disaster; and

**WHEREAS**, under State law, “A declaration of local disaster may not be continued or renewed for a period of seven days except with the consent of the governing body of the political subdivision...” Section 418.108(b), Texas Government Code; and

**WHEREAS**, the City Council of Big Spring wishes to recognize that the coronavirus has become an ongoing concern, and while health and economic problems caused by the coronavirus continue in the City of Big Spring, emergency laws and the local disaster declaration in the City of Big Spring are no longer needed to best address these concerns; and

**WHEREAS**, the City Council of Big Spring finds its necessary to take the following action;

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, THAT:**

**SECTION 1.** City Council directs that it withdraws further consent to the Declaration of the State of Public Health Disaster for the City of Big Spring, Texas related to the coronavirus and COVID-19 issued by the Mayor on March 18, 2020, and consented to by City Council March 26, 2020, in Resolution 004-2020.

**SECTION 2.** The City of Big Spring continues to request assistance from the state and federal governments relating to the deleterious health and economic effects of the coronavirus.

**SECTION 3.** The City of Big Spring encourages all persons in Big Spring to consult their own doctors and health professionals as concerns the coronavirus and their health.

**SECTION 4.** Should any section, paragraph, sentence, clause, phrase, word of this resolution be declared unconstitutional or invalid for any purpose, the remainder of this resolution shall not be affected thereby.

**SECTION 5.** All resolutions or parts of resolutions, or other orders or rules, in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 6.** This resolution shall take effect immediately after passage in accordance with the provisions of the Charter of the City of Big Spring, and it is accordingly so ordained.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the **22nd** day of **February, 2022** with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second and final reading at a regular meeting of the City Council on the **8th** day of **March, 2022** with all members of the Council voting “aye” for the passage of same.

\_\_\_\_\_  
Shannon D. Thomason, Mayor

ATTEST:

\_\_\_\_\_  
Tami L. Davis, City Secretary

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS ADOPTING THE DRAINAGE DESIGN CRITERIA MANUAL FOR THE DESIGN AND CONSTRUCTION OF STORMWATER DRAINAGE SYSTEMS WITHIN THE CITY AND ITS ETJ; AND PROVIDING AN EFFECTIVE DATE**

**WHEREAS**, the City’s Subdivision Ordinance requires development of a Stormwater Management Plan for most types of land disturbing activities within the City and its extraterritorial jurisdiction (ETJ); and

**WHEREAS**, basic requirements and design principles are needed to properly evaluate conditions for the systematic design of a stormwater drainage system;

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AS FOLLOWS, THAT:**

**SECTION 1.** The City Council hereby adopts the regulations known as the “Drainage Design Criteria Manual of Big Spring,” attached hereto as Exhibit “A,” as an appendix to the Big Spring Subdivision Ordinance.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the 22<sup>nd</sup> day of February, 2022 with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second and final reading at a regular meeting of the City Council on the 8<sup>th</sup> day of March, 2022 with all members of the Council voting “aye” for the passage of same.

\_\_\_\_\_  
Shannon D. Thomason, Mayor

ATTEST:

\_\_\_\_\_  
Tami L. Davis, City Secretary

# Drainage Design Criteria Manual

## The City of Big Spring, Texas



Effective June 2016

# Drainage Design Criteria Manual

## The City of Big Spring, Texas



Prepared by:

West Company of Midland, LLC.

110 W. Louisiana Ave., Ste. 110

Midland, Texas 79701

Firm#: 2184

Larry H. Walker, P.E.

Effective June 2016

# DRAINAGE DESIGN CRITERIA MANUAL

Of

## The City of Big Spring, Texas

310 Nolan Street, Big Spring, TX 79720

These drainage standards have been developed pursuant to the Subdivision Ordinance and were adopted by the City of Big Spring with an effective date of June 2016. These were reviewed and approved by Johnny Womack, Public Works Director and support staff.

With permission from the City of Abilene, this document is a modification of the “Drainage Standards for the City of Abilene” and the online version of the “Austin, Texas – Drainage Criteria Manual” updated on November 26, 2014 that has been prepared for the City of Big Spring by West Company of Midland, LLC. The principal authors and compilers of this Manual include Matthew L. Evans, P.E., C.F.M., Engineering Project Manager; and Larry H. Walker, P.E., P.M.P., Vice President Engineering. Johnny R. Poindexter, Assistant Project Manager, is acknowledged for his skillful CADD drafting in preparing the figures.

Drainage Design Criteria Manual  
Of the City of Big Spring

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### **1.0 DRAINAGE POLICY**

#### **1.1 Purpose**

The purpose of this Drainage Design Criteria Manual (Manual) is to establish standard principles and practices for the design and construction of stormwater drainage systems within the City of Big Spring, Texas (City) and its Extraterritorial jurisdiction (ETJ). The intent of this Manual is to effectively guide and assist persons with the development of a Stormwater Management Plan. The City's Subdivision Ordinance requires the development of a Stormwater Management Plan for most types of land disturbing activities within the City and its ETJ. The Manual is intended to provide standards and criteria which provide unity in analysis and system design and is complementary to basic information obtainable from industry standard references on hydrology, hydraulics and water resources. Adherence with this Manual will promote consistency with the identification of the requirements, the analysis of the rainfall, determination of the runoff, methods of collection and conveyance of stormwater.

#### **1.2 Scope**

This Manual is intended to provide the designer of a proposed development project with the basic requirements and design principles to properly evaluate conditions for the systematic design of a stormwater drainage system. The design factors, formulae, graphs and procedures in this Manual are intended for use only as engineering guides in the solution of drainage problems involving determination of the quantity, rate of flow, method of collection, storage, conveyance and disposal of stormwater. The selection of material included in the Manual was based upon the assumption that the design engineer and reviewer have a basic knowledge and understanding of open channel hydraulics, storm sewer hydraulics, and urban hydrological techniques. Responsibility for the actual design remains primarily with the design engineer. Users of this Manual should be knowledgeable and experienced in the theory and application of drainage engineering.

Methods of design other than those indicated herein may be considered in specific cases where experience indicates the appropriateness of such a deviation.

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However, any variations from the practices established herein must have the expressed written approval of the City's Public Works Director or his designee.<sup>1</sup>

### 1.3 Drainage Systems

#### A. Major Drainage Systems

Major drainage systems are those intended to convey larger flows and evaluated with respect to the 100 year frequency storm. A 100 year storm is a storm that has a one percent (1%) chance of being exceeded in any one year period. These major systems are considered to provide flood protection.

##### 1. Natural Streams

- a. Unimproved drainage ways scheduled to remain in the natural state shall be dedicated to the City of Big Spring either by title or easement, and platted to the 100-year flood way limit.
- b. Procedure for design discharge flows, erosion protection, and water surface elevations shall be in accordance with Sections 2, 3 and 5.5, respectively.
- c. Where the proposed improvement encroaches into a natural stream area the floodway shall be dedicated in a similar manner as Section 1.3, Item A.1.a. to the City of Big Spring. The floodway limits shall be determined in accordance with National Flood Insurance standards.

##### 2. Improved Channels

- a. Conveyance for at least the 10-year flood shall be conveyed within the channel banks.
- b. The 100-year runoff shall be conveyed within the channel right-of-way and/or dedicated easement.
- c. Channel right-of-way and/or dedicated easement shall provide for maintenance access.
- d. Unlined channels shall have side slopes no greater than 3:1 and bottom widths not less than eight (8) feet unless prohibited by existing facilities.

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<sup>1</sup> The designee of the Public Works Director shall be considered the only valid substitute who is responsible for the required decision-making and/or approvals listed in this Manual for the Public Works Director.

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- e. Lined channels may have side slopes as steep as 2:1 provided no slope maintenance is required.
  - f. Procedure for design discharge flows, erosion protection, and water surface elevations shall be in accordance with Sections 2, 3 and 5.5, respectively.
3. Detention Storage
- a. Detention storage is used principally to reduce the increased runoff caused by urbanization.
  - b. Detention storage areas shall have the capacity and outlet system to reduce flows for the 2, 10, 25 and 100-year frequency storms to a level not exceeding pre-development rates. Design criteria shall be in accordance with Section 7.
  - c. Maintenance of detention areas shall normally be the responsibility of the landowner except for certain public areas as determined by the Public Works Director. In such cases a filed maintenance agreement in the Public Records of Howard County shall be required.
  - d. Detention sites receiving City of Big Spring maintenance shall be dedicated to the City of Big Spring either by title, easement or plat. The dedicated area shall include all land inundated by the 100-year flood plus additional area as necessary to provide for appropriate maintenance and adequate ingress and egress.
  - e. Discharge from detention storage areas shall not cause downstream erosion as per Sections 5, 6.5 and 6.6.
  - f. An emergency spillway shall be provided and sized to convey the excess 100-year flow which is not stored or conveyed by the principle spillway.
  - g. Detention ponds shall comply with the following site standards unless a written variance from the Public Works Director is obtained:
    - i. Concrete paved or rock lined flow line in accordance with the City's Design and Construction Standards shall be provided in flow line of basin designed to handle flows more frequent than natural rainfall.

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- ii. The pond outfall shall not concentrate the stormwater flow from a site in such a manner as to create a point source of stormwater exiting the site where a non-point source condition currently exists. However, if the point source disposal of the stormwater is unavoidable then the stormwater must be conveyed to an appropriate outfall site (i.e. existing storm sewer or drainage channel.)
  - iii. Concrete pavement or rock lined flow line is not required where design storage will not receive flows more frequent than natural rainfall.
  - iv. Erosion protection as per Section 3 shall be provided at the inflow and outflow of each structure.
  - v. Basins which have disturbed areas from the natural state shall be seeded for erosion control as per Natural Resources Conservation Service (NRCS)/Texas Department of Transportation (TxDOT) standards. Prior to acceptance the grass shall be fully established, or a financial guarantee for the same shall be deposited with the City.
  - vi. Basins shall be designed for complete drainage resulting in a dry pond unless otherwise approved by the Public Works Director.
  - vii. Hydrologic routing through the detention pond of discharges from the 2, 10, 25 and 100-year storms shall be performed to ensure that post development runoff is equal to or less than pre-development runoff under a range of storm frequencies. The Public Works Director may request validation and/or verification of design software computations.
  - h. Where applicable, dam design and safety requirements as set forth by the State of Texas shall be met.
4. Emergency Overflows
- a. Emergency overflows or overland swales shall be provided at all mid-block low points or other low points.

## Drainage Design Criteria Manual - Big Spring, Texas

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- b. Overflow routes shall convey within the right-of-way of the 100-year storm.
- c. A flood limit easement equal to the spread of water from the 100-year storm shall be dedicated to the City of Big Spring. The minimum width shall be twenty (20) feet.
- d. Overland flow routes shall be seeded for erosion control in accordance with standards of NRCS/TxDOT or other methods acceptable to the Public Works Director.

### 5. Street Right-of-Way

All new streets designed to convey storm water runoff shall convey the 100-year flow within the right-of-way limits and/or specifically dedicated easements.

### 6. Bridges and Culverts

- a. Where bridges and/or culverts are installed on major drainage systems, they shall be designed for the 25-year storm event and to meet FEMA standards of zero rise during the 100-year event.
- b. The 100-year flow will not be permitted to overflow specified street bridges in accordance with the approved Comprehensive City Plan.
- c. Design criteria shall be in accordance with Section 6 of this Manual.
- d. Headwalls, rip rap or other approved erosion protection shall be provided at the upstream and downstream ends of the culvert barrel(s) which conform to the City's Design and Construction Standards.
- e. Culvert length plus headwalls shall conform to the City's Design and Construction Standards.

### B. Minor Drainage Systems

Minor drainage systems consist of street gutters, inlets and pipes and function to provide relief from nuisance type floods, such as those occurring from a five (5)-year frequency storm. A five (5)-year storm is a storm that has a 20% chance of occurring every year. A major system will protect from loss of property and life, and a minor system provides for convenience and ease of travel.

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### 1. Streets

- a. Street design and layout should function to provide the initial conveyance system for stormwater runoff for most if not all developments. Street layout should follow existing topography and drainage patterns as closely as practicable. The hydraulic design of a street should be such that reasonable access by emergency vehicles and personnel is ensured during rainstorm events up to and including the 100-year storm.
- b. All streets designed to convey stormwater runoff shall convey the 100-year flow within the right-of-way limits and/or specifically dedicated easements.
- c. For the purposes of maintaining reasonable traffic flow and safety at all times, and for controlling nuisance flooding during all storm events up to and including a five (5)-year storm, all streets that will convey stormwater runoff shall be designed in accordance with the following standards:
  - i. Residential and Collector Streets - For all flows up to the five (5)-year storm, flowing water shall not exceed six inches (6") in depth at any point within the traffic lanes, including intersections, with traffic lanes being defined as the central twenty-two feet (22') of pavement. For streets with an inverted crown, the traffic lanes are defined as the eleven feet (11') adjacent to each curb or edge of pavement.
  - ii. Arterial Streets - For all flows up to the five (5)-year storm, one twelve foot (12') wide lane in the central portion of the street shall not be inundated. For streets with an inverted crown, the traffic lanes are defined as the twelve feet (12') adjacent to each curb or edge of pavement.
  - iii. Divided Arterial Streets and Freeways - For all flows up to the five (5)-year storm, one twelve foot (12') wide lane in each direction shall not be inundated. For streets with an inverted crown, the

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traffic lanes are defined as the twelve feet (12') adjacent to each curb or edge of pavement.

NOTE: The five (5)-year frequency storm with six inches of water on the street will equate to about nine inches of water on the street for a 100-year frequency storm.

- d. The surface of an arterial street shall not be crossed with stormwater runoff from rainfall events at or below the five (5)-year frequency. Flows from events greater than the five (5)-year storm may overtop the roadway surface so long as the flow direction continues along the same line as that for lesser storm event flows as approved by the Public Works Director.
  - e. All existing naturally occurring channels which carry stormwater at a rate greater than 10 cubic feet per second (cfs) during a five (5)-year storm event shall be maintained as such through any new development, and the developer shall not be allowed to close such a channel. In the event a channel as just described intersects a street, the stormwater shall be carried underneath the street in a culvert structure and will not be discharged into the street.
2. Storm Drain Inlets and Pipes
- a. When the five (5)-year frequency flood exceeds the standard street section spread limits, the following could be implemented:
    - i. A storm drainage system consisting of inlets, pipes, manholes and associated appurtenances.
    - ii. Removal of all or part of the storm flow from the street into an alternative conveyance.
    - iii. Street widening as approved by the Public Works Director.
    - iv. Design and installation of non-standard gutter sections.
- NOTE: These are only suggestions and are not meant to be requirements. The design engineer may implement other methods, if approved by the Public Works Director.

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- b. City of Big Spring standards or other standards approved by the Public Works Director may be utilized for each component part of the drainage system.
- c. Design criteria shall be in accordance with the applicable sections of this Manual.
- d. The storm drain system shall conform to the following criteria unless otherwise approved by the Public Works Director:
  - i. Minimum velocity with the pipe flowing full shall be 2.5 feet per second (fps). The maximum velocity of storm drain (collectors) shall be limited to 15 feet per second. The maximum velocity of storm drain (mains) shall be limited to 12 fps.
  - ii. Minimum storm drain pipe diameter shall be 18 inches for a circular pipe or Design Size #3 for an arched pipe.
  - iii. Pipe diameters shall not decrease downstream, except when outlet control for detention may be applicable.
  - iv. Pipe crowns at change in sizes should be set at the same elevation.
  - v. Vertical curves in the conduit will not be permitted except where siphons are approved.
  - vi. Maximum manhole spacing:

**Table 1-1. Maximum manhole spacing**

Pipe Diameter (inches)	Maximum Spacing (feet)
18-36	600
42-60	1,000
Larger than 60	No limit

Manholes and inlets shall be placed at horizontal P.I. alignment changes.

- vii. Minimum pipe cover over the top of the pipe shall not be less than 1.5 ft. unless approved by the Public Works Director, based upon manufacturer's recommendations.

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- viii. The calculated hydraulic grade line of a closed drainage system shall not be more than the maximum control elevation over the street surface (Sections 1.3.B.1 & 2).
  - ix. Short radius bends may be used only on 24" and larger pipes at a junction or bend. A manhole shall always be located at the end of such short radius bends.
3. Roadways without Curb and Gutter
- a. Culverts placed in roadside ditches shall pass the five (5)-year frequency flow, or pass the hydraulic capacity of the ditch without overtopping the road, driveway, etc., more than six (6) inches.
  - b. Headwalls and endwalls, as per Section 6.3, and meeting City of Big Spring Minimum Design and Construction Standards or other approved details shall be provided at the upstream and downstream ends of ditch culverts.
  - c. Culverts perpendicular to the roadway shall have sufficient length to permit a 4:1 slope extending from the shoulder limit to flow line of the pipe where a vertical headwall is not used. Place five foot (5') minimum rip rap around the pipe with an 18" deep toewall along the downstream edge.
  - d. Minimum culvert diameter shall be 18 inches for a circular pipe or Design Size #3 for an arched pipe.
  - e. Design criteria shall be in accordance with the applicable sections of this Manual.
  - f. Culverts parallel to roadway shall have sufficient length to permit a maximum of 4:1 slope extending from the top back at curb or outside edge of shoulder or nearest roadway edge and five foot (5') minimum rip rap around the pipe with an 18" deep toewall along the downstream edge.
4. Roadside Ditches
- a. Roadside ditches shall convey the 10-year flow without overflowing the banks (edge of pavement to right-of-way).

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- b. Maximum ditch velocities shall not exceed those identified in Section 5 without providing erosion protection.
5. Erosion and Sedimentation Control
- a. All improved ditches with erodible materials shall be provided with erosion protection for design velocities exceeding those in Section 5 of this Manual.
  - b. Sediment control shall be provided for all developments as prescribed by the Texas Commission on Environmental Quality's (TCEQ) "General Permit to Discharge Under the Texas Pollutant Discharge Elimination System" (Construction General Permit.)
  - c. Sediment shall not be conveyed into improved drainage facilities, public rights-of-way, or onto adjacent property. Recommendations for sediment control are presented in Section 3 of this Manual, or as otherwise approved by the Public Works Director.
  - d. Entrapped sediment shall periodically be removed and redistributed within the development site or otherwise properly disposed. Detention basins, until accepted by the City for maintenance, shall be continuously monitored and maintained as necessary to maintain design storage and flow conditions.

### 1.4 Developer Responsibilities

#### A. Stormwater Management Plan

1. All Stormwater Management Plans shall be formulated and implemented under the direct supervision of a registered professional engineer, licensed by the State of Texas. Plans submitted for final approval shall bear the signature of the submitting engineer along with the following statement:

"I hereby certify that I am familiar with the adopted ordinances and regulations of the City of Big Spring governing detention and drainage facilities; that these plans have been prepared under my supervision; and that the foregoing Stormwater Management Plan complies with the intent and general requirements of the City of Big Spring."

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2. Stormwater Management Plan Contents. A Stormwater Management Plan shall consist of engineering drawings, contour maps, and all supporting engineering calculations, as applicable to the land area covered by the plan. This is required to demonstrate full compliance with the requirements of the Big Spring Subdivision Ordinance and Big Spring's adopted Drainage Standards. A plan shall include all pertinent information required by the Public Works Director and may include, but is not limited to, any of all of the following elements:
  - a. An engineering report dealing with the applicable provisions of the adopted Big Spring Drainage Standards, clearly setting forth the scope of the engineering problems and the proposed solutions.
  - b. An engineering hydrologic analysis of stormwater runoff from a 100-yr storm under existing site conditions and under proposed developed site conditions in accordance with City's land use plans and consultation with the Public Works Director.
  - c. An engineering hydraulic analysis for the control and conveyance of stormwater runoff from a 100-yr storm under the proposed developed conditions.
  - d. The location of all existing drainage channels, subsurface drainage facilities and other public and private utilities.
  - e. The on-site 100-year flood boundaries of any major drainage systems.
  - f. The proposed method of handling all runoff from the development and a demonstrated capability to handle upstream drainage assuming fully developed condition.
  - g. Proposed fill or other structure elevating techniques, levees, channel modifications, and detention facilities.
  - h. Detention facility computations comparing inflow and outflow rates to establish maximum storage volume and peak discharge rate requirements and to demonstrate maintenance of pre-development runoff condition.

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- i. The location and size of all existing and proposed drainage easements and areas.
  - j. The location, size and character of all temporary and permanent erosion and sedimentation control facilities, with description detailing all on-site erosion control measures which will be established and maintained during all periods of development and construction.
  - k. The pre-development cross sectional conveyance shall be preserved under all circumstances involving fill in the floodplain.
  - l. In addition to the requirements of detentions and pre-development conveyance preservation, the loss of pre-development floodplain storage provided by a natural creek shall be compensated to the greatest extent possible.
3. To the maximum extent possible, Stormwater Management Plans shall be fully documented on a topographic map that accurately delineates all existing and proposed drainage facilities such as streets, storm sewers, natural and manmade channels, swales, etc. All existing and proposed floodplain and floodway boundaries and drainage and/or detention easements shall be shown on this map. Where a significant portion of the drainage area exists outside the specific development tract, a second, larger scale map may be used to delineate contour and the offsite tributary drainage area(s). The exact boundaries of all proposed drainage sub-areas shall be delineated on this map and the pertinent discharge rates from each sub- area shall be listed at the point of discharge. Where physical improvements are proposed to be made as part of this Stormwater Management Plan implementation, the design characteristics and hydraulic capacities of the proposed facilities and the pertinent hydraulic loadings shall also be delineated on this map.
  4. Insure that all dead-end streets have a Stormwater Management Plan for water flow away from the end of the street. Where the extension of a dead-end street is anticipated, the flow away from the point shall be provided on the current project.

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### B. Design Check List For Construction Plans

To assist in the preparation of a complete and standardized set of drainage and construction plans, a check list of data to be included on the plans is presented:

1. Drainage Area Maps for both the existing and proposed conditions will be appropriate to the drainage area.
2. Drawing numbers, date, north arrow, signature blocks, match lines.
3. Subdivision name.
4. Names and widths of streets.
5. Easements and rights-of-way.
6. Survey Data: Bench marks for horizontal and vertical control.
7. Street profiles with gutter flow line grades and typical street cross sections.
8. Pipe size, grade, type, class, length, flow required, flow provided, and hydraulic grade line.
9. Manhole size with invert elevation shown.
10. Inlet size with invert elevations shown.
11. Channel size, slope, and plotted water surface of the 100-year flow, cross section, and discharge velocities (See Table 5-1).
12. Location, horizontally and vertically, of all utility lines.
13. Soil boring logs when available.
14. Structural details.
15. Detention facility location, storage volume, principle spillway design and associated appurtenance details.
16. Erosion and sediment control device(s) location(s) and details as necessary.
17. The engineer will insure that other drainage is not trapped because of this development.

### C. Submittal of Computations

A complete set of design calculations on the appropriate calculation sheets shall be submitted and approved in writing by the Public Works Director for all drainage related projects.

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### D. Applicability

These standards will apply to any and all development projects that have not begun construction (whether previously approved or a new submittal.)

### **1.5 Regional Stormwater Management**

The City of Big Spring may choose to implement a regional stormwater management system in order to limit the impacts of development runoff and provide flood mitigation in the Beals Creek, Big Spring Draw, Big Sandy Draw, Little Sandy Draw, and Reads Draw watersheds. This would be a coordinated effort with other governmental entities within each watershed. The design engineer shall verify with the City of Big Spring prior to the design of individual detention basins in these watersheds.

**2.0 DETERMINATION OF STORMWATER RUNOFF**

**2.1 Methods of Analysis**

The methods of stormwater runoff calculations are dependent upon the design engineer's technical familiarity and the size of the area to be analyzed. For the method chosen the engineer will be responsible for making reasonable assumptions as to the development characteristics of the proposed project area. However, rainfall runoff rates shall be estimated in accordance with standard technical documents that have been researched, validated and published in cooperation with appropriate agencies or organizations, such as the National Oceanographic and Atmospheric Administration, U.S. Geological Survey, and/or TxDOT. The engineer may be asked to provide justification of any assumptions necessary for the calculation of stormwater runoff.

Numerous methods of rainfall-runoff computation are available for the design of storm drainage and flood control systems. The Rational Method is accepted as adequate for drainage areas totaling 100 acres or less. The NRCS (formerly the Soil Conservation Service (SCS)) hydrologic methods (available in the NRCS TR-20, and the US Army Corps of Engineers' Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) program) should be used for drainage areas larger than 100 acres but may also be used for drainage areas of any size. The method of analysis must remain consistent when drainage areas are combined and the method which applies to the largest combined drainage area should be used unless the situation requires the use of NRCS hydrologic methods (i.e., a detention facility connected to a downstream storm drainage system). The engineer can use other methods but must have their acceptability approved in writing by the Public Works Director.

**2.2 Rational Method**

The Rational Method is based on the direct relationship between rainfall and runoff, and is expressed by the following equation:

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$$Q_p = CiA \text{ (Eq. 2-1)}$$

Where:

" $Q_p$ " is defined as the peak runoff in cubic feet per second. Actually,  $Q_p$  is in units of acre-inches per hour. Since this rate of acre-in/hr differs from cubic feet per second by less than one (1) percent (1 acre-in/hr = 1.008 cfs), the more common units of cfs are used.

" $C$ " is the composite coefficient of runoff representing the ratio of peak runoff rate " $Q_p$ " to average rainfall intensity rate.

" $i$ " for the soil types and land uses characteristic of the contributing drainage area. " $i$ " is the average intensity of rainfall in inches per hour for a period of time equal to the time of concentration for the drainage area to the design point under consideration.

" $A$ " is the area in acres contributing runoff to the point of design.

The following basic assumptions are associated with the Rational Method:

1. The storm duration is equal to the time of concentration.
2. The computed peak rate of runoff at the design point is a function of the average rainfall rate over a duration equal to the time of concentration at that point.
3. The return period or frequency of the computed peak flow is the same as that for the design storm.
4. The necessary basin characteristics can be identified and the runoff coefficient does not vary during a storm.
5. Rainfall intensity is constant during the storm duration and spatially uniform for the area under analysis.
6. The maximum rate of discharge at the point of design will occur when the entire area above the point of design is contributing runoff.

### A. Runoff Coefficient (C)

The proportion of the total rainfall that will reach the drainage system depends on the surface vegetation condition, soil type, imperviousness of the surface, land slope and ponding characteristics of the area. Impervious surfaces, such as asphalt pavements and roofs of buildings, will be subject to

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approximately 100 percent runoff (regardless of the slope). On-site inspections and aerial photographs may prove valuable in estimating the nature of the surfaces within the drainage area.

It should be noted that the runoff coefficient "C" is the Rational Method variable which is least amenable to precise determination. A reasonable coefficient must be chosen to represent the integrated effects of infiltration, surface ponding, evaporation, flow routing and interception, all of which affect the time distribution and peak rate of runoff.

It is often desirable to develop a composite runoff coefficient based upon the percentages of different types of surfaces in the drainage area. This procedure is often applied to typical "sample blocks" as a guide to selection of reasonable values of the coefficient for an entire area. Suggested coefficients with respect to specific surface types are given in Table 2-1. "C" values for developed conditions should be based on maximum allowable impervious cover as listed in the City's zoning ordinance.

**Table 2-1. Rational Method Runoff Coefficients (C)**

Character of Surface	Return Period						
	2 Years	5 Years	10 Years	25 Years	50 Years	100 Years	500 Years
<b>Developed</b>							
Compacted Crushed Limestone/Caliche	0.53	0.57	0.61	0.66	0.70	0.75	0.85
Asphaltic	0.73	0.77	0.81	0.86	0.90	0.95	1.00
Concrete	0.75	0.80	0.83	0.88	0.92	0.97	1.00
<b>Grass Areas (Lawns, Parks, etc.)</b>							
<i>Poor Condition*</i>							
Flat, 0-2%	0.32	0.34	0.37	0.40	0.44	0.47	0.58
Average, 2-7%	0.37	0.40	0.43	0.46	0.49	0.53	0.61
Steep, over 7%	0.40	0.43	0.45	0.49	0.52	0.55	0.62
<i>Fair Condition**</i>							
Flat, 0-2%	0.25	0.28	0.30	0.34	0.37	0.41	0.53
Average, 2-7%	0.33	0.36	0.38	0.42	0.45	0.49	0.58

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**Table 2-1. Rational Method Runoff Coefficients (C)**

Character of Surface	Return Period						
	2 Years	5 Years	10 Years	25 Years	50 Years	100 Years	500 Years
Steep, over 7%	0.37	0.40	0.42	0.46	0.49	0.53	0.60
<i>Good Condition***</i>							
Flat, 0-2%	0.21	0.23	0.25	0.29	0.32	0.36	0.49
Average, 2-7%	0.29	0.32	0.35	0.39	0.42	0.46	0.56
Steep, over 7%	0.34	0.37	0.40	0.44	0.47	0.51	0.58
Undeveloped							
<i>Cultivated</i>							
Flat, 0-2%	0.31	0.34	0.36	0.40	0.43	0.47	0.57
Average, 2-7%	0.35	0.38	0.41	0.44	0.48	0.51	0.60
Steep, over 7%	0.39	0.42	0.44	0.48	0.51	0.54	0.61
<i>Pasture/Range</i>							
Flat, 0-2%	0.25	0.28	0.30	0.34	0.37	0.41	0.53
Average, 2-7%	0.33	0.36	0.38	0.42	0.45	0.49	0.58
Steep, over 7%	0.37	0.40	0.42	0.46	0.49	0.53	0.60
<i>Forest/Woodlands</i>							
Flat, 0-7%	0.22	0.25	0.28	0.31	0.35	0.39	0.48
Average, 2-7%	0.31	0.34	0.36	0.40	0.43	0.47	0.56
Steep, over 7%	0.35	0.39	0.41	0.45	0.48	0.52	0.58

**Assumptions:**

The Composite "C" value for developed conditions ( $C_{DEV}$ ) is :  $C_{DEV} = IC_1 + (1-I)C_2$

Where:

I = Impervious cover, percent

$C_1$  = "C" value for impervious cover

$C_2$  = "C" value for pervious area (grass, lawns, parks, etc.)

\* Grass cover less than 50 percent of the area.

\*\* Grass cover on 50 to 75 percent of the area.

\*\*\* Grass cover greater than 75 percent of the area.

Source: 1. Rossmiller (1980)  
2. City of Austin (2014)

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### B. Time of Concentration

The time of concentration is the time for surface runoff to flow from the most remote point in the watershed to the point of interest. This applies to the most remote point in time, not necessarily the most remote point in distance. Runoff from a drainage area usually reaches a peak at the time when the entire area is contributing. However, runoff may reach a peak prior to the time the entire drainage area is contributing if the area is irregularly shaped or if land use characteristics differ significantly within the area. Sound engineering judgment should be used to determine a flow path representative of the drainage area and in the subsequent calculation of the time of concentration. The time of concentration to any point in a storm drainage system is a combination of the sheet flow (overland), the shallow concentrated flow and the channel flow, which may include storm drains. The minimum time of concentration for any drainage area shall be ten (10) minutes. Additionally, the minimum slope used for calculation of sheet and shallow flow travel time components should be 0.005 feet per foot (0.5%). The preferred procedure for estimating time of concentration is the NRCS method as described in NRCS's Technical Release 55 (TR-55). This method is outlined below. The overall time of concentration is calculated as the sum of the sheet, shallow concentrated and channel flow travel times. Note that there may be multiple shallow concentrated and channel segments depending on the nature of the flow path.

$$T_C = T_{t(\text{sheet})} + T_{t(\text{shallow concentrated})} + T_{t(\text{channel})} \quad (\text{Eq. 2-2})$$

1. Sheet Flow. Sheet flow is shallow flow over land surfaces, which usually occurs in the headwaters of a drainage system. The engineer should realize that sheet flow occurs for only very short distances, especially in urbanized conditions. Sheet flow for both natural (undeveloped) and developed conditions should be limited to a maximum of 100 feet. Sheet flow for developed conditions should be based on the actual pavement or grass conditions for areas that are already developed and should be representative of the anticipated land use within the headwater area in the case of currently undeveloped areas. In a typical residential subdivision, sheet flow may be the

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distance from one end of the lot to the other or from the house to the edge of the lot. In some heavily urbanized drainage areas, sheet flow may not exist in the headwater area. The NRCS method employs Equation 2-3, which is a modified form kinematic wave equation, for the calculation of the sheet flow travel time.

$$T_t = 0.42(nL)^{0.8}/((P_2)^{0.5}s^{0.4}) \quad (\text{Eq. 2-3})$$

Where,

$T_t$  = Sheet flow travel time (minutes)

$n$  = Manning's  $n$  (see Table 2-2)

$L$  = Length of the reach (ft)

$P_2$  = 2-year, 24-hour rainfall (inches)

$s$  = Slope of the ground (ft/ft)

2. Shallow Concentrated Flow. After a maximum of approximately 100 feet, sheet flow usually becomes shallow concentrated flow collecting in swales, small rills, and gullies. Shallow concentrated flows are assumed not to have well-defined channels and have flow depths of 0.1 to 0.5 feet. The travel time for shallow concentrated flows can be computed by Equations 2-4 and 2-5. These two equations are based on the solution of Manning's equation with different assumptions for  $n$  (Manning's roughness coefficient) and  $r$  (hydraulic radius, ft). For unpaved areas,  $n$  is 0.05 and  $r$  is 0.4; for paved areas,  $n$  is 0.025 and  $r$  is 0.2.

$$\text{Unpaved } T_t = L/(60(16.1345)(s)^{0.5}) \quad (\text{Eq. 2-4})$$

$$\text{Paved } T_t = L/(60(20.3282)(s)^{0.5}) \quad (\text{Eq. 2-5})$$

Where,

$T_t$  = Travel time for shallow concentrated flows (minutes)

$L$  = Length of the reach (ft)

$s$  = Slope of the ground (ft/ft)

3. Channel or Storm Drain Flow. The velocity in an open channel or a storm drain not flowing full can be determined by using Manning's Equation. Channel velocities can also be determined by using backwater profiles. For open channel flow, average flow velocity is usually determined by assuming a

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bank-full condition. Note that the channel flow component of the time of concentration may need to be divided into multiple segments in order to represent significant changes in channel characteristics.

For storm drain flow under pressure conditions (hydraulic grade line is higher than the lowest crown of a storm drain) the following equation should be applied:

$$V = Q/A \text{ (Eq. 2-6)}$$

Where:

V = Average velocity (ft/s)

Q = Design discharge (cfs)

A = Cross-sectional area (ft<sup>2</sup>)

Flow travel time through a channel can be calculated by the equation:

$$T_t = \Sigma(L_i/60 V_i) \text{ (Eq. 2-7)}$$

Where:

T<sub>t</sub> = Total flow travel time through the channel (minutes)

L<sub>i</sub> = The i-th channel segment length (ft)

V<sub>i</sub> = The average flow velocity within the ith channel segment (ft/s)

**Table 2-2. Manning's "n" for overland flow**

Manning's "n" <sup>1</sup>	Surface Description
0.015	Concrete (rough or smoothed finish)
0.016	Asphalt
0.05	Fallow (no residue)
Cultivated Soils:	
0.06	Residue Cover ≤ 20%
0.17	Residue cover > 20%
Grass:	
0.15	Short-grass prairie
0.24	Dense grasses <sup>2</sup>
0.13	Range (natural)

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**Table 2-2. Manning's "n" for overland flow**

Manning's "n" <sup>1</sup>	Surface Description
Woods: <sup>3</sup>	
0.40	Light underbrush
0.80	Dense underbrush
<sup>1</sup> The Manning's n values are a composite of information compiled by Engman (1986).	
<sup>2</sup> Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.	
<sup>3</sup> When selecting n, consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.	
Source: City of Austin (2014)	

### C. Rainfall Intensity

The rainfall intensity (i), is the average rainfall rate in inches per hour for the period of maximum rainfall of a given frequency having a duration equal to the time of concentration. After the design storm frequency has been selected, the rainfall intensity can be obtained from the intensity-duration-frequency (IDF) curves based on the selected design frequency and design duration as established by design standards or chosen by the engineer as a design parameter. The design engineer can also calculate the value of rainfall intensity from the best-fit IDF equation (2-8) with known  $t_c$  value for the entire drainage area of interest.

$$i = b / (t_c + d)^e \text{ (Eq. 2-8)}$$

where: i = Average Rainfall Intensity (inches/hour)

$t_c$  = storm duration (minutes) (equals time of concentration)

b, d, e = Coefficients for different storm frequencies listed in Table 2-3

**Table 2-3. Intensity-Duration-Frequency curve coefficients for Howard County**

Constants	Storm Year					
	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
e (in) =	0.805	0.800	0.802	0.796	0.791	0.788
b =	42	56	65	76	86	95
d (min)=	9.2	10.1	10.1	10.1	10.1	9.2
Source: Smith (1998)						

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Using Equation 2-8 and the coefficients in Table 2-3, the following storm intensities for Howard County are provided in Table 2-4 and can be utilized to create an IDF curve.

**Table 2-4. Intensity Curve Data for Howard County**

Time of Concentration (minutes)	Runoff Values for the given Storm Intensities <sup>1</sup> (in/hr)					
	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
10	3.89	5.08	5.86	6.97	8.01	9.26
20	2.78	3.68	4.24	5.06	5.82	6.65
30	2.19	2.92	3.37	4.02	4.64	5.27
40	1.82	2.45	2.82	3.37	3.89	4.41
50	1.57	2.11	2.43	2.92	3.37	3.81
60	1.39	1.87	2.15	2.58	2.98	3.37
70	1.24	1.68	1.93	2.32	2.68	3.03
80	1.13	1.53	1.76	2.11	2.45	2.76
90	1.04	1.41	1.62	1.94	2.25	2.54
100	0.96	1.30	1.50	1.80	2.09	2.35
110	0.90	1.21	1.40	1.68	1.95	2.20
120	0.84	1.14	1.31	1.58	1.83	2.06
130	0.79	1.07	1.23	1.49	1.72	1.94
140	0.75	1.02	1.17	1.41	1.63	1.84
150	0.71	0.97	1.11	1.34	1.55	1.75
160	0.68	0.92	1.06	1.27	1.48	1.67
170	0.64	0.88	1.01	1.22	1.41	1.59
180	0.62	0.84	0.97	1.17	1.35	1.53
190	0.59	0.81	0.93	1.12	1.30	1.47
200	0.57	0.78	0.89	1.08	1.25	1.41
210	0.55	0.75	0.86	1.04	1.21	1.36
220	0.53	0.72	0.83	1.00	1.16	1.31
230	0.51	0.70	0.80	0.97	1.13	1.27
240	0.49	0.68	0.78	0.94	1.09	1.23

<sup>1</sup> Calculated with Equation 2-8 ( $i = b / (t_c + d)^e$ ) and e, b, and d values from Table 2-3

Source: Adapted from City of Midland (1992, p. 4-14)

In 1998, William Asquith at the USGS Texas Office analyzed virtually all rainfall data available in the State of Texas using L-moment methodology and

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published the results in a USGS Water Resources Investigations Report (WRIR 98-4044). In June 2004, Dr. Asquith, in cooperation with TxDOT, published the depth-duration-frequency (DDF) maps of several precipitation events for Texas. The values listed in Table 2.5 were interpolated from the maps of that atlas. The design engineer may utilize this information or other suitable publications to generate the IDF and the DDF values that are suitable for use in the City of Big Spring. The IDF curves and the IDF equations are required for use in determining peak flows by the Rational Method or other appropriate methods.

**Table 2-5. Depth-Duration-Frequency Table for Howard County**

Recurrence Interval (yr)	Depth of Precipitation (inches)											
	15-min	30-min	1-hr	2-hr	3-hr	6-hr	12-hr	1-day	2-day	3-day	5-day	7-day
2	0.69	0.98	1.23	1.52	1.57	1.81	2.16	2.54	2.62	3.15	3.43	3.74
5	0.94	1.25	1.72	2.16	2.20	2.61	2.83	3.62	4.24	4.57	4.88	5.39
10	1.11	1.50	2.06	2.58	2.69	3.24	3.47	4.45	4.94	5.32	5.71	6.26
25	1.31	1.80	2.48	3.16	3.32	3.77	4.23	5.34	6.15	6.82	7.03	7.64
50	1.51	2.09	2.86	3.74	3.92	4.50	4.88	6.47	7.03	8.11	8.38	8.75
100	1.76	2.39	3.31	4.34	4.52	5.46	5.83	7.38	8.00	9.12	9.85	10.23
250	1.87	2.71	3.84	5.37	5.48	6.52	6.96	8.73	9.54	10.85	11.62	11.99
500	2.23	2.99	4.38	5.87	6.21	7.86	8.14	9.92	10.83	12.17	12.71	13.20

Source: Interpolated values from the maps in Asquith and Roussel, (2004)

Using the values in Table 2-5, the engineer may obtain the precipitation depth for a given frequency and convert this precipitation depth to precipitation intensity by dividing the depth by the storm duration. The storm duration is measured in inches/hour.

#### D. Drainage Area (A)

The size (acres) of the watershed needs to be determined for application of the Rational Method. The area may be determined through the use of topographic maps, supplemented by field surveys where topographic data has changed or where the contour interval is too great to distinguish the direction of flow. The drainage divide lines are determined based on topography, street layout, lot grading, building structure configuration and orientation, drainage

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system layout and other features that are created by the urbanization process.

### 2.3 Soil Conservation Service Method for Calculation of Peak Flows

The Soil Conservation Service (SCS) hydrologic method can be applied to urban drainage areas of any size. The major parameters required to calculate a runoff hydrograph with the method include the rainfall distribution, runoff curve numbers, time of concentration and drainage area. For detailed information regarding the SCS method and the TR-20 computer program, the user is referred to the following NRCS publications. These can be obtained from the NRCS website.

They are:

NEH-4: "Hydrology," Section 4, National Engineering Handbook

TR-20: Computer Program for Project Formulation, Hydrology

TR-55: Urban Hydrology for Small Watersheds

TP-149: A Method for Estimating Volume and Rate of Runoff in Small Watersheds

A. The City of Big Spring has adopted the use of an SCS 24-hour storm duration with a Type II distribution for use with the SCS method. For use in spreadsheet calculations, Type II distribution ordinates can be derived from the HEC-HMS program. When using the HEC-HMS model, the computational time interval should be selected based on criteria for the minimum lag time. The maximum computational time interval used in a HEC-HMS model should be six (6) minutes. The HEC-HMS programs can be downloaded from the US Army Corps of Engineers website. These models may be requested by the public and used as the basis for drainage analysis where applicable. Any results based on models must be certified by a Texas Licensed Professional Engineer.

B. Soil Conservation Service Runoff Curve Numbers

The NRCS has developed an index, the runoff curve number, to represent the combined hydrologic effect of soil type, land use, agricultural land treatment class, hydrologic condition, and antecedent soil moisture. These watershed factors have the most significant impact in estimating the volume of runoff, and can be assessed from soil surveys, site investigations and land use maps.

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The curve number is an indication of the potential runoff for a given antecedent soil moisture condition, and it ranges in value from zero to 100. The NRCS runoff curve numbers are grouped into three (3) antecedent soil moisture conditions — Antecedent Runoff Condition (ARC) I, ARC II and ARC III. Values of runoff curve numbers for all three (3) conditions may be computed following guidelines in Part 630, Chapter 10 of the National Engineering Handbook. ARC I is the dry soil condition and ARC III is the wet soil condition. ARC II is normally considered to be the average condition. The Antecedent Runoff Condition (ARC) was previously referred to as the Antecedent Moisture Condition (AMC) in older NRCS publications.

The NRCS curve number values provided in Tables 2-6 and 2-7 are for an ARC II. If it is desired to change to an ARC I or III condition, the adjustments given in Part 630, Chapter 10 of the National Engineering Handbook should be used. Justification must be provided for the selection of an ARC other than condition II.

The National Resources Conservation Service has classified more than 4,000 soils into four (4) hydrologic groups, identified by the letters A, B, C, and D, to represent watershed characteristics.

Group A: (Low runoff potential). Soils having a high infiltration rate even when thoroughly wetted and consisting chiefly of deep, well-drained to excessively drained sands or gravels.

Group B: Soils having a moderate infiltration rate when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well-drained soils with moderately fine to moderately coarse texture.

Group C: Soils having a slow infiltration rate when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water or soil with moderately fine to fine texture.

Group D: (High runoff potential). Soils having a very slow infiltration rate when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan

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or clay layer at or near the surface and shallow soils over nearly impervious material.

Table 2-6 lists the curve numbers for the four (4) soil groups under various land uses, land treatment and hydrologic conditions. Curve numbers for fully developed conditions should be based on maximum allowable impervious cover listed in Big Spring Zoning Ordinances. When calculating fully developed peak runoff rates it is recommended that the undeveloped curve number and the maximum allowable impervious cover be used as input parameters. In order to determine the soil classifications in the Big Spring area, the NRCS Soil Survey of Howard County, Texas should be used. Digital versions of these soil datasets are available online.

**Table 2-6. NRCS Runoff Curve Numbers for Urban Areas  
(assuming ARC-II condition)**

Cover Description		Curve Numbers for Hydrologic Soil Group			
Cover Type and Hydrologic Condition	Average % Impervious Area <sup>1</sup>	A	B	C	D
<i>Fully Developed Urban Areas (Vegetation Established)</i>					
Open Space (lawns, parks, golf courses, cemeteries, etc.)					
Poor condition (grass cover 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover 75%)		39	61	74	80
Impervious Areas:					
Paved parking lots, roofs, driveways, etc. (excluding right of way)		98	98	98	98
Streets and Roads:					
Paved; curbs and storms drains (excluding right of way)		98	98	98	98
Paved; open ditches (including right of way)		83	89	92	93
Gravel (including right of way)		76	85	89	91
Dirt (including right of way)		72	82	87	89
Western desert urban areas:					

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**Table 2-6. NRCS Runoff Curve Numbers for Urban Areas  
(assuming ARC-II condition)**

Cover Description		Curve Numbers for Hydrologic Soil Group			
Cover Type and Hydrologic Condition	Average % Impervious Area <sup>1</sup>	A	B	C	D
Natural desert landscaping (pervious areas only) <sup>3</sup>		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1-2-inch sand or gravel mulch and basin borders)		96	96	96	96
<i>Urban districts</i>					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
<i>Developing Urban Areas</i>					
Newly graded areas (pervious areas only, no vegetation)		77	86	91	94
Idle lands (CN's are determined using cover types similar to those listed under "Agricultural Lands.")					

<sup>1</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 2-1 or 2-2.

<sup>2</sup> Composite CN's for natural desert landscaping should be computed using Figures 2-1 and 2-2 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>3</sup> Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

<sup>4</sup> **Poor:** less than 30 percent ground cover (litter, grass and brush overstory).

**Fair:** 30 to 70 percent ground cover.

**Good:** greater than 70 percent ground cover

Source: NRCS (1986, pp. 2-5)

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**Table 2-7. NRCS Runoff Curve Numbers for Agricultural Lands<sup>1</sup>  
(assuming ARC-II condition)**

Cover Description	Treatment <sup>2</sup>	Hydrologic condition	Curve Numbers for Hydrologic Soil Group			
			A	B	C	D
<i>Cultivated Agricultural Lands</i>						
Fallow	Bare Soil	--	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row Crops	Straight Row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+CR	Poor	65	73	79	81
		Good	61	70	77	80
<i>Arid and Semiarid Rangelands<sup>3</sup></i>						
Herbaceous—mixture of grass, weeds and low-growing brush with brush the minor element		Poor		80	87	93
		Fair		71	81	89
		Good		62	74	85
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, mesquite and cactus.		Poor	63	77	85	88
		Fair	55	72	81	86
		Good	49	68	79	84

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$

<sup>2</sup> Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

<sup>3</sup> **Poor:** less than 30 percent ground cover (litter, grass and brush overstory).

**Fair:** 30 to 70 percent ground cover.

**Good:** greater than 70 percent ground cover

Source: NRCS (1986, pp. 2-6 and 2-8)

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### C. Time of Concentration

The procedures for estimating time of concentration for the NRCS method are described in the NRCS Technical Release 55 (TR-55) and in Section 2.2.B of this Manual. Three (3) types of flow (sheet flow, shallow concentrated flow and channel flow) are considered. Note that Table 2-2 shall be used for determination of sheet flow Manning's roughness coefficients rather than the table included in TR-55.

In hydrograph analysis, the time of concentration can be defined as the time from the end of excess rainfall to the point of inflection on the falling limb of the hydrograph. The time of concentration determines the shape of the runoff hydrograph. Times of concentration are required for the existing and developed conditions to adequately model the impact of the development on stormwater runoff. The methodology presented in TR-55 provides a reasonable approach for the estimation of time of concentration. The lag time, defined as the time between the center of mass of excess rainfall to the runoff peak, is typically used in the HEC-HMS implementation of the SCS methodology. The lag time can be estimated with this equation.

$$T_{lag} = 0.6 T_c \text{ (Eq. 2-9)}$$

In general, times of concentration for the developed condition should be calculated based on conservative assumptions that consider the increased hydraulic efficiency expected with an ultimate developed condition. Times of concentration should be representative of the overall drainage area, not simply based on the longest (in either distance or time) flow path. Sheet flow for both existing and proposed conditions should be limited to 100 feet. This length should be considered a maximum; sheet flow lengths should be measured and justified for all conditions. Additionally, the minimum slope used for calculation of sheet and shall flow travel time components should be 0.005 feet per foot (0.5%).

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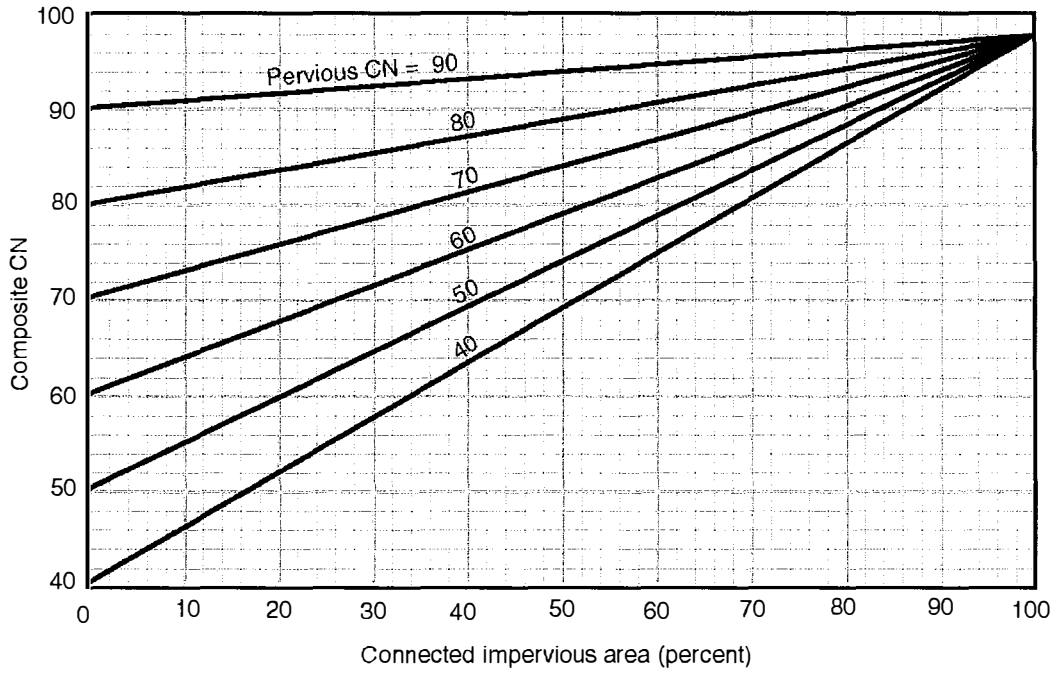


Figure 2-1. Composite CN with connected impervious area.  
Source: NRCS (1986, p. 2-10)

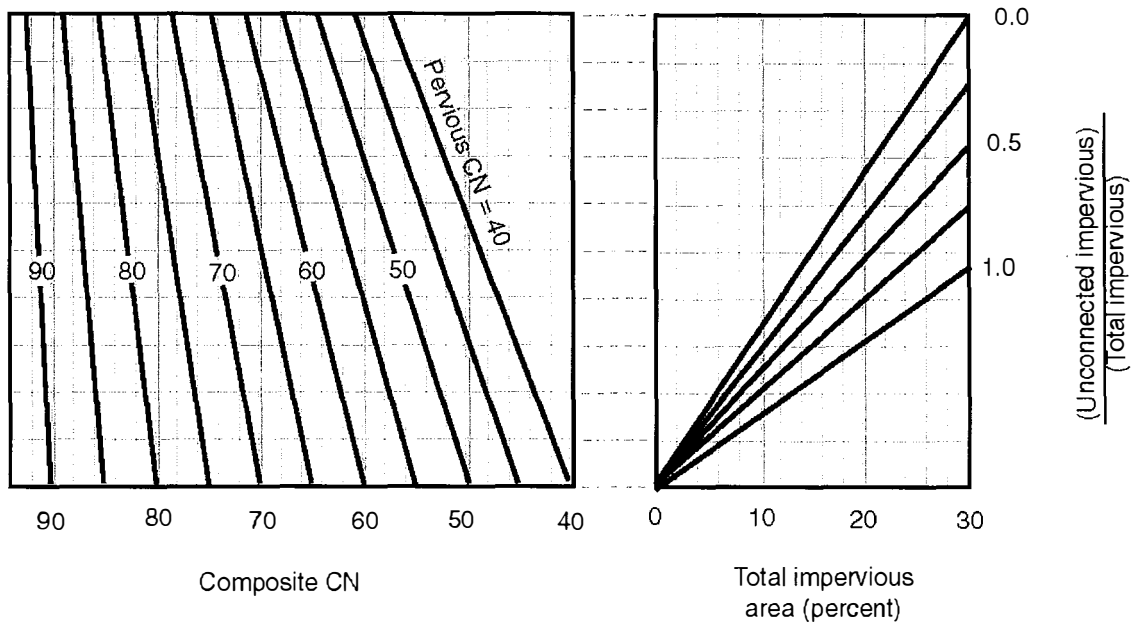


Figure 2-2. Composite CN with unconnected impervious areas and total impervious area less than 30%.  
Source: NRCS (1986, p. 2-10)

**3.0 EROSION AND SEDIMENTATION CONTROL PLAN**

**3.1 General**

Increased natural erosion and sedimentation processes are frequent results of land development activities. Therefore, TCEQ requires compliance with the Construction General Permit. Compliance with TCEQ may require a Stormwater Pollution Prevention Plan (SWPPP). For this reason, an erosion and sediment control program must be instituted during the construction phase. Prior to the completion of a subdivision and acceptance of public improvements, rights-of-way, and easements combined on each lot shall have a sediment barrier constructed, designed for a 2-year storm (such construction to be covered by a Maintenance Bond) and maintained until the lot is stabilized, or one (1) year after acceptance of the subdivision by the City as per the aforementioned maintenance bond. An erosion and sediment control program shall be utilized to prevent sedimentation damage to areas and streams below the development site until the site is stabilized. The following practices are recommended for erosion and sedimentation control.

**3.2 Sediment Barriers**

Sediment barriers intercept runoff and capture sediments prior to the discharge of runoff into a water course or onto adjacent downstream properties. Properly constructed and maintained, these structures remove the bulk of coarser sediment from runoff leaving a construction site and effectively reduce the velocity and hence erosive capacity of runoff.

Five structures recommended as temporary sediment barriers below a construction site are the straw bale barrier, silt fence, erosion-control logs, sand bags and rock filter dams. The straw bale barrier consists of standard rectangular straw bales placed end to end (tied together with nylon binder twine or wire) and adequately staked to the ground. The silt fence consists of a filter fabric attached to a wire mesh fence of suitable height. Erosion-control logs are mesh tubes filled with compost or straw which function similar to straw bales. Sand bags are polypropylene, polyethylene or polyamide woven fabric bags filled with natural coarse sand or manufactured sand. Rock filter dams are small berms placed

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perpendicular to the flow path across swales or ditches. These dams are constructed of aggregate ranging in size from three (3) to eight (8) inches in diameter depending upon the anticipated runoff flow volumes and/or velocities.

These methods are applicable for small drainage areas and may be used in a minor swale or ditch line with a runoff contributing area less than two acres. Care should be taken in determining the number and spacing of these structures for larger drainage areas.

### **3.3 Storm Drain Inlet Protection**

Storm drain inlets intercepting flow from a disturbed drainage area should be provided to ensure adequate protection against sediment entering the storm drain line. Recommended practices for a standard grate drop inlet include a straw bale barrier, silt fence, erosion-control logs, sand bags, and a block and gravel filter.

The straw bale barrier, silt fence, erosion-control logs, and sand bags are described in Section 3.2. These structures are constructed along the outside perimeter of the inlet. Good judgment should be used in determining the adequacy of these filters for larger concentrated flows which may reduce their structural stability.

The block and gravel filter is used where heavy concentrated flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure. It consists of cinder blocks placed lengthwise around the perimeter of the inlet and wrapped with wire mesh. A suitable coarse aggregate is then piled against the wire mesh to the top of the block barrier. The wire mesh should have ½ inch openings and the aggregate should be of suitable size and gradation to effectively filter sediment.

Recommended practices for a standard depressed curb inlet include a straw bale, silt fence, erosion-control logs, sand bags and a block and gravel sediment filter. These structures are similar in purpose and design as mentioned for a grate drop inlet. The design and placement of barriers will be as approved by the Public Works Director.

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All previously mentioned structures should be periodically checked and maintained to provide optimum protection against sediment entering the storm drain line.

### **3.4 Detention Basin**

Small detention basins are an alternative measure to sediment barriers for preventing sediment to be carried off-site to downstream areas. Basins should be sized with proper outlet works to detain stormwater runoff for a length of time suitable for the settling of most sediment carried off with the stormwater. Runoff from a construction site must be effectively diverted to the basin for implementation of this method. Periodic cleaning of the detention basin is necessary to prevent loss of storage volume capacity.

### **3.5 Erosion Control**

Erosion control prevents sediment from inundating areas down-slope from a construction site by preventing displacement of soil located within the construction zones due to runoff. Various methods such as the diversion of upland stormwater runoff, temporary seeding and mulching of the site, and surface roughening to reduce runoff velocity and increase infiltration will reduce the erosion of denuded land before stabilization is established. For development of land greater than 1.0 acre an SWPPP will be considered as fulfillment of this section. An erosion prevention plan is required to be approved by the Public Works Director for development of land less than 1.0 acre.

**4.0 FLOW IN STREETS AND STORM DRAIN INLET DESIGN**

**4.1 Gutter Flow**

Drainage of stormwater flow in gutters is based upon the hydraulics of open channels. Permissible use of gutters for stormwater conveyance will be based upon limitations set forth in Section 1.3.B.1.

**4.2 Inlet Use**

The following conditions exist for the various uses of inlets.

- A. Combination curb inlets should be only where space behind curb prohibits other inlet types.
- B. Grate inlets should be used only where space restrictions prohibit other inlets or at locations with no curb.
- C. No depressed inlets shall be used on arterials and freeways unless they are clearly outside all traffic lanes.
- D. Inlets shall be placed preferably at the upstream side of street intersections, at low points, or where the gutter flow exceeds its limits. Inlets shall be located on off streets or alleys when possible.
- E. Water flowing in gutters of arterials and expressways should be collected prior to super-elevated sections to prevent water flowing across the street for up to a 5-year storm as per Section 1.3.B.1.

**4.3 Inlet Types**

Inlets must be utilized at the point at which street flow conditions begin to approach or exceed the storm runoff limitations set forth in Section 1.3.B.1. The final selection of inlet types will be based upon hydraulic performance, safety requirements and economics.

Inlets in sumps, curb inlets on grade, depressed curb inlets on grade, recessed curb inlets and combinations thereof are acceptable means of intercepting excess surface runoff.

The following guidelines shall be used in the design of inlets to be located on streets.

## Drainage Design Criteria Manual - Big Spring, Texas

- A. Maximum permissible depression for depressed curb inlets (depression measured from gutter line) in residential and collector streets shall be five (5) inches.
- B. Maximum permissible depression for depressed curb inlets (depression measured from gutter line) in divided and undivided arterials and freeways shall be two and one-half inches (2.5 in) unless specifically approved by the Public Works Director.
- C. Inlets shall have a six (6) inches minimum throat opening.
- D. Recessed inlets shall not interfere with the intended use of a sidewalk.
- E. Inlets should be designed and located with pedestrian and bicycle traffic in mind.
- F. Table 4-1 lists the reductions in calculated inlet capacities that shall be utilized to account for blockage of the inlets by trash and debris:

**Table 4-1. Inlet Capacity Reduction Values**

Inlet Type	Capacity Reduction (%)
5" depressed curb inlet	10
Drop inlets in sumps	10
Combination grate and curb inlet in a sump	20
Grate inlets	25

- G. The capacity of a combination curb and grate inlet on grade shall be considered to be ninety percent (90%) of the sum of their individual capacities (allowing for reduction due to clogging). This will also apply to a combination depressed curb and grate inlet on grade.
- H. The capacity of a combination curb and grate inlet in a sump shall be considered the sum of their individual capacities (allowing for clogging).

### 5.0 **CHANNELS**

#### 5.1 **General**

Channels exist in nature as creeks and streams and provide the natural conveyance for storm runoff. Likewise in urban storm drainage, constructed channels may improve the natural system by providing the conveyance needed for large quantities of storm runoff. Utilization of open channels for urban storm drainage, in addition to the requirements in Section 1 and 2, and Figure 5-1, requires additional considerations. Channels may be advantageous because of greater capacity and normally lower cost, however, consideration must be given to the extended right-of-way requirement, safety hazards in residential areas, and maintenance costs.

Hydraulically, open channels are characterized by a concentrated flow having a free water surface. The design of open channels should provide a channel cross section of sufficient size to adequately convey the design flow of water and prevent flooding. Section 1.3, A and Figure 5-1 set forth basic criteria defining utilization, capacities, shape, and lining requirements for channels.

#### 5.2 **Discharge Criteria**

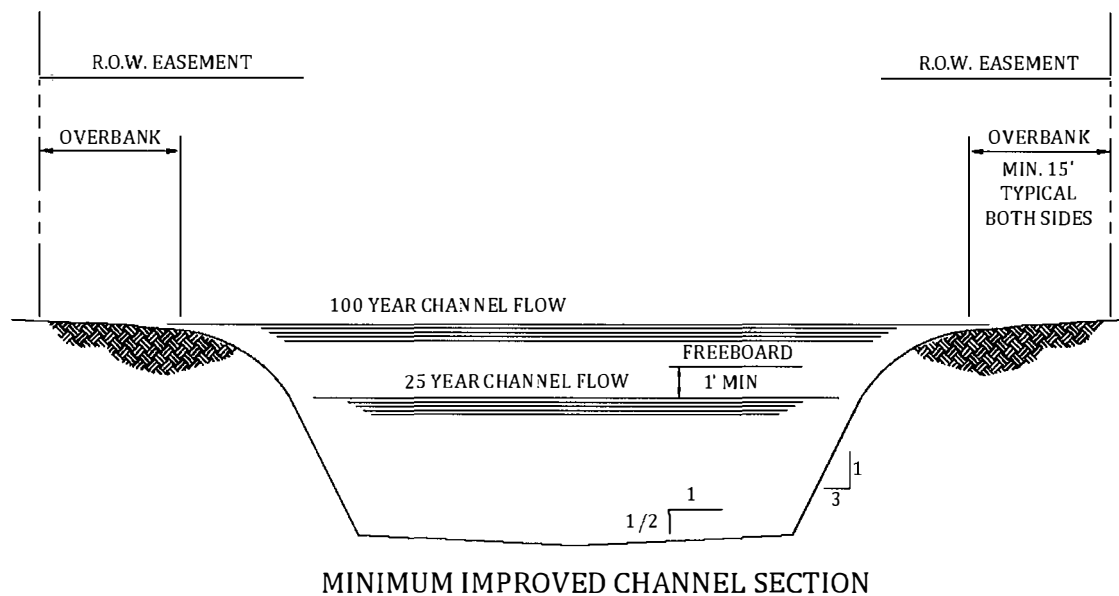
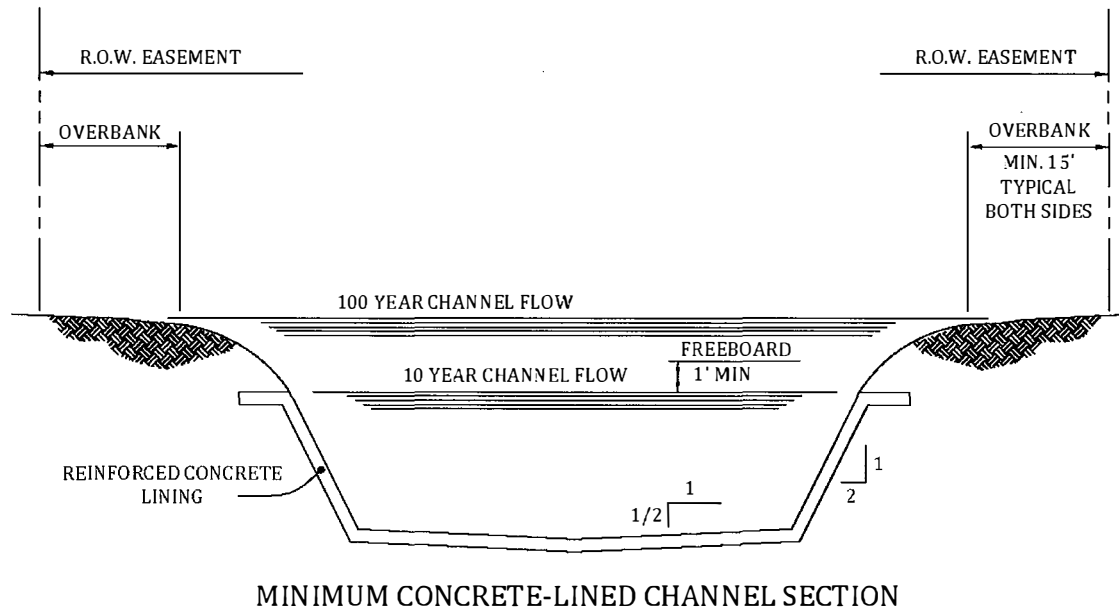
Design flows in natural and improved channels and through bridges or culverts and other structures associated with a particular channel shall be based on the higher of the following:

1. The Big Spring Flood Insurance Study.
2. Design flows frequency as calculated by design criteria given in Section 2.

#### 5.3 **Velocity**

With higher velocities it will become necessary to provide channel lining to prevent erosion, therefore, maximum velocities of flow for various channel linings are established in Table 5-1 to give the engineer a guide for providing channel protection. Table 5-1 is only a guide, and linings other than those listed may be used if approved by the Public Works Director. Where practical, channel stepping, flow retarding structures, or other suitable methods may be utilized to control high velocities and thereby prevent erosion.

## Drainage Design Criteria Manual - Big Spring, Texas



**Figure 5-1. Channel Sections**

Conversely, consideration should be given to minimum velocities and grades to prevent silting. Recommended velocities for unlined channels are as given in Table 5-1.

## Drainage Design Criteria Manual - Big Spring, Texas

### 5.4 Freeboard

Major channels with built-up levees should be provided with three (3) feet of freeboard. All other improved channels with built-up levees should be provided with one (1) foot of freeboard. Consideration for additional freeboard should be given when a channel flows through an area where extensive damage would occur as a result of overflow.

### 5.5 Water Surface Profiles

A water surface profile must be computed for all channels and shown on all final drawings. Standard acceptable backwater methods or computer programs may be utilized. All losses due to changes in velocity, drops, bridge openings and other obstructions must be considered.

### 5.6 Maintaining the Natural Storage Volume

Maintaining the natural storage volume provided in the floodplain will be required in channel calculations.

**Table 5-1. Recommended Maximum Channel Velocities**

Channel Material	Maximum Channel Velocity (ft/s)
Fine Sand	2.5
Coarse Sand	4.0
Fine Gravel	6.0
Earth:	
• Sandy Silt	2.5
• Silty Clay	3.5
• Clay	6.0
Bermuda Grass-Lined Earth:	
• Sandy Silt	6.0
• Silty Clay	8.0
Sedimentary Rock:	
• Soft Shale	3.5
• Soft Sandstone	8.0
Igneous or Hard Metamorphic Rock	12.0
Reinforced Concrete Lining	15.0

## Drainage Design Criteria Manual - Big Spring, Texas

### 6.0 CULVERTS

#### 6.1 General

Culverts are an integral part of any storm drainage system. The function of a drainage culvert is to pass stormwater flow from the upstream side of an embankment to the downstream side without creating excessive downstream velocities, submerging embankment or causing excessive backwater.

#### 6.2 Quantity of Flow

The quantity of design flow shall be determined in accordance with Section 2 of this Manual.

#### 6.3 Headwalls and Endwalls

Headwalls will be either straight parallel headwalls, flared headwalls, paved sloped entrances, warped headwalls or pre-formed headwalls, or as approved by the Public Works Director with or without aprons depending on site conditions. Suggested guidelines for the selection of headwall and endwall types are provided in Table 6-1.

**Table 6-1. Guidelines for the Selection of Headwall and Endwall Types**

Conditions	Headwall and Endwall Types
Approach velocities below 6 fps. Approach channel undefined. Formation of backwater pool is acceptable. No downstream channel protection required.	Straight parallel
Approach velocities between 6-10 fps. Approach channel well defined	Flared (wings of flared walls located with respect to axis of the approach channel velocity)
Approach velocities of 8 fps or greater. Approach channel well defined.	Warped (suggested for use only for large drainage installations with limited right-of-way.)

#### 6.4 Culvert Hydraulics

The hydraulic design of culverts will be based upon design aids found in the TxDOT specifications and standard plans, or other suitable material as approved by the Public Works Director.

## Drainage Design Criteria Manual - Big Spring, Texas

### 6.5 Discharge Velocities

The velocity of discharge from culverts should be limited as shown in Table 6-2. Consideration must be given to the effect of high velocities and turbulence on the channel, adjoining property and embankment.

**Table 6-2. Culvert Discharge Velocities**

Culvert Discharging onto:	Maximum Allowable Velocity (fps)
Earth (sandy)	6
Earth (calcareous clay)	8
Earth (sodded, vegetated)	8
Hard Shale	10
Rock or Concrete	15

### 6.6 Erosion Control

In certain instances, rip rap protection and energy dissipaters downstream of culverts may prove to be more economical solutions to high outlet velocities than resizing of a culvert. Engineering judgment will dictate the design of energy dissipaters and sizing and placing of rip rap. The Technical Report. No. FHWA/R0-82/011, "Scour at Culvert Outlets in Mixed Bed Materials" U.S. Department of Transportation dated September 1982, is one source of information available regarding the effects of scour downstream of culvert outlets.

### 6.7 Culvert Type

The selection of the type of culvert utilized and its shape is left open to individual judgment based on local conditions but shall meet with the approval of the Public Works Director.

**7.0 DETENTION STORAGE**

**7.1 General**

Detention is a means of reducing the increased runoff associated with the development of drainage basins. Detention storage ponds should have the capacity and outlet works capable of reducing increased peak flows for each of the 2, 10, 25 and 100-year frequency storms. The net flow rate from a detention storage pond shall not exceed pre-development runoff rates from the drainage basin. Retention storage may be considered for approval by the Public Works Director.

Because an area used for detention of runoff may have other uses, the size, shape, and slope(s) of the detention facility should be compatible with such auxiliary uses of the facility. In addition, the allowable depth of water for the design recurrence interval and the length of time that stored water remains in the facility should also be compatible with the other uses of the facility.

**7.2 Design**

A flow routing analysis using detailed hydrographs must be applied for all detention pond designs. The NRCS hydrologic methods (TR-20) and the HEC hydrologic methods (HEC-HMS) may be used. The engineer may use other methods but must have their acceptability approved by the Public Works Director.

7.6 The following detention facility computations shall be submitted and reviewed for approval by the Public Works Director.

1. Existing pre-development runoff hydrographs for the 2, 5, 10, 25 and 100-year storms.
2. 2, 5, 10, 25 and 100-year hydrographs representing developed conditions.
3. A depth/elevation versus storage graph for the detention basin.
4. A depth/elevation versus discharge graph for the detention basin outlet works.
5. Reservoir routing computations of the developed conditions 2, 5, 10, 25 and 100-year hydrographs through the detention facility and associated outflow hydrographs.

## Drainage Design Criteria Manual - Big Spring, Texas

### B. Runoff Hydrographs

The runoff hydrographs for areas of 200 acres or greater will be developed using Snyder's Synthetic Unit Hydrograph procedure, or other methods approved by the Public Works Director.

For drainage areas less than 200 acres, the Rational Method, Modified Rational Method (MRM) or other methods approved by the Public Works Director shall be utilized to construct the runoff hydrograph.

### C. Depth/Elevation - Storage Relationship

A depth/elevation storage relationship is a graph of depth/elevation of stored water vs. storage volume for the detention basin. The depth/elevation is usually placed on the ordinate, and the storage volume on the abscissa. The units for depth can be inches or feet. The units for elevation would be feet. The units for volume can be cubic feet, acre-inches, and acre-feet. The storage volume at a particular depth is always the total volume of storage below that depth.

### D. Depth/Elevation -Discharge Relationship

A depth/elevation discharge relationship is expressed by a graph of depth/elevation vs. discharge rate. The depth/elevation is usually placed on the ordinate, and the discharge rate on the abscissa. The units for depth can be inches or feet. The units for elevation would be feet. The units for outflow rate can be cubic feet per second. The outflow rate at a particular depth is the summation of the outflow rates from all outlet structures which are discharging water at that particular depth.

## 7.3 Basin Design vs. Storm Frequency and Duration

Detention basins designed for use in the Big Spring area should be designed to limit post development runoff to predevelopment rates for each of the 2, 5, 10, 25 and 100-year storms. Analysis of these storms with various durations should be carried out to ascertain that the storage space and outlet works of a detention basin are indeed capable of alternating all design storms of varying durations in accordance with Big Spring standards.

## **Drainage Design Criteria Manual - Big Spring, Texas**

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### **7.4 Berms**

Berms will not be permitted where the "toe" of the outside berm will be closer than 5 feet from the ROW line. There must be room for sidewalks near the ROW line of all streets.

### **7.5 Regional Detention Ponds**

The City of Big Spring encourages the use of larger Regional Ponds over a large number of smaller ponds in the same areas if owner or owners can work together to create one pond for general use.

## Drainage Design Criteria Manual - Big Spring, Texas

### 8.0 REFERENCES

Asquith, W.H. and M. C. Roussel. (2004). *Atlas of Depth-Duration Frequency of Precipitation Annual Maxima for Texas*. Scientific Investigations Report 2001-5041 (Texas Department of Transportation Implementation Report 5-1301-01-1). U.S. Geological Survey.

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City of Austin. (November 2014). *Drainage Criteria Manual*. Retrieved from [https://www.municode.com/library/tx/austin/codes/drainage\\_criteria\\_manual?nodeId=15305](https://www.municode.com/library/tx/austin/codes/drainage_criteria_manual?nodeId=15305)

City of Midland. (1992). *Storm Drainage Design Manual*.

Engman, E.T. (1986). Roughness coefficients for routing surface runoff. *Journal of Irrigation and Drainage Engineering*, 112(1), 39-53.

Natural Resources Conservation Service. (1986). *Urban Hydrology for Small Watersheds*. (Second Edition). Technical Release 55.

Rossmiller, R.L. (1980). The Rational Formula Revisited. *Proceedings of International Symposium on Urban Storm Runoff*. University of Kentucky, Lexington.

Smith, P.N. (1998). *TXDOT\_IDF\_Coeffs*. Retrieved from [https://ceprofs.tamu.edu/kbrumbelow/CVEN463/TXDOT\\_IDF\\_Coeffs.xls](https://ceprofs.tamu.edu/kbrumbelow/CVEN463/TXDOT_IDF_Coeffs.xls)

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022 BY INCREASING THE GENERAL FUND BUDGET FOR THE PURPOSE OF LIGHTING REPLACEMENTS AT THE ROY ANDERSON SPORTS COMPLEX; PROVIDING FOR SEVERABILITY; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS** the City Council adopted the annual 2021-22 budget for the City of Big Spring, Texas on September 28, 2021 (“Budget”); and

**WHEREAS** replacing some lighting fixtures at the Roy Anderson Sports Complex was not included in such Budget; and

**WHEREAS** the City Manager and the Finance Director recommend that the City Council increase the General Fund budgeted expenditures and amend the Budget previously approved;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AS FOLLOWS THAT:**

**SECTION 1.** The General Fund Budget of the Annual Budget for the City of Big Spring, Texas for the Fiscal Year beginning October 1, 2021 and ending September 30, 2022 is hereby increased by the amount of \$16,500.00 to the expense account number 002-027-375-6229 for the purpose of lighting replacements at the Roy Anderson Sports Complex.

**SECTION 2.** The remaining portions of Ordinance Number 039-2021 shall remain in full force and effect.

**SECTION 3.** Should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose, the reminder of this ordinance shall not be affected thereby.

**SECTION 4.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 5.** The City Secretary is hereby authorized and directed to cause the publication of this ordinance in accordance with law.

**SECTION 6.** This ordinance shall be in full force and effective from and after its publication as required by law.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the **22<sup>nd</sup>** day of **February, 2022** with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second reading at a regular meeting of the City Council on the **8<sup>th</sup>** day of **March, 2022** with all members of the Council voting “aye” for the passage of same.

\_\_\_\_\_  
Shannon D. Thomason, Mayor

ATTEST:

\_\_\_\_\_  
Tami L. Davis, City Secretary

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AMENDING ORDINANCE NUMBER 039-2021 WHICH ADOPTED THE ANNUAL BUDGET FOR THE CITY OF BIG SPRING, TEXAS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2021 AND ENDING SEPTEMBER 30, 2022 BY INCREASING THE GENERAL FUND BUDGET TO PURCHASE EQUIPMENT FOR VARIOUS DEPARTMENTS; PROVIDING FOR SEVERABILITY; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS** the City Council adopted the annual 2021-22 budget for the City of Big Spring, Texas on September 28, 2021 (“Budget”); and

**WHEREAS** all bids were rejected for the Lease Purchasing Agreement due to the decrease in the amount to be financed and the various equipment needed for various departments were not included in such Budget; and

**WHEREAS** the City Manager and the Finance Director recommend that the City Council increase the General Fund budgeted expenditures and amend the Budget previously approved;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BIG SPRING, TEXAS, AS FOLLOWS THAT:**

**SECTION 1.** The General Fund Budget of the Annual Budget for the City of Big Spring, Texas for the Fiscal Year beginning October 1, 2021 and ending September 30, 2022 is hereby increased by the amount of \$77,857.44 to the following expense account numbers:

002-022-320-6404 - Batwing Mower for the Street Department in the amount of \$24,892.28;

002-027-370-6314 – Zero Turn Mower for the Parks Department in the amount of \$10,952.48; and

002-027-390-6314 – Greens Mower for the Golf Course in the amount of \$42,012.68.

This equipment will be funded through the General Fund Balance.

**SECTION 2.** The remaining portions of Ordinance Number 039-2021 shall remain in full force and effect.

**SECTION 3.** Should any section, paragraph, sentence, clause, phrase or word of this ordinance be declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby.

**SECTION 4.** All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

**SECTION 5.** The City Secretary is hereby authorized and directed to cause the publication of this ordinance in accordance with law.

**SECTION 6.** This ordinance shall be in full force and effective from and after its publication as required by law.

**PASSED AND APPROVED** on first reading at a regular meeting of the City Council on the **22<sup>nd</sup>** day of **February, 2022** with all members of the Council voting “aye” for the passage of same.

**PASSED AND APPROVED** on second reading at a regular meeting of the City Council on the **8<sup>th</sup>** day of **March, 2022** with all members of the Council voting “aye” for the passage of same.

\_\_\_\_\_  
Shannon D. Thomason, Mayor

ATTEST:

\_\_\_\_\_  
Tami L. Davis, City Secretary

**BIG SPRING MUNICIPAL AUDITORIUM HEATING WATER  
CONVERSION AND SYSTEM UPGRADES  
AGREEMENT FOR ENGINEERING SERVICES**

This Agreement is made by and between the City of Big Spring, a Texas Home Rule municipal corporation (“CITY”) and Fincher Engineering, LLC, (“ENGINEER”).

WHEREAS, CITY desires to retain a person or firm to provide the following services: See Exhibit A, Scope of Work AND COMPENSATION and by this reference incorporated herein.

WHEREAS, ENGINEER warrants that it is qualified and competent to render the aforesaid services, and holds and will continue to hold at all times pertinent to this Agreement, the license or licenses as required by law to perform this Agreement;

NOW, THEREFORE, for and in consideration of the agreement made, and the payments to be made by City, the parties agree to the following:

I. Scope of Services

ENGINEER agrees to provide all of the professional engineering services described in Exhibit A attached hereto, and by this reference made a part hereof, shall conform to those specifications set forth in the Scope of Services, attached as Exhibit A, incorporated herein by reference as if set forth herein in full. ENGINEER accepts this engagement on the terms and conditions hereinafter set forth. In the event of any conflict between the Exhibits and this Agreement, the terms of this Agreement shall govern.

It is expressly understood that in the performances of the services herein, ENGINEER and the agents and employees thereof, shall act in an independent capacity and as an independent consultant and not as officers, employees or agents of CITY.

ENGINEER shall be free to contract for similar services to be performed for others while ENGINEER is under Agreement with CITY.

II. Compensation to ENGINEER

- A. The fees for furnishing services under this Agreement shall be based on Exhibit A. Said fees shall remain in effect for the entire term of the Agreement.

III. Project Schedule

The Project schedule shall be determined by mutual agreement by CITY and ENGINEER. ENGINEER will confer with representatives of CITY to take such steps as necessary to keep the Project on schedule. CITY’S representative for purposes of this Agreement shall be the City Manager or his designee. ENGINEER will begin work on the Project within five (5) days after receipt of written notification to proceed from CITY.

#### IV. Ownership of Documents

ENGINEER agrees that all products, including but not limited to all reports, documents, materials, data, drawings, information, techniques, procedures, and results of the work of itself and of subcontractors (“Work Product”) arising out of or resulting from the particular and defined services that will be provided hereunder, will be the sole and exclusive property of CITY and are deemed “Works Made for Hire.” ENGINEER agrees to and does hereby assign the same to CITY. ENGINEER will enter into any and all necessary documents to effect such assignment to CITY. ENGINEER shall maintain originals or copies of all Work Product that is produced and/or used in the execution of this Agreement. It is understood that ENGINEER does not represent that such Work Product is suitable for use by CITY on any other projects or for any purposes other than those stated in this Agreement. Reuse of Work Product by CITY without ENGINEER’s specific written authorization, verification and adaption will be at CITY’s risk and without any liability on behalf of ENGINEER.

Work Product shall not be subject to copyright or proprietary claim of ENGINEER.

CITY may, at its election, require ENGINEER to return Work Product to CITY prior to or at the conclusion of retention period, as defined elsewhere in this agreement, and in any case to do so within thirty (30) days of the CITY’s request.

If, at the end of the said retention period, there is litigation or other questions arising from, involving or concerning Work Product or the Project, ENGINEER shall retain the records until the resolution of such litigation or other such questions.

ENGINEER shall notify City immediately upon receiving requests for Work Product from a third party. ENGINEER understands and agrees that CITY will process and handle all such requests.

#### V. Confidentiality

ENGINEER agrees neither it nor its employees, subcontractors or agents will, during or after the term of this Agreement, disclose proprietary or confidential information of CITY unless required to do so by court order or similar valid legal means. Such proprietary and confidential information received by ENGINEER, its employees, subcontractors and agents shall be used by ENGINEER, its employees, subcontractors and agents solely and exclusively in connection with the performance of the Project.

#### VI. Records License and Retention

ENGINEER agrees that CITY or its duly authorized representatives will, until the expiration of four (4) years after final payment under this Agreement (“the retention period”) have access to and the right to examine, audit, and copy Work Product, pertinent books, documents, papers, invoices and records of ENGINEER involving transactions related to this Agreement, which

books, documents, papers, invoices and records ENGINEER agrees to maintain for said time period.

#### VII. Taxes

Any and all taxes assessed by any government body upon services or materials used in the performance of this Agreement shall be the responsibility of ENGINEER.

#### VIII. Material and Equipment

ENGINEER shall furnish at ENGINEER's own expense, all materials, supplies and equipment necessary to carry out the terms of this Agreement.

#### IX. Indemnification

ENGINEER shall indemnify and save harmless CITY and its officers, agents, and employees from all suits, actions, losses, damages, claims, or liability of any character, type, or description, including without limiting the generality of the foregoing all expenses of litigation, court costs, and attorney's fees for injury or death to any person, or injury to any property, received or sustained by any person or persons or property, arising out of, or occasioned by, the acts of ENGINEER or its agents or employees, in the execution or performance of this contract.

#### X. Insurance

ENGINEER will provide insurance coverage in accordance with CITY's insurance requirements as set forth in the "Certificate of Insurance Requirements" attached to this Agreement and by reference made a part hereof. If the required insurance is terminated, altered, or changed in a manner not acceptable to CITY, this Agreement may be terminated by CITY, without penalty, on written notice to ENGINEER. In addition, ENGINEER will provide Professional Liability Insurance in the amount of \$1,000,000.00 per claim.

#### XI. Applicable Law

ENGINEER shall at all times observe and comply with all applicable laws, ordinances and regulations of the state, federal and local governments which are in effect at the time of the performance of this Agreement.

#### XII. Termination

Either party shall have the right to terminate this Agreement by giving the non-terminating party seven (7) days prior written notice. Upon receipt of notice of termination, ENGINEER will cease any further work under this Agreement and CITY will only pay for work performed prior to the termination date set forth in the notice. All finished and unfinished Work Product prepared by ENGINEER pursuant to this Agreement will be the property of CITY.

#### XIII. Nonconformity

In the event CITY finds that any of the Work Product produced by ENGINEER under this Agreement does not conform to the Scope of Work, then ENGINEER will be given ten (10) days after receipt of written notice of the nonconformity to make any and all corrections to remedy the non-conformance. If after these ten (10) days ENGINEER has failed to make any Work Product conform to the Scope of Work, CITY may terminate this Agreement immediately by providing written notice of termination to ENGINEER. Upon termination CITY will only owe for work done prior to termination and accepted by CITY. All finished or unfinished Work Product prepared by ENGINEER pursuant to this Agreement will be the property of CITY.

#### XIV. Excusable Delays

Neither party shall be responsible for failure to fulfill its obligations hereunder or liable for damages resulting from delay in performance as a result of war, fire, strike, riot or insurrection, natural disaster, delay of carriers, governmental order or regulation, complete or partial shutdown of plant, unavailability of equipment or software from suppliers, default of a subcontractor or vendor to the party if such default arises out of causes beyond the reasonable control of such subcontractor or vendor, the acts or omissions of the other party, or its officers, directors, employees, agents, contractors, or elected officials, or other occurrences beyond the party's reasonable control ("Excusable Delay" hereunder). In the event of such Excusable Delay, performance shall be extended as agreed to in writing by the parties.

#### XV. Notices

ENGINEER's address for notice under this Agreement is as follows:

Justin Fincher, P.E., Owner  
Fincher Engineering, LLC  
5621 114th Street  
Suite 100  
Lubbock, TX 79424

CITY'S address for notice under this Agreement is as follows:

Todd Darden, City Manager  
City of Big Spring  
310 Nolan St.  
Big Spring, TX 79720

Any notice given pursuant to this Agreement shall be effective as of the date of receipt by registered or certified mail, or overnight delivery, to the address stated in this Agreement, or by hand-delivery to the person named in this paragraph representing the respective party.

#### XVI. Contingency

All obligations of CITY are expressly contingent upon appropriation by the City Council of the City of Big Spring of sufficient, reasonably available funds.

#### XVII. Assigned Personnel

ENGINEER shall provide experienced and qualified personnel to carry out the work to be performed by ENGINEER under this Agreement and shall be responsible for and in full control of the work of such personnel. ENGINEER shall not substitute any personnel for those specifically named in its proposal unless personnel with substantially equal or better qualifications and experience are provided and acceptable to CITY, as is evidenced in writing.

#### XVIII. Standard of Care

ENGINEER will perform the services to be provided under this Agreement 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 and as expeditiously as is prudent considering the ordinary professional skill and care of a competent engineer.

#### XIX. Accessibility—Texas Accessibility Standards

ENGINEER agrees not to discriminate by reason of age, race, religion, sex, color, national origin or condition of disability in the performance of this Agreement. ENGINEER further agrees to comply with the Equal Opportunity Clause as set forth in Executive Order 11246 as amended and to comply with the provisions contained in the Americans with Disability Act, as amended.

#### XX. Amendments and Modifications

If ENGINEER is requested in writing by CITY to provide any optional, additional or out of scope services, ENGINEER and CITY will agree in writing as to the nature of such services and to a price for such services before any work is started.

No modifications to this Agreement shall be enforceable unless agreed to in writing by both parties.

#### XXI. Third Party Obligations

CITY and ENGINEER hereby each binds itself, its successors, legal representatives and assigns to the other party to this Agreement, and to the successors, legal representatives and assigns of such party in respect to all covenants of this Agreement. Neither CITY nor ENGINEER will be obligated or liable to any third party as a result of this Agreement.

#### XXII. Assignment

ENGINEER will not assign, sublet, or transfer interest in this Agreement without the prior written consent of the CITY.

#### XXIII. Choice of Law, Forum, and Venue

This Agreement, and all claims or causes of action (whether in contract, implied contract, tort, equity or statute) that may be based upon, arise out of or relate to this Agreement, or the negotiation, execution, or performance of this Agreement (including any claim or cause of action based upon, arising out of or related to any representation or warranty made in or in connection with this Agreement or as an inducement to enter into this Agreement), shall be governed by, and enforced in accordance with, the internal laws of the State of Texas, including its statutes of limitations. Any such claim or cause of action shall be exclusively filed and adjudicated in state courts sitting in Howard County, Texas. Venue shall be and is convenient in Howard County, Texas. Appellate jurisdiction shall be exclusively through the state appellate courts of Texas and the Supreme Court of the United States. For any such claim or cause of action, the parties consent and submit to the personal jurisdiction of the courts of the State of Texas.

XXIV. Waiver

In no event shall the making by the CITY of any payment to ENGINEER constitute or be construed as a waiver by the CITY of any breach of the Agreement, or any default which may then exist, nor shall it in any way impair or prejudice any right or remedy available to the CITY in respect to such breach or default.

XXV. Severability

In the event any invalid provision herein contained is held to be invalid by any court of competent jurisdiction, and such was not a controlling or material inducement to the making of this Agreement, the invalid provision shall be deemed of no effect and shall be deemed stricken from this Agreement without affecting the binding force of the remainder.

XXVI. Integrated Agreement

The parties intend this statement of their Agreement to constitute the complete, exclusive, and fully integrated statement of their Agreement. The Agreement may only be amended or changed by a written document executed by all parties to the Agreement.

IN WITNESS WHEREOF, the parties have made and executed this Agreement as of the day, month and year shown below to be effective as of the date that the last of the Parties signs.

EXECUTED and AGREED to as of the dates indicated below

ENGINEER:

CITY:

FINCHER ENGINEERING, LLC

THE CITY OF BIG SPRING, TEXAS

\_\_\_\_\_  
Justin Fincher, P.E., Owner

\_\_\_\_\_  
Todd Darden, City Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Attest:

\_\_\_\_\_  
\_\_\_\_\_

APPROVED AS TO FORM ONLY:

\_\_\_\_\_  
Andrew W. Hagen, City Attorney

Attest:

\_\_\_\_\_  
Tami L. Davis, Assistant City Secretary

# **CERTIFICATE OF INSURANCE REQUIREMENTS**

## **CITY OF BIG SPRING, TEXAS**

### **1. General Insurance Conditions**

The following conditions shall apply to all insurance policies obtained by ENGINEER for the purpose of complying with this Agreement.

#### **1.1. Satisfactory Companies**

Coverage shall be maintained with insurers and under forms of policies satisfactory to City and with insurers licensed to do business in Texas.

#### **1.2. Named Insureds & Loss Payable Endorsements**

All insurance policies required herein shall be drawn in the name of ENGINEER, with City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees named as additional insureds. For Fire and Extended Coverage on buildings and improvements, all policies shall have loss payable endorsements for both Parties according to their respective interests.

#### **1.3. Waiver of Subrogation**

ENGINEER shall require its insurance carrier(s), with respect to all insurance policies, to waive all rights of subrogation against City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees.

#### **1.4. Certificates of Insurance**

At or before the time of execution of this Agreement, ENGINEER shall furnish City's Finance Director with certificates of insurance as evidence that all of the policies required herein are in full force and effect and provide the required coverages and limits of insurance. All certificates of insurance shall clearly state that all applicable requirements have been satisfied. The certificates shall provide that any company issuing an insurance policy shall provide to City not less than thirty (30) days of advance notice in writing of cancellation, non-renewal or material change in the policy, of insurance. In addition, ENGINEER and insurance company shall immediately provide written notice to City's Finance Director upon receipt of notice of cancellation of any insurance policy, or of a decision to terminate or alter any insurance policy. Certificates of insurance and notices of cancellations, terminations or alterations shall be furnished to City's Finance Director at City Hall, 310 Nolan St., Big Spring, TX 79720.

#### **1.5. Engineer's Liability**

The procurement of such policy of insurance shall not be construed to be a

limitation upon ENGINEER's liability or as a full performance on its part of the indemnification provisions of this Agreement. ENGINEER's obligations are, notwithstanding any policy of insurance, for the full and total amount of any damage, injury or loss caused by or attributable to its activities conducted at or upon the premises. Failure of ENGINEER to maintain adequate coverage shall not relieve ENGINEER of any contractual responsibility or obligation.

## **2. Types and Amounts of Insurance Required**

ENGINEER shall obtain and continuously maintain in full effect at all times during the term hereof, at ENGINEER's sole expense, insurance coverages as follows with limits not less than those set forth below:

### **2.1 Commercial General Liability**

This policy shall be a comprehensive occurrence-type policy and shall protect the ENGINEER and additional insureds against all claims arising from bodily injury, sickness, disease or death of any person (other than the ENGINEER's employees) and damage to property of the City or others arising out of the act of omission of the ENGINEER or its agents and employees. This policy shall also include protection against claims for the contractual liability assumed by ENGINEER under the paragraph of this Agreement entitled "Indemnification", including lease liability, completed operations, products, liability, contractual coverage, broad form property coverage, explosion, collapse, underground, premises/operations, and independent contractors (to remain in force for two years after final payment).

Coverage shall be as follows:

\$ 2,000,000.00      General Aggregate

\$ 1,000,000.00      Each Occurrence

### **2.2 Automobile Liability**

This coverage shall protect ENGINEER and the additional insureds, against all claims for injury or property damage associated with use of automobiles, and shall cover all automobiles owned, or otherwise that shall be used by ENGINEER and any of its employees, agents, subcontractors or assigns on City property in connection with the Agreement.

\$ 1,000,000.00      Combined Single Limit

### **2.3 Umbrella Liability**

\$ 2,000,000.00      Each Occurrence

\$ 2,000,000.00      Aggregate

**2.4 Workers' Compensation Coverage:**

State statutory limits

**2.5 Professional Liability**

\$ 1,000,000.00      Per Claim

## EXHIBIT A SCOPE OF WORK AND COMPENSATION

### I. PROJECT DESCRIPTION

- a. **City of Big Spring Municipal Auditorium Heating Water Conversion and System Upgrades.** The project consists of replacing the old steam boiler system and converting to heating water system by installing new heating water boilers and all associated system changes as summarized below.
  - i. Replace existing steam boiler with two new heating water boilers.
  - ii. Modification of existing gas piping and flues to connect to new boilers.
  - iii. New hot water piping.
  - iv. New DDC controls.
  - v. New heating water pumps
  - vi. New AHU in basement
  - vii. Refurbishment of large AHU in basement including new heating water coils

### II. BASIC SERVICES

- a. HVAC, Plumbing and Electrical Design through permit approved construction documents based on Part IV technical clarifications and Construction Phase services detailed in Part V.

### III. FEE ARRANGEMENT

- |   |                 |
|---|-----------------|
| a. Basic Services thru Construction Documents | <b>\$25,000</b> |
| b. Construction Phase Services                | <b>\$ 7,000</b> |

### IV. TECHNICAL CLARIFICATIONS

- a. Fincher Engineering, LLC scope of work is to provide all required mechanical and electrical engineering services for the project described above.
- b. ComCheck energy compliance forms for mechanical systems will be provided as required for building permit.
- c. HVAC design based on standard temperature conditions 75°F cooling/70°F heating and 50% relative humidity (uncontrolled) with no special temperature, humidity, or filtration requirements.
- d. Design Services **exclude**:
  - i. Electrical system upgrades beyond what is required to install new boilers, pumps, and air handling units.
  - ii. Plumbing system upgrades beyond what is required to install new boilers, pumps, and air handling units.
  - iii. Communications, security, and audio-visual systems (Electrical drawings will be infrastructure (boxes, power, and conduit) for these

- systems if required)
- iv. LEED documentation or energy modeling/analysis

V. CONSTRUCTION PHASE SERVICES

- a. Submittal Review of all MEP submittals.
- b. Response to contractor requests for information (RFI's)
- c. Up to 2 construction site visits for MEP review.
  - i. Upon request, any additional site visits shall be charged at \$1,500 per site visit.
- d. As-Built documents can be provided to Owner if requested in dwg and pdf format implementing the construction phase changes from Contractor plan markups.

VI. METHOD OF PAYMENT

- a. Fincher Engineering, LLC will submit statement for services rendered. The statements for services will be according to schedule below:
  - i. Completion of Construction Documents 100% of Design
  - ii. Completion of Construction 100% of CP Fee



**Board Name:**  
McMAHON-WRINKLE AIRPARK DEVELOPMENT

**Term**                      **Expires**  
Three Years              09-30-XX

Name	Appointed	Reappointed	Term Expires	District
John Watkins	12/14/2021		9/30/2023	1
Willie Rangel, Jr.	9/27/2011	9/8/2020	9/30/2023	2
Phillip Welch	2/12/2013	9/8/2020	9/30/2023	3
James D. DeVille	7/11/2017	9/24/2019	9/30/2022	3
Joseph Harrison (Safety Officer) Board Appointed	9/9/2020		Permanent	4
J.D. Smith	9/8/2020		9/30/2022	4
Rodney Patridge	9/8/2020		9/30/2023	3

**Board Name:**  
BOARD OF ADJUSTMENTS & APPEALS

**Term**                      **Expires**  
Three Years              09-30-XX

Name	Appointed	Reappointed	Term Expires	District
John Flores (Construction Field)	11/9/2021		9/30/2023	1
Rosie Franco	1/11/2022		9/30/2023	2
Ron Howell (Construction Field)	10/10/2006	10/9/2018	9/30/2021	3
Dale Coates (Mechanical Contractor)	2/22/2005	9/24/2019	9/30/2022	5
Tommy Corwin (Construction Field)	2/22/2005	9/24/2019	9/30/2022	5
Richard Wright(Construction Field)	2/22/2005	9/24/2019	9/30/2022	5
Walter Brumley, Jr.(Electrician)	9/26/2017	9/8/2020	9/30/2023	6

**Board Name:**  
CONVENTION & VISITORS BUREAU BOARD

**Term**                      **Expires**  
Three Years              09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Sheila Crockett	11/9/2021		9/30/2023	1
Chavonna Parker	11/9/2021		9/30/2024	2
Kristy Tyra	1/11/2022		9/30/2022	5
Jacob Cerda (At Large Member)	9/24/2013	9/24/2019	9/30/2022	4
Gloria Pierce (At Large Member)	8/13/2019	9/8/2020	9/30/2023	4
Jay Patel (At Large Member Hotel Industry)	9/26/2017	9/8/2020	9/30/2023	4
Emaan Campbell	1/11/2022		9/30/2022	Mayor

**Board Name:**  
PARKS AND RECREATION BOARD

**Term**  
Three Years      **Expires**  
09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Patsy Garza	9/8/2020		9/30/2023	1
Juanita Porras Alexander	9/28/2021		9/30/2024	2
Ryan Williams	4/23/2019	9/24/2019	9/30/2022	3
Johnny R. DeLeon	4/23/2019	9/8/2020	9/30/2023	4
Danny Flenniken	4/23/2019	9/24/2019	9/30/2022	4
Nolan Domiguez	9/22/2020		9/30/2022	5
Amy Hernandez - Resigned ?	9/14/2021		9/30/2024	6

**Board Name:**  
PLANNING & ZONING COMMISSION

**Term**  
Three Years      **Expires**  
09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Dale Avant	9/24/2013	8/30/2021	9/30/2023	1
TJ (Thomas Jesse)Stewart	7/13/2021		9/30/2024	2
Bebe McCasland	8/9/2016	10/9/2018	9/30/2021	4
Kelley Owens	9/26/2017	9/8/2020	9/30/2023	4
Tammy DePauw	3/14/2017	9/24/2019	9/30/2022	5
Kevan Schooler	9/26/2017	9/8/2020	9/30/2023	5
Aubrey Weaver, Jr	9/24/2013	9/24/2019	9/30/2022	6

**Board Name:**  
TRAFFIC COMMISSION

**Term**  
Three Years      **Expires**  
09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Sharon DeAnda	11/9/2021		9/30/2023	1
Jonathan Ray - Resigned	7/13/2021		9/30/2023	2
Dana Rodriguez	2/11/2020		9/30/2021	4
Charles Smith	4/23/2019	9/8/2020	9/30/2023	5
Roy Gomez, Jr	4/23/2019		9/30/2022	5
Kyle S. Green	11/24/2019		9/30/2022	5
Caroyln Miller	9/14/2021		9/30/2024	6

**Board Name:**  
ZONING BOARD OF ADJUSTMENTS

**Term**                      **Expires**  
Three Years                09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Oscar Flores	10/26/2021		9/30/2023	1
Louisa Rangel	10/26/2021		9/30/2024	2
Carrie Rodman	9/24/2013	9/24/2019	9/30/2022	3
Sherry Wiggington	11/9/2021		9/30/2024	4
Veronica Zuniga	11/9/2021		9/30/2022	5
J. D. Smith	4/23/2019		9/30/2021	4
Jeanie Knocke	10/26/2021		9/30/2022	Mayor

**Board Name:**  
**ALTERNATES**  
ZONING BOARD OF ADJUSTMENTS

**Term**                      **Expires**  
Three Years                09-30-XX

Name	Appointed	Reappointed	Term Expires	District
				1
				2
				3
				4
				5
				4
				Mayor

**Board Name:**  
BIG SPRING ECONOMIC DEVELOPMENT  
CORP

**Term**                      **Expires**  
Three Years                09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Cody Williams	10/26/2021		9/30/2023	1
R.Shane Seaton	9/8/2020		9/30/2023	2
Winston (Paschal) Odom	9/8/2020		9/30/2023	3
Raul Benavides	9/24/2019	9/24/2019	9/30/2022	5
Jeffrey D. Ward	9/27/2016	9/24/2019	9/30/2022	C

**Board Name:**  
ANIMAL RESCUE AND ADOPTION  
COMMITTEE

**Term**  
Three Years      **Expires**  
09-30-XX

Name	Appointed	Reappointed	Term Expires	District
Amanda Williams	8/10/2021		9/30/2023	1
Julia Hartman	7/13/2021		9/30/2024	2
Amy French	1/11/2022		9/30/2023	3
Tiffany Rabone	11/9/2021		9/30/2024	4
Brittany Hankins	7/28/2021		9/30/2022	5
			9/30/2024	6
Mary Frances Malone	9/28/2021		9/30/2022	Mayor

Highlighted are Expiring or Vacant