WALKER COUNTY PLAT APPLICATION

If any section is not applicable to the proposed development project please mark that section "NA"
All references to the Walker County Subdivision Regulations will be abbreviated WCSR in this document.

SECTION A – OWNER / APPLICANT INFORMATION		FOR COUNTY USE ONLY
A1. Property Owner's Last Name The Curry Family Trust dated July 19, 2024	A2. Property Owner's First Name Trustee: Boyce Curry	Application Number: P-2025-016
A3. Mailing Address [redacted]		Date of Submittal: 6-6-25
		Precinct Number: 4
City [redacted]	State [redacted]	ZIP Code [redacted]
A4. Primary Telephone Number [redacted]	A5. Alternate Phone Number	
A6. Email Address [redacted]	A7. Name of Lienholder (If no lienholder mark "None") None	

SECTION B – PROFESSIONAL SERVICES

Owner shall provide the names of the Professional Engineer, Registered Professional Land Surveyor, and any Authorized Representative for the Plat Application. By including the information of an Authorized Representative on the application the Owner/Applicant agrees that this individual is given authority to sign for, submit, receive, and make any decisions related to the submitted application on behalf of the owner. In the case that the owner wishes to retract this authority, the Owner/Applicant shall submit this retraction in writing to the Planning and Development Office. If no Authorized Representative is named then all communications related to the project will be submitted to the Owner/Applicant. All correspondence, including but not limited to notices, approvals, disapprovals, and conditions are authorized to be sent to any listed Mailing Address or Electronic Mail account.

B1. Name of Registered Professional Land Surveyor (R.P.L.S.) Mike H. Rubaiy RPLS 2907 w/ H&H Professional Land Services, Inc.	B2. Phone Number of R.P.L.S. 281-385-2087
B3. Email of R.P.L.S. info@hhsurveying.com	B4. Mailing Address of R.P.L.S. P.O. Box 1974 Mont Belvieu, TX 77580
B5. Name of Professional Engineer N/A	B6. Phone Number of P.E. N/A
B7. Email of P.E. N/A	B7. Mailing Address of P.E. N/A
B9. Name of Authorized Representative Heather Henicke w/ H&H Professional Land Services & Colt West with Apex Platting Consultants	B10. Phone Number of Authorized Representative. 281-385-2087 936-402-6278
B11. Email of Authorized Representative h.henicke@hhsurveying.com apexplatting.west@gmail.com	B12. Mailing Address of Authorized Representative. P.O. Box 1974 Mont Belvieu, TX 77580

Initials of Applicant BWC

SECTION C – PARENT TRACT PROPERTY INFORMATION

Information for the tract or tracts of land that are the subject of the plat application

C1. Is the property located within the city limits of Huntsville, New Waverly, or Riverside? *(Mark with "X")*		*Yes	✔	No
**If the answer to C1 is "Yes" then the applicant will need to apply to the City having jurisdiction.*				
C2. Is the property within two miles of the City of Huntsville? *(Mark with "X")*		*Yes	✔	No
**If the answer to C2 is "Yes" then the applicant will need to submit any plat applications to the City of Huntsville.*				
C3. Is the property within 1/2 mile of the City of New Waverly? (Mark with "X")		Yes	✔	No

The Abstract, Tract #, and Survey Name are generally included in the property description on the deed, the Geographic Id # can be obtained from the Walker County Appraisal District, the Appraisal District Map or the most recent property tax statement issued for the property. If a property is in a platted subdivision items B10 – B13 must be filled out using information from the property deed, if not in a platted subdivision mark these sections "NA"

C4. Property Acreage	C5.. Appraisal Geographic ID #	C6. Survey Name	C7. Abstract #
0.54 Ac.	8827-001-0-00700 & 8827-001-0-00800	G. W. ROBINSON SURVEY	454

Section C8 – C11 are for Amending Plat and Replat Applications only.

C8. Subdivision Name	C9. Lot #s	C10. Block #	C11. Section #
Wildwood Shores	7 and 8	1	7

C12. Deed Record Filing Information for Parent Tract (s) *(WCDR and WCOPR are the record sets of the County Clerk - Mark the record set with an "X") If more than one tract please indicate multiple deeds.*

Volume / Document #	Page		
2025-107406	1-3	☐	Walker County Deed Records (WCDR) (Generally before 1986)
		✔	Walker County Official Public Records (WCOPR)
Volume / Document #	Page	☐	Walker County Deed Records (WCDR) (Generally before 1986)
		☐	Walker County Official Public Records (WCOPR)
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		☐	Walker County Official Public Records (WCOPR)
Volume / Document #	Page	☐	Walker County Deed Records (WCDR) (Generally before 1986
		☐	Walker County Official Public Records (WCOPR)

SECTION D – APPLICATION TYPE

Please choose a single application type from the list below and mark with an "X".

D1. _____ **Plat Application** *(This application is required for all plat applications including improvements or including more than 4 lots)*

D2. _____ **Minor Plat Application** *(This application is required for minor subdivisions with no proposed infrastructure and 4 or less lots.)*

D3. X **Re-Plat / Amending Plat Application** *(This application is required to alter or amend a previously platted subdivision)*

D4. _____ **Exception Application** *(This application is required in order to obtain approval for subdivisions excepted from the WCSR.)*

SECTION E - REQUEST FOR A GUIDANCE REVIEW

The request for a guidance review is only allowable if an application is submitted incomplete. The guidance review is voluntary and must be requested by the owner/applicant below and authorized by the County. This review of the submitted documents prior to a complete application is outside the standard review timelines, however the applicant/ owner may proceed to submit a complete application without awaiting the results of this review. If at any time during the Guidance Review process a completed application is submitted then the Guidance Review will cease, and the incomplete results of the review will not be forwarded to the applicant. Any deficiencies or comments released as part of the guidance review are not to be considered as a final review, but are collected to assist the owner and owner's agents in their efforts to comply with the regulations.

E1. The Developer/Owner does hereby voluntarily make a request for a "Guidance Review" of the application if the application is found to be incomplete.	X	Yes, a review is requested		No, a review is not requested

Initials of Applicant BAE

SECTION F – SUBDIVISION APPLICATION DETAILS

(The # of Proposed Lots shall include any Reserve or Remainders Created by the Subdivision)

F1. Original Acreage	F2. Original # of Tracts	F3. # of Proposed Lots	F4. Proposed Name of Subdivision
0.52 Ac.	2	1	Wildwood Shores, Section 7 Partial Replat No 1 of Lot 7 and 8, Block 1, A Private Subdivision

SECTION G – ENGINEERING AND PROPOSED IMPROVEMENTS

G1. Will the proposed subdivision utilize a public water system?	X	Yes		No
G2. Will the proposed subdivision utilize individual on-site sewage facilities?		Yes	✔	No
G3. Will the proposed subdivision include the construction of road, drainage, or other improvements regulated by the WCSR?		Yes *	✔	No
G4. If the answer to G3 is "Yes" then what is the estimated cost of construction of all regulated improvements?				
G5. If the answer to G3 is "Yes" then what is the approximate length of all proposed roads in linear feet?				
G6. Will the proposed subdivision access from or across a Texas Department of Transportation system road?		Yes	✔	No

SECTION H – CERTIFICATIONS AND ACKNOWLEDGEMENTS

I, the below signed individual, am the legal owner or legal representative of the owner of the property described in this application, and do hereby certify that the information contained in this application is a true and correct under penalty of law. The below signature further represents my understanding, agreement, and acceptance of the following items:

1. Authorization is hereby given to Walker County and its representatives to enter onto the private property described in the application for the purpose of inspection and regulation related to this application and the applicable regulations.
2. I have read and understand the requirements of the Walker County Subdivision Regulations, and understand it is my responsibility to comply with all the requirements therein.
3. The completion and acceptance of this application by Walker County in no way shall be construed as a guarantee that the proposed construction will be approved for installation. This application may be rejected as incomplete for 10 business days after the original submittal of the application at any point without any refund of the application fee. This includes that no refund shall be given for applications submitted incomplete or applications withdrawn. The applicant also recognizes that additional resubmittals, applications, or responses after the initial application may result in a fee increase to the original application fee, and that any increase in the fee must be paid when the additional submittal is submitted.
4. The completion and acceptance of this application is not an authorization to perform any activity. A final approval of the application and approval of the plat for filing must be made in writing prior to any subdivision of property or filing of any plat. I understand that any approvals made related to this application are made subject to the minimum requirements of the Walker County Subdivision Regulations.
5. If no direct variance is granted to the Walker County Subdivision Regulations or other State of Federal requirements then no approval under this application shall be construed to provide a waiver to compliance with those regulations and the Owner/Applicant is still fully responsible for compliance with said regulations.
6. The fee for the subdivision applications may be calculated based on variable factors including cost of construction, number of lots, length of road centerline, and the quantity of revisions, replacement applications, and responses. The initial calculated fee charged at the original submittal may increase during the application timeline if any of these variables change or are calculated in error. Any increase in the fee must be paid as part of any submittal of a revision, replacement, or response to an application.
7. I hereby release, indemnify, and hold harmless Walker County and its employees and agents for any and all claims, costs, or liabilities, expressly including alleged negligence, or for any damages to property or persons arising from the inspection, construction, development, design, or review related to this application or occurring under any permit issued in relation to this application. I understand that I and my agents are completely and wholly responsible for the design and construction of all necessary improvements to local, State, and Federal Standards.
8. I certify that all necessary permits from those Federal, State, or local government agencies (including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 (Corps of Engineers), Texas Commission on Environmental Quality, Texas Historical Commission, United States Fish and Wildlife (Endangered Species), Texas Water Development Board, TXDOT, and City Approvals, etc.) have been obtained.

Signature	Date	Printed Name
Boyce W. Curry	5-7-2025	Boyce W. Curry

THE STATE OF TEXAS § COUNTY OF HARRIS §

Before me Kylee P. Montanez a notary public on this day personally appeared Boyce William Curry, known to me (or proved to me) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he executed the same for purposes and consideration there in expressed.

Given under my hand and seal of officer this 7 Day of MAY, 2025

KYLEE PAULETT MONTANEZ NOTARY PUBLIC STATE OF TEXAS ID 130806939 EXP. 10-12-2028

Initials of Applicant BWC

WILDWOOD SHORES SECTION 7
REPLAT OF LOT 7 AND 8 BLOCK 1
A PRIVATE SUBDIVISION

A RE-PLAT; CONSISTING OF 1 LOT, 1 BLOCK, SHOWING 0.54 ACRES OF LAND SITUATED IN THE G. W. ROBINSON SURVEY, ABSTRACT 454, WALKER COUNTY, TEXAS AND BEING THE SAME TRACT KNOWN AS LOT 7 AND 8, BLOCK 1 OF WILDWOOD SHORES, SECTION 7, A SUBDIVISION IN WALKER COUNTY, TEXAS ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN VOLUME 4, PAGE 18 OF THE PLAT RECORDS OF WALKER COUNTY, TEXAS.

REASON FOR RE-PLAT: TO MAKE ONE LOT.

STATE OF TEXAS
COUNTY OF WALKER

WE, THE CURRY FAMILY TRUST DATED JULY 19, 2024 ACTING BY AND THROUGH BOYCE CURRY, TRUSTEE, CO-OWNER OF THE CERTAIN TRACT OF LAND SHOWN HEREON AND DESCRIBED IN A DEED RECORDED IN DOCUMENT NO. 2025-107406 OF THE OFFICIAL RECORDS OF WALKER COUNTY, TEXAS AND DO HEREBY STATE THAT THERE ARE NO LIEN HOLDERS OF THE CERTAIN TRACT OF LAND, AND DO HEREBY AMEND SAID TRACT AS SHOWN HEREON, AND DO HEREBY CONSENT TO ALL PLAT NOTE REQUIREMENTS SHOWN HEREON, AND DO HEREBY FOREVER DEDICATE TO THE PUBLIC THE ROADS, ALLEYS, RIGHTS-OF-WAY, EASEMENTS AND PUBLIC PLACES SHOWN HEREON FOR SUCH PUBLIC PURPOSES AS WALKER COUNTY MAY DEEM APPROPRIATE AND DO HEREBY STATE THAT ALL PUBLIC ROADWAYS AND EASEMENTS AS SHOWN ON THIS PLAT ARE FREE OF LIENS OR THIS DEDICATION IS APPROVED BY THE A LEINHOLDER. THIS SUBDIVISION IS TO BE KNOWN AS WILDWOOD SHORES, SECTION 7, REPLAT OF LOT 7 AND 8 BLOCK 1.

TO CERTIFY WHICH, WITNESS BY MY HAND THIS 27TH DAY OF June, 2025.

BOYCE CURRY, TRUSTEE

STATE OF TEXAS
COUNTY OF Chambers

BEFORE ME, THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED BOYCE CURRY KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED. GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS 27th DAY OF June, 2025.

NOTARY PUBLIC FOR THE STATE OF TEXAS

Amanda Nicole Shelton
My Commission Expires
6/17/2026
Notary ID 129713014

STATE OF TEXAS
COUNTY OF WALKER

THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THIS MAP OR PLAT, AS DESCRIBED HEREIN, FOR A SUBDIVISION HAVING BEEN FULLY PRESENTED TO THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS, AND BY THE SAID COURT DULY CONSIDERED, WAS ON THIS DAY APPROVED AND THAT THIS PLAT IS AUTHORIZED TO BE REGISTERED AND RECORDED IN THE PROPER RECORDS OF THE COUNTY CLERK OF WALKER COUNTY, TEXAS.

THIS CERTIFICATION IS BASED UPON THE REPRESENTATIONS OF THE DEVELOPER/DEVELOPER'S AGENT, ENGINEER. SANITARIAN, AND/OR SURVEYOR WHOSE SEAL(S) AND/OR SIGNATURES ARE AFFIXED HERETO. THIS CERTIFICATION IS MADE SOLELY UPON SUCH REPRESENTATIONS AND SHOULD NOT BE RELIED UPON FOR VERIFICATIONS OF THE FACTS ALLEGED. WALKER COUNTY DISCLAIMS ANY RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

DATE:_____

_____
COLT CHRISTIAN, JUDGE

_____
DANNY KUYKENDALL, PRECINCT 1

_____
RONNIE WHITE, PRECINCT 2

_____
BILL DAUGETTE, PRECINCT 3

_____
BRANDON DECKER, PRECINCT 4

STATE OF TEXAS
COUNTY OF WALKER

I, KARI FRENCH, COUNTY CLERK OF WALKER COUNTY, DO HEREBY CERTIFY THAT THIS PLAT WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE THE ___ DAY OF ___, 20___, IN VOLUME _____ , PAGE _____ OF THE PLAT RECORDS OF WALKER COUNTY, TEXAS.

FOR TAX PURPOSES, THIS PLAT COMPLIES WITH SECTION 12.002 OF THE PROPERTY CODE.

COUNTY CLERK
WALKER COUNTY, TEXAS

BY:_____
DEPUTY CLERK

COUNTY OF WALKER, TEXAS NOTES:

1. IT IS THE RESPONSIBILITY OF THE OWNER, NOT THE COUNTY, TO ASSURE COMPLIANCE WITH THE PROVISIONS OF ALL APPLICABLE STATE, FEDERAL, AND LOCAL LAWS AND REGULATIONS RELATING TO THE PLATTING AND DEVELOPMENT OF THIS PROPERTY.

THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT. FLOODPLAIN DATA, IN PARTICULAR, MAY CHANGE. IT IS FURTHER UNDERSTOOD THAT THE OWNER(S) OF THE TRACT OF LAND COVERED BY THIS PLAT, ITS SUCCESSORS AND/OR ASSIGNS, OR A DESIGNATED PROPERTY OWNER'S ASSOCIATION MUST INSTALL AND MAINTAIN AT THEIR OWN EXPENSE ALL ROADS, STORMWATER MANAGEMENT CONTROLS, TRAFFIC CONTROL DEVICES, AND SIGNAGE THAT MAY BE REQUIRED UNTIL SUCH TIME, IF ANY, SAID INFRASTRUCTURE IN THE SUBDIVISION HAVE BEEN ACCEPTED FOR PUBLIC MAINTENANCE.

2. CLUSTER AND INDIVIDUAL MAILBOXES, IF ALLOWED, SHALL BE SET THREE FEET FROM THE EDGE OF THE PAVEMENT OR BEHIND CURBS, WHEN USED. ALL MAILBOXES WITHIN COUNTY ARTERIAL RIGHT-OF-WAY SHALL MEET THE CURRENT TXDOT STANDARDS. ANY MAILBOX THAT INTERFERES WITH OR NEGATIVELY AFFECTS THE MAINTENANCE OR USE OF THE ROADS OR DRAINAGE SYSTEM MAY BE REMOVED BY WALKER COUNTY.

3. NO STRUCTURE OR LAND WITHIN THIS PLAT SHALL HEREAFTER BE DEVELOPED WITHOUT FIRST OBTAINING A DEVELOPMENT PERMIT FROM THE WALKER COUNTY FLOODPLAIN ADMINISTRATOR UNLESS THE PROPOSED DEVELOPMENT IS EXEMPT OR EXCEPTED FROM THE WALKER COUNTY FLOODPLAIN DEVELOPMENT REGULATIONS.

THE MINIMUM, LOWEST FINISHED FLOOR ELEVATION SHALL BE IN COMPLIANCE WITH THE LOCAL FLOODPLAIN REGULATIONS AND THE FINISHED FLOOR ELEVATION NOTED ON THE PLAT, WHICHEVER ELEVATION IS HIGHER.

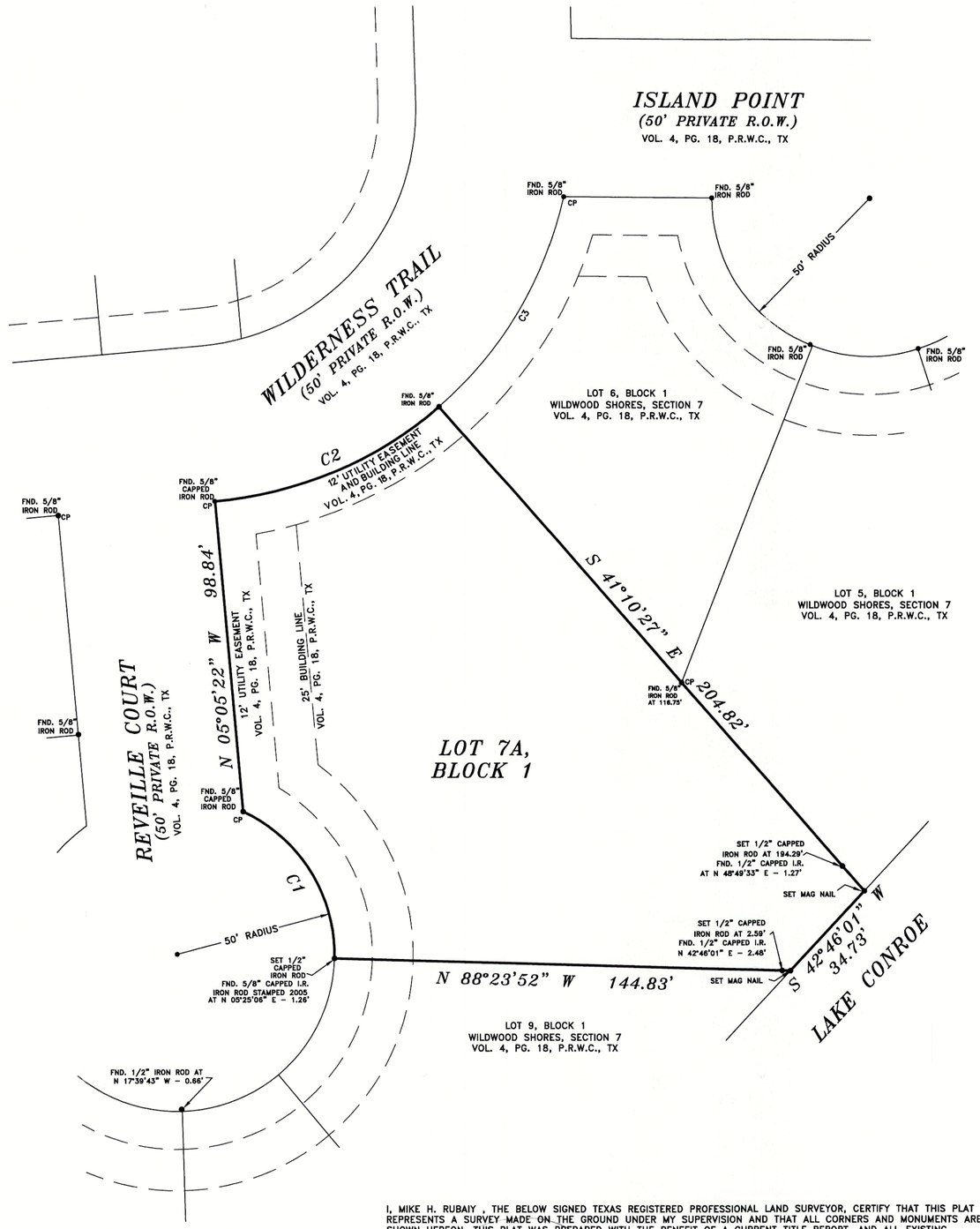
4. ALL OWNERS OF LOTS WITHIN THE SUBDIVISION SHALL HAVE THE RESPONSIBILITY OF COMPLYING WITH THE WALKER COUNTY SUBDIVISION REGULATIONS' POLICIES ON DRAINAGE RUNOFF DUE TO THE DEVELOPMENT OF IMPERVIOUS AREAS CREATED THROUGH THE DEVELOPMENT OF THE LOT FOR RESIDENTIAL, COMMERCIAL, OR RECREATIONAL USE. IT IS THE RESPONSIBILITY OF LOT OWNERS TO COMPLY WITH ANY REGULATIONS OR LIMITATIONS NOTED, AND PERMITS ISSUED BY WALKER COUNTY FOR DEVELOPMENT DO NOT ACT AS A WAIVER OR VARIANCE OF THE LOT OWNER'S RESPONSIBILITY TO PROVIDE FOR EXCESS RUNOFF AND DRAINAGE CREATED BY THE PERMITTED DEVELOPMENT. IF DETENTION OF WATER IS NECESSARY IN ORDER TO COMPLY WITH THE LOCAL, STATE, OR FEDERAL REGULATIONS INCLUDING BUT NOT LIMITED TO THE WALKER COUNTY SUBDIVISION REGULATIONS THEN THE OWNER MAY BE ABLE TO ACCOMPLISH COMPLIANCE WITH SAID POLICIES THROUGH CREATING DETENTION ON A SINGLE LOT, MULTIPLE LOTS, OR THE ENTIRE SUBDIVISION DEPENDING ON THE CIRCUMSTANCES INVOLVED AND DEPENDING ON THE OWNER'S ABILITY TO OBTAIN THE COOPERATION OF OTHER OWNERS IN THE SUBDIVISION. A COPY OF AN AGREEMENT BETWEEN OWNERS TO CREATE DETENTION SHALL BE SUBMITTED TO WALKER COUNTY AND FILED IN THE PUBLIC RECORDS BECOMING A RESTRICTION ON FUTURE OWNERS, HEIRS, AND ASSIGNS.

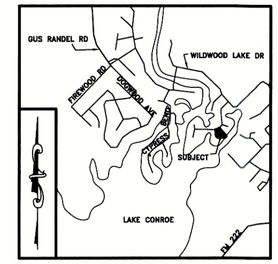
5. ALL LOTS WITHIN THE SUBDIVISION AND THE OWNERS THEREOF MUST CONTINUE TO ACCEPT ALL EXISTING DRAINAGE FLOWS AND DRAINAGE STRUCTURES IN PLACE AT THE TIME OF DEVELOPMENT THAT ARE A PART OF OR NECESSARY TO THE EXISTING OR DESIGNED ROADS INFRASTRUCTURE OR THE EXISTING OR DESIGNED SYSTEM OF DRAINAGE, IN ADDITION TO ALL NATURAL FLOWS OF WATER ENTERING ONTO OR CROSSING THE PROPERTY. ALL DRAINAGE EASEMENTS SHOWN HEREON SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, PLANTINGS, AND OTHER OBSTRUCTIONS TO THE OPERATION AND MAINTENANCE OF THE DRAINAGE FACILITIES.

6. UTILITIES SHALL BE INSTALLED WITHIN A DEDICATED UTILITY EASEMENT. UTILITIES ARE NOT PERMITTED WITHIN DRAINAGE EASEMENTS, UNLESS SPECIFICALLY EXCEPTED BY THE SUBDIVISION REGULATIONS.

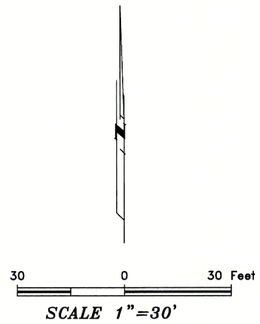
7. WALKER COUNTY WILL AT NO POINT BE UNDER ANY OBLIGATION TO ACCEPT MAINTENANCE OF THE ROADS OR ASSOCIATED DRAINAGE FEATURES, AS THE ROADS AND ASSOCIATED DRAINAGE FEATURES WERE DEVELOPED AND APPROVED, BY REQUEST OF THE OWNER, SPECIFICALLY FOR PRIVATE MAINTENANCE.

8. UNDINE TEXAS ENVIRONMENTAL, LLC AN APPROVED PUBLIC WATER SUPPLY SYSTEM, HAS AN ADEQUATE QUANTITY TO SUPPLY THE SUBDIVISION, AND PROVISIONS HAVE BEEN MADE TO PROVIDE SERVICE TO EACH LOT WITHIN THIS SUBDIVISION.





VICINITY MAP: NOT TO SCALE



SCALE 1"=30'

LEGEND

CP = CONTROL POINT

CURVE CHART

CURVE	RADIUS	ARC	BEARING	CHORD
C1	50.00'	58.20'	N 31°44'35" W	54.97'
C2	125.00'	78.72'	N 66°52'06" E	77.43'
C3	125.00'	78.72'	N 30°47'08" E	77.43'

GENERAL NOTES:

1. THE BEARINGS ARE REFERENCED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE 4203, NAD83.

2. ALL CORNERS ARE PROPERTY MARKED WITH SET 1/2" IRON RODS CAPPED MARKED H&H LAND, UNLESS OTHERWISE SHOWN.

3. SURVEYOR HAS NOT ABSTRACTED SUBJECT PROPERTY AND HAS RELIED ON THE TITLE COMMITMENT FROM FIDELITY NATIONAL TITLE GF NO. 202530451.

4. FLOWAGE AND INUNDATION EASEMENTS UP TO THE 207' M. S. L., AND WAIVER OF DAMAGES CAUSED BY FLOODING BETWEEN 201' M.S.L. AND 207' M.S. L. IN FAVOR OF THE SAN JACINTO RIVER AUTHORITY AS SHOWN ON THE PLAT RECORDED IN CAB. 4, PG. 18, P.R.W.C., TX.

5. THIS PLAT DOES NOT SEEK TO CHANGE OR AMEND ANY EXISTING DEED RESTRICTIONS.

6. PROPERTY DOES LIE WITHIN THE 100 YEAR FLOOD PLAIN AND IS IN ZONE "A" ACCORDING TO THE WALKER COUNTY, TEXAS FEMA FIRM PANEL NO. 48471C0500D, DATED 08-16-2011. H&H PROFESSIONAL LAND SERVICES, INC. DOES NOT ASSUME RESPONSIBILITY FOR EXACT DETERMINATION. BEFORE ANY DEVELOPMENT PLANNING, DESIGN, OR CONSTRUCTION IS STARTED, THE COMMUNITY, CITY, AND COUNTY IN WHICH SUBJECT TRACT EXISTS SHOULD BE CONTACTED, SAID ENTITIES MAY IMPOSE GREATER FLOOD PLAIN AND FLOODWAY RESTRICTIONS THAN SHOWN BY THE F.I.R.M. THAT MAY AFFECT DEVELOPMENT.

I, MIKE H. RUBAIY , THE BELOW SIGNED TEXAS REGISTERED PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION AND THAT ALL CORNERS AND MONUMENTS ARE SHOWN HEREON. THIS PLAT WAS PREPARED WITH THE BENEFIT OF A CURRENT TITLE REPORT, AND ALL EXISTING EASEMENTS AND ENCUMBRANCES RELATED TO SAID REPORT ARE SHOWN. FURTHER, I CERTIFY THIS PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS OF WALKER COUNTY.

MIKE H. RUBAIY,
R.P.L.S. NO. 2907, STATE OF TEXAS

STATE OF TEXAS
REGISTERED
M.H. RUBAIY
2907
PROFESSIONAL
LAND SURVEYOR

June 27, 2025

DATE: 06/19/2025
JOB NO.: 225067

OWNER: THE CURRY FAMILY TRUST
ADDRESS: 6 A BAYVILLA STREET
BAYTOWN, TEXAS 77520

PROFESSIONAL LAND SERVICES
P. O. Box 1974
Mont Belvieu, TX 77580
(Office) 281 385-2087
(Email) info@hhsurveying.com
Firm No. 10052400

Apex Platting Consultants
P. O. Box 1974
Mont Belvieu, TX 77580
936-402-6278

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name Legacy Grand Ranch, LLC	Application Number: P-2025-011
A2. Property Owner's Street Address [redacted]	Date of Submittal: 6-24-25
City: [redacted] State: [redacted] ZIP Code: [redacted]	
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]
A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.)	

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT

(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. Survey and Abstract	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page
B. B. GOODRICH LEAGUE, A-23; ELIZABETH RIDGEWAY SURVEY, A-472; NICHOLAS L. GARRETT SURVEY, A-219; THEODORE BENNETT LEAGUE, A-68	76232 & 12700	105772,105030

B4. Existing or Proposed Name of Subdivision	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No)
LEGACY GRAND RANCH, SECTION 1	No

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS

Please list any supporting documents or submittals included with the variance request as attachments.

Description of Attachment(s)	Exhibit #
C.1	
C.2	
C.3	
C.4	

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) B2.1 of the Subdivision Regulations of Walker County, Texas as follows:

Variance for Block 1, Lot 27 to not have a 125ft road frontage.

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?

Yes _____ No NO

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

This lot, along a roadway curve is the only one in the subdivision that needs this variance. As well as when compared to the required staff road frontage of the flag lot next to it (50 feet), it has 83.51 feet of frontage.

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?

Yes YES No _____

If yes please explain below:

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?

Yes _____ No NO Please list the additional measures below.

SECTION F –VARIANCE(S) GRANTED

F.1 A VARIANCE TO THE WALKER COUNTY SUBDIVISION REGULATIONS IS GRANTED AS FOLLOWS:

_____

_____

_____

_____

F.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE:

_____

_____

_____

_____

SECTION G - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

NOTICE

ALL DEVELOPMENT MUST BE IN STRICT COMPLIANCE WITH THE CONDITIONS STATED HEREIN AND ANY OTHER CONDITIONS STATED WITHIN THE APPLICATION OR DURING THE PRESENTATION TO COMMISSIONERS COURT. ANY VARIATION MAY RESULT IN THE IMMEDIATE SUSPENSION OR CANCELLATION OF THIS VARIANCE. VIOLATION OF THE CONDITIONS OF THIS VARIANCE MAY ALSO RESULT IN THE COMMISIONERS COURT SEEKING INJUNCTIVE RELIEF, CIVIL, OR CRIMINAL PENALTIES.

WARNING

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I, _____, do hereby acknowledge that I have reviewed the provisions, notices, warnings and disclaimers stated above and that I understand them, agree with them and intend to fully comply with them.

Signature of Owner/Applicant	Date

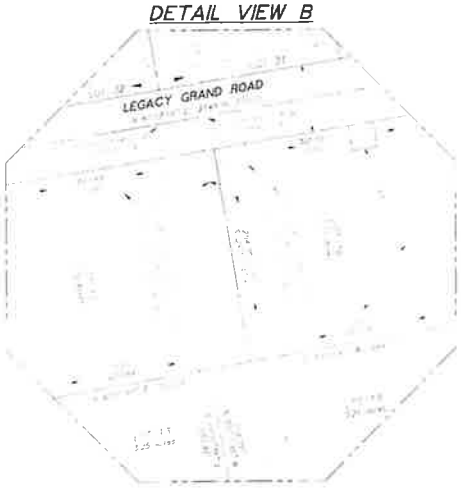
SECTION H – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reason(s) for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Subdivision Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

Signature of Owner/Applicant acknowledging conditions after court action	Date

DETAIL VIEW B



PLAT OF
LEGACY GRAND RANCH
SECTION 1

CONTAINING 3 BLOCKS, 158 LOTS AND 9 RESERVES

A SUBDIVISION CONTAINING 591.71 ACRES OF LAND, BEING OUT OF THE RESIDUE OF THE CALLED 568.18 ACRE TRACT ONE AND THE CALLED 23.531 ACRE TRACT TWO AS DESCRIBED IN A CORRECTION DEED TO LEGACY GRAND RANCH, LLC RECORDED UNDER INSTRUMENT No. 2025-105772, OFFICIAL RECORDS, WALKER COUNTY, TEXAS

B. B. GOODRICH LEAGUE, A-23
ELIZABETH RIDGEWAY SURVEY, A-472
NICHOLAS L. GARRETT SURVEY, A-219
THEODORE BENNETT LEAGUE, A-68
WALKER COUNTY, TEXAS

MAY 2025

LEGEND

○	Set 5/8" Iron Rod w/cap marked "MICHAEL A NAMKEN RPLS 6533", UNLESS otherwise noted
⊗	Point for Corner
④	Block Number
	Flood Zone A
CDN	Certificate of Convenience and Necessity area line
DE	Public Drainage Easement
MFE	Minimum Finished Floor Elevation
NLZ	No Linear Zone
NLZ/PP	No Linear Zone Private Property
NLZ/R	No Linear Zone Reserves
NTE	[illegible]
PRE	Private Drainage Easement
PUE	Public Utility Easement
VE	Vegetation Easement
WSE	Water Surface Elevation
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

PRELIMINARY

This document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document.

INDIVIDUAL SHEETS INDEX

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
6	Block 1, 6 and 7, Detail View B	

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name Legacy Grand Ranch, LLC	Application Number: P-2025-011
A2. Property Owner's Street Address [redacted]	Date of Submittal: 6-24-25
City: [redacted] State: [redacted] ZIP Code: [redacted]	
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]
A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.)	

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT

(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. Survey and Abstract	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page
B. B. GOODRICH LEAGUE, A-23; ELIZABETH RIDGEWAY SURVEY, A-472; NICHOLAS L. GARRETT SURVEY, A-219; THEODORE BENNETT LEAGUE, A-68	76232 & 12700	105772,105030

B4. Existing or Proposed Name of Subdivision	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No)
LEGACY GRAND RANCH, SECTION 1	No

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS

Please list any supporting documents or submittals included with the variance request as attachments.

	Description of Attachment(s)	Exhibit #
C.1		
C.2		
C.3		
C.4		

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) B2.2 of the Subdivision Regulations of Walker County, Texas as follows:

Variance for Block 1- Lots 13,14,15, 23, 24, 28 & 29;
Block 2 - Lots 9 & 24; Block 3 - Lots 12,16,17,18,19, 20, 21, 22, 23, 24, & 25
Block 6 - Lot 3

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?
Yes _____ No NO

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

All lots listed in D.1 of this form are greater than 3 acres in size, and the design of the lots will be consistent with the others in the subdivision.

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?
Yes YES No _____

If yes please explain below:

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?
Yes _____ No NO Please list the additional measures below.

SECTION F –VARIANCE(S) GRANTED

F.1 A VARIANCE TO THE WALKER COUNTY SUBDIVISION REGULATIONS IS GRANTED AS FOLLOWS:

_____

_____

_____

_____

F.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE:

_____

_____

_____

_____

SECTION G - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

NOTICE

ALL DEVELOPMENT MUST BE IN STRICT COMPLIANCE WITH THE CONDITIONS STATED HEREIN AND ANY OTHER CONDITIONS STATED WITHIN THE APPLICATION OR DURING THE PRESENTATION TO COMMISSIONERS COURT. ANY VARIATION MAY RESULT IN THE IMMEDIATE SUSPENSION OR CANCELLATION OF THIS VARIANCE. VIOLATION OF THE CONDITIONS OF THIS VARIANCE MAY ALSO RESULT IN THE COMMISIONERS COURT SEEKING INJUNCTIVE RELIEF, CIVIL, OR CRIMINAL PENALTIES.

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I, _____, do hereby acknowledge that I have reviewed the provisions, notices, warnings and disclaimers stated above and that I understand them, agree with them and intend to fully comply with them.

Signature of Owner/Applicant	Date

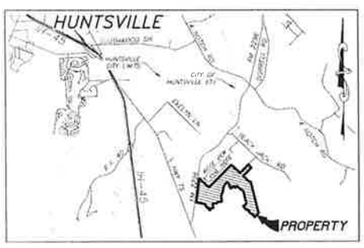
SECTION H – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reason(s) for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Subdivision Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

Signature of Owner/Applicant acknowledging conditions after court action.	Date

LEGACY GRAND RANCH SECTION 1 SHEET INDEX



VICINITY MAP
Not To Scale

LEGEND

(4)	Block Number
	Flood Zone A
WCDR	Walker County Deed Records
WCOPR	Walker County Official Public Records
WCOR	Walker County Official Records
WCPR	Walker County Plat Records

CS – COUNTY CLERK CERTIFICATION

STATE OF TEXAS §
§ KNOWN ALL MEN BY THESE PRESENTS;
COUNTY OF WALKER §

I, Karl A. French, Clerk of the County Court of Walker County, do hereby certify that this plat with its certificate of authentication was filed for record in my office

the _____ day of _____, 20_____,

in Volume _____, Page _____ of the Plat Records of Walker County, Texas.

For tax purposes, this plat complies with Section 12.002 of the Property Code.

Clerk County
Walker County, Texas

PRELIMINARY

By: _____ Deputy

PRELIMINARY

This document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document.

INDIVIDUAL SHEETS INDEX

PLAT OF
LEGACY GRAND RANCH SECTION 1

CONTAINING 8 BLOCKS, 158 LOTS AND 9 RESERVES

A SUBDIVISION CONTAINING 931.71 ACRES OF LAND, BEING OUT OF THE RESIDUE OF THE CALLED 968.18 ACRE TRACT ONE AND THE CALLED 24.581 ACRE TRACT TWO AS DESCRIBED IN A CORRECTION DEED TO LEGACY GRAND RANCH, LLC. RECORDED UNDER INSTRUMENT NO. 2025-105772, OFFICIAL RECORDS, WALKER COUNTY, TEXAS.

B. B. GOODRICH LEAGUE, A-23
ELIZABETH RIDGEWAY SURVEY, A-472
NICHOLAS L. GARRETT SURVEY, A-219
THEODORE BENNETT LEAGUE, A-68
WALKER COUNTY, TEXAS

MAY 2025

HAMILTON, INC.
936-661-3325

Job No. 25-001

SHEET 1 OF 11

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name Forestar (USA) Real Estate Group, Inc.	Application Number:
A2. Property Owner's Street Address [redacted]	Date of Submittal: 3/24/2025
City [redacted]	State [redacted] ZIP Code [redacted]
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]

A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.)
Being 216.78 acres of land, situated in the JOSE MARIA DE LA GARZA GRANT, Abstract No. 22, Walker County, Texas and being all of the portion of land in Walker County of a called 238.118 acre tract of of land described in a deed dated April 28, 2020 from Godwin LLC and Joseph E. Adams, III to Joseph E. Adams, III and Heather Adams recorded under Instrument No. 56813, Official Records, Walker County, Texas (WCOR) and under Document No. 20204698, Official Public Records, San Jacinto County, Texas (SJCOPR).

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT
(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. Survey and Abstract	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page
JOSE MARIA DE LA GARZA GRANT, Abstract No. 22, Walker County, Texasd	Property ID: 12323 Owner ID: 837588	20204698

B4. Existing or Proposed Name of Subdivision	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No)
Peach Creek	No

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS
Please list any supporting documents or submittals included with the variance request as attachments.

Description of Attachment(s)	Exhibit #
C.1 Exhibit 1 - D1 and D2 Responses	1
C.2 Exhibit 2 - Peach Creek Flexamat Memo	2
C.3 Exhibit 3 - Peach Creek Section 1 Locations	3
C.4 Exhibit 4 - Flexamat Specifications	4

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) B12.8.m, B12.8n, B12.9d, & B12.10 of the Subdivision Regulations of Walker County, Texas as follows:

See Exhibit 1 for response.

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?

Yes x No _____

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

See Exhibit 1 for response.

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?

Yes X No _____

If yes please explain below:

Without the Flexamat variance, we would follow Walker County Standards for slope paving and rock rip rap, but this is not the visual look we're going for. The ditch variance is needed as there are more types of ditches than just roadside, which need to have different specifications, otherwise they end up being unnecessarily wide and deep, which severly reduces developable space.

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?

Yes _____ No X Please list the additional measures below.

Walker County MUD No. 1 will hire a Maintenance contractor to maintain all drainage swales within the MUD boundary which encompasses the entirety of Peach Creek, except the HOA would maintain back lot drainage through a private drainage easement, and homeowners will maintain any swales within their lots.

SECTION F –VARIANCE(S) GRANTED

F.1 A VARIANCE TO THE WALKER COUNTY SUBDIVISION REGULATIONS IS GRANTED AS FOLLOWS:

F.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE:

SECTION G - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

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I, MATT WARZECHA, do hereby acknowledge that I have reviewed the provisions, notices, warnings and disclaimers stated above and that I understand them, agree with them and intend to fully comply with them.

Signature of Owner/Applicant	Date
	29 MAR 2023

SECTION H – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reason(s) for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Subdivision Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

Signature of Owner/Applicant acknowledging conditions after court action.	Date

Summary

- We'd like to have the option to use Flexamat as an alternative to slope paving or rip rap in the rules for everything up to 10fps

- Anything above 10fps would still need designed energy dissipator blocks

- We'd like to recognize that the WACO rules only currently outline the specs of a roadside ditch and believe that these rules will only be applicable to our temporary swales that are adjacent to public ROW or will be within ROW and all private drainage will follow Walker County B12.3 private drainage where owner will be responsible for maintenance.

- We have other ditches in the development that have differing min depth, longitudinal slope, and side slope requirements that follow best engineering practices included within Walker County, TxDOT, and City of Huntsville.

- Geotech report supports up to 3:1 slopes in cohesive soils and 4:1 in non cohesive soils (clay vs sand)

- We need the temporary swale (designed to survive even if the developer leaves, but temporary since it will be replaced in the future), to move at 0.35% instead of 0.5% due to depth requirements. This is a maintainable slope agreeed upon by County Engineer reviewer (GLS) and Elevation Land Solutions.

- For all other swales within the Private Drainage reserves or easements we are designing with best engineering practices per Walker County B12.3 as well as relevant jurisdictional standards and design guidelines so there is an appropriate plan for extreme event flow.

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land solutions

EXHIBIT 1

Alternative Permanent Erosion Controls and Exemptions of Roadside Ditches - Variance Request Response

Response to item D.1 in the Variance Request Form:

- A Variance is requested to Section B12.8.m, B12.8n, B12.9d, B12.10d to allow Flexamat as an alternative to both rip rap and slope paving, and B12.10, to allow all of the different swale types shown in this variance within the entire development (instead of only roadside ditch specs) of the Subdivision Regulations of Walker County, Texas as follows:

Variance (Adding Flexamat as Alternative permanent erosion control to Section B12.8.m, B12.8n, B12.9d, B12.10d)

- The Owner proposes submitting an alternative permanent erosion protection of Flexamat to all requirements per County Standards referencing slope paving and rock rip rap, but not energy dispator blocks when velocities exceed 10 fps. Flexamat has proven to perform at least as well as concrete slope paving, but it also can allow for grass to grow between the blocks allowing for a much more aesthetically pleasing and natural look and provides some energy dissipation as well.
- Detention Facilities 12.8.m
    - Flexamat would be allowed for Outlet Velocities exceeding 5 fps into Ponds and out of Ponds, but below 10 fps.
- Detention Facilities 12.8n
    - Flexamat would be allowed for Emergency Overflow Weirs.
- Roadway Bridges/Culverts 12.9d
    - Flexamat would be allowed for Outlet Velocities exceeding 5 fps at Culverts, but below 10 fps.
- Roadside Ditches 12.10d
    - Flexamat would be allowed for ditches exceeding 3 fps for ditches and below.

Variance (B12.10 Roadside Ditches with Additional Definitions.

- The Owner proposes additional definitions of swales and ditches that do not fully comply with the subdivision regulations B12.10 for Roadside Ditches.

best practices from relevant criteria with their design design standards have been listed below.

    - Perimeter Swales should follow all rules and regulatio
        - B12.10 a. – ~~Instead of conveying the 10-year storm event with 6" of freeboard,~~ we would convey the 100-year with 0" of freeboard only. References to adjacent right of way would be adjacent property or lot.
        - B12.10 c. - Minium depth of shall be 12" instead of 18" measured from the lowest top of bank to flow line.
        - B12.10 d. - Velocity control measures would consider flexamat as an alternative when velocities exceed 4 fps.
        - B12.10 e - Side Slopes would have a maximum grade of 4:1.
        - B12.10 h – Storm utilities may be placed within the ditch to help capture and convey flow towards detention structures.
    - Rear Lot Swales should follow
        - B12.10 a. – ~~Instead of conveying the 10-year storm event with 6" of freeboard, we would convey the 100-year with 0" of freeboard only~~. References to adjacent right of way would be adjacent property or lot.
        - B12.10 c. - Minium depth shall be 6" instead of 18" measured from the lowest top of bank to flow line.

- B12.10 d. - Velocity control measures would consdier flexamat as an alternative when velocities exceed 4 fps.
- B12.10 e - Side Slopes would have a maximum grade of 4:1.
- B12.10 h – Rear lot inlets and storm utilities may be placed within the swale to help capture and convey flow without creating openings under fences.

- Extreme Event Swales should follow all rules and regulations except the following
  - ~~B12.10 a. – Instead of conveying the 10-year storm event with 6" of freeboard, we would convey the 100-year with 0" of freeboard only.~~ References to adjacent right of way would be adjacent property or lot.
  - B12.10 c. - Minium depth of shall be 12" instead of 18" measured from the lowest top of bank to flow line.
  - B12.10 d. - Velocity control measures would consider flexamat as an alternative when velocities exceed 4 fps.
  - B12.10 e - Side Slopes would have a maximum grade of 4:1.
  - B12.10 h – Storm utilities may be placed within the ditch to help capture and convey flow towards detention structures.
- Temporary Swale should follow all rules and regulations except the following
  - ~~B12.10 a. – Instead of conveying the 10-year storm event with 6" of fre~~ we would convey the 100-year with 0" of freeboard only.
  - B12.10 d. - Velocity control measures would consider flexamat as an alternative when velocities exceed 4 fps.
  - B12.10 e - Side Slopes would have a maximum grade of 4:1.

0.35% slope instead of 0.5 due to depth issues and erosion

- Pond Backslope Swales should follow all rules and regulations except the following
  - ~~B12.10 a. – Instead of conveying the 10-year storm event with 6" of freeboard, we would convey the 100-year with 0" of freeboard only.~~
  - B12.10 b. – Swales and interceptors with follow HCFCD details. These are not designed to convey large flow just maintenance berm.
  - B12.10 c. - Minium depth of shall be 6" instead of 18" measured from the lowest top of bank to flow line.
  - B12.10 d. - Velocity control measures would consider flexamat as an alternative when velocities exceed 4 fps. Slope Paving per HCFCD detail will be used at interceptors swales.
  - B12.10 e - Side Slopes would have a maximum grade of 4:1.
  - B12.10 h – Storm utilities may be placed within the ditch to help capture and convey flow towards detention structures.
- Retaining Wall Back Slopes should follow all rules and regulations except the following
  - ~~B12.10 a. – Instead of conveying the 10-year storm event with 6" of freeboard, we would convey the 100-year with 0" of freeboard only.~~
  - B12.10 b. – Swales not designed to convey large flow but rather to drain water behind the wall to prevent failures.
  - B12.10 c. - Minium depth of shall be 3" instead of 18" measured from the lowest top of bank.
  - B12.10 d. - Velocity control measures would consider claylined swales as an alternative.
  - B12.10 e - Side Slopes would have a maximum grade of 4:1.
  -

Response to item E.2 in the Variance Request Form:

- Flexamat is a permanent erosion control measure that is much more visually appealing as it allows for grass growth between the blocks, provides for more energy dissipation than slope paving, is easier to install than slope paving, is easier to fix if failures occur, and can even outperform slope paving to slopes up to 3:1.
- Roadside Ditches are currently the only type of swale considered within Subdivision Regulations but is not inclusive of the required drainage swales required for development within Peach Creek. They are also overly restrictive due to required side slopes and design depth reflecting freeboard requirements despite still conveying the 100 year.

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Exhibit 2 - Peach Creek Flexamat Memo

January 23, 2025

Mr. Andrew Isbell
Walker County Planning and Development Department
1313 University Ave
Huntsville, TX 77340

RE: Alternative Material for Erosion Protection and Outlet Protection - Flexamat

Dear Andrew Isbell,

Attached are the documents pertaining to Flexamat Plus that are proposed within Peach Creek residential development. The purpose of this submission is to give an understanding of construction details, specifications of performance, final appearance, and feedback prior to submitting for a variance.

Items included have been explained below.

1. Flexamat Plus – Oulet Armoring
    a. This will be used at locations adjacent to slope paving to avoid concrete edge washout.
2. Flexamat Plus – Overflow Channel Parallel to Flow
    a. This will be used at locations parallel to Extreme Event Flow to avoid washout in extreme events.
3. Flexamat Plus – Overflow Channel Perpendicular to Flow
    a. This will be used at locations perpendicular to Extreme Event Flow to avoid washout in extreme events as well as channelized offsite flow.
4. Flexamat Plus – Slope Armoring
    a. This will be used to protect 4:1 Side Slopes when bends and curves are within ditch or downstream of overflow channel into detention pond or creek.
5. Flexamat Plus – Specification
    a. This will be used with the bidding documents for the contractor to be aware of the construction specifications.

Flexamat would be used in lieu of Subdivision Regulations with the same spirit of the regulations. Documented in the following are locations that would not be followed by using Flexamat

1. Detention Facilities 12.8.m
    a. Rock Riprap/ Concrete Energy Dissipating Devices
2. Detention Facilities 12.8n
    a. 5" Slope Paving for Emergency Overflow Weird
3. Roadway Bridges/Culverts 12.9d
    a. Rock Riprap/ Concrete Lining/Energy Dissipating Devices
4. Roadside Ditches 12.10d
    a. Rock Riprap/ Concrete Lining

Attached is an example of scour that Flexamat Plus was used to protect. Grass will grow between the blocks and create a blended look for residents, easier maintenance effort, while providing improved hydraulic performance.

Figure 1: Slope Paving at Large Box Culvert Scour

Figure 2: Flexamat Plus During Construction Being Rolled and Tied per Specifications

After

Figure 3: Flexamat Plus Prior to Grass Growth

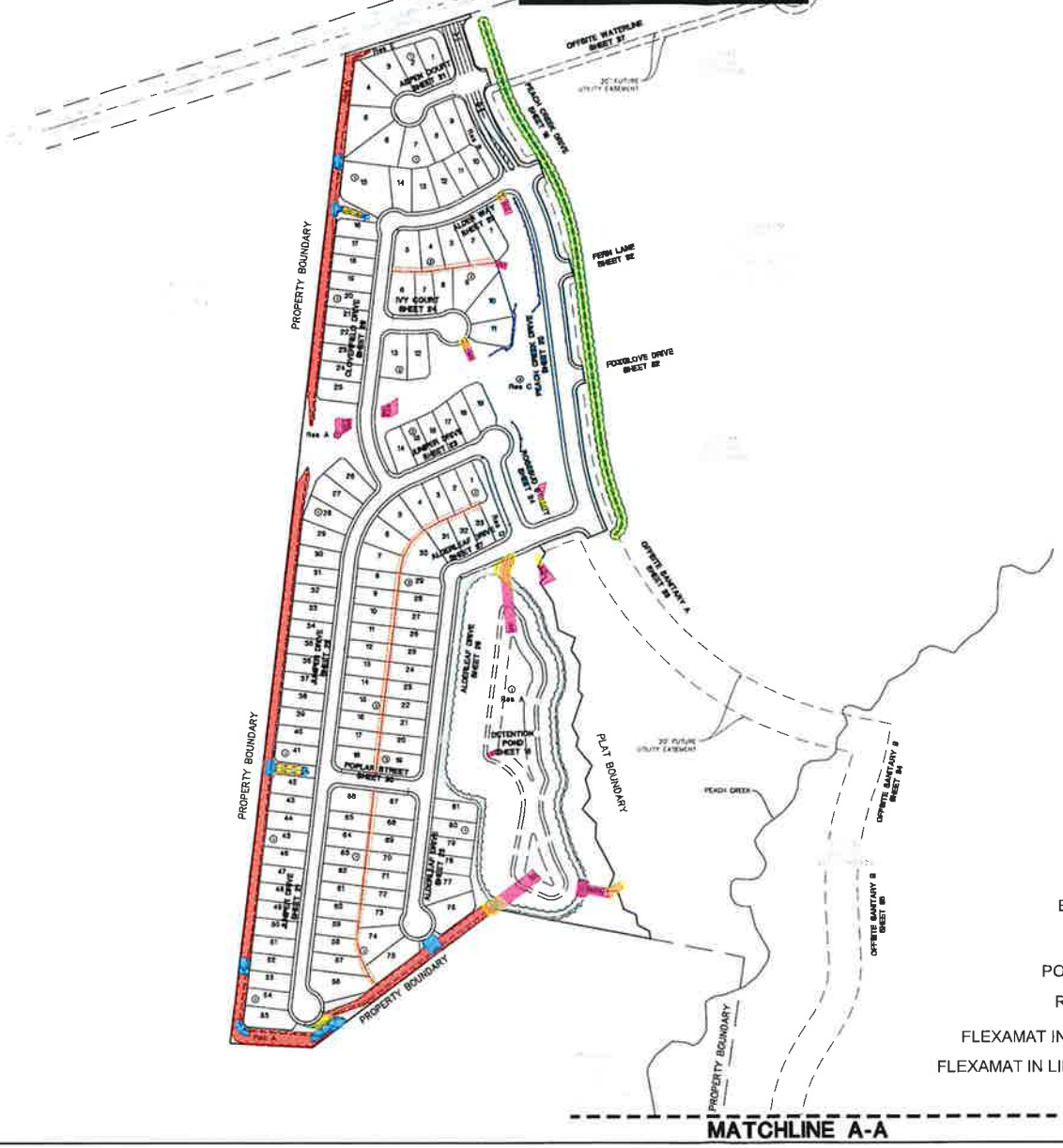
After with
Heavy Rain

Figure 4: Flexamat Plus Hydraulic Performance

Respectfully,

Walker Burgess, PE
Partner, Development Manger

Exhibit 3 - Peach Creek Section 1 Locations.



LEGEND:

- PERIMETER SWALE
- REAR LOT SWALE
- EXTREME EVENT SWALE
- TEMPORARY SWALE
- POND BACKSLOPE SWALE
- RETAINING WALL SWALE
- FLEXAMAT IN LIEU OF ROCK RIP-RAP
- FLEXAMAT IN LIEU OF 5" SLOPE PAVING

ELEVATION land solutions
TBPE REGISTRATION NUMBER F-22671
9709 LAKESIDE BLVD. SUITE 200
THE WOODLANDS, TX 77381 832.823.2200

N

0 75 150 300
SCALE: 1"=150'

BENCHMARKS:

FLOODPLAIN INFORMATION:

DATE	REVISION	APP

PROJECT OVERALL

DILLON G. ARMAS
9709 LAKESIDE BLVD. SUITE 200
THE WOODLANDS, TX 77381
(832) 823-2200
TBPE NO. F-22671

1/23/2025

WALKER COUNTY
ENGINEERING DEPARTMENT

APPROVED

DATE

SHEET 3 OF 64

ELEVATION LAND SOLUTIONS - PEACH CREEK FOREST SEC 1 COLLECTOR ROAD PH I DETENTION - PROJECT NO. 610.147.006.00

Exhibit 4 - Flexamat Specifications

Flexamat Plus Specification

1. DESCRIPTION

A Tied Concrete Block Mat with Triple Layered Underlayment. This work shall consist of furnishing and placing the system in accordance with this specification and conforming with the lines, grades, design, and dimensions shown on the plans.

2. MATERIALS

Flexamat Plus is manufactured from individual concrete blocks tied together with high strength knitted polypropylene bi-axial geogrid. Each block is tapered, beveled and interlocked and includes connections that prevent lateral displacement of the blocks within the mats when they are lifted for placement.

Tied Concrete Block Mats with Triple Underlayment shall be Flexamat Plus, manufactured by Motz Enterprises, Inc.

2.1. **Blocks.** Furnish blocks manufactured with concrete conforming to the cement requirements of ASTM C150 and to the aggregate requirements of ASTM C33. Blocks shall have a minimum weight of 3 lb. per block and placed no further than 2 in. apart. Material weight per square foot shall not exceed 10 lbs. Blocks shall have a 2.25" profile, a flat-top pyramid shape, and a coarse finish without protrusions. Concrete shall have a minimum compressive strength requirement of Table1 and certified by a third party.

Table 1
Concrete Compressive Strength Requirements

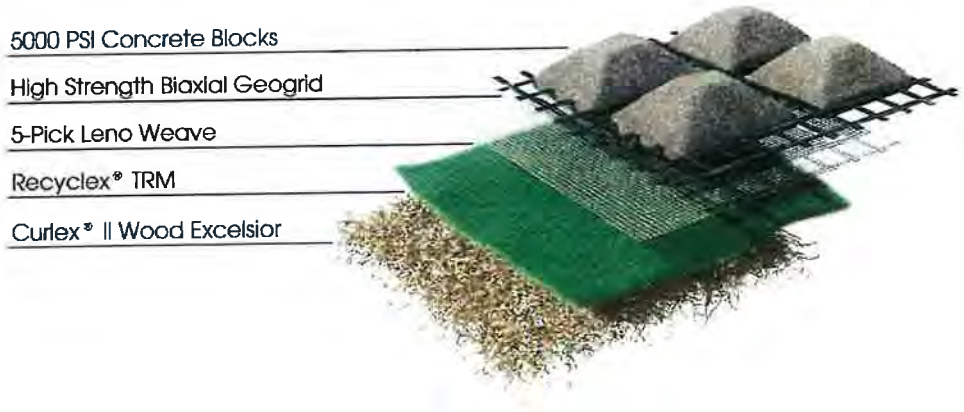
Age	Required Compressive Strength psi
7 - Day	5000 psi
14 – Day	6000 psi
28 - Day	6900 psi

2.2. **Polypropylene Bi-Axial Geogrid.** The interlocking geogrid shall be an open knitted fabric composed of high tenacity, multifilament polypropylene yarns knitted and coated in tension with an acrylic based coating which is designed to resist degradation in environments with exposure to water and low pH (,4 pH) and high pH (>9 pH). When combined with the revetment mat, this will yield a high tenacity, low elongating, and continuous filament polypropylene geogrid that is embedded within the base of the concrete blocks. Ensure the geogrid meets the requirements of Table 2.

Table 2
Polypropylene Bi-Axial Geogrid

Property	Unit	Test	Requirement
Mass/Unit Area	oz/yd²	ASTM D5261	6.5 oz/yd²
Aperture Size	English units	Measured	1.4x 1.4 inch
Ultimate Wide Width Tensile Strength (MD x CMD)	lb/ft	ASTM D6637	2,055 lb/ft
Elongation at Ultimate Tensile Strength (MD x CMD)	%	ASTM D6637	6%
Wide Width Tensile Strength @ 2% (MD x CMD)	lb/ft	ASTM D6637	822 lb/ft
Wide Width Tensile Strength @ 5% (MD x CMD)	lb/ft	ASTM D6637	1,640 lb/ft
Tensile Modulus @ 2% (MD x CMD)	lb/ft	ASTM D6637	41,100 lb/ft
Tensile Modulus @ 5% (MD x CMD)	lb/ft	ASTM D6637	32,800 lb/ft

2.3. **Underlayment Materials.** A four-layered system includes, in order from top to bottom, 1) Concrete block mat 2) 5-Pick Leno Weave 3) Recyclex TRM-V and 4) Curlex® II. The underlayment materials shall be packaged within the roll of the Flexamat Plus.



Five-Pick Leno Weave:
This Five-Pick Weave provides added strength and support to the underlayments.

Index Property	Units	Value
GSM	g/m²	118 (-3˜ +3)
Density	Picks/10cm	62 x 24 (+/- 2)
Warp Strength	N/5cm	≥ 350
Warp Elongation	%	20 - 50
Weft Strength	N/5cm	≥ 280
Weft Elongation	%	20 - 50
Warp Shrinkage	%	≤ 7
Weft Shrinkage	%	≤ 9

Recyclex® TRM:
Recyclex TRM – V is a permanent non-degradable Turf Reinforcement Mat (TRM), consists of 100% post-consumer recycled polyester (green or brown bottles) with 80% five-inch fibers or greater fiber length. It is of consistent thickness with fibers evenly distributed throughout the entire area of the TRM. The top and bottom of each TRM is covered with heavy duty polypropylene net. Fibers are tightly crimped and curled to allow fiber interlock, and to

retain 95% memory of the original shape after loading by hydraulic events. Fibers have a specific gravity greater than 1.0; therefore, the blanket will not float during hydraulic events. Recyclex TRM – V meets Federal Government Executive Order initiatives for use of products made from, or incorporating, recycled materials. Recyclex TRM – V shall be manufactured in the U.S.A. and the fibers shall be made from 100% recycled post-consumer goods.

Index Property	Test Method	Value
Thickness	ASTM D 6525	0.294 in (7.47 mm)
Light Penetration	ASTM D 6567	57%
Resiliency	ASTM D 6524	86%
Mass per Unit Area	ASTM D 6566	0.50 lb/yd^2 (271 g/m^2)
MD-Tensile Strength Max.	ASTM D 6818	295.2 lb/ft (4.32 kN/m)
TD-Tensile Strength Max.	ASTM D 6818	194.4 lb/ft (2.85 kN/m)
MD-Elongation	ASTM D 6818	32.2%
TD-Elongation	ASTM D 6818	40.8%
Swell	ECTC Procedure	8%
Water Absorption	ASTM D 1117/ECTC	33.8%
Specific Gravity	ASTM D 792	1.21
UV Stability	ASTM D 4355 (1,000 hr)	80% minimum
Porosity	Calculated	97.5%
Bench-Scale Rain Splash	ECTC Method 2	SLR = 5.86 @ 2 in/hr [1,2]
Bench-Scale Rain Splash	ECTC Method 2	SLR = 5.00 @ 4 in/hr [1,2]
Bench-Scale Rain Splash	ECTC Method 2	SLR = 6.33 @ 6 in/hr [1,2]
Bench-Scale Shear	ECTC Method 3	2.41 lb/ft^2 @ 0.5 in soil loss [2]
Germination Improvement	ECTC Method 4	432%

[1] SLR is the Soil Loss Ratio, as reported by NTPEP/AASHTO. [2] Bench-scale index values should not be used for design purposes

Curlex® II:

Curlex II erosion control blanket (ECB) consists of a specific cut of naturally seed free Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It is of consistent thickness with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket is covered with degradable polypropylene netting.

Index Property	Test Method	Value
Thickness	ASTM D 6525	0.418 in (10.62 mm)
Light Penetration	ASTM D 6567	34.6%
Resiliency	ASTM D 6524	64%
Mass per Unit Area	ASTM D 6475	0.57 lb/yd^2 (309 g/m^2)
MD-Tensile Strength Max.	ASTM D 6818	127.0 lb/ft (1.9 kN/m)
TD-Tensile Strength Max.	ASTM D 6818	50.9 lb/ft (0.7 kN/m)
MD-Elongation	ASTM D 6818	28.64%
TD-Elongation	ASTM D 6818	29.84%
Swell	ECTC Procedure	89%
Water Absorption	ASTM D 1117/ECTC	199%
Bench-Scale Rain Splash	ECTC Method 2	SLR = 6.84 @ 2 in/hr [2,3]
Bench-Scale Rain Splash	ECTC Method 2	SLR = 7.19 @ 4 in/hr [2,3]
Bench-Scale Rain Splash	ECTC Method 2	SLR = 7.56 @ 6 in/hr [2,3]
Bench-Scale Shear	ECTC Method 3	2.6 lb/ft^2 @ 0.5 in soil loss [3]
Germination Improvement	ECTC Method 4	645%

[1] Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior is 22%.

[2] SLR is the Soil Loss Ratio, as reported by NTPEP/AASHTO. [3] Bench-scale index values should not be used for design purposes.

2.4. Mats will be rolled for shipment. Upon delivery, rolls may be left exposed for up to 30 days. If exposure will exceed 30 days, cover or tarp the rolls to minimize UV exposure.

Chipping or missing concrete resulting in a weight loss exceeding 15% of the average weight of a concrete unit is grounds for rejection by the engineer. Replace, repair or patch the damaged areas per the manufacturer's recommendations.

3. PERFORMANCE

Full-Scale laboratory testing performed by an independent 3rd party testing facility with associated engineered calculations certifying the hydraulic capacity of the proposed Tied-Concrete Block Erosion Control Mat meets the following requirements:

Test	Tested Value	Bed Slope	Soil Classification	Limiting Value
ASTM 6460	Shear Stress	30%	Sandy Loam (USDA)	24lb./ft^2
ASTM 6460	Velocity	20%	Loam (USDA)	30 ft./sec

4. ALTERNATIVE PRODUCTS

Such products must be pre-approved in writing by the Engineer prior to bid date. Alternative product packages must be submitted to the Engineer a minimum of fifteen (45) days prior to bid date. Submittal packages for alternate products must include, as a minimum, the following:

4.1. Alternative Product Properties – Product must be comprised of materials as detailed in Section 2, including both in composition, underlayment layers and performance requirements.

4.2. Full-Scale laboratory testing performed by an independent 3rd party testing facility with associated engineered calculations certifying the hydraulic capacity of the proposed Tied-Concrete Block Erosion Control Mat meets the performance requirements listed in Section 3 of this specification.

4.3. A list of 15 comparable projects in terms of project size, application and material dimensions in the United States, where the results of the specific alternative material's use can be verified and reviewed for system integrity and sustained after a minimum of 10 years of service life.

5. EQUIPMENT

Provide the proper equipment to place the mat that will not damage the mat material or disturb the topsoil subgrade and seed bed.

6. CONSTRUCTION

Prior to installing Flexamat Plus, prepare the subgrade as detailed in the plans. All subgrade surfaces to be smooth and free of all rocks, stones, sticks, roots, and other protrusions or debris of any kind that would result in an individual block being raised more than 3/4 in. above the adjoining blocks. When seeding is shown on the plans, provide subgrade material that can sustain growth.

Ensure the prepared subgrade provides a smooth, firm, and unyielding foundation for the mats. The subgrade shall be graded into a parabolic or trapezoidal shape to concentrate flow to middle of mat or mats.

When vegetation is required, distribute seed on the prepared topsoil subgrade before installation of the concrete mats in accordance with the specifications.

Install mats to the line and grade shown on the plans and per the manufacturer's guidelines. The manufacturer or authorized representative will provide technical assistance during preparation and installation of the concrete block mats as needed.

Provide a minimum 18 in. deep concrete mat embedment toe trench at all edges exposed to concentrated flows. Recess exterior edges subject to sheet flow a minimum of 6 in.

Provide fastening or anchoring as recommended by the manufacturer or engineer for the site conditions.

7. MEASUREMENT

This Item will be measured by the square foot as shown on the plans, complete in place.

8. PAYMENT

The work performed, and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Flexamat Plus". This price is full compensation for loading and transporting, placing concrete block mats; excavation and disposal; furnishing topsoil and bedding; and equipment, labor, materials, tools, and incidentals.

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name David D Wickens	Application Number: P-2025-015
A2. Property Owner's Street Address [redacted]	Date of Submittal: 07/15/2025
City [redacted]	State [redacted]
ZIP Code [redacted]	
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]
A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.) 457 FM 2693 New Waverly 77358 (Appraisal ID# 12229) Jose Maria De La Garza Survey Abstract # 22	

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT (For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)		
B1. Survey and Abstract Jose Maria De La Garza Survey Abstract # 22	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page Inst# 204709
B4. Existing or Proposed Name of Subdivision Walker Reserve Section 1	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No) No	

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS

Please list any supporting documents or submittals included with the variance request as attachments.

Description of Attachment(s)	Exhibit #
C.1 Variance request letter	
C.2 Agent authorization letter	
C.3	
C.4	

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) 3.25 of the Subdivision Regulations of Walker County, Texas as follows:

Owner paid fee portion calculated based on acreage that does not include areas shown as residential. This is not a waiver of the fee, owner must pay the balance prior to next submittal or have fee waived by variance.

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?

Yes _____ No X

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

Fee Structure pertaining to acreage, lots and the remainder of the parcel to be developed as part of future sections

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?

Yes X No _____

If yes please explain below:

The Difference in permitting fees without variance approval is approximately $20,000.00

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?

Yes _____ No X Please list the additional measures below.

SECTION F –VARIANCE(S) GRANTED

F.1 A VARIANCE TO THE WALKER COUNTY SUBDIVISION REGULATIONS IS GRANTED AS FOLLOWS

F.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE:

SECTION G - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

NOTICE

ALL DEVELOPMENT MUST BE IN STRICT COMPLIANCE WITH THE CONDITIONS STATED HEREIN AND ANY OTHER CONDITIONS STATED WITHIN THE APPLICATION OR DURING THE PRESENTATION TO COMMISSIONERS COURT. ANY VARIATION MAY RESULT IN THE IMMEDIATE SUSPENSION OR CANCELLATION OF THIS VARIANCE. VIOLATION OF THE CONDITIONS OF THIS VARIANCE MAY ALSO RESULT IN THE COMMISIONERS COURT SEEKING INJUNCTIVE RELIEF, CIVIL, OR CRIMINAL PENALTIES.

WARNING

THE APPLICANT ACKNOWLEDGES THAT HE/SHE IS RESPONSIBLE TO ENSURE THAT ANY VARIANCE DOES NOT DAMAGE OR THREATEN THE PUBLIC OR ADJACENT PROPERTIES AND COMPLIES WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

DISCLAIMER

THE COMMISSIONER'S COURT OF WALKER COUNTY AND ANY OFFICER OR EMPLOYEE OF WALKER COUNTY ARE NOT LIABLE FOR DAMAGES OR LOSS RESULTING FROM THE GRANTING OF THIS VARIANCE. THIS VARIANCE IS GRANTED IN RELIANCE UPON THE STATEMENTS AND EVIDENCE SUPPLIED BY THE APPLICANT AND HIS/HER AGENTS IN THE APPLICATION AND PRESENTATION TO COMMISSIONERS COURT.

I, Jesse McLaury, do hereby acknowledge that I have reviewed the provisions, notices, warnings and disclaimers stated above and that I understand them, agree with them and intend to fully comply with them.

Signature of Owner/Applicant	Date
	07-15-25

SECTION H – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reason(s) for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Subdivision Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

Signature of Owner/Applicant acknowledging conditions after court action.	Date

SPEARPOINT
ENGINEERING, LLC

June 30, 2025

Mr. Andrew Isbell
Walker County Planning & Development
1313 University Avenue
Huntsville, TX 77340

Re: Variance Request – Permit Fees for
Walker Reserve Section 1
Walker County

Mr. Isbell,

We are applying for variance of the below description given reference to the permit fee for the subject tract and plan review.

Owner paid fee portion calculated based on acreage that does not include areas shown as residential. This is not a waiver of the fee, owner must pay the balance prior to next submittal or have fee waived by variance.

Should you have any questions or require additional information, please contact me.

Sincerely,

Jesse McLaury, P.E.
Project Manager
Office: 936-256-2626
Jesse@spetexas.com

WALKER RESERVE
A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

OWNERS:
KENDALL HOMES OF TEXAS LLC
427 MASON PARK BLVD
KATY TX 77450

SURVEYORS
SURVTECH SURVEYING
PO BOX 1080
CONROE TEXAS 77305
936-539-5444

STATE OF TEXAS
COUNTY OF WALKER
KNOW ALL MEN BY THESE PRESENTS

I,___________, AUTHORIZED SIGNATORY ON BEHALF OF SILCO INC, OWNERS OF A CERTAIN TRACT OF LAND SHOWN HEREON AND DESCRIBED IN A DEED RECORDED IN DOCUMENT NO. 2025-104709, OFFICIAL RECORDS OF WALKER COUNTY TEXAS, AND DO HEREBY SUBDIVIDE SAID TRACT AS SHOWN HEREON, AND DO HEREBY CONSENT TO ALL PLAT NOTE REQUIREMENTS SHOWN HEREON, AND DO HEREBY FOREVER DEDICATE TO THE PUBLIC THE ROADS, ALLEYS, RIGHTS-OF-WAY, EASEMENTS, AND PUBLIC PLACES SHOWN HEREON FOR SUCH PUBLIC PURPOSES AS WALKER COUNTY MAY DEEM APPROPRIATE, AND DO HEREBY STATE THAT ALL PUBLIC ROADWAYS AND EASEMENTS AS SHOWN ON THIS PLAT ARE FREE OF LIENS OR THIS DEDICATION IS APPROVED BY A LIENHOLDER. THIS SUBDIVISION IS TO BE KNOWN AS:

WALKER RESERVE

TO CERTIFY WHICH, WITNESS BY MY HAND THIS __________ DAY OF __________________, 2025.

____

SILCO INC.

STATE OF TEXAS
COUNTY OF________________

THE FOREGOING INSTRUMENTS WAS ACKNOWLEDGED BEFORE ME THE
__________ DAY OF _______ 2025

BY __________________, AUTHORIZED AGENT OF SILCO INC

____
NOTARY PUBLIC SIGNATURE

STATE OF TEXAS
COUNTY OF WALKER
KNOW ALL MEN BY THESE PRESENTS;
I, KARI FRENCH, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE
FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION, WAS FILED FOR RECORD IN MY OFFICE ON THE_____ DAY OF_____, 20 _ A.D.,
AT_____O'CLOCK,_.M.,
AND DULY RECORDED THIS THE DAY OF______, 20 _ A.D., AT______O'CLOCK, _.M., IN THE PLAT RECORDS OF SAID COUNTY IN CABINET_____PAGE______

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN HUNTSVILLE, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

KARI FRENCH, CLERK COUNTY COURT OF WALKER COUNTY, TEXAS

BY:________________DEPUTY

STATE OF TEXAS COUNTY OF WALKER
KNOW ALL MEN BY THESE PRESENTS:

THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THIS MAP OR PLAT, WITH FIELD NOTES HEREON, FOR A SUBDIVISION HAVING BEEN FULLY PRESENTED TO THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS, AND BY THE SAID COURT DULY CONSIDERED, WAS ON THIS DAY APPROVED AND THAT THIS PLAT IS AUTHORIZED TO BE REGISTERED AND RECORDED IN THE PROPER RECORDS OF THE COUNTY CLERK OF WALKER COUNTY, TEXAS. THIS CERTIFICATION IS BASED UPON THE REPRESENTATIONS OF THE DEVELOPER/DEVELOPER'S AGENT. ENGINEER, SANITARIAN, AND/OR SURVEYOR WHOSE SEAL(S) AND/OR SIGNATURES ARE AFFIXED HERETO. THIS CERTIFICATION IS MADE SOLELY UPON SUCH REPRESENTATIONS AND SHOULD NOT BE RELIED UPON FOR VERIFICATIONS OF THE FACTS ALLEGED. WALKER COUNTY DISCLAIMS ANY RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

____
COLT CHRISTIAN
COUNTY JUDGE

____
DANNY KUYKENDALL
COMMISSIONER, PRECINCT 1

____
RONNIE WHITE
COMMISSIONER, PRECINCT 2

____
BILL DAUGETTE
COMMISSIONER, PRECINCT 3

____
BRANDON DECKER
COMMISSIONER, PRECINCT 4

BASED UPON A REVIEW OF THE PLAT AND ASSOCIATED PLANS, I, THE BELOW SIGNED PROFESSIONAL ENGINEER FIND THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF THE CURRENT WALKER COUNTY FLOODPLAIN REGULATIONS. I FURTHER UNDERSTAND AND AGREE THAT THIS FINDING IS MADE BY AND THROUGH MY INDEPENDENT REVIEW, AND WALKER COUNTY HAS NO RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

_____________________________ P.E.

__________ P.E.

SPEAR POINT ENGINEERING
TBPE FIRM #18904
604 Worsham Street, Suite 100
Willis, TX 77378
713-305-0698

THE COUNTY WILL ASSUME NO RESPONSIBILITY FOR DRAINAGE WAYS, STORMWATER MANAGEMENT CONTROLS, OR EASEMENTS IN THE SUBDIVISION, OTHER THAN THOSE WITHIN THE DEDICATED RIGHT OF WAY OR PUBLIC EASEMENTS AT SUCH TIME, IF ANY, THE ROADS ARE ACCEPTED FOR PUBLIC MAINTENANCE. UNTIL SUCH TIME, IF ANY, SAID INFRASTRUCTURE IS ADOPTED INTO PUBLIC MAINTENANCE, PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE ONGOING MAINTENANCE OF THE ROADS, RIGHTS-OF-WAY, SIGNAGE, DRAINAGE, AND OTHER IMPROVEMENTS WITHIN THE SUBDIVISION

I, MICHAEL WARREN, R.P.L.S., CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE ON THE GROUND UNDER SUPERVISION AND THAT ALL CORNERS AND MONUMENTS ARE AS SHOWN HEREON.

____
MICHAEL WARREN R.P.L.S. # 4935

MICHAEL CRAIG WARREN
4935

SURVTECH CORPORATION
FIRM #10005100
2020 FM 2854
CONROE, TEXAS 77304
936-539-5444

1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS AND A 35' BUILDING LINE ALONG ALL STREET RIGHT OF WAYS WITHIN THE SUBDIVISION, UNLESS SHOWN OTHERWISE

3. THERE IS A 16' UTILITY EASEMENT ALONG ALL STREET RIGHT OF WAYS

IRF= IRON ROD FOUND
BL= BUILDING LINE
UE= UTILITY EASEMENT
DE= DRAINAGE EASEMENT
AE= ACCESS EASEMENT
CM= CONTROL MONUMENT
FNL= FENCELINE
CL= CENTERLINE
VOL= VOLUME, PG= PAGE
ROW= RIGHT OF WAY
CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5\8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

WALKER RESERVE
A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

OWNERS:
KENDALL HOMES OF TEXAS LLC
427 MASON PARK BLVD
KATY TX 77450

SURVEYORS
SURVTECH SURVEYING
PO BOX 1080
CONROE TEXAS 77305
936-539-5444

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NOTE: ALL CORNERS ARE 5\8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

LOT 10
1.00 AC

LOT 9
1.00 AC

LOT 8
1.00 AC

LOT 8
1.12 AC

BLOCK 1

LOT 9
1.76 AC

RESERVE A
9.02 AC

LOT 7
1.00 AC

LOT 6
1.00 AC

LOT 7
1.00 AC

LOT 10
CF# 2024-103611
3.34 AC

TERPSTRA
85.63 ACRES
VOL 219 PAGE 250
OFFICIAL RECORDS

W P HARDY
134.193 ACRE
VOL 166 PAGE 595
OFFICIAL RECORDS

LOT 5
1.00 AC

BLOCK 2

LOT 4
1.00 AC

LOT 3
1.00 AC

LOT 2
1.00 AC

LOT 1
1.19 AC

LOT 6
1.00 AC

LOT 5
1.00 AC

LOT 4
1.00 AC

LOT 3
1.54 AC

LOT 2
2.30 AC

LOT 1
2.27 AC

5/8"IRF WITH MTL CAP
N:10199864.18
E:3857752.01

EASTMAN KODAK
PIPELINE ESMT
(50' CENTERED ON PIPELINE)
2 PIPELINES PRESENT
VOL 173 PAGE 393-397

100' GSU ESMT VOL 367 PAGE 545

PIPELINE ESMT

HEATHERWOOD DRIVE 70' ROW

STATE HIGHWAY FM 2693
100' ROW

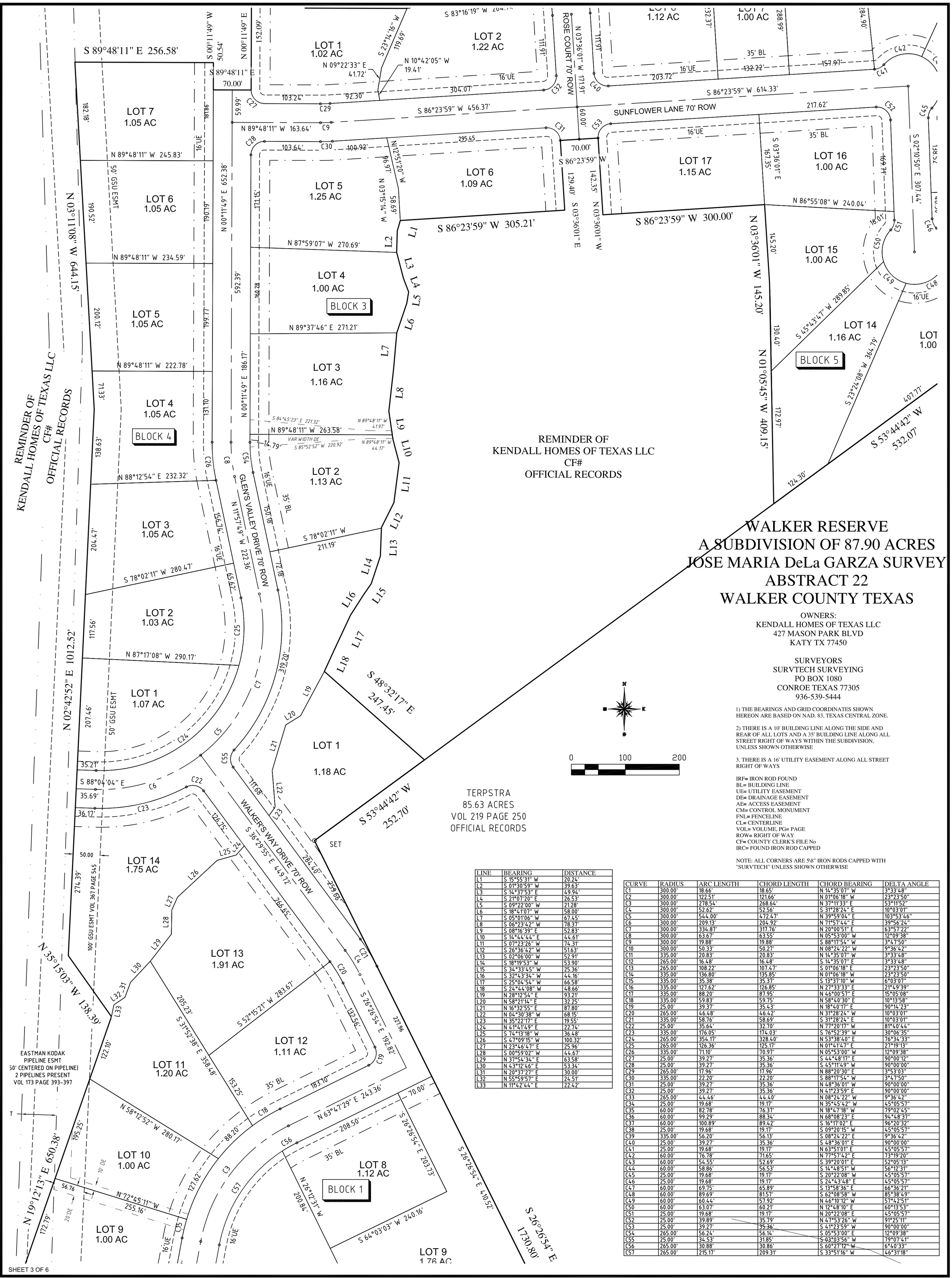
SURVTECH
SURVEYORS
PLANNERS
"A Land Surveying Company"

P.O. BOX 1080 \ CONROE, TEXAS 77305-1080
936-539-5444 \ FAX 936-539-5442
email: SURVTECH@SURVCORP.COM

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	300.00'	18.66'	18.65'	N 14°35'07" W	3°33'48"
C2	300.00'	122.51'	121.66'	N 01°06'18" W	23°23'50"
C3	300.00'	278.54'	268.64'	N 37°11'33" E	53°11'52"
C4	300.00'	52.62'	52.56'	S 31°28'24" E	10°03'01"
C5	300.00'	544.00'	472.47'	N 39°59'04" E	103°53'46"
C6	300.00'	209.13'	204.92'	N 71°57'44" E	39°56'24"
C7	300.00'	334.87'	317.76'	N 20°00'51" E	63°57'22"
C8	300.00'	63.67'	63.55'	N 05°53'00" W	12°09'38"
C9	300.00'	19.88'	19.88'	S 88°17'54" W	3°47'50"
C10	300.00'	50.33'	50.27'	N 08°24'22" W	9°36'42"
C11	335.00'	20.83'	20.83'	N 14°35'07" W	3°33'48"
C12	265.00'	16.48'	16.48'	S 14°35'07" E	3°33'48"
C13	265.00'	108.22'	107.47'	S 01°06'18" E	23°23'50"
C14	335.00'	136.80'	135.85'	N 01°06'18" W	23°23'50"
C15	335.00'	35.38'	35.37'	S 13°37'10" W	6°03'07"
C16	335.00'	127.62'	126.85'	N 27°33'33" E	21°49'39"
C17	335.00'	88.20'	87.95'	N 46°00'57" E	15°05'08"
C18	335.00'	59.83'	59.75'	N 58°40'30" E	10°13'58"
C19	25.00'	39.37'	35.43'	N 18°40'17" E	90°14'23"
C20	265.00'	46.48'	46.42'	N 31°28'24" W	10°03'01"
C21	335.00'	58.76'	58.69'	S 31°28'24" E	10°03'01"
C22	25.00'	35.64'	32.70'	N 77°20'17" W	81°40'44"
C23	335.00'	176.05'	174.03'	S 76°52'39" W	30°06'35"
C24	265.00'	354.17'	328.40'	N 53°38'40" E	76°34'33"
C25	265.00'	126.36'	125.17'	N 01°41'47" E	27°19'13"
C26	335.00'	71.10'	70.97'	N 05°53'00" W	12°09'38"
C27	25.00'	39.27'	35.36'	S 44°48'17" E	90°00'12"
C28	25.00'	39.27'	35.36'	S 45°11'49" W	90°00'00"
C29	265.00'	17.96'	17.96'	N 88°20'30" E	3°53'03"
C30	335.00'	22.20'	22.20'	S 88°17'54" W	3°47'50"
C31	25.00'	39.27'	35.36'	N 48°36'01" W	90°00'00"
C32	25.00'	39.27'	35.36'	N 41°23'59" E	90°00'00"
C33	265.00'	44.46'	44.40'	N 08°24'22" W	9°36'42"
C34	25.00'	19.68'	19.17'	N 35°45'42" W	45°05'57"
C35	60.00'	82.78'	76.37'	N 18°47'18" W	79°02'45"
C36	60.00'	99.29'	88.34'	N 68°08'23" E	94°48'37"
C37	60.00'	100.89'	89.42'	S 16°17'02" E	96°20'32"
C38	25.00'	19.68'	19.17'	S 09°20'15" W	45°05'57"
C39	335.00'	56.20'	56.13'	S 08°24'22" E	9°36'42"
C40	25.00'	39.27'	35.36'	S 48°36'01" E	90°00'00"
C41	25.00'	19.68'	19.17'	N 63°51'01" E	45°05'57"
C42	60.00'	76.78'	71.65'	N 77°57'42" E	73°19'20"
C43	60.00'	54.55'	52.69'	S 39°20'01" E	52°05'13"
C44	60.00'	58.86'	56.53'	S 14°48'51" W	56°12'31"
C45	25.00'	19.68'	19.17'	S 20°22'08" W	45°05'57"
C46	25.00'	19.68'	19.17'	S 24°43'48" E	45°05'57"
C47	60.00'	69.75'	65.89'	S 13°58'36" E	66°36'21"
C48	60.00'	89.69'	81.57'	S 62°08'58" W	85°38'49"
C49	60.00'	60.44'	57.92'	N 46°10'12" W	57°42'51"
C50	60.00'	63.07'	60.21'	N 12°48'10" E	60°13'53"
C51	25.00'	19.68'	19.17'	N 20°22'08" E	45°05'57"
C52	25.00'	39.89'	35.79'	N 47°53'26" W	91°25'11"
C53	25.00'	39.27'	35.36'	S 41°23'59" W	90°00'00"
C54	265.00'	56.24'	56.14'	S 05°53'00" E	12°09'38"
C55	25.00'	34.53'	31.85'	S 03°03'56" W	79°07'41"
C56	265.00'	30.88'	30.86'	S 60°27'12" W	6°40'33"
C57	265.00'	215.17'	209.31'	S 33°51'16" W	46°31'18"

LINE	BEARING	DISTANCE
L1	S 15°55'31" W	20.24'
L2	S 01°30'59" W	39.63'
L3	S 14°37'53" E	49.94'
L4	S 21°07'20" E	26.53'
L5	S 09°22'00" W	21.28'
L6	S 18°41'07" W	58.00'
L7	S 05°01'06" W	67.45'
L8	S 06°23'42" W	78.37'
L9	S 08°16'39" E	52.83'
L10	S 14°44'44" E	44.61'
L11	S 07°23'26" W	74.31'
L12	S 26°36'42" W	51.63'
L13	S 02°06'00" W	52.91'
L14	S 18°19'53" W	53.90'
L15	S 34°33'45" W	25.36'
L16	S 32°43'34" W	44.16'
L17	S 25°04'54" W	66.58'
L18	S 24°44'08" W	48.66'
L19	N 28°12'54" E	93.21'
L20	N 58°21'14" E	32.25'
L21	N 16°32'55" E	87.80'
L22	N 04°30'38" W	68.15'
L23	N 35°22'17" E	19.55'
L24	N 41°41'49" E	22.74'
L25	S 74°13'18" W	36.48'
L26	S 47°09'15" W	100.32'
L27	N 23°46'47" E	25.96'
L28	S 00°59'02" W	44.67'
L29	N 37°54'34" E	63.58'
L30	N 43°12'46" E	53.34'
L31	N 20°37'27" E	30.00'
L32	N 55°59'57" E	24.51'
L33	N 11°42'44" E	22.42'

0 100 200



WALKER RESERVE
A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

OWNERS:
KENDALL HOMES OF TEXAS LLC
427 MASON PARK BLVD
KATY TX 77450

SURVEYORS
SURVTECH SURVEYING
PO BOX 1080
CONROE TEXAS 77305
936-539-5444

1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS AND A 35' BUILDING LINE ALONG ALL STREET RIGHT OF WAYS WITHIN THE SUBDIVISION, UNLESS SHOWN OTHERWISE

3. THERE IS A 16' UTILITY EASEMENT ALONG ALL STREET RIGHT OF WAYS

IRF= IRON ROD FOUND
BL= BUILDING LINE
UE= UTILITY EASEMENT
DE= DRAINAGE EASEMENT
AE= ACCESS EASEMENT
CM= CONTROL MONUMENT
FNL= FENCELINE
CL= CENTERLINE
VOL= VOLUME, PG= PAGE
ROW= RIGHT OF WAY
CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5\8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

LINE	BEARING	DISTANCE
L1	S 15°55'31" W	20.24'
L2	S 01°30'59" W	39.63'
L3	S 14°37'53" E	49.94'
L4	S 21°07'20" E	26.53'
L5	S 09°22'00" W	21.28'
L6	S 18°41'07" W	58.00'
L7	S 05°01'06" W	67.45'
L8	S 06°23'42" W	78.37'
L9	S 08°16'39" E	52.83'
L10	S 14°44'44" E	44.61'
L11	S 07°23'26" W	74.31'
L12	S 26°36'42" W	51.63'
L13	S 02°06'00" W	52.91'
L14	S 18°19'53" W	53.90'
L15	S 34°33'45" W	25.36'
L16	S 32°43'34" W	44.16'
L17	S 25°04'54" W	66.58'
L18	S 24°44'08" W	48.66'
L19	N 28°12'54" E	93.21'
L20	N 58°21'14" E	32.25'
L21	N 16°32'55" E	87.80'
L22	N 04°30'38" W	68.15'
L23	N 35°22'17" E	19.55'
L24	N 41°41'49" E	22.74'
L25	S 74°13'18" W	36.48'
L26	S 47°09'15" W	100.32'
L27	N 23°46'47" E	25.96'
L28	S 00°59'02" W	44.67'
L29	N 37°54'34" E	63.58'
L30	N 43°12'46" E	53.34'
L31	N 20°37'27" E	30.00'
L32	N 55°59'57" E	24.51'
L33	N 11°42'44" E	22.42'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	300.00'	18.66'	18.65'	N 14°35'07" W	3°33'48"
C2	300.00'	122.51'	121.66'	N 01°06'18" W	23°23'50"
C3	300.00'	278.54'	268.64'	N 37°11'33" E	53°11'52"
C4	300.00'	52.62'	52.56'	S 31°28'24" E	10°03'01"
C5	300.00'	544.00'	472.47'	N 39°59'04" E	103°53'46"
C6	300.00'	209.13'	204.92'	N 71°57'44" E	39°56'24"
C7	300.00'	334.87'	317.76'	N 20°00'51" E	63°57'22"
C8	300.00'	63.67'	63.55'	N 05°53'00" W	12°09'38"
C9	300.00'	19.88'	19.88'	S 88°17'54" W	3°47'50"
C10	300.00'	50.33'	50.27'	N 08°24'22" W	9°36'42"
C11	335.00'	20.83'	20.83'	N 14°35'07" W	3°33'48"
C12	265.00'	16.48'	16.48'	S 14°35'07" E	3°33'48"
C13	265.00'	108.22'	107.47'	S 01°06'18" E	23°23'50"
C14	335.00'	136.80'	135.85'	N 01°06'18" W	23°23'50"
C15	335.00'	35.38'	35.37'	S 13°37'10" W	6°03'07"
C16	335.00'	127.62'	126.85'	N 27°33'33" E	21°49'39"
C17	335.00'	88.20'	87.95'	N 46°00'57" E	15°05'08"
C18	335.00'	59.83'	59.75'	N 58°40'30" E	10°13'58"
C19	25.00'	39.37'	35.43'	N 18°40'17" E	90°14'23"
C20	265.00'	46.48'	46.42'	N 31°28'24" W	10°03'01"
C21	335.00'	58.76'	58.69'	S 31°28'24" E	10°03'01"
C22	25.00'	35.64'	32.70'	N 77°20'17" W	81°40'44"
C23	335.00'	176.05'	174.03'	S 76°52'39" W	30°06'35"
C24	265.00'	354.17'	328.40'	N 53°38'40" E	76°34'33"
C25	265.00'	126.36'	125.17'	N 01°41'47" E	27°19'13"
C26	335.00'	71.10'	70.97'	N 05°53'00" W	12°09'38"
C27	25.00'	39.27'	35.36'	S 44°48'17" E	90°00'12"
C28	25.00'	39.27'	35.36'	S 45°11'49" W	90°00'00"
C29	265.00'	17.96'	17.96'	N 88°20'30" E	3°53'03"
C30	335.00'	22.20'	22.20'	S 88°17'54" W	3°47'50"
C31	25.00'	39.27'	35.36'	N 48°36'01" W	90°00'00"
C32	25.00'	39.27'	35.36'	N 41°23'59" E	90°00'00"
C33	265.00'	44.46'	44.40'	N 08°24'22" W	9°36'42"
C34	25.00'	19.68'	19.17'	N 35°45'42" W	45°05'57"
C35	60.00'	82.78'	76.37'	N 18°47'18" W	79°02'45"
C36	60.00'	99.29'	88.34'	N 68°08'23" E	94°48'37"
C37	60.00'	100.89'	89.42'	S 16°17'02" E	96°20'32"
C38	25.00'	19.68'	19.17'	S 09°20'15" W	45°05'57"
C39	335.00'	56.20'	56.13'	S 08°24'22" E	9°36'42"
C40	25.00'	39.27'	35.36'	S 48°36'01" E	90°00'00"
C41	25.00'	19.68'	19.17'	N 63°51'01" E	45°05'57"
C42	60.00'	76.78'	71.65'	N 77°57'42" E	73°19'20"
C43	60.00'	54.55'	52.69'	S 39°20'01" E	52°05'13"
C44	60.00'	58.86'	56.53'	S 14°48'51" W	56°12'31"
C45	25.00'	19.68'	19.17'	S 20°22'08" W	45°05'57"
C46	25.00'	19.68'	19.17'	S 24°43'48" E	45°05'57"
C47	60.00'	69.75'	65.89'	S 13°58'36" E	66°36'21"
C48	60.00'	89.69'	81.57'	S 62°08'58" W	85°38'49"
C49	60.00'	60.44'	57.92'	N 46°10'12" W	57°42'51"
C50	60.00'	63.07'	60.21'	N 12°48'10" E	60°13'53"
C51	25.00'	19.68'	19.17'	N 20°22'08" E	45°05'57"
C52	25.00'	39.89'	35.79'	N 47°53'26" W	91°25'11"
C53	25.00'	39.27'	35.36'	S 41°23'59" W	90°00'00"
C54	265.00'	56.24'	56.14'	S 05°53'00" E	12°09'38"
C55	25.00'	34.53'	31.85'	S 03°03'56" W	79°07'41"
C56	265.00'	30.88'	30.86'	S 60°27'12" W	6°40'33"
C57	265.00'	215.17'	209.31'	S 33°51'16" W	46°31'18"

WALKER RESERVE
A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

OWNERS:
KENDALL HOMES OF TEXAS LLC
427 MASON PARK BLVD
KATY TX 77450

SURVEYORS
SURVTECH SURVEYING
PO BOX 1080
CONROE TEXAS 77305
936-539-5444

1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS AND A 35' BUILDING LINE ALONG ALL STREET RIGHT OF WAYS WITHIN THE SUBDIVISION, UNLESS SHOWN OTHERWISE

3. THERE IS A 16' UTILITY EASEMENT ALONG ALL STREET RIGHT OF WAYS

IRF= IRON ROD FOUND
BL= BUILDING LINE
UE= UTILITY EASEMENT
DE= DRAINAGE EASEMENT
AE= ACCESS EASEMENT
CM= CONTROL MONUMENT
FNL= FENCELINE
CL= CENTERLINE
VOL= VOLUME, PG= PAGE
ROW= RIGHT OF WAY
CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5/8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

SURVTECH
SURVEYORS
PLANNERS
"A Land Surveying Company"
P.O. BOX 1080 \ CONROE, TEXAS 77305-1080
936-539-5444 \ FAX 936-539-5442
email: SURVTECH@SURVCORP.COM

0 100 200

TERPSTRA WILLIAM
264.41 ACRE
VOL 281 PAGE 592
OFFICIAL RECORDS

LINE AS ESTABLISHED VIA BOUNDARY LINE AGREEMENT
VOLUME 284, PAGE 399

N 29°18'56" E 191.83'
325.70'
S 53°43'33" E 714.66'
243.83'
145.13'
N 88°06'29" E 502.50'
5/8"IRC
1/2"IRF
20.85'
145.93'
240.14'
95.58'
N 50°47'24" W 24.14'
N 37°38'02" W 26.14'
N 09°51'43" W 40.87'
N 03°42'35" E 65.01'
N 25°35'19" E 83.05'
N 05°18'28" W 85.95'
N 00°09'08" W 73.44'
N 10°50'26" E 46.62'
S 89°48'11" E 288.12'
N 69°15'56" W 179.12'
7.5' DE
N 25°32'42" E 161.15'
150.29'
S 03°36'01" E 232.37'
N 76°47'17" E 236.75'
N 13°12'43" W 161.09'
100.88'
S 83°16'19" W 264.74'
S 23°14'16" W 119.69'
N 10°42'05" W 19.41'
N 09°22'33" E 41.72'
N 03°36'01" W 111.91'
35' BL
16'UE
132.22'
157.97'
203.72'
304.07'
103.24'
92.30'
S 86°23'59" W 614.33'
S 86°23'59" W 456.37'
SUNFLOWER LANE 70' ROW
60.00'
217.62'
N 89°48'11" W 163.64'
103.64'
400.92'
295.45'
70.00'
S 86°23'59" W
129.40'
142.35'
N 03°36'01" W
S 86°23'59" W 305.21'
S 86°23'59" W 300.00'
N 87°59'07" W 270.69'
N 89°37'46" E 271.21'
S 84°45'23" E 221.32'
N 89°48'11" W 263.58'
N 89°48'11" W 41.97'
VAR WIDTH DE
S 85°52'52" W 220.92'
N 89°48'11" W 44.17'
14.79'
N 03°36'01" W 145.20'
N 01°05'45" W 409.15'
S 01°45'45" E 722.12'
N 87°49'10" E 216.74'
N 86°55'08" W 240.04'
S 02°10'50" E 307.44'
138.52'
248.52'
S 40°19'14" E 172.80'
87.24'
SET
5/8"IRC
59.96'
S 45°43'47" W 289.85'
S 23°24'08" W 364.79'
407.77'
S 53°44'42" W 532.07'
124.30'
130.40'
112.97'
N 76°42'36" E 198.40'
N 24°37'22" E 294.65'
N 06°02'12" W 284.90'
S 03°36'01" E 288.99'
266.28'
S 00°11'49" W 50.54'
N 00°11'49" E 152.09'
N 00°11'49" E 652.38'
N 00°11'49" E 592.39'
N 00°11'49" E 186.17'
S 89°48'11" E 70.00'
16'UE
35' BL
GLENSVA
LOT 1 1.02 AC
LOT 2 1.22 AC
LOT 3 1.20 AC
LOT 4 1.76 AC
LOT 5 1.43 AC
BLOCK 5
LOT 6 1.12 AC
LOT 7 1.00 AC
LOT 8 1.00 AC
LOT 9 1.00 AC
LOT 10 1.08 AC
LOT 11 1.11 AC
LOT 12 1.06 AC
LOT 13 1.00 AC
LOT 14 1.16 AC
LOT 15 1.00 AC
LOT 16 1.00 AC
LOT 17 1.15 AC
LOT 5 1.25 AC
LOT 6 1.09 AC
LOT 4 1.00 AC
BLOCK 3
LOT 3 1.16 AC
LOT 2 1.13 AC
ROSE COURT 70' ROW

REMINDER OF
KENDALL HOMES OF TEXAS LLC
CF#
OFFICIAL RECORDS

LINE	BEARING	DISTANCE
L1	S 15°55'31" W	20.24'
L2	S 01°30'59" W	39.63'
L3	S 14°37'53" E	49.94'
L4	S 21°07'20" E	26.53'
L5	S 09°22'00" W	21.28'
L6	S 18°41'07" W	58.00'
L7	S 05°01'06" W	67.45'
L8	S 06°23'42" W	78.37'
L9	S 08°16'39" E	52.83'
L10	S 14°44'44" E	44.61'
L11	S 07°23'26" W	74.31'
L12	S 26°36'42" W	51.63'
L13	S 02°06'00" W	52.91'
L14	S 18°19'53" W	53.90'
L15	S 34°33'45" W	25.36'
L16	S 32°43'34" W	44.16'
L17	S 25°04'54" W	66.58'
L18	S 24°44'08" W	48.66'
L19	N 28°12'54" E	93.21'
L20	N 58°21'14" E	32.25'
L21	N 16°32'55" E	87.80'
L22	N 04°30'38" W	68.15'
L23	N 35°22'17" E	19.55'
L24	N 41°41'49" E	22.74'
L25	S 74°13'18" W	36.48'
L26	S 47°09'15" W	100.32'
L27	N 23°46'47" E	25.96'
L28	S 00°59'02" W	44.67'
L29	N 37°54'34" E	63.58'
L30	N 43°12'46" E	53.34'
L31	N 20°37'27" E	30.00'
L32	N 55°59'57" E	24.51'
L33	N 11°42'44" E	22.42'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	300.00'	18.66'	18.65'	N 14°35'07" W	3°33'48"
C2	300.00'	122.51'	121.66'	N 01°06'18" W	23°23'50"
C3	300.00'	278.54'	268.64'	N 37°11'33" E	53°11'52"
C4	300.00'	52.62'	52.56'	S 31°28'24" E	10°03'01"
C5	300.00'	544.00'	472.47'	N 39°59'04" E	103°53'46"
C6	300.00'	209.13'	204.92'	N 71°57'44" E	39°56'24"
C7	300.00'	334.87'	317.76'	N 20°00'51" E	63°57'22"
C8	300.00'	63.67'	63.55'	N 05°53'00" W	12°09'38"
C9	300.00'	19.88'	19.88'	S 88°17'54" W	3°47'50"
C10	300.00'	50.33'	50.27'	N 08°24'22" W	9°36'42"
C11	335.00'	20.83'	20.83'	N 14°35'07" W	3°33'48"
C12	265.00'	16.48'	16.48'	S 14°35'07" E	3°33'48"
C13	265.00'	108.22'	107.47'	S 01°06'18" E	23°23'50"
C14	335.00'	136.80'	135.85'	N 01°06'18" W	23°23'50"
C15	335.00'	35.38'	35.37'	S 13°37'10" W	6°03'07"
C16	335.00'	127.62'	126.85'	N 27°33'33" E	21°49'39"
C17	335.00'	88.20'	87.95'	N 46°00'57" E	15°05'08"
C18	335.00'	59.83'	59.75'	N 58°40'30" E	10°13'58"
C19	25.00'	39.37'	35.43'	N 18°40'17" E	90°14'23"
C20	265.00'	46.48'	46.42'	N 31°28'24" W	10°03'01"
C21	335.00'	58.76'	58.69'	S 31°28'24" E	10°03'01"
C22	25.00'	35.64'	32.70'	N 77°20'17" W	81°40'44"
C23	335.00'	176.05'	174.03'	S 76°52'39" W	30°06'35"
C24	265.00'	354.17'	328.40'	N 53°38'40" E	76°34'33"
C25	265.00'	126.36'	125.17'	N 01°41'47" E	27°19'13"
C26	335.00'	71.10'	70.97'	N 05°53'00" W	12°09'38"
C27	25.00'	39.27'	35.36'	S 44°48'17" E	90°00'12"
C28	25.00'	39.27'	35.36'	S 45°11'49" W	90°00'00"
C29	265.00'	17.96'	17.96'	N 88°20'30" E	3°53'03"
C30	335.00'	22.20'	22.20'	S 88°17'54" W	3°47'50"
C31	25.00'	39.27'	35.36'	N 48°36'01" W	90°00'00"
C32	25.00'	39.27'	35.36'	N 41°23'59" E	90°00'00"
C33	265.00'	44.46'	44.40'	N 08°24'22" W	9°36'42"
C34	25.00'	19.68'	19.17'	N 35°45'42" W	45°05'57"
C35	60.00'	82.78'	76.37'	N 18°47'18" W	79°02'45"
C36	60.00'	99.29'	88.34'	N 68°08'23" E	94°48'37"
C37	60.00'	100.89'	89.42'	S 16°17'02" E	96°20'32"
C38	25.00'	19.68'	19.17'	S 09°20'15" W	45°05'57"
C39	335.00'	56.20'	56.13'	S 08°24'22" E	9°36'42"
C40	25.00'	39.27'	35.36'	S 48°36'01" E	90°00'00"
C41	25.00'	19.68'	19.17'	N 63°51'01" E	45°05'57"
C42	60.00'	76.78'	71.65'	N 77°57'42" E	73°19'20"
C43	60.00'	54.55'	52.69'	S 39°20'01" E	52°05'13"
C44	60.00'	58.86'	56.53'	S 14°48'51" W	56°12'31"
C45	25.00'	19.68'	19.17'	S 20°22'08" W	45°05'57"
C46	25.00'	19.68'	19.17'	S 24°43'48" E	45°05'57"
C47	60.00'	69.75'	65.89'	S 13°58'36" E	66°36'21"
C48	60.00'	89.69'	81.57'	S 62°08'58" W	85°38'49"
C49	60.00'	60.44'	57.92'	N 46°10'12" W	57°42'51"
C50	60.00'	63.07'	60.21'	N 12°48'10" E	60°13'53"
C51	25.00'	19.68'	19.17'	N 20°22'08" E	45°05'57"
C52	25.00'	39.89'	35.79'	N 47°53'26" W	91°25'11"
C53	25.00'	39.27'	35.36'	S 41°23'59" W	90°00'00"
C54	265.00'	56.24'	56.14'	S 05°53'00" E	12°09'38"
C55	25.00'	34.53'	31.85'	S 03°03'56" W	79°07'41"
C56	265.00'	30.88'	30.86'	S 60°27'12" W	6°40'33"
C57	265.00'	215.17'	209.31'	S 33°51'16" W	46°31'18"

WALKER RESERVE
A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

OWNERS:
KENDALL HOMES OF TEXAS LLC
427 MASON PARK BLVD
KATY TX 77450

SURVEYORS
SURVTECH SURVEYING
PO BOX 1080
CONROE TEXAS 77305
936-539-5444

1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS AND A 35' BUILDING LINE ALONG ALL STREET RIGHT OF WAYS WITHIN THE SUBDIVISION, UNLESS SHOWN OTHERWISE

3. THERE IS A 16' UTILITY EASEMENT ALONG ALL STREET RIGHT OF WAYS

IRF= IRON ROD FOUND
BL= BUILDING LINE
UE= UTILITY EASEMENT
DE= DRAINAGE EASEMENT
AE= ACCESS EASEMENT
CM= CONTROL MONUMENT
FNL= FENCELINE
CL= CENTERLINE
VOL= VOLUME, PG= PAGE
ROW= RIGHT OF WAY
CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5/8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

TERPSTRA WILLIAM
264.41 ACRE
VOL 281 PAGE 592
OFFICIAL RECORDS

LINE AS ESTABLISHED VIA BOUNDARY LINE AGREEMENT
VOLUME 284, PAGE 399

N 88°06'29" E
502.50'

5/8"IRC

145.13'
150.29'
1/2"IRF
20.85'
145.93'
240.14'
95.58'
266.28'

S 03°36'01" E 232.37'
S 03°36'01" E 288.99'
N 06°02'12" W 284.90'
N 24°37'22" E 294.65'

LOT 7
1.00 AC
LOT 8
1.00 AC
LOT 9
1.00 AC
LOT 10
1.08 AC

35' BL
16'UE
132.22'
157.97'
C41
C42
C43
N 76°42'36" E 198.40'

S 86°23'59" W 614.33'
E 70' ROW
217.62'
C52
C45
C44
248.52'

LOT 11
1.11 AC

16'UE
35' BL
S 03°36'01" E 167.35'
169.71'
LOT 16
1.00 AC
LOT 17
1.15 AC

S 02°10'50" E 307.44'
138.52'
N 87°49'10" E 216.74'
48.57'

S 01°45'45" E
722.12'

LINE AS ESTABLISHED VIA BOUNDARY LINE AGREEMENT

N 86°55'08" W 240.04'
)" W 300.00'
16.01'
C51
C50
C46
C47
LOT 12
1.06 AC

N 87°01'24" E
699.43'

N 84°47'47" E
320.54'

5/8"IRF
SET
S 04°11'28" E
94.33'

MCKIGNEY
5.912 ACRE
VOL 157 PAGE 599
OFFICIAL RECORDS

N 03°36'01" W 145.20'
145.20'
LOT 15
1.00 AC
C49
C48
S 40°19'14" E 172.80'
16'UE
5/8"IRC
55.96'
87.24'
SET

1.77 ACRE INGRESS/EGRESS ESMT VOL 284 PAGE 392

S 88°15'01" W
1110.50'

S 45°43'47" W 289.85'
LOT 14
1.16 AC
LOT 13
1.00 AC
BLOCK 5
130.40'
S 23°24'08" W 364.79'
407.77'
S 53°44'42" W
532.07'
N 01°05'45" W 409.15'
172.97'
124.30'

N
W E
S

0 100 200

SURVTECH
SURVEYORS
PLANNERS
"A Land Surveying Company"

P.O. BOX 1080 \ CONROE, TEXAS 77305-1080
936-539-5444 \ FAX 936-539-5442
email: SURVTECH@SURVCORP.COM

LINE	BEARING	DISTANCE
L1	S 15°55'31" W	20.24'
L2	S 01°30'59" W	39.63'
L3	S 14°37'53" E	49.94'
L4	S 21°07'20" E	26.53'
L5	S 09°22'00" W	21.28'
L6	S 18°41'07" W	58.00'
L7	S 05°01'06" W	67.45'
L8	S 06°23'42" W	78.37'
L9	S 08°16'39" E	52.83'
L10	S 14°44'44" E	44.61'
L11	S 07°23'26" W	74.31'
L12	S 26°36'42" W	51.63'
L13	S 02°06'00" W	52.91'
L14	S 18°19'53" W	53.90'
L15	S 34°33'45" W	25.36'
L16	S 32°43'34" W	44.16'
L17	S 25°04'54" W	66.58'
L18	S 24°44'08" W	48.66'
L19	N 28°12'54" E	93.21'
L20	N 58°21'14" E	32.25'
L21	N 16°32'55" E	87.80'
L22	N 04°30'38" W	68.15'
L23	N 35°22'17" E	19.55'
L24	N 41°41'49" E	22.74'
L25	S 74°13'18" W	36.48'
L26	S 47°09'15" W	100.32'
L27	N 23°46'47" E	25.96'
L28	S 00°59'02" W	44.67'
L29	N 37°54'34" E	63.58'
L30	N 43°12'46" E	53.34'
L31	N 20°37'27" E	30.00'
L32	N 55°59'57" E	24.51'
L33	N 11°42'44" E	22.42'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	300.00'	18.66'	18.65'	N 14°35'07" W	3°33'48"
C2	300.00'	122.51'	121.66'	N 01°06'18" W	23°23'50"
C3	300.00'	278.54'	268.64'	N 37°11'33" E	53°11'52"
C4	300.00'	52.62'	52.56'	S 31°28'24" E	10°03'01"
C5	300.00'	544.00'	472.47'	N 39°59'04" E	103°53'46"
C6	300.00'	209.13'	204.92'	N 71°57'44" E	39°56'24"
C7	300.00'	334.87'	317.76'	N 20°00'51" E	63°57'22"
C8	300.00'	63.67'	63.55'	N 05°53'00" W	12°09'38"
C9	300.00'	19.88'	19.88'	S 88°17'54" W	3°47'50"
C10	300.00'	50.33'	50.27'	N 08°24'22" W	9°36'42"
C11	335.00'	20.83'	20.83'	N 14°35'07" W	3°33'48"
C12	265.00'	16.48'	16.48'	S 14°35'07" E	3°33'48"
C13	265.00'	108.22'	107.47'	S 01°06'18" E	23°23'50"
C14	335.00'	136.80'	135.85'	N 01°06'18" W	23°23'50"
C15	335.00'	35.38'	35.37'	S 13°37'10" W	6°03'07"
C16	335.00'	127.62'	126.85'	N 27°33'33" E	21°49'39"
C17	335.00'	88.20'	87.95'	N 46°00'57" E	15°05'08"
C18	335.00'	59.83'	59.75'	N 58°40'30" E	10°13'58"
C19	25.00'	39.37'	35.43'	N 18°40'17" E	90°14'23"
C20	265.00'	46.48'	46.42'	N 31°28'24" W	10°03'01"
C21	335.00'	58.76'	58.69'	S 31°28'24" E	10°03'01"
C22	25.00'	35.64'	32.70'	N 77°20'17" W	81°40'44"
C23	335.00'	176.05'	174.03'	S 76°52'39" W	30°06'35"
C24	265.00'	354.17'	328.40'	N 53°38'40" E	76°34'33"
C25	265.00'	126.36'	125.17'	N 01°41'47" E	27°19'13"
C26	335.00'	71.10'	70.97'	N 05°53'00" W	12°09'38"
C27	25.00'	39.27'	35.36'	S 44°48'17" E	90°00'12"
C28	25.00'	39.27'	35.36'	S 45°11'49" W	90°00'00"
C29	265.00'	17.96'	17.96'	N 88°20'30" E	3°53'03"
C30	335.00'	22.20'	22.20'	S 88°17'54" W	3°47'50"
C31	25.00'	39.27'	35.36'	N 48°36'01" W	90°00'00"
C32	25.00'	39.27'	35.36'	N 41°23'59" E	90°00'00"
C33	265.00'	44.46'	44.40'	N 08°24'22" W	9°36'42"
C34	25.00'	19.68'	19.17'	N 35°45'42" W	45°05'57"
C35	60.00'	82.78'	76.37'	N 18°47'18" W	79°02'45"
C36	60.00'	99.29'	88.34'	N 68°08'23" E	94°48'37"
C37	60.00'	100.89'	89.42'	S 16°17'02" E	96°20'32"
C38	25.00'	19.68'	19.17'	S 09°20'15" W	45°05'57"
C39	335.00'	56.20'	56.13'	S 08°24'22" E	9°36'42"
C40	25.00'	39.27'	35.36'	S 48°36'01" E	90°00'00"
C41	25.00'	19.68'	19.17'	N 63°51'01" E	45°05'57"
C42	60.00'	76.78'	71.65'	N 77°57'42" E	73°19'20"
C43	60.00'	54.55'	52.69'	S 39°20'01" E	52°05'13"
C44	60.00'	58.86'	56.53'	S 14°48'51" W	56°12'31"
C45	25.00'	19.68'	19.17'	S 20°22'08" W	45°05'57"
C46	25.00'	19.68'	19.17'	S 24°43'48" E	45°05'57"
C47	60.00'	69.75'	65.89'	S 13°58'36" E	66°36'21"
C48	60.00'	89.69'	81.57'	S 62°08'58" W	85°38'49"
C49	60.00'	60.44'	57.92'	N 46°10'12" W	57°42'51"
C50	60.00'	63.07'	60.21'	N 12°48'10" E	60°13'53"
C51	25.00'	19.68'	19.17'	N 20°22'08" E	45°05'57"
C52	25.00'	39.89'	35.79'	N 47°53'26" W	91°25'11"
C53	25.00'	39.27'	35.36'	S 41°23'59" W	90°00'00"
C54	265.00'	56.24'	56.14'	S 05°53'00" E	12°09'38"
C55	25.00'	34.53'	31.85'	S 03°03'56" W	79°07'41"
C56	265.00'	30.88'	30.86'	S 60°27'12" W	6°40'33"
C57	265.00'	215.17'	209.31'	S 33°51'16" W	46°31'18"

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A SUBDIVISION OF 87.90 ACRES
JOSE MARIA DeLa GARZA SURVEY
ABSTRACT 22
WALKER COUNTY TEXAS

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427 MASON PARK BLVD
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1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS

IRF= IRON ROD FOUND
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UE= UTILITY EASEMENT
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CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5\8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

BASED UPON A REVIEW OF THE PLAT AND PLANS AS REPRESENTED BY THE SAID ENGINEER OR SURVEYOR, I, THE BELOW SIGNED DESIGN/REVIEW PROFESSIONAL, BEING QUALIFIED TO MAKE SAID DETERMINATION UNDER TEXAS LAW, FIND THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF THE WALKER COUNTY ON-SITE SEWAGE FACILITY REGULATIONS, AND TITLE 30 OF THE TEXAS ADMINISTRATIVE CODE, CHAPTER 285, INCLUDING BUT NOT LIMITED TO THE SUITABILITY OF THE PROPOSED LOTS TO ACCOMMODATE ON-SITE SEWAGE FACILITIES WITHIN THE PROPOSED DEVELOPMENT CONSIDERING ALL OF THE REQUIREMENTS OF TITLE 30, 285 TAC AND ANY APPLICABLE LOCAL ORDERS. I ALSO AGREE THAT WALKER COUNTY, ITS AGENTS, AND ASSIGNS BEAR NO RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

_____ DATE
_____ P.E.

SPEAR POINT ENGINEERING
TBPE FIRM #18904
604 Worsham Street, Suite 100
Willis, TX 77378
713-305-0698

THE DESIGN OF THIS PROJECT WILT NOT NEGATIVELY IMPACT THIS PROPERTY OR ADJACENT PROPERTIES. BASED ON CALCULATIONS MADE FROM AVAILABLE DATA, IF THE IMPERVIOUS COVER (STRUCTURES, DRIVEWAYS, SIDEWALKS, ETC.) ON EACH LOT DOES NOT EXCEED 8,000 SQUARE FEET, THEN THE EXISTING DETENTION ON THE PROPERTY WILL BE SUFFICIENT. HOWEVER, IF THE IMPERVIOUS COVER OF THE PROPERTY EXCEEDS OR SURPASSES 8,000 SQUARE FEET THEN FURTHER STUDY WILL BE NECESSARY AND POSSIBLE DRAINAGE/DETENTION IMPROVEMENTS MAY BE REQUIRED IN ACCORDANCE WITH CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS INCLUDING THE WALKER COUNTY SUBDIVISION REGULATIONS. LOCAL APPROVAL OR ALLOWANCE MUST BE GIVEN BY WALKER COUNTY IN WRITING PRIOR TO THE ALTERATION OF THE DRAINAGE INFRASTRUCTURE. IT IS THE RESPONSIBILITY OF LOT OWNERS TO COMPLY WITH ANY REGULATIONS OR LIMITATIONS NOTED, AND PERMITS ISSUED BY WALKER COUNTY FOR DEVELOPMENT DO NOT ACT AS A WAIVER OR VARIANCE OF THE LOT OWNER'S RESPONSIBILITY TO PROVIDE FOR EXCESS RUNOFF AND DRAINAGE CREATED BY THE PERMITTED DEVELOPMENT.

BASED UPON A REVIEW OF THE PLAT AND ASSOCIATED PLANS, I, THE BELOW SIGNED PROFESSIONAL ENGINEER FIND THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF THE CURRENT WALKER COUNTY FLOODPLAIN REGULATIONS. I FURTHER UNDERSTAND AND AGREE THAT THIS FINDING IS MADE BY AND THROUGH MY INDEPENDENT REVIEW, AND WALKER COUNTY HAS NO RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

_____ DATE
_____ P.E.

SPEAR POINT ENGINEERING
TBPE FIRM #18904
604 Worsham Street, Suite 100
Willis, TX 77378
713-305-0698

CULVERT SCHEDULE

Lots	Roadway	QUANTITY	INSIDE DIAMETER

NO STRUCTURE OR LAND WITHIN THIS PLAT SHALL HEREAFTER BE DEVELOPED WITHOUT FIRST OBTAINING A DEVELOPMENT PERMIT FROM THE WALKER COUNTY FLOODPLAIN ADMINISTRATOR UNLESS THE PROPOSED DEVELOPMENT IS EXEMPT OR EXCEPTED FROM THE WALKER COUNTY FLOODPLAIN DEVELOPMENT REGULATIONS. THE MINIMUM, LOWEST FINISHED FLOOR ELEVATION SHALL BE IN COMPLIANCE WITH THE LOCAL FLOODPLAIN REGULATIONS AND THE FINISHED FLOOR ELEVATION NOTED ON THE PLAT, WHICHEVER ELEVATION IS HIGHER.

IT IS THE RESPONSIBILITY OF THE OWNER, NOT THE COUNTY, TO ASSURE COMPLIANCE WITH THE PROVISIONS OF ALL APPLICABLE STATE, FEDERAL, AND LOCAL LAWS AND REGULATIONS RELATING TO THE PLATTING AND DEVELOPMENT OF THIS PROPERTY. THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT.
FLOODPLAIN DATA, IN PARTICULAR, MAY CHANGE. IT IS FURTHER UNDERSTOOD THAT THE OWNER(S) OF THE TRACT OF LAND COVERED BY THIS PLAT, ITS SUCCESSORS AND/OR ASSIGNS, OR A DESIGNATED PROPERTY OWNER'S ASSOCIATION MUST INSTALL AND MAINTAIN AT THEIR OWN EXPENSE ALL ROADS, STORMWATER MANAGEMENT CONTROLS, TRAFFIC CONTROL DEVICES, AND SIGNAGE THAT MAY BE REQUIRED UNTIL SUCH TIME, IF ANY, SAID INFRASTRUCTURE IN THE SUBDIVISION HAVE BEEN ACCEPTED FOR PUBLIC MAINTENANCE.

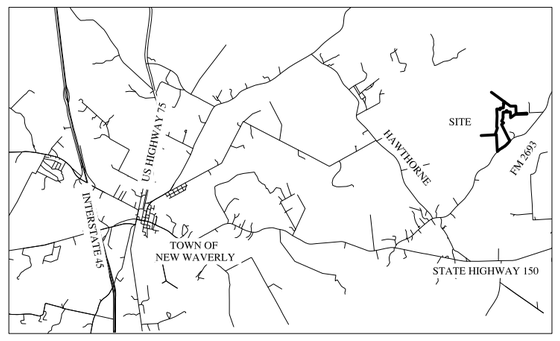
CLUSTER AND INDIVIDUAL MAILBOXES, IF ALLOWED, SHALL BE SET THREE FEET FROM THE EDGE OF THE PAVEMENT OR BEHIND CURBS, WHEN USED. ALL MAILBOXES WITHIN COUNTY ARTERIAL RIGHT-OF-WAY SHALL MEET THE CURRENT TXDOT STANDARDS. ANY MAILBOX THAT INTERFERES WITH OR NEGATIVELY AFFECTS THE MAINTENANCE OR USE OF THE ROADS OR DRAINAGE SYSTEM MAY BE REMOVED BY WALKER COUNTY.

UTILITIES SHALL BE INSTALLED WITHIN A DEDICATED UTILITY EASEMENT. UTILITIES ARE NOT PERMITTED WITHIN DRAINAGE EASEMENTS, UNLESS SPECIFICALLY EXCEPTED BY THE SUBDIVISION REGULATIONS.

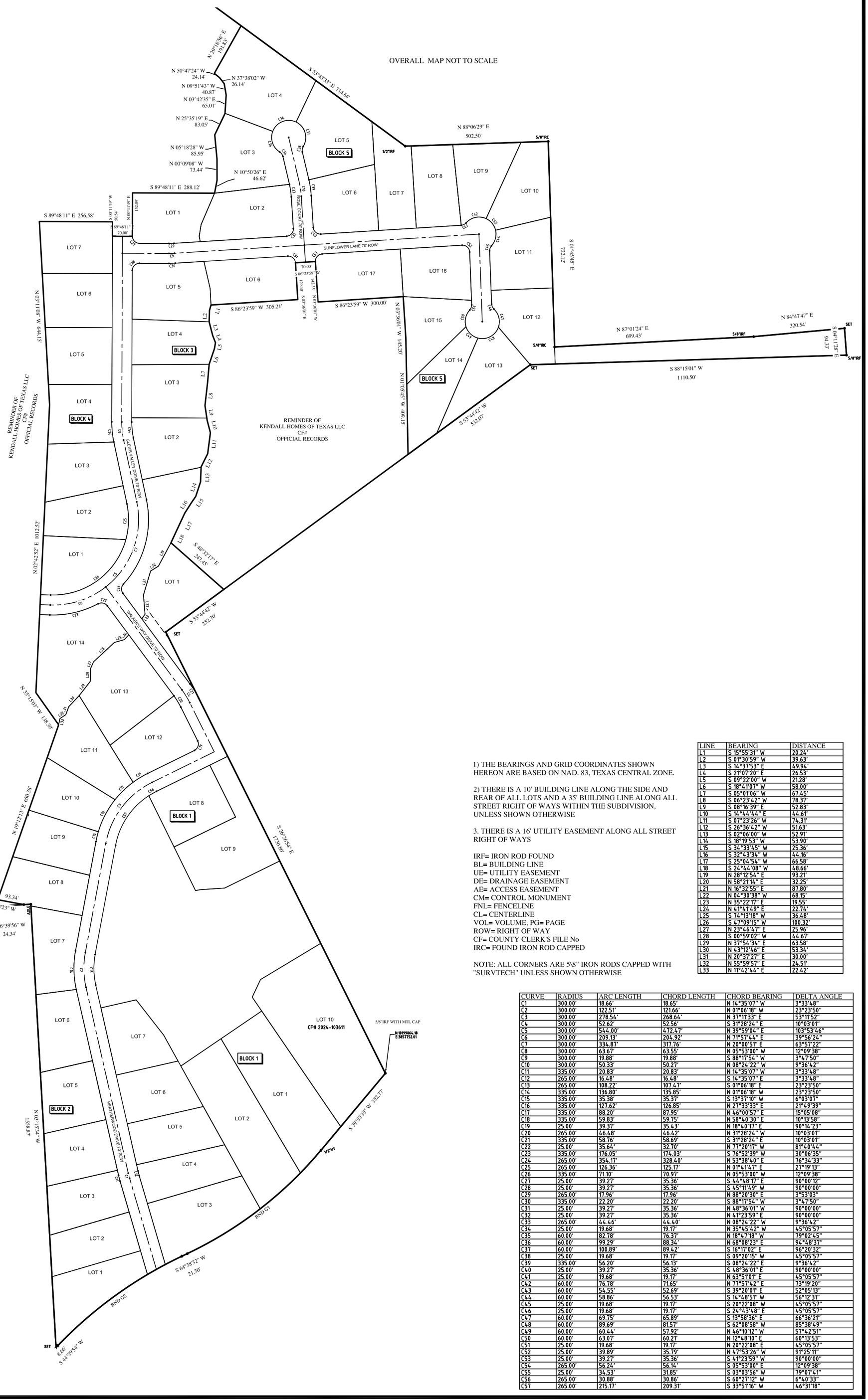
EACH LOT WILL BE SERVED BY PRIVATE ON-SITE WATER WELLS

THERE IS HEREBY DEDICATED A PRIVATE EASEMENT FOR DRAINAGE PURPOSES, EXTENDING A DISTANCE OF 15 FEET ON EACH SIDE OF THE CENTERLINE OF ALL NATURAL DRAINAGE COURSES,

VICINITY MAP (NOT TO SCALE)



OVERALL MAP NOT TO SCALE



1) THE BEARINGS AND GRID COORDINATES SHOWN HEREON ARE BASED ON NAD. 83, TEXAS CENTRAL ZONE.

2) THERE IS A 10' BUILDING LINE ALONG THE SIDE AND REAR OF ALL LOTS AND A 35' BUILDING LINE ALONG ALL STREET RIGHT OF WAYS WITHIN THE SUBDIVISION, UNLESS SHOWN OTHERWISE

3. THERE IS A 16' UTILITY EASEMENT ALONG ALL STREET RIGHT OF WAYS

IRF= IRON ROD FOUND
BL= BUILDING LINE
UE= UTILITY EASEMENT
DE= DRAINAGE EASEMENT
AE= ACCESS EASEMENT
CM= CONTROL MONUMENT
FNL= FENCELINE
CL= CENTERLINE
VOL= VOLUME, PG= PAGE
ROW= RIGHT OF WAY
CF= COUNTY CLERK'S FILE No
IRC= FOUND IRON ROD CAPPED

NOTE: ALL CORNERS ARE 5\8" IRON RODS CAPPED WITH "SURVTECH" UNLESS SHOWN OTHERWISE

LINE	BEARING	DISTANCE
L1	S 15°55'31" W	20.24'
L2	S 01°30'59" W	39.63'
L3	S 14°37'53" E	49.94'
L4	S 21°07'20" E	26.53'
L5	S 09°22'00" W	21.28'
L6	S 18°41'07" W	58.00'
L7	S 05°01'06" W	67.45'
L8	S 06°23'42" W	78.37'
L9	S 08°16'39" E	52.83'
L10	S 14°44'44" E	44.61'
L11	S 07°23'26" W	74.31'
L12	S 26°36'42" W	51.63'
L13	S 02°06'00" W	52.91'
L14	S 18°19'53" W	53.90'
L15	S 34°33'45" W	25.36'
L16	S 32°43'34" W	44.16'
L17	S 25°04'54" W	66.58'
L18	S 24°44'08" W	48.66'
L19	N 28°12'54" E	93.21'
L20	N 58°21'14" E	32.25'
L21	N 16°32'55" E	87.80'
L22	N 04°30'38" W	68.15'
L23	N 35°22'17" E	19.55'
L24	N 41°41'49" E	22.74'
L25	S 74°13'18" W	36.48'
L26	S 47°09'15" W	100.32'
L27	N 23°46'47" E	25.96'
L28	S 00°59'02" W	44.67'
L29	N 37°54'34" E	63.58'
L30	N 43°12'46" E	53.34'
L31	N 20°37'27" E	30.00'
L32	N 55°59'57" E	24.51'
L33	N 11°42'44" E	22.42'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	300.00'	18.66'	18.65'	N 14°35'07" W	3°33'48"
C2	300.00'	122.51'	121.66'	N 01°06'18" W	23°23'50"
C3	300.00'	278.54'	268.64'	N 37°11'33" E	53°11'52"
C4	300.00'	52.62'	52.56'	S 31°28'24" E	10°03'01"
C5	300.00'	544.00'	472.47'	N 39°59'04" E	103°53'46"
C6	300.00'	209.13'	204.92'	N 71°57'44" E	39°56'24"
C7	300.00'	334.87'	317.76'	N 20°00'51" E	63°57'22"
C8	300.00'	63.67'	63.55'	N 05°53'00" W	12°09'38"
C9	300.00'	19.88'	19.88'	S 88°17'54" W	3°47'50"
C10	300.00'	50.33'	50.27'	N 08°24'22" W	9°36'42"
C11	335.00'	20.83'	20.83'	N 14°35'07" W	3°33'48"
C12	265.00'	16.48'	16.48'	S 14°35'07" E	3°33'48"
C13	265.00'	108.22'	107.47'	S 01°06'18" E	23°23'50"
C14	335.00'	136.80'	135.85'	N 01°06'18" W	23°23'50"
C15	335.00'	35.38'	35.37'	S 13°37'10" W	6°03'07"
C16	335.00'	127.62'	126.85'	N 27°33'33" E	21°49'39"
C17	335.00'	88.20'	87.95'	N 46°00'57" E	15°05'08"
C18	335.00'	59.83'	59.75'	N 58°40'30" E	10°13'58"
C19	25.00'	39.37'	35.43'	N 18°40'17" E	90°14'23"
C20	265.00'	46.48'	46.42'	N 31°28'24" W	10°03'01"
C21	335.00'	58.76'	58.69'	S 31°28'24" E	10°03'01"
C22	25.00'	35.64'	32.70'	N 77°20'17" W	81°40'44"
C23	335.00'	176.05'	174.03'	S 76°52'39" W	30°06'35"
C24	265.00'	354.17'	328.40'	N 53°38'40" E	76°34'33"
C25	265.00'	126.36'	125.17'	N 01°41'47" E	27°19'13"
C26	335.00'	71.10'	70.97'	N 05°53'00" W	12°09'38"
C27	25.00'	39.27'	35.36'	S 44°48'17" E	90°00'12"
C28	25.00'	39.27'	35.36'	S 45°11'49" W	90°00'00"
C29	265.00'	17.96'	17.96'	N 88°20'30" E	3°53'03"
C30	335.00'	22.20'	22.20'	S 88°17'54" W	3°47'50"
C31	25.00'	39.27'	35.36'	N 48°36'01" W	90°00'00"
C32	25.00'	39.27'	35.36'	N 41°23'59" E	90°00'00"
C33	265.00'	44.46'	44.40'	N 08°24'22" W	9°36'42"
C34	25.00'	19.68'	19.17'	N 35°45'42" W	45°05'57"
C35	60.00'	82.78'	76.37'	N 18°47'18" W	79°02'45"
C36	60.00'	99.29'	88.34'	N 68°08'23" E	94°48'37"
C37	60.00'	100.89'	89.42'	S 16°17'02" E	96°20'32"
C38	25.00'	19.68'	19.17'	S 09°20'15" W	45°05'57"
C39	335.00'	56.20'	56.13'	S 08°24'22" E	9°36'42"
C40	25.00'	39.27'	35.36'	S 48°36'01" E	90°00'00"
C41	25.00'	19.68'	19.17'	N 63°51'01" E	45°05'57"
C42	60.00'	76.78'	71.65'	N 77°57'42" E	73°19'20"
C43	60.00'	54.55'	52.69'	S 39°20'01" E	52°05'13"
C44	60.00'	58.86'	56.53'	S 14°48'51" W	56°12'31"
C45	25.00'	19.68'	19.17'	S 20°22'08" W	45°05'57"
C46	25.00'	19.68'	19.17'	S 24°43'48" E	45°05'57"
C47	60.00'	69.75'	65.89'	S 13°58'36" E	66°36'21"
C48	60.00'	89.69'	81.57'	S 62°08'58" W	85°38'49"
C49	60.00'	60.44'	57.92'	N 46°10'12" W	57°42'51"
C50	60.00'	63.07'	60.21'	N 12°48'10" E	60°13'53"
C51	25.00'	19.68'	19.17'	N 20°22'08" E	45°05'57"
C52	25.00'	39.89'	35.79'	N 47°53'26" W	91°25'11"
C53	25.00'	39.27'	35.36'	S 41°23'59" W	90°00'00"
C54	265.00'	56.24'	56.14'	S 05°53'00" E	12°09'38"
C55	25.00'	34.53'	31.85'	S 03°03'56" W	79°07'41"
C56	265.00'	30.88'	30.86'	S 60°27'12" W	6°40'33"
C57	265.00'	215.17'	209.31'	S 33°51'16" W	46°31'18"

Schedule of Fees for Department of Planning and Development

Description of Item	Current Fee
Development Permit Fees	
Development Permit - Single Family Residential	$100.00
Development Permit – Commercial/Industrial/Multi-family	$ 100.00 + 5¢ per square foot of development (general/structures)
	1.5¢ per sq. ft. of paving/parking ***w/ max. fee of $ 5,000.00***
Multi Property Development Permit – Commercial/Industrial	$ 100.00 + 5¢ per square foot of development (general/structures)
	1.5¢ per sq. ft. of paving/parking ***no maximum fee***
On-Site Sewage Facility Permit Fees	
Single Family Residential On-site Sewage Permit	$210.00
Commercial / Multi-Family On-site Sewage Permit	$ 510.00 + 25¢ per gallon for designs above 500 gallons
Re-Inspection Fee OR Additional Inspection Fee	$125.00
Modification of Sprayfield on permitted system	50% of permit fee
Report Submittal Fee for required OSSF Reports	$5.00
Late Fee for Overdue OSSF Reports	$ 2.00 per day late (capped @ $ 100.00 per report)
Late Fee for Overdue Contracts	$25.00
Subdivision Platting Fees	
Minor Plat	$ 250.00 up to 4 unplatted lots with NO road construction
Major Plats without Right-of-Way Improvements (Detention Only)	$ 600.00 + $ 50.00 /lot over Four (4) Lots (plat review portion) and ($7,500.00 + $125.00/ Acre + $125.00/Lot) X 0.90 (plan review and inspection portion)
Major Plats with 40 or Fewer Lots	$600.00 + $50.00 / lot over Four(4) Lots (plat review portion) and ($18,000.00 + $150.00/Acre + $150.00/Lot) X 0.90 (plan review and inspection portion)
Major Plats Exceeding 40 Lots	$600.00 + $50.00 / lot over Four(4) Lots (plat review portion) and ($15,000.00 + $125.00/Acre + $125.00/ Lot) X 0.90 (plan review and inspection portion)
Re-Plat Fee	Identical to the platting fee(s) of same type or category
OSSF Subdivision Review Fee	$ 150.00 + $ 10.00 per lot/tract for each lot/tract over 4
Variance Request Fee	$200.00 per type
Misc. Fees	
9-1-1 Address Request/Application	No Charge
Solid Waste Hauler's License	$50.00
Printing Standard Page Plotter Map	$ 15.00 *Pricing is for printing of existing maps
Printing 11 x 17 Map	$ 5.00 and DOES NOT include custom map creation
Credit Card Processing Fee	2.5% of total transaction

- All plat applications not meeting the conditions for approval without response, amendment, or revision following the third submittal will be subject to an increase in the plat application fee of 25% of the properly calculated original fee including the percentage of construction costs. An additional fee increase of 25% of the original fee will be assessed for each additional response, revision.

- A payment of the current calculated value of the plat application fee, or any deficiencies calculated at the time of submittal, must be included with all original applications, responses, or revisions submitted.
- Given that the plat application fee is based on factors subject to change during the review process, such as number of lots, acreage, subdivision design, quality of application, and quantity of responses or revisions, the applicant must pay all fees prior to submittal or, in the case of a fee calculation error, prior to the approval of the application.
- Non-payment of the currently assessed fee is considered cause for the denial of the plat application.
- Any application, response, amendment, or revision submitted without the appropriate fee or fee adjustment being paid will not be received and is not considered submitted.
- The Director of Planning and Development has the authority to waive resubmittal/revision fee increases when additional submittals are necessary to respond to review errors or are considered minor in nature.
- Multi-family Development Permit includes, but is not limited to all Mobile Home Parks, RV Parks, Apartment Buildings, etc. The multi-family designation does not include multiple individual single-family residential units constructed on a single lot for the use of the owner.
- Mobile Home Park and RV Park designation includes two or more mobile homes or RVs offered for rent on a single property.
- Multi-family OSSF Permit includes any on-site sewage system serving more than one residential unit.
- The late fee for overdue contracts and reports will be charged based on a methodology/policy developed by Planning and Development which can consider not only statutory requirements, processing requirements, date submitted, received, processed, but also extenuating circumstances involved in individual submittals.

STATE OF TEXAS
COUNTY OF WALKER

This is to certify that the Commissioner Court of Walker County, Texas has on this **28th day of August, 2023**, approved this schedule of fees for the Department of Planning and Development of Walker County, Texas.

These fees shall replace and amend current fees charged by the department.

COLT CHRISTIAN, County Judge

DANNY KUYKENDALL, Comm. Prec. 1

RONNIE WHITE, Comm. Prec. 2

BILL DAUGETTE, Comm. Prec. 3

BRANDON DECKER, Comm. Prec. 4

COMMISSIONERS COURT ★ WALKER COUNTY, TEXAS ★

VARIANCE REQUEST TO THE FLOODPLAIN MANAGEMENT REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION			FOR COUNTY USE ONLY
A1. Building/Site Owner's Name Black Eye Properties LLC			Permit Number:
A2. Building/Site Street Address [redacted]			Date of Submittal:
City [redacted]	State [redacted]	ZIP Code [redacted]	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Property ID: 20223 Legal Description: Smith J (A-497), Tract 4, Acres 9.5663			

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
Walker County	Walker	Texas

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)
48471C0525	D	08/16/2011	08/16/2011	X, A

THE ABOVE NAMED PERMIT APPLICANT DOES HEREBY MAKES AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE CONDITIONS OF PERMIT APPROVAL AND/OR CONSTRUCTIONS STANDARDS REQUIRED BY THE WALKER COUNTY FLOOD PLAIN MANAGEMENT REGULATIONS FOR PROPOSED DEVELOPMENT WITHIN AN IDENTIFIED FLOOD HAZARD AREA RELATED TO THE ABOVE REFERENCED DEVELOPMENT PERMIT APPLICATION.

SECTION C – BASE FLOOD ELEVATION UTILIZED IN DESIGN

(If a determination of the base flood elevation has been made, then a copy of a *Determination of Base Flood Elevation Form* must be submitted and the elevation shown in C1 below should correspond with the elevation that appears in subsection E3 on that form. For large projects subject to varying or multiple flood heights please place an "X" in the box adjacent to D2)

C1) [✓] _____ **The Base Flood Elevation for the proposed location/project is:** 310.78 **ft mean sea level.**

C2) [ ] _____ This project is subject to multiple Base Flood Elevations, the BFE is provided in attached plans/submittals as project overlay, detailed method of determination, drainage plans, and BFE impact summary.

C3) [ ] _____ **No Base Flood Elevation has been determined for this property**

SECTION D – VARIANCE(S) RELATED TO ELEVATION REQUIREMENTS AND DRY FLOODPROOFING

Applicant requests a variance to the elevation requirements of Sections 5:02(a), 5:02(b), or 5:02(c) (requiring that new or substantially improved structures be elevated a minimum of twelve (12) inches above the base flood elevation authorization is requested to construct the lowest floor of the listed structure(s) at the elevations listed below. (Elevation must be listed in the same datum used for the base flood elevation listed in Section "C" or if no BFE is provided then listed as a distance to the tenth of a foot above lowest natural grade.

Description of Structure(s)	Proposed Elevation of lowest floor including basement	Proposed Elevation of Flood Proofing (Non-Residential Structures Only)
D.1 C-Store	312.00	
D.2 Retail	312.00	
D.3		
D.4		

SECTION E – OTHER VARIANCE

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

E.1 A Variance is requested to Section(s) 3.11 of the Walker County Flood Plain Regulations as follows:

Restricted Uses of the Flood Hazard Area

SECTION F – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Floodplain Regulations need to be included along with the Section(s) of the Regulation to which they apply)

F.1 Is the variance for new construction or substantial improvement of a structure to be erected on a lot of one-half acre or less in sized contiguous to and surrounded by lots with existing structures constructed below the base flood elevation?

Yes _____ No X

F.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit F.2"):

Some part of the the 9.5663 acre tract lies within the FEMA flood hazard area (A zone), it is over 5 acres and would require a detailed study because it was subdivided out of a larger tract. A variance for the requirement of the detailed drainage study is requested. The forms regarding the determination of BFE by using BLE engineering have been attached with this request.

F.3 Will the failure to grant the variance result in any exceptional hardship to the applicant?

Yes X No _____

If yes please explain below:

The preparation of the detailed drainage study will be very time consuming and it will create hardship to the applicant as the necessary data for the detail study may not be available. A detail drainage study will not be necessary for this project.

F.4 Is the variance requested within a regulatory floodway?

Yes _____ No X

F.5 Will the variance result in increased flood heights, additional threats to public safety, extraordinary public expense, create a nuisance, cause fraud, victimization of the public, or conflict with existing local laws or court orders?

Yes _____ No X Please provide analysis or explanation below or reference attachments:

Although some portion of the project area lies within the Flood Hazard Area (A Zone), the project area is not in a floodway. The FFE of the buildings has been set atleast 1 (one) foot above the BFE determined for this project. Also proper mitigation and detention storages has been provided for floodplain. So there no additional threats to public safety.

SECTION H –VARIANCE(S) GRANTED

(All design elevations shall be given in the same elevation datum used for the elevation in section D1)

H.1 A VARIANCE TO THE WALKER COUNTY FLOOD PLAIN REGULATIONS IS GRANTED AS FOLLOWS:

H.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE IN ADDITION TO THE REQUIREMENTS OF THE DEVELOPMENT PERMIT AND ANY REQUIREMENTS OF THE FLOOD PLAIN MANAGEMENT REGULATIONS:

SECTION J - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

NOTICE

ALL DEVELOPMENT MUST BE IN STRICT COMPLIANCE WITH THE VARIANCES STATED HERE AND OTHER CONDITIONS STATED ON THE DEVELOPMENT PERMIT. ANY VARIATION WILL RESULT IN IMMEDIATE SUSPENSION OF THIS VARIANCE AND THE DEVELOPMENT PERMIT. FLAGRANT VIOLAITON OF THE CONDITIONS OF THIS VARIANCE MAY RESULT IN THE COMMISIONER'S COURT SEEKING INJUNCTIVE RELIEF, CIVIL, OR CRIMINAL PENALTIES.

WARNING

THE GRANTING OF A VARIANCE IS LIMITED TO THE PERMITTING STANDARDS AND LOCAL REGULATORY STANDARD ONLY. IT IS NOT A VARIANCE FROM THE REQUIREMENT TO PURCHASE FLOOD INSURANCE. **PREMIUMS FOR FLOOD INSURANCE COVERAGE FOR THE STRUCTURE WILL INCREASE** AS A RESULT OF CONSTRUCTING THE FIRST FLOOR BELOW THE LEVEL OF THE BASE FLOOD, AND MAY INCREASE AS A RESULT OF OTHER VARIANCES GRANTED. LOWERING THE FIRST FLOOR BELOW THE BASE FLOOD ELEVATION **MAY INCREASE THE POTENTIAL FOR FLOOD DAMAGE AND LOSS OF LIFE**. THE APPLICANT ACKNOWLEDGES THAT HE/SHE IS RESPONSIBLE TO ENSURE THAT ANY VARIANCE DOES NOT DAMAGE OR THREATEN ADJASCENT PROPERTIES AND COMPLIES WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

DISCLAIMER

THE COMMISSIONER'S COURT OF WALKER COUNTY AND ANY OFFICER OR EMPLOYEE OF WALKER COUNTY ARE NOT LIABLE FOR DAMAGES OR LOSS OF LIFE RESULTING FROM FLOODING OF THE PROPERTY FOR WHICH A PERMIT OR VARIANCE IS GRANTED.

I, Golam Mostofa, do hereby acknowledge that I have reviewed the provisions, warnings, notices, and disclaimers stated above and that I understand them agree with them and intend to comply fully with them. I also acknowledge that my flood insurance costs will increase and flood damage potential to any structure or property subject to this variance will increase. I am fully aware that Walker County is not liable for damages to my property or structure, and that I accept full responsibility for the risks associated with this variance. I also certify that in the event I sell this property or structure in the future, that I will give notice of the variance to the purchaser prior to sale.

Signature of Owner/Applicant	Date
Golam Mostofa	05/12/2025

SECTION I – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reasons for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Flood Plain Management Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

DETERMINATION OF BASE FLOOD ELEVATION FORM

Copy all pages of this Determination and all attachments for (1) community official, (2) building owner

SECTION A – PROPERTY INFORMATION			FOR COUNTY USE ONLY
A1. Building/Site Owner's Name Black Eye Properties LLC			Permit Number:
A2. Building/Site Street Address [redacted]			Date of Submittal:
City [redacted]	State [redacted]	ZIP Code [redacted]	

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Property ID: 20223 Legal Description: Smith J (A-497) Tract 4, 9.5663 Acres

A4. Latitude/Longitude: Lat. 30.533459° Long. -95.498110° Horizontal Datum: ☐ NAD 1927 ☑ NAD 1983

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
Walker County	Walker	Texas

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)
48471C0525	D	08/16/2011	08/16/2011	X, A

B9. Indicate elevation datum used for on FIRM Panel in Item B7: ☐ NGVD 1929 ☑ NAVD 1988 ☐ Other/Source: _____

SECTION C – SOURCE OF BASE FLOOD ELEVATION DATA

C1. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in item E3.
☐ FIS Profile ☐ LOMA, LOMR, Federal, State, or Local Determination (Attach Copy) ☑ Base Level Engineering BLE (Attach Copy)
☐ Other (Complete Section D)

SECTION D – METHOD OF DETERMINATION FOR APPROXIMATE ZONE A

The below methods of determination are those listed and described in detail in publication FEMA 265/July 1995 "Managing Floodplain Development in Approximate Zone A Areas" and any determinations submitted shall utilize a method consistent with the publication, acceptable to FEMA, and considered appropriate by the certifying engineer or surveyor (see section F)

D1) SIMPLIFIED METHODS

- ☐ Contour Interpolation Method
- ☐ Data Extrapolation Method

D2) DETAILED METHODS (Please select one item from each category)

a) *Topography:*

- ☐ Existing Topographic Maps
- ☐ Field Survey

b) *Hydrology:*

- ☐ Discharge Drainage Area Relationships
- ☐ Regression Equations
- ☐ TR-55
- ☐ Rational Formula
- ☐ Other Hydrograph Methods: _____

c) *Hydraulics:*

- ☐ Normal Depth
- ☐ Critical Depth
- ☐ Step-Backwater Analysis
- ☐ Hydraulic Structures

SECTION E – BASE FLOOD ELEVATION (BFE) DETERMINATION

(BFE shall be determined to within one tenth of a foot)

E1. Indicate elevation datum used for the Base Flood Elevation shown in section E3:

☐ NGVD 1929 ☑ NAVD 1988 ☐ Other/Source: _____

E2. What is the site/location to which the determined Base Flood Elevation can be applied:

a) ☑ The entire lot/tract described in section A3

b) ☐ A specific building site on, or portion of, the lot/tract described in Section A3

If E2(b) is selected a detailed scaled map/survey must me attached indicating the area of the lot subject to the BFE determined

E3. The Base Flood Elevation for the site described in section E2, determined utilizing FEMA approved methods is:

310.78 ft

SECTION F – CERTIFICATION

This certification is to be signed and sealed by a registered engineer authorized by law to practice engineering in the State of Texas. If the source of the Base Flood Elevation in Section C is not "other", or is a finding under the "other" category supported by the "contour interpolation method" then a registered professional surveyor may sign and seal the certification instead of a registered engineer. I certify that the information on this form represents my best efforts to interpret the data available, and that the determinations herein where made in compliance with FEMA approved methodologies and standard engineering practices. . I understand that any false statement may be punishable by fine or imprisonment.

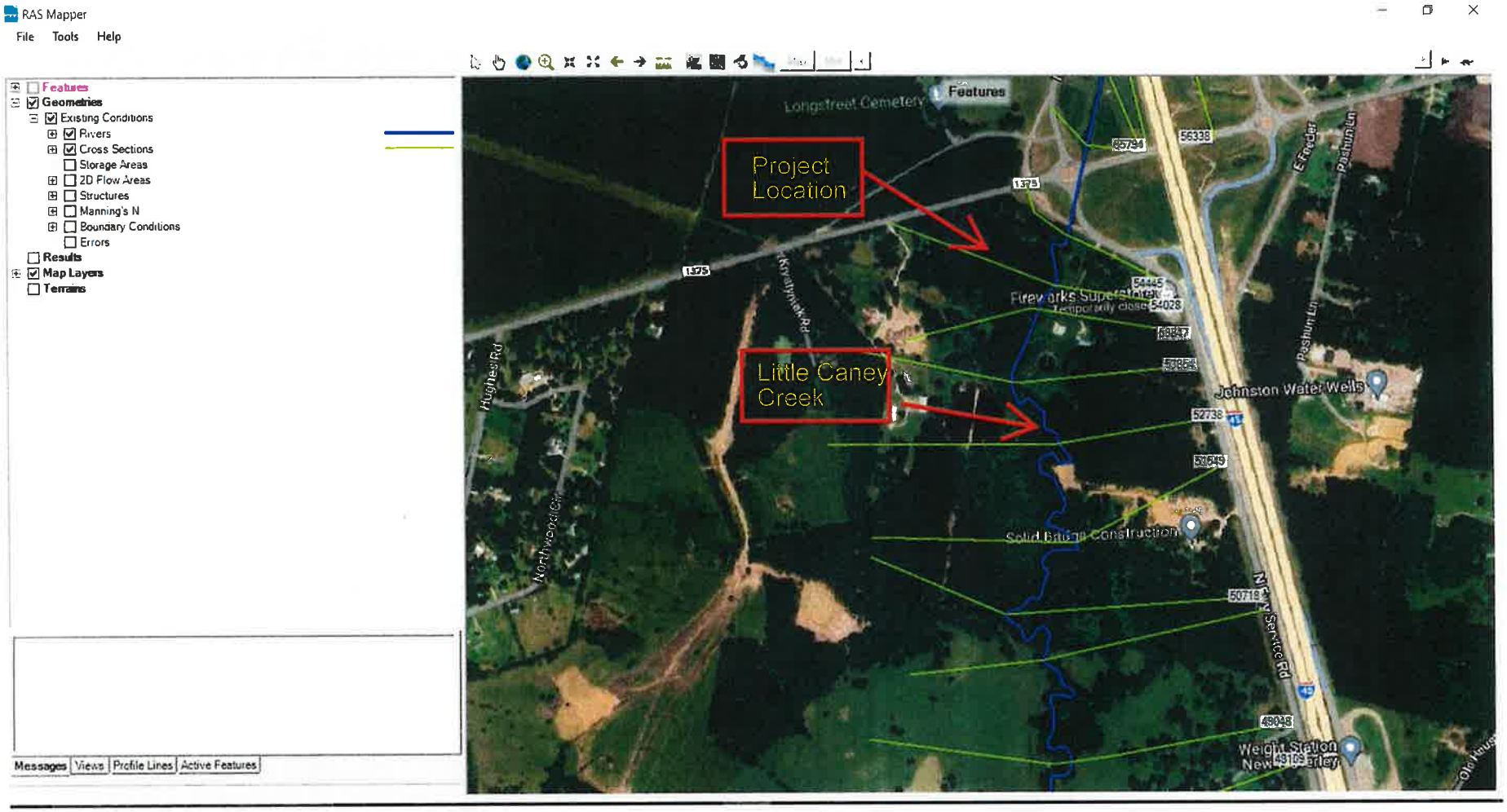
Were latitude and longitude in Section A provided by a licensed land surveyor? ☐ Yes ☑ No Check here if attachments

Certifier's Name: Golam Mostofa	License Number: TX-93031	
Title: President		
Company Name: Midstream & Terminal Services LLC		
Address: 9950 Westpark Dr., Ste 426		
City: Houston	State: TX	ZIP Code: 77063
Signature: Golam Mostofa	Date: 05/12/2025	Telephone: 281-404-4438

Comments and Attachments (One copy of the current FIRM with the subject lot/tract overlaid, a copy of any engineering studies completed in support of this determination, and a copy of any detailed map required by section E2 shall be included and listed along with any other attachments). Please list all attachments along with the number of pages of that attachment.

The BFE has been determined by Base Level Engineering (BLE) prepared by Compass PTS JV for FEMA titled: "East Fork San Jacinto Watershed TX Base Level Engineering (BLE) Results" Date: May 2018

Attachment:
1. HEC-RAS cross sections on Little Caney Creek near project area, No. of page= 1
2. HEC-RAS results for cross section on Little Caney Creek near project area (River Station 54028), No. of page = 1
3. Report: East Fork San Jacinto Watershed, TX Base Level Engineering (BLE) results, No. of pages= 42



HEC-RAS cross sections on Little Caney Creek Near Project Area

Data Source: East Fork San Jacinto Watershed, TX Base Level Engineering (BLE) HEC-RAS models, prepared by Compass PTS, obtained from FEMA website)

HEC-RAS results for Cross-Section on Little Caney Creek near Project Area (River Station 54028)

Data Source: East Fork San Jacinto Watershed, TX Base Level Engineering (BLE) HEC-RAS models, prepared by Compass PTS, obtained from FEMA website)

HEC-RAS Plan: Multiple River: LITTLE CANEY CR Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	58735	10-year	993.00	317.04	324.48	322.36	324.61	0.004456	5.90	737.17	640.50	0.38
Reach-1	58735	25-year	1391.00	317.04	324.92		325.03	0.004370	6.07	1038.90	748.63	0.38
Reach-1	58735	50-year	1893.00	317.04	325.33		325.42	0.003992	6.00	1350.29	771.70	0.37
Reach-1	58735	1pct_min	853.00	317.04	324.30		324.44	0.004433	5.79	624.39	601.64	0.38
Reach-1	58735	100-year	2575.00	317.04	325.83		325.91	0.003586	5.91	1744.92	812.27	0.35
Reach-1	58735	1pct_plu	7778.00	317.04	328.53		328.60	0.002677	6.12	4424.03	1173.43	0.32
Reach-1	58735	500-year	4865.00	317.04	327.19		327.25	0.002911	5.87	2966.55	943.34	0.33
Reach-1	58233	10-year	993.00	315.69	322.64		322.67	0.003288	3.23	1109.55	636.96	0.22
Reach-1	58233	25-year	1391.00	315.69	323.11		323.13	0.003205	3.34	1419.98	682.57	0.22
Reach-1	58233	50-year	1893.00	315.69	323.66		323.68	0.002957	3.36	1808.92	725.50	0.21
Reach-1	58233	1pct_min	853.00	315.69	322.45		322.48	0.003327	3.20	992.95	617.91	0.22
Reach-1	58233	100-year	2575.00	315.69	324.24		324.27	0.002930	3.51	2241.14	761.16	0.21
Reach-1	58233	1pct_plu	7778.00	315.69	327.13		327.17	0.002975	4.29	4728.04	965.69	0.22
Reach-1	58233	500-year	4865.00	315.69	325.73		325.77	0.002947	3.92	3449.48	860.44	0.22
Reach-1	57179	10-year	993.00	311.62	318.66		318.71	0.004331	3.75	844.06	395.67	0.25
Reach-1	57179	25-year	1391.00	311.62	319.17		319.21	0.004363	3.95	1064.14	505.57	0.25
Reach-1	57179	50-year	1893.00	311.62	319.49		319.55	0.005456	4.54	1235.63	537.29	0.29
Reach-1	57179	1pct_min	853.00	311.62	318.43		318.47	0.004387	3.69	751.69	383.33	0.25
Reach-1	57179	100-year	2575.00	311.62	320.02		320.08	0.005664	4.83	1525.20	567.51	0.29
Reach-1	57179	1pct_plu	7778.00	311.62	322.49		322.60	0.006918	6.34	3262.98	815.21	0.34
Reach-1	57179	500-year	4865.00	311.62	321.32		321.41	0.006195	5.56	2360.87	714.92	0.32
Reach-1	56338	10-year	993.00	308.22	314.26		314.38	0.006208	5.22	483.95	282.03	0.38
Reach-1	56338	25-year	1391.00	308.22	315.35		315.43	0.004629	5.04	913.36	547.21	0.33
Reach-1	56338	50-year	1893.00	308.22	316.25		316.29	0.002900	4.32	1517.58	770.75	0.27
Reach-1	56338	1pct_min	853.00	308.22	313.92		314.04	0.006391	5.09	396.68	226.54	0.38
Reach-1	56338	100-year	2575.00	308.22	316.86		316.91	0.002698	4.37	2035.53	915.24	0.26
Reach-1	56338	1pct_plu	7778.00	308.22	319.50		319.54	0.002213	4.73	5186.15	1579.55	0.25
Reach-1	56338	500-year	4865.00	308.22	318.20		318.24	0.002508	4.64	3440.37	1186.84	0.26
Reach-1	55794	10-year	1182.00	304.02	312.54		312.63	0.002091	4.49	739.69	207.66	0.27
Reach-1	55794	25-year	1673.00	304.02	313.59		313.70	0.002442	5.25	1017.04	396.40	0.30
Reach-1	55794	50-year	2293.00	304.02	314.32		314.48	0.003707	6.79	1408.71	653.22	0.37
Reach-1	55794	1pct_min	1040.00	304.02	312.21		312.29	0.002067	4.35	672.67	199.13	0.27
Reach-1	55794	100-year	3140.00	304.02	315.02		315.16	0.003709	7.09	1934.52	869.21	0.38
Reach-1	55794	1pct_plu	9483.00	304.02	318.52		318.57	0.001521	5.46	6259.48	1341.08	0.25
Reach-1	55794	500-year	6011.00	304.02	316.79		316.87	0.002513	6.45	3973.59	1297.87	0.32
Reach-1	55494	10-year	1182.00	303.28	311.50		311.72	0.004600	6.50	528.20	205.15	0.40
Reach-1	55494	25-year	1673.00	303.28	312.37		312.63	0.005530	7.62	816.34	546.65	0.45
Reach-1	55494	50-year	2293.00	303.28	313.17		313.33	0.003995	6.86	1330.98	694.78	0.38
Reach-1	55494	1pct_min	1040.00	303.28	311.22		311.42	0.004237	6.10	475.14	175.90	0.38
Reach-1	55494	100-year	3140.00	303.28	314.04		314.15	0.003036	6.32	1981.28	802.38	0.34
Reach-1	55494	1pct_plu	9483.00	303.28	318.08		318.14	0.001378	5.27	5813.23	1032.24	0.24
Reach-1	55494	500-year	6011.00	303.28	316.16		316.22	0.001870	5.60	3868.59	953.51	0.28
Reach-1	55030	10-year	1182.00	302.21	310.85		310.88	0.000856	2.91	1109.84	286.10	0.17
Reach-1	55030	25-year	1673.00	302.21	311.55		311.59	0.001093	3.46	1314.36	301.07	0.20
Reach-1	55030	50-year	2293.00	302.21	312.24		312.30	0.001344	4.03	1528.03	317.84	0.22
Reach-1	55030	1pct_min	1040.00	302.21	310.63		310.66	0.000782	2.74	1046.89	280.57	0.17
Reach-1	55030	100-year	3140.00	302.21	313.05		313.13	0.001638	4.69	1795.56	337.93	0.25
Reach-1	55030	1pct_plu	9483.00	302.21	317.07		317.23	0.002884	7.68	3506.23	514.29	0.35
Reach-1	55030	500-year	6011.00	302.21	315.14		315.26	0.002313	6.27	2594.85	427.95	0.31
Reach-1	54445	10-year	1182.00	301.89	309.95		310.02	0.003030	4.48	876.76	465.10	0.28
Reach-1	54445	25-year	1673.00	301.89	310.55		310.62	0.002768	4.49	1174.11	506.57	0.27
Reach-1	54445	50-year	2293.00	301.89	311.16		311.22	0.002648	4.60	1491.84	565.11	0.27
Reach-1	54445	1pct_min	1040.00	301.89	309.77		309.85	0.002984	4.38	797.75	445.07	0.28
Reach-1	54445	100-year	3140.00	301.89	311.86		311.93	0.002621	4.81	1912.47	621.92	0.27
Reach-1	54445	1pct_plu	9483.00	301.89	315.65		315.73	0.002238	5.51	4864.97	1001.01	0.26
Reach-1	54445	500-year	6011.00	301.89	313.80		313.87	0.002372	5.15	3224.36	748.93	0.26
Reach-1	54028	10-year	1985.00	299.38	308.73		308.77	0.002941	3.75	2023.25	930.64	0.22
Reach-1	54028	25-year	2833.00	299.38	309.36		309.40	0.002991	3.95	2625.95	1017.95	0.22
Reach-1	54028	50-year	3901.00	299.38	310.04		310.08	0.002746	3.96	3345.73	1102.07	0.21
Reach-1	54028	1pct_min	1772.00	299.38	308.58		308.60	0.002969	3.72	1860.30	923.02	0.22
Reach-1	54028	100-year	5350.00	299.38	310.78		310.81	0.002673	4.08	4181.54	1169.54	0.21
Reach-1	54028	1pct_plu	16158.00	299.38	314.80		314.84	0.002018	4.34	9904.50	1695.27	0.19
Reach-1	54028	500-year	10283.00	299.38	312.85		312.89	0.002310	4.24	6894.83	1444.54	0.20
Reach-1	53847	10-year	1985.00	299.51	308.30		308.33	0.002062	3.02	2022.31	745.77	0.18
Reach-1	53847	25-year	2833.00	299.51	308.88		308.91	0.002394	3.40	2541.50	1016.43	0.20
Reach-1	53847	50-year	3901.00	299.51	309.55		309.58	0.002729	3.80	3259.60	1145.33	0.21
Reach-1	53847	1pct_min	1772.00	299.51	308.14		308.16	0.001968	2.92	1902.05	736.04	0.18

Project Location

compass
Identify, Interpret, Integrate

East Fork San Jacinto Watershed, TX Base Level Engineering (BLE) Results

Contract #HSFE60-15-D-0003, Task Order #HSFE60-16-J-0228
May 2018

Prepared for:

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Version Number	Version Date	Summary Changes	Team/Author
1	May 2018	Initial Base Level Engineering Draft	Compass PTS JV

APPROVALS

This document requires the approval of the following persons:

Role	Name	Phone Extension	Title (CLIN/RMC)	Review Date	Approved Date
Project Manager	April Smith	512.457.7818	Project Manager	May 13, 2018	May 30, 2018

CLIENT DISTRIBUTION

Name	Title/Organization	Location
FEMA's MIP	Region VI	See path above
Alan Johnson	FEMA Region VI	Denton, Texas
Larry Voice	FEMA Region VI	Denton, Texas

Table of Contents

Executive Summary

FEMA Region VI contracted Compass to complete a Base Level Engineering (BLE) analysis for the East Fork San Jacinto (EFSJ) HUC-8 Watershed in Southeast Texas, to support FEMA's Discovery process and validation of effective Zone A Special Flood Hazard Areas (SFHAs). The BLE process involves using best available data and incorporating automated techniques with traditional model development procedures to produce regulatory-quality flood hazard boundaries for the 1-percent annual chance event as well as estimates of flood hazard boundaries for multiple recurrence intervals.

The source digital terrain data used for surface model development in support of hydrologic and hydraulic analysis as well as mapping activities were leveraged from various local, State, and Federal partners. Details regarding the different datasets used are provided below in Section 1.1.

Flood discharges for this study were calculated using the United States Geological Survey (USGS) regression equations and were modified to account for the Hurricane Harvey-adjusted flood frequency analyses (explained in further detail below). Regression equations were obtained from the USGS Scientific Investigations Report (SIR) 2009-5087, *Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment Based, PRESS-Minimized, Residual-Adjusted Approach* (2009).

The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program version 4.1 was used to compute water surface elevations on a stream by stream basis. All hydraulic models were computed using 1-D steady state analysis.

In August 2017, the East Fork San Jacinto Watershed experienced record rainfall and flooding from Hurricane Harvey. The historic scale of the storm and the anticipated level of reconstruction in its aftermath precipitated a need to provide advisory data to the communities most impacted. Per FEMA Task Order HSFE60-17-J-0003, FEMA contracted Compass to calibrate the BLE models for the watershed to account for observed Hurricane Harvey data. Flood frequency analyses[1] that incorporated peak Hurricane Harvey discharges on six USGS gages in the East and West Fork San Jacinto Watersheds were utilized to determine appropriate factors to apply to the USGS regression equations. The BLE models were calibrated using the Harvey-adjusted peak discharges. These peak discharges are provided in the spatial files delivered in the East Fork San Jacinto BLE database. In addition, roughness coefficients were revised to calibrate the BLE models to observed Hurricane Harvey stream flow. The streamflow and n-value adjustments were applied throughout the watershed. A memorandum detailing the methodology behind the adjustments is provided in Appendix B.

The stream mile network that was validated for these watersheds was compiled using FEMA's Community Needs Management Strategy (CNMS) inventory. CNMS is an inventory of flood hazard studies and flood hazard mapping needs for areas where a study is needed. This data is helpful for community officials in analyzing and depicting flood hazards to enhance the understanding of flood risks. Communities may use this information to make informed decisions on their planning and flood mitigation efforts. Table ES-1 lists the Zone A stream miles associated with this validation analysis.

[1] FEMA (Federal Emergency Management Agency) 2017, *Hurricane Harvey: Precipitation and Streamflow Analysis*.

Table ES-1: Summary of Stream Miles

Source	East Fork San Jacinto Stream Miles
CNMS	381.5

The full inventory of Zone A studies in the watershed were classified in CNMS. Total miles validated in CNMS are summarized in Table ES-2 and illustrated in Figure ES-1 below.

Table ES-2: Zone A Validation Results

Validation Status	Status Type	Total Miles
VALID	BEING STUDIED	73.8
UNVERIFIED	BEING STUDIED	307.7

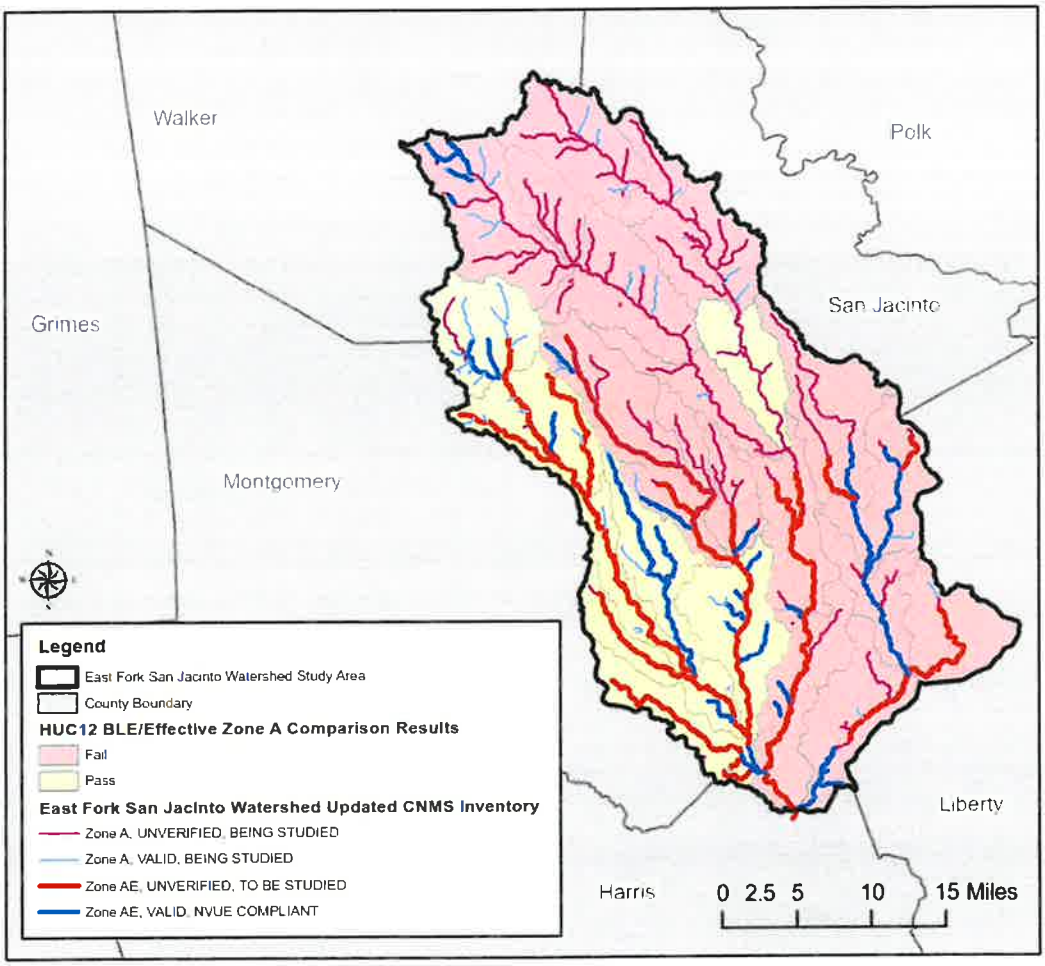

Figure ES-1: East Fork San Jacinto River Watershed CNMS Validation Results

An overall risk for each HUC-12 watershed was calculated using the National Flood Risk Percentages Dataset and its proportional area. The weighted risk was multiplied by the percentage of points in the watershed that failed the CNMS comparison to effective to determine

the priority score. Figure ES-2 below shows the range of the East Fork San Jacinto HUC-8 priority scores which can be used to initiate discussions during the Discovery phase.

Lower Tarkington Bayou HUC-12 was determined to have the highest priority score and the most need while Cagle Branch-Caney Creek HUC-12 had the lowest score.

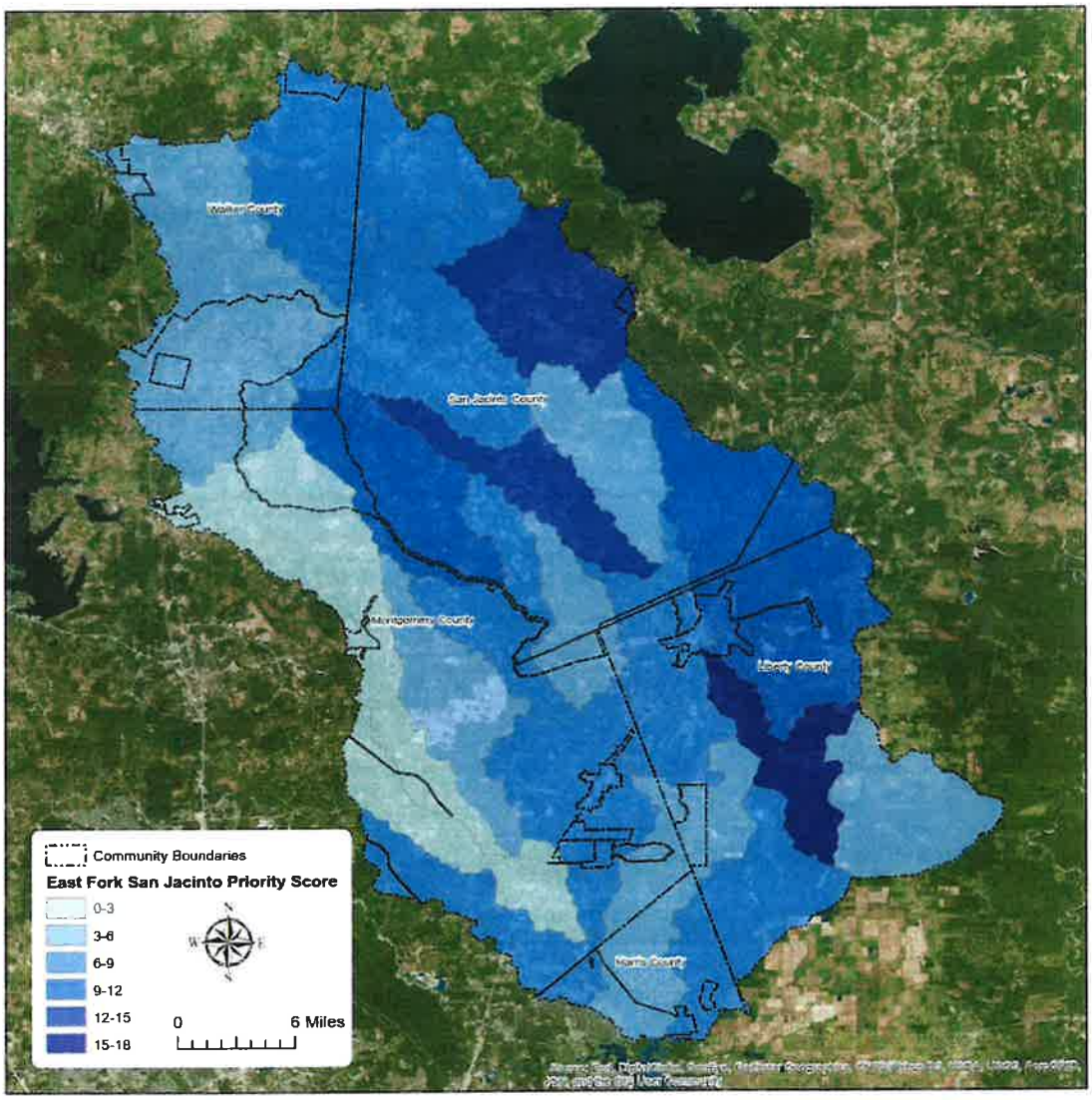

Figure ES-2: Ranking of East Fork San Jacinto River Watershed HUC-12s

Base Level Engineering (BLE) Methodology

Recent innovations and efficiencies in floodplain mapping have allowed the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) to develop a process called Base Level Engineering (BLE), which can be used to address current program challenges, including the validation of Zone A studies and the availability of flood risk data in the early stages of a Flood Risk Project. The BLE process involves using best available data and incorporating automated techniques with traditional model development procedures to produce regulatory quality flood hazard boundaries for the 1-percent annual chance event as well as estimates of flood hazard boundaries for multiple recurrence intervals. The cost for developing the data and estimates resulting from the BLE process are lower than standard flood production costs. The BLE results may be used for eventual production of regulatory and non-regulatory products.

As described in Title 42 of the Code of Federal Regulations, Chapter III, Section 4101(e), once every five years, FEMA must evaluate whether the information on Flood Insurance Rate Maps (FIRMs) reflects the current risks in flood-prone areas. FEMA makes this determination of flood hazard data validity by examining flood study attributes and change characteristics, as specified in the Validation Checklist of the Coordinated Needs Management Strategy (CNMS) Technical Reference. The CNMS Validation Checklist provides a series of critical and secondary checks to determine the validity of flood hazard areas studied by detailed methods (e.g., Zone AE, AH, or AO). While the critical and secondary elements in CNMS provide a comprehensive method of evaluating the validity of Zone AE studies, a cost-effective approach for evaluating Zone A studies has been lacking.

In addition to the need for Zone A validation guidance, FEMA standards require flood risk data to be provided in the early stages of a Flood Risk Project. FEMA Program Standard SID #29 requires that during Discovery, data must be identified that illustrates potential changes in flood elevation and mapping that may result from the proposed project scope. If available data does not clearly illustrate the likely changes, an analysis is required that estimates the likely changes. This data and any associated analyses should be shared and results should be discussed with stakeholders.

An important goal of the BLE process is the scalability of the results. Scalability means that the results of a BLE analysis can not only be used for CNMS evaluations of Zone A studies, but can also be leveraged throughout the Risk MAP program. The data resulting from a BLE analysis can be updated as needed and used for the eventual production of regulatory and non-regulatory products, outreach and risk communication, and MT-1 processing. Leveraging this data outside the Risk MAP program may also be valuable to external stakeholders.

FEMA Region VI contracted Compass to complete a BLE analysis for the East Fork San Jacinto Watershed in Southeast Texas to support FEMA's Discovery process and validation of effective Zone A Special Flood Hazard Areas (SFHA). The study extents include portions of Harris, Liberty, Montgomery, San Jacinto, and Walker Counties, and include the following communities: the Cities of Cleveland, Coldspring, Conroe, Cut and Shoot, Houston, Huntsville, New Waverly, North Cleveland, Patton Village, Plum Grove, Roman Forest, Splendora, Willis, and Woodbranch. The study area consists of four HUC-10 basins: Peach Creek-Caney Creek, East Fork San Jacinto River – Frontal Lake Houston, Tarkington Bayou-Luce Bayou, and Winters Bayou-East Fork San Jacinto River. Figure 1 shows the orientation of the EFSJ HUC-10 basins with respect to the counties.

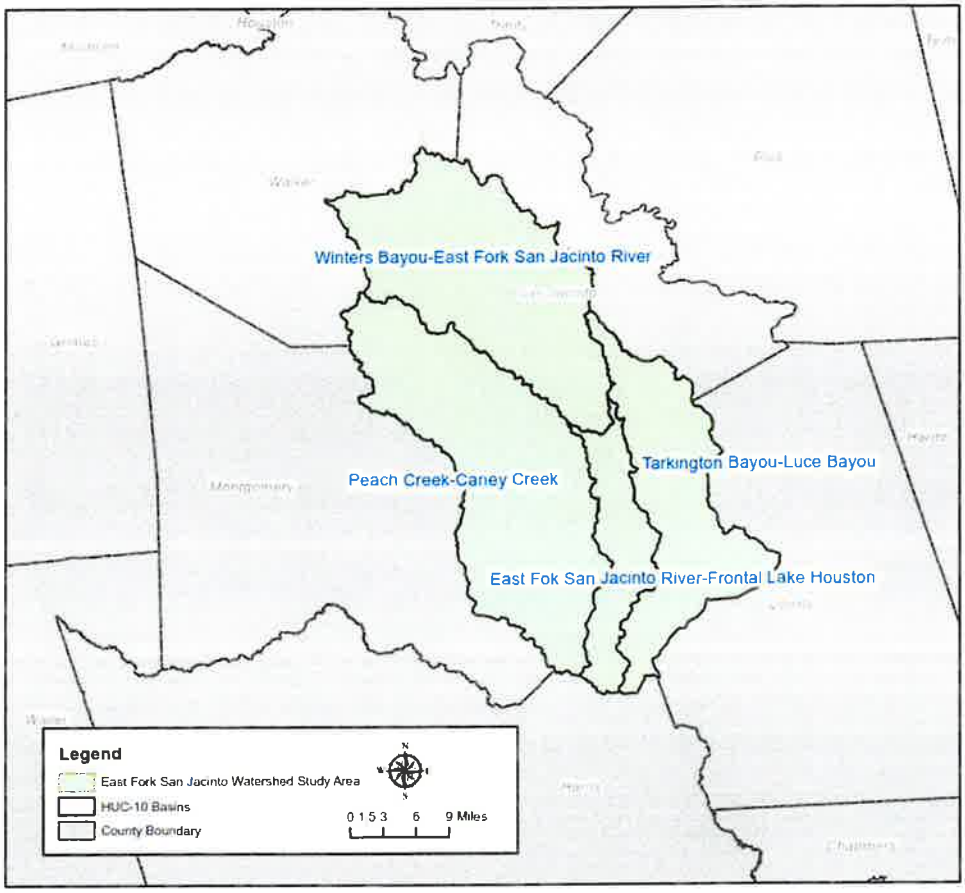

Figure 1: East Fork San Jacinto Watershed HUC-10 Basins

Compass studied approximately 1,474 miles of stream reaches within the East Fork San Jacinto Watershed with a minimum drainage area tolerance of one square mile outside of population centers and half a square mile inside population centers). The selection and extent of stream reaches studied were based upon the number of stream miles with a minimum drainage area of one square mile and not the number of effective Zone A stream miles. Study reaches were extended above this threshold as appropriate to ensure all effective Zone A flood areas received an updated analysis. Topographic data from multiple sources were used to determine the hydrologic and hydraulic characteristics of the watershed. The following sections summarize the BLE process and discuss the results along with their recommended use.

1.1 Topographic Data

Topographic data from multiple sources were used to determine the hydrologic and hydraulic characteristics of the watershed. Topographic data was obtained from the Houston-Galveston Area Council (H-GAC), Texas Natural Resources Information System (TNRIS), and the United States Geological Survey (USGS).

All available metadata, survey reports, and other leverage documentation are available with the source dataset. Figure 2 shows the extents of the source Digital Terrain Model (DTM) data used for the East Fork San Jacinto Watershed.

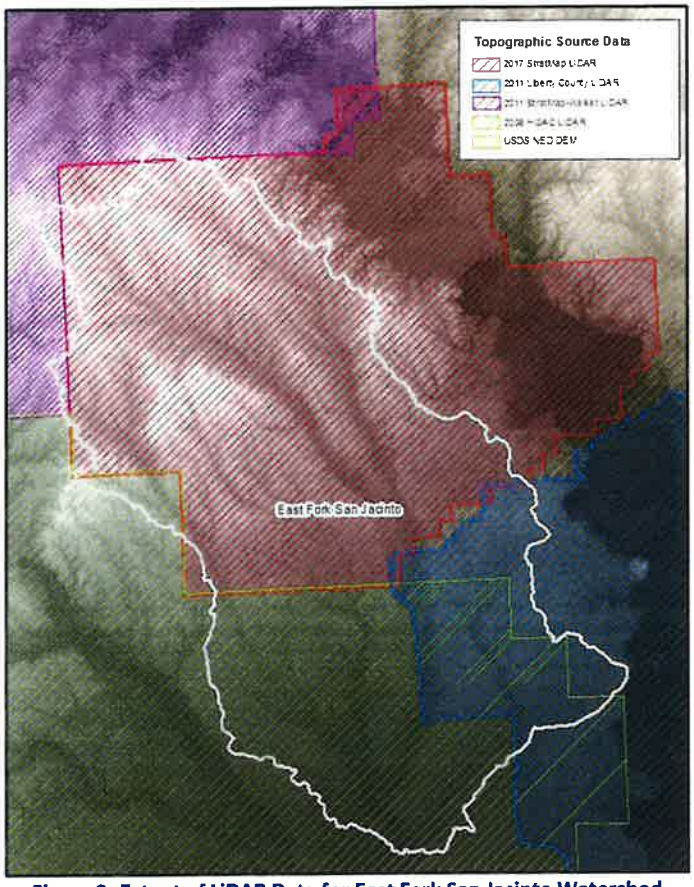

Figure 2: Extent of LiDAR Data for East Fork San Jacinto Watershed

1.1.1 Source Terrain Data

Five topographic datasets were used in the development of the BLE hydraulic models. Details on each dataset are outlined below.

1.1.1.1 2017 StratMap LiDAR

The 2017 StratMap LiDAR was acquired by Fugro Geospatial Inc. for the Texas Water Development Board from February 1, 2017 through March 21, 2017. The project design of the LiDAR data acquisition was developed to support a nominal post spacing of 0.5 meter. The RMSEz reported for the dataset was 4.927 centimeters at the 95% confidence level which meets project accuracy specifications of the National Standard for Spatial Data Accuracy (NSSDA).

1.1.1.2 2011 TNRIS LiDAR

The 2011 TNRIS LiDAR (50cm) for Austin, Grimes, and Walker Counties is 840 tiles covering approximately 3,300 square miles. The project design of the LiDAR data acquisition was developed to support a nominal post spacing of 0.5 meter. The AeroMetric, Inc. acquisition covered 440 flights lines in 51 lifts from January 8, 2011 through February 3, 2011. LiDAR data was

processed to achieve a bare ground surface. The RMSEz reported for the dataset was 0.11 meters at the 95% confidence level which meets project accuracy specifications of the NSSDA.

1.1.1.3 2011 Liberty County TNRIS LiDAR

The 2011 Liberty County LiDAR, in the format of LAS, was acquired by Fugro EarthData in January 2011. The project area consists of one Area of Interest (AOI) in Liberty County, Texas and covers an area of approximately 1,055 square miles, which includes a 100 meter perimeter buffer around the original extent. The bore sighted unclassified LAS data for the AOI was delivered in a full swath LAS format, and a subset of 641 square miles was processed to a Level 2, which is a fully calibrated, classified point cloud in LAS format using the following classification scheme: Class 1 – Processed, but unclassified, Class 2 – Bare-earth ground, Class 7 – Low points and noise, Class 9 – Water, Class 11 – Withheld. The RMSEz reported for the dataset was 0.06 meters at the 95% confidence level which meets project accuracy specifications of the NSSDA.

1.1.1.4 H-GAC 2008 LiDAR

The H-GAC 2008 LiDAR was acquired between February 1, 2008 and March 4, 2008 with a publication date of November 3, 2008. Merrick & Company (Merrick) performed the LiDAR survey for the H-GAC. In order to post process the LiDAR data to meet task order specifications, Merrick established a total of 296 QA control points that were used to calibrate the LiDAR to known ground locations established throughout the project area. The Non-vegetated Vertical Accuracy (NVA) reported for the 2012 East Central Texas LiDAR was 0.22 feet at the 95% confidence level, which meets project accuracy specifications of the NSSDA.

1.1.1.5 USGS NED DEM

The National Elevation Dataset (NED), a product of the USGS, is a seamless gridded dataset representing the best available raster elevation data available to the USGS for the conterminous United States, Alaska, Hawaii, and territorial islands. The NED is derived from diverse source data that are processed to a common coordinate system and unit of vertical measure. The NED serves the East Fork San Jacinto Watershed topographic data development by filling in as best available data where there are gaps in the data sets listed above. This dataset was only used for a very small area in comparison to the overall HUC-8 watershed.

1.1.1.6 Terrain Data Processing

The LiDAR data were processed in Environmental System Research Institute (ESRI) ArcGIS software to create a composite Digital Terrain Model (DTM) dataset for the project area. The outputs from the processing described below were used during the hydrology, hydraulics, floodplain mapping and CNMS processes and validations.

The Watershed Information System (WISE) software platform was utilized in order to create a digital surface model for each watershed's project area. This module allows source data from a variety of sources to be prioritized based on level of accuracy or preference of the user.

For the East Fork San Jacinto Watershed, the 2017 StratMap LiDAR was prioritized as the highest data source for the East Fork San Jacinto Watershed. The 2011 TNRIS LiDAR was the second highest priority, 2011 Liberty County TNRIS LiDAR was third highest priority, and the 2008 H-GAC

LiDAR was fourth highest priority. USGS NED data supplemented the datasets to fill in remaining gaps in LiDAR data.

The DEMs created from the LiDAR datasets mentioned above were compiled in order of vertical accuracy into a mosaic dataset using ArcMap. From this mosaic, a tile index was created for the project area and the mosaic was clipped into 50,000-foot tiles, converted to asciis and imported into WISE Terrain Analyst (WTA). Visual inspection of the 10-foot DEMs was performed to ensure no voids and/or artifacts were present in the DEM. The DEM surface model was affirmed to be suitable for hydraulic takeoffs and supporting other hydraulic analyses.

Stream centerlines were manually digitized using the 10-foot DEMs as a source for horizontal alignment and vertical elevation. These stream centerlines are created for use in the hydraulic analysis, hydro-enforcement of the 50-foot DEMs, and visual reference on the FIRM products. Several routines were then used to take localized elevations from the source topographic data and apply them to the streams. This gave the stream vertices elevation information along the Z axis. The resulting elevations ensure that the streams are lower in elevation than any overbank sumps. A separate routine was then used to ensure that the elevations of these vertices descend in height down to an outfall. The final streams file is then "burned" into the 50-foot DEMs to force flow through structures while preventing it from jumping out of the channel banks.

After the DEM was imported, an additional 50-foot DEM was created from the same mosaic and tile index used for the 10-foot DEM. This 50-foot DEM was used for hydro enforcement of the project areas. Proprietary software was used to identify natural sinks, peaks and flat areas in the 50-foot DEM surface. Elevations of the cells in the DEM were algorithmically calculated and the best path to route flow was determined without filling sinks in the DEM. Once all calculations were completed, the flow was checked confirming that all drainage flows downstream correctly and is routed to outside of the HUC-8 basin.

In addition to the quantitative assessment of the source digital terrain, a qualitative visual inspection of the composite DEM was performed using a hillshade derived from the 10-foot DEM. The visual inspection indicated that no unusual or non-terrestrial features were observed in the composite DEM, assuring the surface files used for hydrologic and hydraulic analyses and floodplain mapping activities are sufficient for BLE analysis.

1.2 Hydrology

Flood discharges for this study were calculated using the United States Geological Survey (USGS) regression equations that were adjusted to account for Harvey-adjusted flood frequency analyses (see Section 1.2.1). Regression equations were obtained from the USGS Scientific Investigations Report (SIR) 2009-5087, *Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment Based, PRESS-Minimized, Residual-Adjusted Approach* (2009).

The Watershed Information System (WISE) software was used to delineate drainage basins in shapefile format using the 50-foot DEM. WISE was also used to calculate the main-channel slope for each basin. The basin shapefile attribution was automated by WISE with drainage area, main-channel slope, and precipitation.

Table 1 shows the published equations used in this study. In these equations, Q_i represents peak streamflow for i-recurrence interval (annual chance exceedance (a.c.e.)) in cubic feet per second (cfs), P represents mean annual precipitation in inches, S represents dimensionless main-channel

slope, Ω represents the OmegaEM parameter, and A represents cumulative drainage area in square miles.

Table 1: Summary of Regression Equations in Texas (SIR 2009-5087)

Recurrence Interval	Equation
$Q_{10\%}$	$P^{1.203} \times S^{0.403} \times 10^{[0.918\Omega + 13.62 - 11.97A^{(-0.0289)}]}$
$Q_{4\%}$	$P^{1.140} \times S^{0.446} \times 10^{[0.945\Omega + 11.79 - 9.819A^{(-0.0374)}]}$
$Q_{2\%}$	$P^{1.105} \times S^{0.476} \times 10^{[0.961\Omega + 11.17 - 8.997A^{(-0.0424)}]}$
$Q_{1\%}$	$P^{1.071} \times S^{0.507} \times 10^{[0.969\Omega + 10.82 - 8.448A^{(-0.0467)}]}$
$Q_{0.2\%}$	$P^{0.988} \times S^{0.569} \times 10^{[0.976\Omega + 10.40 - 7.605A^{(-0.0554)}]}$
Variables: Q_i, peak flow for i recurrence interval (a.c.e.), in cubic feet per second; P, mean annual precipitation, in inches; S, Main-channel slope (dimensionless); Ω, OmegaEM parameter; A, cumulative drainage area, in square miles	

Discharges for the 1-percent plus and 1-percent minus a.c.e. were calculated as $Q_{1\%+/-} = Q_{1\%} \pm 10^{1.6*0.30}$, where 0.30 is the mean residual standard error for the $Q_{1\%}$ equation.

The mean annual precipitation values were determined based on a shapefile coverage obtained from the Texas Water Development Board (TWDB) and available for download at the following location: http://www.twdb.texas.gov/mapping/gisdata/doc/Precipitation_Shapefile.zip

The annual precipitation values reflect data for the climatological period 1981-2010 as recorded by the Natural Resources Conservation Service (NRCS).

Main-channel slope was calculated in WISE. An automated routine determined the longest flowpath from upstream of a reach to the outlet of the sub-basin of interest. Two points along the channel, one at 10 percent and the other at 85 percent of the channel length, determined the endpoints of the segment used in the main-channel slope calculation. The elevations for those endpoints were based on the 10-foot DEM developed from the LiDAR.

From USGS SIR 2009-5087, the OmegaEM parameter is a generalized terrain and climate index that expresses relative differences in peak-streamflow potential. A shapefile was developed and populated with OmegaEM values based on Figure 2 in SIR 2009-5087. This shapefile was used, along with a python script in ArcCatalog, to determine OmegaEM values on a sub-basin basis. For sub-basins spanning more than one OmegaEM grid, the sub-basin's centroid determined its OmegaEM parameter.

Automated basin delineations were performed in WISE. Basin break points were set by the user with a sub-basin target size of one square mile. This criterion was adjusted for the main stem of the East Fork San Jacinto River to avoid excessive and unnecessary discharge breaks. Break points were also set immediately upstream of stream confluences. Cumulative drainage area was determined based on these automated delineations performed by WISE in combination with a

stream connectivity routine that defined the stream reach segments with upstream and downstream neighbors.

The sub-basin shapefile was attributed with the computed discharges, and those discharges were incorporated into the HEC-RAS models using an automated routine in WISE. Discharges, as well as water surface elevation results, were associated with the hydraulic cross sections prior to generation of floodplain boundaries and grid mapping. Those results are available in GIS format as part of this BLE submittal package.

1.2.1 Special Considerations: Harvey Advisory Data

In August 2017, the East Fork San Jacinto River watershed experienced record rainfall and flooding from Hurricane Harvey. Per Task Order HSFE60-17-J-0003, FEMA contracted Compass to analyze the EFSJR BLE models to account for observed Hurricane Harvey data.

FEMA performed pre- and post-Harvey flood frequency analyses (FFAs)[2] on 46 USGS stream gages in the Harvey-affected counties. Of the analyzed gages, six were in the East and West Fork San Jacinto River watersheds (see Figure 3). The results of the FFAs for these six gages are shown on Table 2. The analysis indicates substantial increases in peak discharge for all storm events of interest (i.e., 10%, 4%, 2%, 1%, and 0.2% annual exceedance probabilities), and the percent increases are greater in the larger storm events.

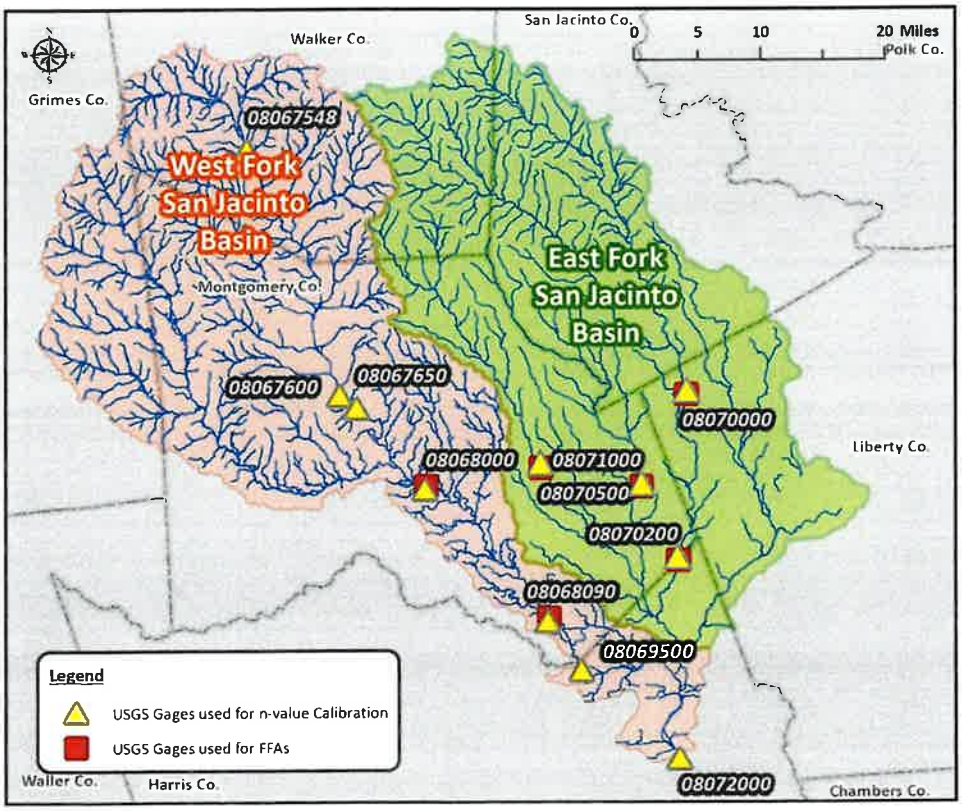

Figure 3: Locations of USGS Gages Utilized in n-value Calibration and Flood Frequency Analyses

[2] FEMA (Federal Emergency Management Agency) 2017, *Hurricane Harvey: Precipitation and Streamflow Analysis*.

Table 2: Post-Harvey Flood Frequency Analyses on Gages in the East and West Fork San Jacinto River Watersheds[3]

Station ID	Station Name	Drainage Area (mi^2)	Post-Harvey Peak Discharge (cfs) for Selected AEPs *(Percent Change from Pre-Harvey)*				
			10%	4%	2%	1%	0.2%
08068000	W Fork San Jacinto River near Conroe	828	31,400 *(6.7%)*	53,800 *(9.3%)*	78,100 *(12.3%)*	111,000 *(14.6%)*	238,000 *(19.7%)*
08068090	W Fork San Jacinto River above Lake Houston near Porter	962	39,900 *(6.3%)*	64,800 *(9.3%)*	89,400 *(11.4%)*	120,000 *(13.3%)*	224,000 *(18.8%)*
08070000	E Fork San Jacinto River near Cleveland	325	22,900 *(5.7%)*	40,200 *(8.7%)*	58,300 *(10.5%)*	82,000 *(12.3%)*	166,000 *(16.3%)*
08070200	E Fork San Jacinto River near New Caney	388	21,000 *(6.7%)*	38,000 *(11.1%)*	57,000 *(14.6%)*	83,100 *(17.8%)*	186,000 *(25.3%)*
08070500	Caney Creek near Splendora	105	10,100 *(5.7%)*	17,100 *(6.4%)*	24,500 *(7.3%)*	34,300 *(8.2%)*	70,400 *(9.7%)*
08071000	Peach Creek at Splendora	117	9,300 *(8.4%)*	17,000 *(11.2%)*	25,200 *(13.5%)*	36,100 *(15.5%)*	75,500 *(19.7%)*

The discharges obtained in the gage analyses (pre- and post-Harvey) were compared to those calculated from the 2009 regression equations. Discharge versus cumulative drainage area data points were plotted on a log-log scale for the six gages and all EFSJR sub-basins (see Figure 4). Power trendlines were fitted to the gage data and the 2009 regression model data points. The resulting trendline equations and R^2 values for the 1% AEP are displayed on Figure 4. When compared to the gage analyses, the 2009 regression models under-predict streamflow.

[3] FEMA 2017, *Hurricane Harvey: Precipitation and Streamflow Analysis.*

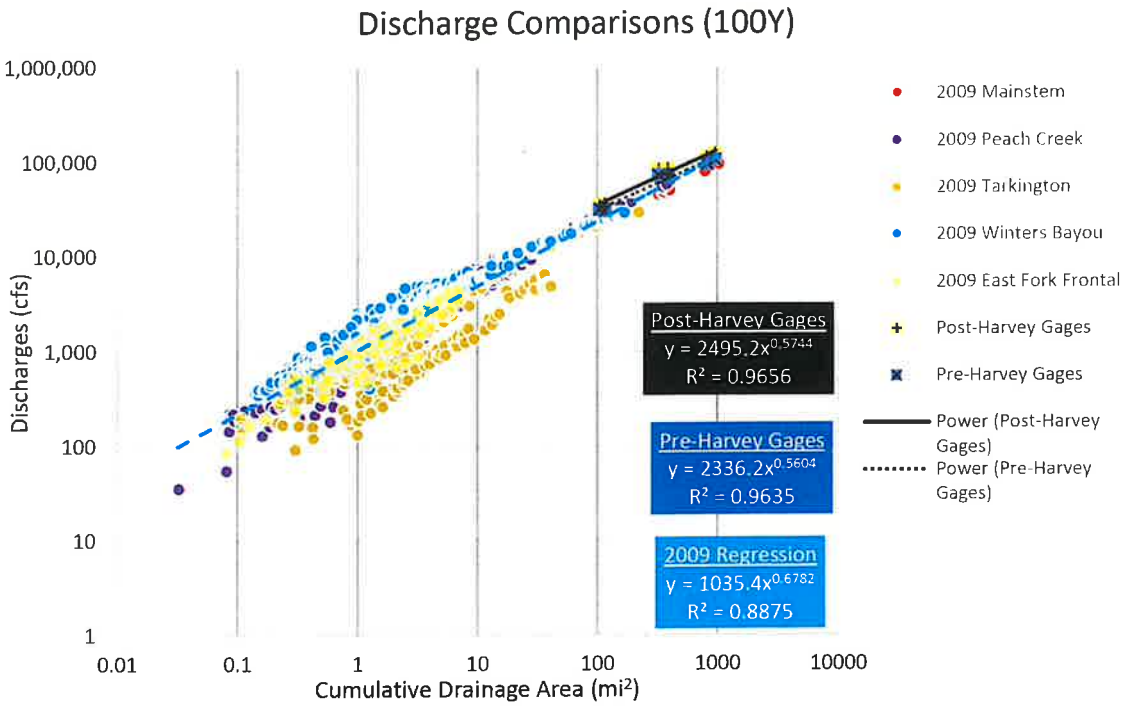

Figure 4: Comparison of Q_{100} values calculated from the regression models and the gage analyses

For each storm recurrence interval, a constant "α" was computed from the trendline equations to adjust the 2009 regression model streamflow predictions to the post-Harvey flood frequency analyses. α was computed as $\alpha = y_{\text{Post-Harvey FFA}} / y_{\text{2009 Regression}}$, where y represents the respective power trendline equations. The α-factors were applied as a constant multiplier to the 2009 regression equations (Table 1) to obtain the adjusted flows. The computed α-factors are presented in Table 3. The α-factor for the 10-year storm event is less than one, so no adjustment was used for the 10-year. The BLE models were updated with the modified discharges. The hydrologic adjustments described here are discussed further in the attached memorandum (Appendix B).

Table 3: Computed α-factors for BLE on the East and West Fork San Jacinto Watersheds

10%	4%	2%	1%	0.2%
0.87 (no adjustment)	1.04	1.17	1.33	1.76

1.3 Hydraulics

The hydraulic approach for this BLE analysis of the East Fork San Jacinto Watershed consisted of using the terrain model described in Section 1.1 in combination with the hydrologic outputs from Section 1.2 to establish water surface elevations using 1-D steady state analysis. The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program version 4.1 was chosen as the computer model to compute water surface elevations on a stream by stream basis. The WISE software was used to establish model stream orientation, generate initial hydraulic cross section

layout and stationing, assign n-values to cross sections, and develop all input files for the HEC-RAS program. ESRI's ArcMap program was used to review and refine cross-section layout orientation.

First pass cross-section layout was performed using an automated routine in WISE based on the cumulative drainage area at the cross section location. A first draft model was created based on this initial cross-section layout, and draft boundaries were developed. At this stage, a second pass inspection for cross-section placement occurred. Significant refinement occurred during this step. To improve the hydraulic models, additional cross-sections were added as needed to better define the BLE floodplain boundary. Cross-sections were extended in locations where overtopping occurred. Orientation of cross-sections was refined to improve on the perpendicular orientation to flow. Additional cross-sections were added at floodplain constrictions and at downstream portions of tributaries to ensure a proper tie-in with receiving streams. Cross-sections were adjusted to remove sections that intersected hydraulic crossings in the floodplain. For some of the largest studied streams, cross-sections were laid out manually in order to have more reasonable spacing and better capture the constrictions in the floodplain.

Cross-sections were not drawn on top of roadways or railroads but were placed at the upstream and downstream face of major roads and railroads. Ineffective flow stations were placed in the hydraulic models as appropriate to account for flow constrictions and other locations deemed by the engineer to be ineffective at conveying flow downstream.

Cross-sections were drawn on dam tops for significant dams with well-defined spillways in order to better represent ponded water upstream of the structures. In so doing, it was assumed that the vast majority of the flow during a flood event would pass the spillway and that the hydraulic model would reasonably estimate flow across the spillway as represented in the hydraulic cross-section. The elevations used in the modeling were checked against effective Zone A boundaries, and the results were deemed reasonable.

The relationship between cumulative drainage area and assigned channel geometry is shown in Table 4. These default values for dimensions and spacing were subject to change based on engineering judgment.

Table 4: Cross-Section Default Parameters

Drainage area (upper limit)	XS Spacing	Channel Top Width	Channel Bottom Width	Channel Depth
1.0	500	4	3.5	0.5
2.0	500	6	5	0.5
4.0	500	11	10	0.5
8.0	500	18	17	0.5
10.0	500	20	19	0.5
15.0	600	26	25	0.5
20.0	600	32	31	0.5
25.0	600	38	36	0.5
30.0	600	43	41	0.5
40.0	600	52	50	0.5
50.0	600	60	57	1
75.0	750	68	65	1
100.0	750	76	73	1
150.0	1000	91	88	1
250.0	1000	122	119	2

Drainage area (upper limit)	XS Spacing	Channel Top Width	Channel Bottom Width	Channel Depth
500.0	1500	198	195	2
1000.0	2500	351	346	3
2000.0	4000	657	652	3
5000.0	4000	1575	1565	3

In typical BLE projects, Manning's roughness coefficients (n-values) are determined using the 2011 National Land Cover Data (NLCD) dataset in combination with n-values from Chow (1959) and Calenda et al. (2005). The association between the n-values and the NLCD Classification is shown in Table 5. Manning's n-value takeoffs are performed by WISE (default values taken from the "Normal" column). N-values within channel banks are constrained by the automated routine to a range of 0.030 to 0.070. Then, overbank and channel n-values are manually adjusted in certain locations based on engineering judgment. Under the current BLE task order, the n-value assignments were modified in a calibration process detailed in Section 1.3.1.

Table 5: Manning's "n" Roughness Based on 2011 NLCD Classification (Moore, 2011)

NLCD Classification	Minimum	Normal	Maximum	Source
Open Water	0.025	0.03	0.033	Chow 1959
Developed, Open Space	0.01	0.013	0.016	Calenda et al. 2005
Developed, Low Intensity	0.038	0.05	0.063	Calenda et al. 2005
Developed, Medium Intensity	0.056	0.075	0.094	Calenda et al. 2005
Developed, High Intensity	0.075	0.1	0.125	Calenda et al. 2005
Barren Land	0.025	0.03	0.035	Chow 1959
Deciduous Forest	0.1	0.12	0.16	Chow 1959
Evergreen Forest	0.1	0.12	0.16	Chow 1959
Mixed Forest	0.1	0.12	0.16	Chow 1959
Scrub/Shrub	0.035	0.05	0.07	Chow 1959
Grassland/Herbaceous	0.025	0.03	0.035	Chow 1959
Pasture/Hay	0.03	0.04	0.05	Chow 1959
Cultivated Crops	0.025	0.035	0.045	Chow 1959
Woody Wetlands	0.08	0.1	0.12	Chow 1959
Emergent Herbaceous Wetland	0.075	0.1	0.15	Chow 1959

The boundary condition used for the majority of the study streams was normal depth with a default value of 0.005 ft/ft. For streams with large drainage areas (generally greater than 8 square miles), the normal depth slope was calculated based on the channel inverts of the downstream cross sections.

In cases where streams tie in to a lake, a normal depth slope was calculated based on the channel inverts of the downstream cross sections (typically between 0.0001 and 0.001 ft/ft). Several HUC-10s within this watershed are located in urban areas with storm drain systems, which are unaccounted for in the BLE models. Simplifications of these systems may considerably affect perceived risk.

1.3.1 Special Considerations: Harvey Advisory Data

Per Task Order HSFE60-17-J-0003, FEMA contracted Compass to analyze the EFSJR BLE models to account for observed Hurricane Harvey data. A limited number of gages operate within the EFSJR watershed, with two located on the mainstem of the East Fork San Jacinto River.

To verify the hydraulic methodology of the BLE process in the EFSJR watershed, the peak recorded USGS gage flows on the East Fork San Jacinto River during Harvey were input into the existing hydraulic model. There are two USGS gages (08070200 and 08070000) on the East Fork San Jacinto River that record stream flow. Additionally, there are two USGS gages (08070500 and 08071000) on Caney Creek and Peach Creek. All four of these gages were utilized in the hydraulic calibration (see Figure 3).

Using the initial model created for the East Fork San Jacinto River and the Harvey flows, the computed water surface elevation was an average of 2.9 feet below the recorded water surface elevations.

Manning's roughness coefficients (n-values) assigned by the GIS tool, which utilizes the 2011 National Land Cover Database (NLCD) data, appear to be low when the recorded Harvey USGS gage flows are input into the models and the water surface elevations are compared to the recorded Harvey USGS gage elevations.

An overbank n-value adjustment of +0.05 with a minimum final value of 0.11 is recommended for the East Fork San Jacinto River. This alters the range of Manning's n-values from 0.05 – 0.12 to 0.11 – 0.17. The channel adjustment of +0.02 with a minimum final value of 0.06 is recommended. This will alter the range of Manning's n-values from 0.03 – 0.07 to 0.06 – 0.09. The exception to the adjustment of roughness coefficients within the channel is through large reservoirs or lakes. The Manning's n-value was set to 0.03 through Lake Houston. Increasing the n-values results in water surface elevation profiles more representative of the gage elevations recorded during Harvey.

The n-value calibration process is detailed further in the attached memorandum (Appendix B).

1.4 Quality Control

Following the initial BLE analysis in each watershed, the flood hazard area delineations created by the BLE process were reviewed for areas where the results were not ideal.

QC results indicated that some of the models should be extended to cover the scope of effective flood hazard data. Those streams were extended farther upstream to match the extents of the SFHA data.

Typical manual editing resulting from reasonability checks included adding cross-sections, adjusting orientation of cross-sections, trimming cross-sections and reduction of the default "V" angle of cross-sections. Examples of default "V" angled cross-sections are shown in Figure 5. It is estimated that 75 percent of cross-sections were adjusted in some work areas while other areas did not require as much editing. Other examples of manual editing included the addition of cross-sections at confluence areas (see Figure 6 below), modifications to improve perpendicular orientation at the channel, adjustment of discharge breaks to better represent flow addition points, revisions to dam spillways and dam tops, additional cross-sections bounding major hydraulic structures, and revisions to n-values.

A major component of the QC process was an automated check that identified locations where the 1-percent a.c.e profile was crossed by any other frequency profile. Significant effort was made to reasonably resolve all of these instances. Another automated check identified locations where there was a drawdown of greater than 0.5 foot on the 1-percent a.c.e. water surface profile. This check is particularly useful for identifying errors in the model such as a channel that is too wide, a

poorly placed cross-section, or a need for additional cross-sections. Again, significant effort was made to reasonably resolve these drawdown situations.

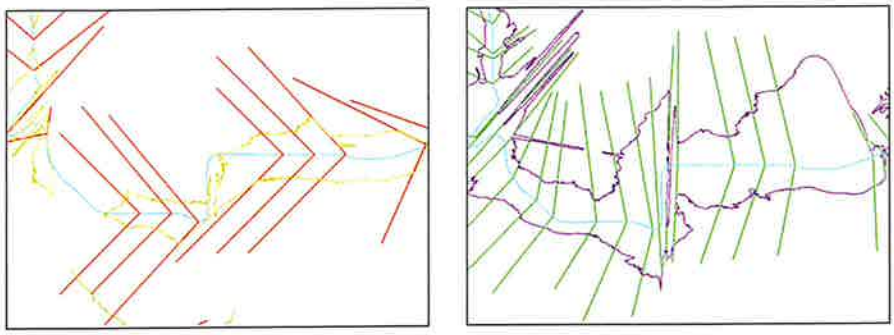

Figure 5: Default "V" angle cross-sections automated by WISE (left). Manually edited cross-sections to more accurately capture terrain (right). Resulting flood boundaries shown in gold (left) or purple (right) for clarity.

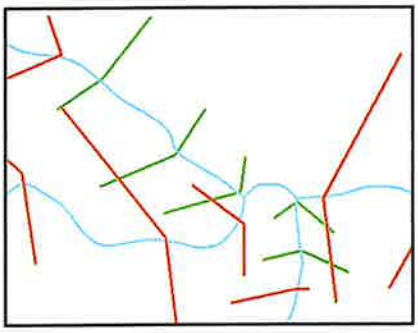

Figure 6: Manually added cross-sections (green) to improve accuracy of tie-ins at confluences.

1.5 One-percent Special Flood Hazard Area Delineation

The 1-percent and 0.2-percent boundaries were mapped using a routine that develops water surface elevation grids based on the 10-foot cell size DEM developed from the LiDAR dataset used for this project (see Section 1.1). This product was converted to a polygon for cleaning. The cleaning routine involved manual inspection of the polygons to identify and remove areas of disconnected flooding. In general, areas with a size of less than 5,000 square feet were removed and all others were investigated to determine whether they should be considered as potentially part of the SFHA. This investigation was aided by the ground DEM and aerial imagery. Manual adjustments to the polygons were made to account for spillways on dams which could not be accurately modeled using HEC-RAS as well as disconnected areas along the flooding source that should reasonably be connected.

Following the removal of disconnected flooding areas and other boundary adjustments, the small islands in the floodplain were filled. Islands with a size between roughly 5,000 and 30,000 square feet were inspected and, in general, islands that were less than 10,000 square feet were filled.

Once the island filling process was complete, the water surface raster mapping routine was run and set to conform to the polygon boundary. This ensures that the water surface raster and the floodplain boundary are consistent with each other. The depth raster product was created at the end of the process by performing a raster subtraction with the water surface elevation raster and the ground DEM.

Challenges

Challenges encountered during BLE analyses vary based on available data on which to run the analysis. The East Fork San Jacinto Watershed presented challenges as summarized in the following paragraphs.

The East Fork San Jacinto Watershed is located in Southeast Texas, an area known for flat terrain. In some of the wide and flat floodplains, small tributaries run parallel to large streams. Parallel streams with shared floodplains were modeled by moving the combined discharge upstream to the cross-section that begins the shared floodplain.

A significant effort was made to improve water surface elevation tie-ins at stream confluences. Cross-sections were manually added on the downstream end of nearly every stream, some of which traverse the receiving stream, so that the water surface elevation of the tributary would be lower than that of the receiving stream.

There are a significant number of small-sized dams on the tributaries throughout the watershed. Discharges calculated with the regression equations do not take into account the impact of these structures. There may be need for further investigation when upgrading these models for detailed studies.

There is a noticeable inconsistency in the mapping of Tarkington Bayou-Luce Bayou HUC-10 in the area where the studied reach moves in and out of the different topography sources.

As noted in Section 1.4 above, multiple streamlines did not extend far enough to fully capture effective flood hazard data. The streamlines generated in the development of the one-square mile basins were extended in order to more closely match the effective areas and CNMS streams.

There are a few containment issues in the Peach-Caney HUC-10 basins. Peach CR 017 was not able to contain the 500-year flooding event due to being a man made channel and perpendicular to the natural hydraulic gradient.

Finally, there are a few containment issues in the Crystal Creek and Frontal Lake Houston HUC-10 basins. Significant effort was made to contain the flooding events, but this was not always achieved due to particularly wide, flat floodplains.

Results and Recommendations

The BLE results for this study produced a SFHA that compares reasonably well with the effective SFHA. These boundaries provide an additional estimated SFHA in areas that do not currently have an SFHA mapped. These results provide context for flood risk communication as part of the Discovery process, and should be verified through community work map meetings before being applied to a regulatory product.

A map showing the BLE results is included as Appendix A.

3.1 CNMS Validation of Effective Zone A SFHA

The inventory of Zone A studies (381.5 miles) in the East Fork San Jacinto watershed were classified in CNMS with validation status of "UNVERIFIED" (307.7 miles) or "VALID" (73.8 miles), and with status type of "BEING STUDIED" (381.5 miles). The following is a summary of the results of the CNMS validation assessment for the effective Zone A studies in the study area. Initial Assessment checks A1-A3 were evaluated for the CNMS inventory of Zone A studies.

INITIAL ASSESSMENT A1 – SIGNIFICANT TOPOGRAPHY UPDATE CHECK

This check involves determining whether a topographic data source is available that is significantly better than what was used for the effective Zone A modeling and mapping. For the study area in the East Fork San Jacinto Watershed, the effective Zone A topographic data leveraged a variety of sources, but was primarily based upon United States Interagency Elevation Inventory. Three LiDAR sources are available (2008 H-GAC, 2011 TNRIS, 2011 FEMA LiDAR and 2017 StratMap LiDAR) that are a significant improvement from the effective Zone A topographic source for a small percentage of reaches (38 miles). These 38 miles fail this assessment. The remainder of the mileage passes this check.

INITIAL ASSESSMENT A2 – CHECK FOR SIGNIFICANT HYDROLOGY CHANGES

This check involves first determining whether new regression equations have become available from the USGS since the date of the effective Zone A study. If newer regression equations exist for the area of interest, then an engineer must determine whether these regression equations would significantly affect the 1-percent annual chance flow.

The hydrology methods for all effective Zone A study areas located in the East Fork San Jacinto Watershed are unknown and, therefore, pass this assessment check.

INITIAL ASSESSMENT A3 – CHECK FOR SIGNIFICANT DEVELOPMENT

This check involves using the National Urban Change Indicator (NUCI) dataset to assess increased urbanization in the watershed of the Zone A study. If the percentage of urban area within the HUC-12 watershed containing the effective Zone A study is 15% or more, and has increased by 50% or more since the effective analysis, the study would fail this check. Although the NUCI data provide year-to-year changes in urbanization, the NLCD also is needed to establish a baseline of urban land cover for this analysis. The check for significant development in this watershed was completed by evaluating percentage of urban change at the HUC-12 level. Approximately 70% of the effective Zone A studies in this watershed are still considered rural and pass this check. The

remainder are classified as urban and have had a >50% increase in urbanization since the effective study and, therefore, fail this check.

All of the initial assessment results are shown in Table 6.

Table 6: Zone A Initial Assessment Results

Assessment Check	Pass / Fail	Notes
A1 – Topography	Pass/Fail	Three LiDAR sources available that are a significant improvement from effective topography affecting a portion of studies.
A2 – Hydrology	Pass	Effective hydrology methods used are unknown.
A3 – Development	Pass/Fail	~30% of streams fall inside HUC-12 watersheds classified as urban and have had a >50% increase in urban area.

VALIDATION CHECK A4 – CHECK OF STUDIES BACKED BY TECHNICAL DATA

Zone A studies that pass all initial assessment checks described above may be categorized as "Valid" in the CNMS Inventory only if the effective Zone A study is supported by modeling or sound engineering judgment and all regulatory products are in agreement. If the effective Zone A study passes all initial assessment checks, but is not supported by modeling, or if the original engineering method used is unsupported or undocumented, a comparison of the BLE results and effective Zone A's is performed. All Zone A studies, except one small 0.4 mile reach that was restudied as part of a 2016 LOMR, do not have the effective methodology documented. Therefore, all reaches other than the one LOMR segment failed this check.

VALIDATION CHECK A5 – COMPARISON OF BLE AND EFFECTIVE ZONE A

The BLE /effective Zone A comparison method leverages the existing Floodplain Boundary Standard (FBS) certification procedures described in FEMA SID 113, but with a slight modification. This modified FBS comparison approach uses the 1-percent plus and 1-percent minus flood profiles and horizontal and vertical tolerances described in FEMA's Automated Engineering guidance document dated May 2016. For the comparison of BLE and effective Zone A in the Texas study area, the following vertical and horizontal tolerances were used to conduct the modified FBS procedure. One point was placed every 200 feet along the floodplain boundaries for comparison.

Vertical Tolerance: +/- 10 feet (one-half contour interval of assumed effective topographic source).
Horizontal Tolerance: +/- 75 feet (standard horizontal tolerance for BLE comparison testing).

Comparison results for these streams were grouped at the HUC-12 level and are summarized in Table 7 to better understand the general health of the HUC-12 watershed, but the validation check was performed at the stream level. Streams where the percentage of passing FBS sample points is greater than or equal to 85% are marked as "Pass", otherwise marked as "Fail".

Table 7: BLE Comparison Results

HUC-12 Watershed		Total FBS points	Fail	Pass	%Pass	BLE Comparison Pass? (>85%)	Priority Score
Watershed Name	Watershed Number						
East Fork San Jacinto	All Streams	20,998	5,014	15,984	76%	Fail	
Boggy Creek-Peach Creek	120401030106	1,394	484	910	65%	Fail	10.1
Boswell Creek	120401030301	909	197	712	78%	Fail	6.9
Cagle Branch-Caney Creek	120401030104	154	3	151	98%	Pass	1.1
Cobb Creek-East Fork San Jacinto River	120401030305	2,132	438	1694	79%	Fail	8.6
Dry Creek-Caney Creek	120401030105	64	8	56	88%	Pass	1.4
Gourd Creek-Winters Bayou	120401030302	2,252	390	1862	83%	Fail	4.6
Gully Branch-Peach Creek	120401030109	154	6	148	96%	Pass	7.2
Hegar Branch-Caney Creek	120401030101	1670	244	1426	85%	Pass	5.7
Hopkins Branch-Winters Bayou	120401030303	1,997	590	1,407	70%	Fail	7.9
Indian Gulley-Luce Bayou	120401030204	142	29	113	80%	Fail	6.0
Jayhawker Creek	120401030108	600	172	428	71%	Fail	5.1
Lawrence Creek-Peach Creek	120401030107	938	324	614	65%	Fail	6.4
Lower Tarkington Bayou	120401030203	182	46	136	75%	Fail	16.5
Luce Bayou-Frontal Lake Houston	120401030205	416	104	312	75%	Fail	6.8
Marsh Branch-Tarkington Bayou	120401030202	187	30	157	84%	Fail	10.5
McCombs Creek-East Fork San Jacinto River	120401030306	732	180	552	75%	Fail	7.4
McRae Creek-Caney Creek	120401030102	173	10	163	94%	Pass	2.8
Miller Creek-East Fork San Jacinto River	120401030307	2176	500	1676	77%	Fail	12.1
Nebletts Creek-Winters Bayou	120401030304	1,034	567	467	45%	Fail	13.7
Oil Creek-East Fork San Jacinto	120401030308	1,227	159	1068	87%	Pass	3.2
Orange Branch-East Fork San Jacinto River	120401030402	121	51	70	58%	Fail	5.9
Upper Tarkington Bayou	120401030201	1,549	413	1,136	73%	Fail	9.1
West Fork Spring Branch-Spring Branch	120401030103	439	8	431	98%	Pass	3.5
Whiskey Branch-East Fork San Jacinto River	120401030401	332	61	271	82%	Fail	7.6
White Oak Creek-Frontal Lake Houston	120401030110	24	0	24	100%	Pass	6.5

VALIDATION RESULTS

Based on the validation assessments and BLE comparison results described above, the CNMS inventory of Zone A studies in the East Fork San Jacinto Watershed has been updated as summarized in Table 8 and illustrated in Figure 7 below.

Table 8: Zone A Validation Results

Validation Status	Status Type	Total Miles
VALID	BEING STUDIED	73.8
UNVERIFIED	BEING STUDIED	307.7

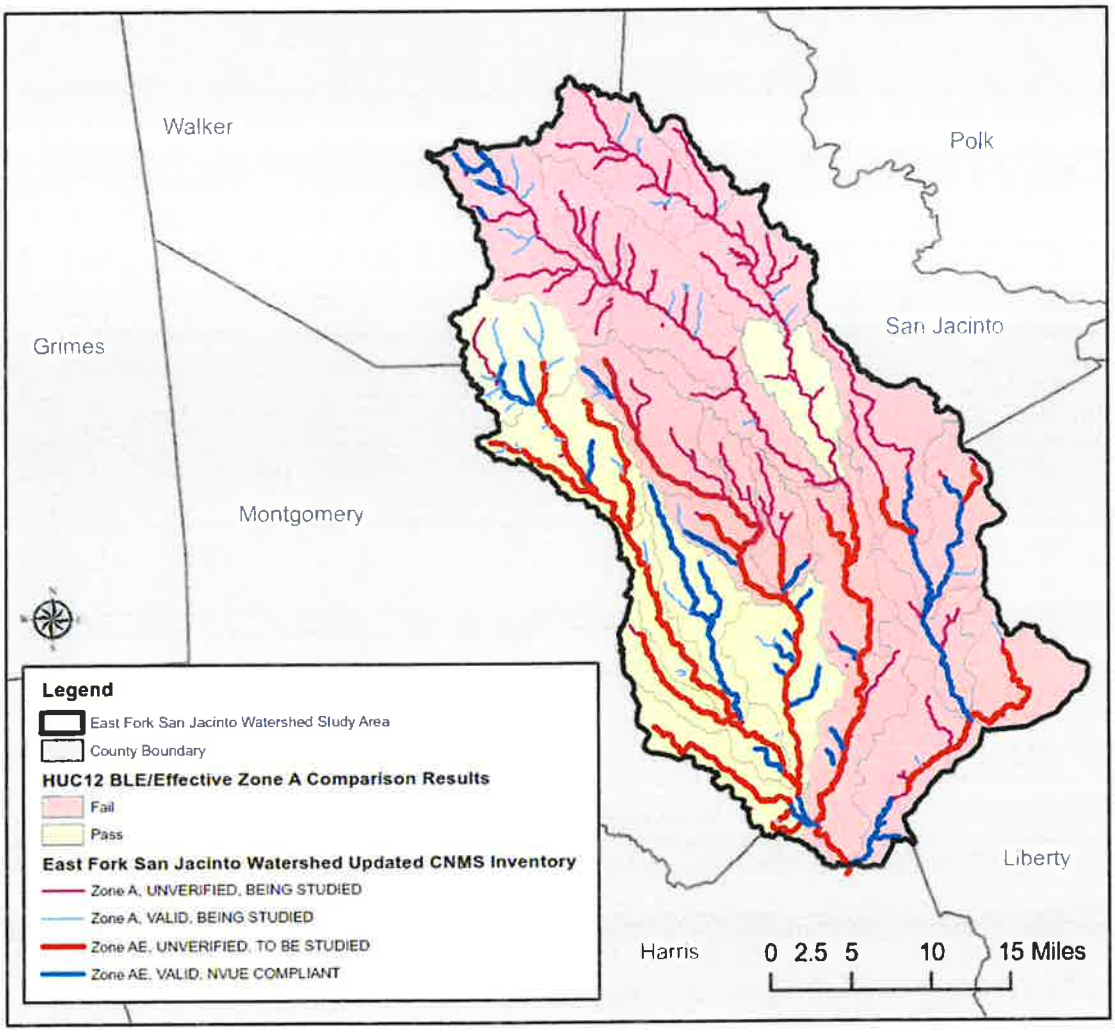

Figure 7: East Fork San Jacinto River Watershed CNMS Validation Results

An overall risk for each HUC-12 watershed was calculated using the National Flood Risk Percentages Dataset and its proportional area. The weighted risk was multiplied by the percentage of points in the watershed that failed the CNMS comparison to effective to determine

the priority score. Figure 8 below shows the range of the HUC-12 priority scores which can be used to initiate discussions during the Discovery phase.

Lower Tarkington Bayou HUC-12 was determined to have the highest priority score and the most need while Cagle Branch-Caney Creek HUC-12 had the lowest score.

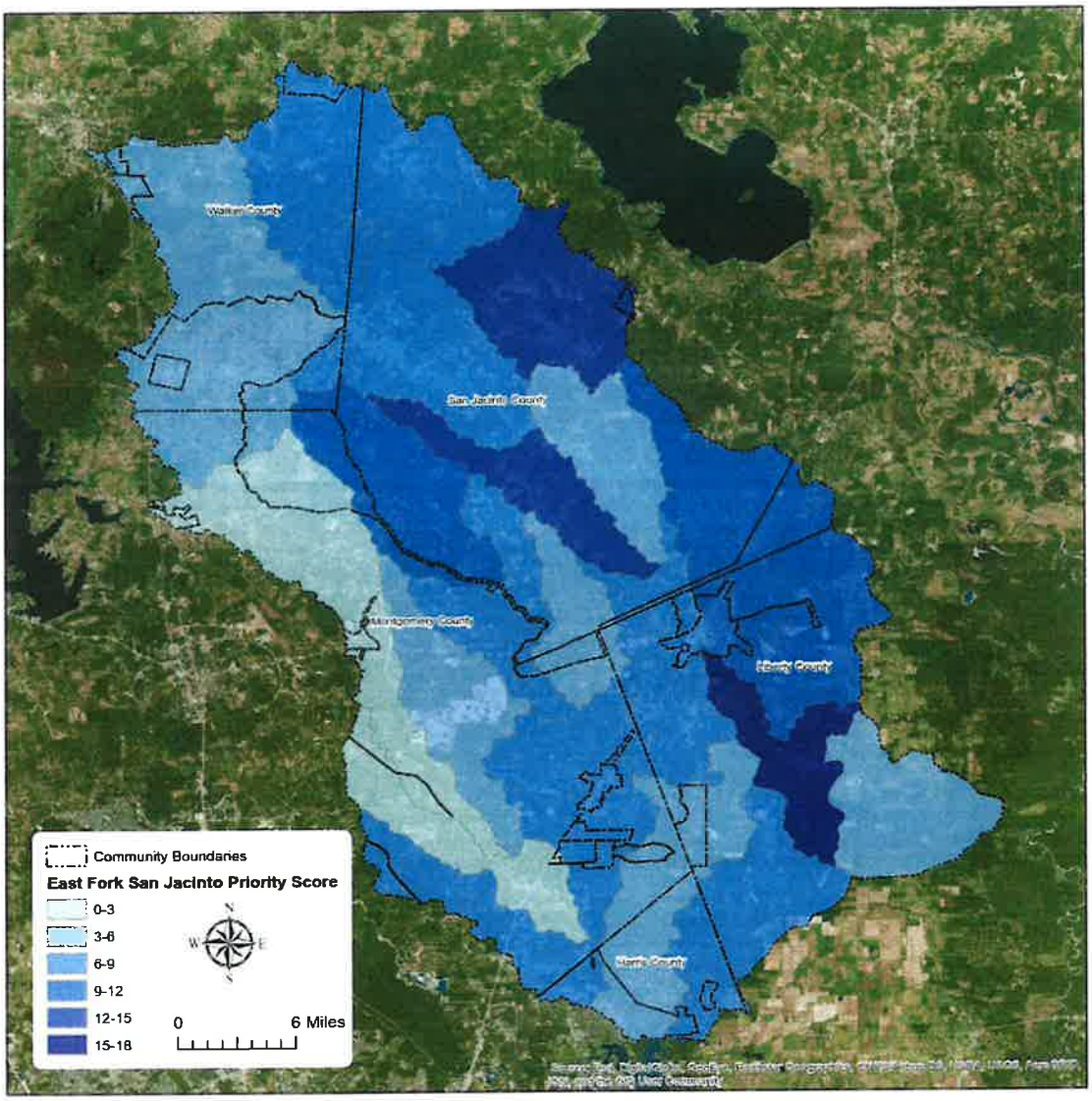

Figure 8: Ranking of East Fork San Jacinto River Watershed HUC-12s

3.2 Flood Risk Analysis

An advanced flood risk analysis was performed using the updated 1-percent-annual-chance grid (known as 'refined' grid) created for this project. The loss analysis uses 2010 census data and the subsequent results are stored in the L_RA_Results table.

Hazus version 4.0 was used for the loss analysis.

The losses are reported via census blocks. It is important to note that Hazus version 4.0 uses dasymetric census blocks. Dasymetric mapping removes undeveloped areas (such as areas covered by other bodies of water, wetlands, or forests) from the Census blocks, changing their shape and reducing their size in these areas. For more information on dasymetric data visit FEMA's Media Library for the Hazus-MH Data Inventories: Dasymetric vs. Homogenous, or Hazus 3.0 Dasymetric Data Overview.

References

1. Asquith, William H. and Roussel, Meghan C., "Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment-Based, PRESS-Minimized, Residual-Adjusted Approach," United States Geological Survey Scientific Investigations Report 2009-5087, 2009.
2. Chow, Ven T. "Development of Uniform Flow and It Formulas." *Open Channel Hydraulics*. Caldwell, NJ: Blackburn, 1959. 109-113. Print.
3. FEMA, "Guidance for Flood Risk Analysis and Mapping – Automated Engineering", May 2016. (https://www.fema.gov/media-library-data/1469144112748-f3c4ecd90cb927cd200b6a3e9da80d8a/Automated_Engineering_Guidance_May_2016.pdf).
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5. Texas Precipitation – Average monthly and annual precipitation for the climatological period 1981-2010. Data from NRCS. Retrieved October 2015. (http://www.twdb.texas.gov/mapping/gisdata.asp).
6. United States Army Corps of Engineers, Hydrologic Engineering Center. (January 2010). HEC-RAS River Analysis System, Version 4.1.0. Davis, California.
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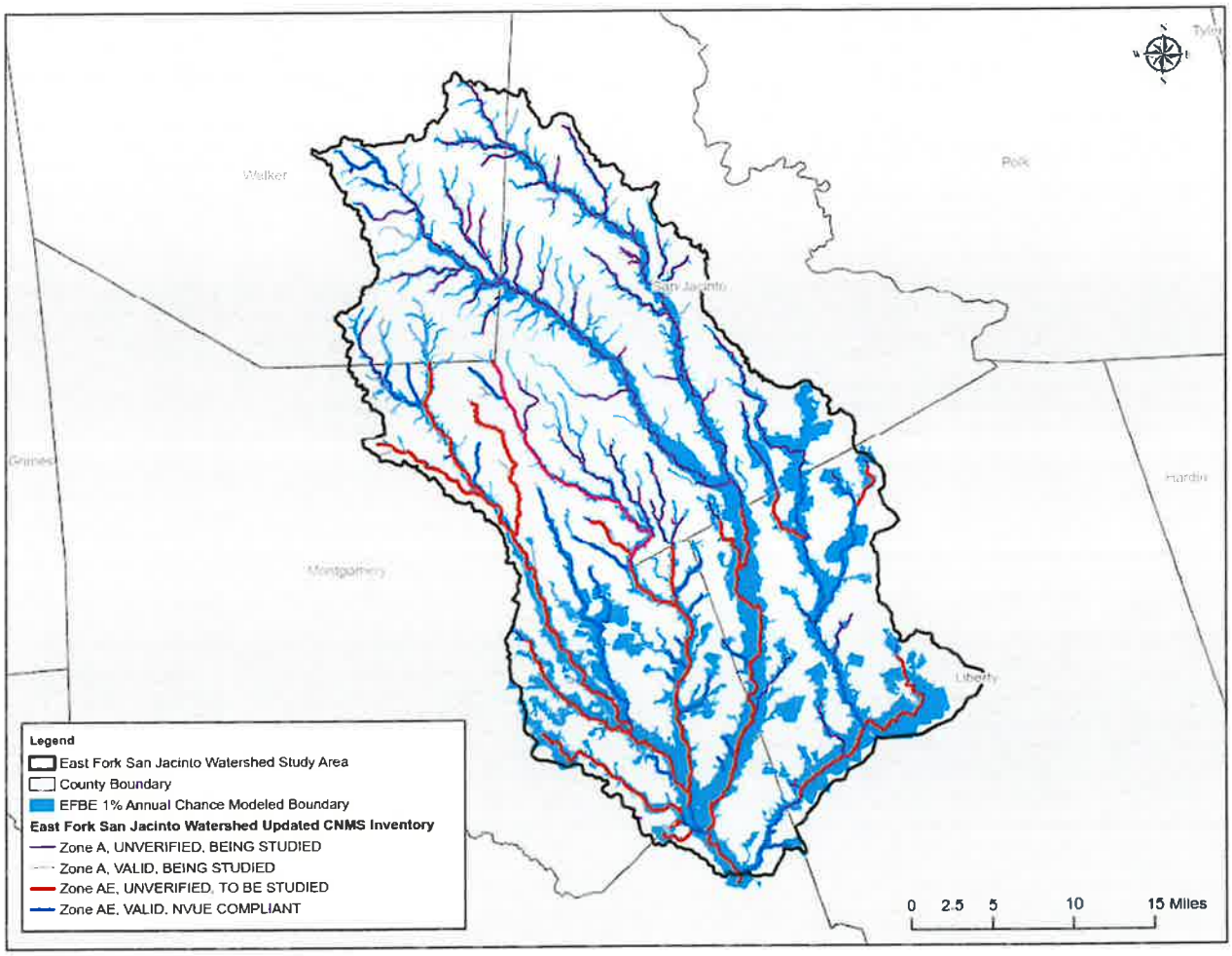
9. United States Geological Survey, Interagency Advisory Committee on Water Data. "Guidelines for determining Flood Flow Frequency", Bulletin #17B of the Hydrology Subcommittee, Revised September 1981, Editorial Corrections March 1982. Reston, VA.
10. Watershed Concepts, a Division of Hayes, Seay, Mattern & Mattern. *Watershed Information System (WISE,)* Version 4.1.0. 2008.

Appendix A BLE Map



Appendix B BLE EFSJR Harvey Hydrology & Hydraulics Memo

Date: May 7, 2018

To: Alan Johnson

Larry Voice

From: April Smith, PE, CFM

Subject: BLE East Fork San Jacinto River Watershed Harvey Hydrology & Hydraulics Update

Summary

The intent of this memo is to summarize the findings and updates incorporated into the Base Level Engineering (BLE) hydrology and hydraulics for the East Fork San Jacinto River (EFSJR) watershed as a result of the recent major storm event Hurricane Harvey. The proposed updates to the EFSJR basin have already been implemented for the West Fork San Jacinto River (WFSJR) watershed. A separate analysis was conducted for the WFSJR watershed with results and recommendations presented in the *BLE West Fork San Jacinto River Watershed Harvey Hydrology & Hydraulics Update* technical memorandum dated December 27, 2017. Due to the schedule of this study, the pre-Harvey hydrology was not used in the EFSJR models and hydraulic results are presented herein.

Major findings related to the incorporation of post-Harvey flood frequency analyses include:

- The 1996 regression model predicts lower 100-year streamflow values than those of the 2009 regression model for 93% of the basins studied (**Figure 1**).
- The 2009 regression equations are recommended for use because they provide streamflow estimates closer to the Flood Insurance Study (FIS) discharges for the EFSJR (**Figure 2**).
- Both the 1996 and 2009 regression models predict lower 100-year streamflow values than the post-Harvey flood frequency analyses on gages located in the East Fork San Jacinto River watersheds (**Figure 2**). Therefore, a frequency adjustment factor is recommended for the 2009 regression equations.
- For each storm recurrence interval and regression model, a constant, "α", was computed from the trendline equations to adjust the 1996 and 2009 regression model streamflow predictions to the post-Harvey flood frequency analyses. The α-factors were applied as a constant multiplier to the regression equations to obtain the adjusted flows (**Figure 3**). The computed α-factors are given in **Table 1**. The factors for the 10-year storm event are less than one, so no adjustment is recommended for the 10-year (**Table 4**).

Table 9. Computed α-factors for the EFSJR Watershed

	10-year	25-year	50-year	100-year	500-year
α_{1996}	1.70	1.82	2.07	2.33	2.50
α_{2009}	0.87	1.04	1.17	1.33	1.76

- The adjusted 2009 model Q_{100} flows were applied to six representative streams—the main stem of the EFSJR, one from Winters Bayou HUC 10, and two each from Tarkington Bayou/Luce Bayou HUC 10 and Peach Creek/Caney Creek HUC 10. The water surface elevations increase is shown in **Figure 4**. There is a positive correlation between the magnitude of the increase and the flow in the stream.

Major findings of BLE model calibration to recorded flows and stages from Harvey:

- Manning's roughness coefficients (n-values) assigned by the GIS tool, which utilizes the 2011 National Land Cover Database (NLCD) data, appear to be low when the recorded Harvey USGS gage flows are input into the models and the water surface elevations are compared to the recorded Harvey USGS gage elevations (**Figures 5** and **6**).

- An overbank n-value adjustment of +0.05 with a minimum final value of 0.11 is recommended for the East Fork San Jacinto River. This alters the range of Manning's n-values from 0.05 – 0.12 to 0.11 – 0.17. The channel adjustment of +0.02 with a minimum final value of 0.06 is recommended. This will alter the range of Manning's n-values from 0.03 – 0.07 to 0.06 – 0.09. The exception to the adjustment of roughness coefficients within the channel is through large reservoirs or lakes. The Manning's n-value was set to 0.03 through Lake Houston. Increasing the n-values results in water surface elevation profiles more representative of the gage elevations recorded during Harvey (**Figure 5**).

- In a review of the East Fork San Jacinto n-values assigned, it was found that the NLCD dataset may assign inaccurate land use values in various locations, which leads to low Manning's n-values reported using the GIS tool and subsequently used in the hydraulic models (**Figure 6**). During the model building process, the n-values assigned using the GIS tool should be reviewed.

Suggested Adjustments Based On Findings

1. The Manning's roughness coefficients for the East Fork San Jacinto River should be increased by 0.02 in the channel and 0.05 in the overbanks, with minimum values of 0.06 and 0.11, respectively. The following table details the adjustments that are suggested while **Figure 7** shows the increase in water surface elevations when using these proposed coefficients.

Table 10. Roughness Value Adjustments

Channel		Overbank		Large Lake/Reservoir	
Original Assigned Value	Suggested Value	Original Assigned Value	Suggested Value	Original Assigned Value	Suggested Value
0.03	0.06	0.05	0.11	0.03	0.015
0.04	0.06	0.075	0.125		
0.05	0.07	0.1	0.15		
0.06	0.08	0.12	0.17		
0.07	0.09				

2. Polygons created by the Manning's roughness assignment tool should be viewed in conjunction with aerial imagery during model building to verify appropriate land use values are present in the NLCD dataset.

3. **Table 3** shows the published 2009 equations for Texas. In these equations, Q_i represents peak stream flow for i-recurrence interval (annual chance exceedance (a.c.e.)) in cubic feet per second (cfs), P represents mean annual precipitation in inches, S represents dimensionless main-channel slope, Ω represents the OmegaEM parameter (**Figure 8**), and A represents cumulative drainage area in square miles. The flows calculated from the 2009 regression equations should be adjusted by the factors in **Table 4**.

Table 11. Summary of Regression Equations in Texas (SIR 2009-5087)

Recurrence Interval	Equation
$Q_{10\%}$	$P^{1.203} \times S^{0.403} \times 10^{[0.918\Omega + 13.62 - 11.97A^{(-0.0289)}]}$
$Q_{4\%}$	$P^{1.140} \times S^{0.446} \times 10^{[0.945\Omega + 11.79 - 9.819A^{(-0.0374)}]}$
$Q_{2\%}$	$P^{1.105} \times S^{0.476} \times 10^{[0.961\Omega + 11.17 - 8.997A^{(-0.0424)}]}$
$Q_{1\%}$	$P^{1.071} \times S^{0.507} \times 10^{[0.969\Omega + 10.82 - 8.448A^{(-0.0467)}]}$
$Q_{0.2\%}$	$P^{0.988} \times S^{0.569} \times 10^{[0.976\Omega + 10.40 - 7.605A^{(-0.0554)}]}$
Variables: Q_i, peak flow for i recurrence interval (a.c.e.), in cubic feet per second; P, mean annual precipitation, in inches; S, Main-channel slope (dimensionless); Ω, OmegaEM parameter; A, cumulative drainage area, in square miles	

Table 12. Recommended Flow Adjustments for BLE on the EFSJR Watersheds

	10-year	25-year	50-year	100-year	500-year
α_{2009}	None	1.04	1.17	1.33	1.76

Supporting Figures

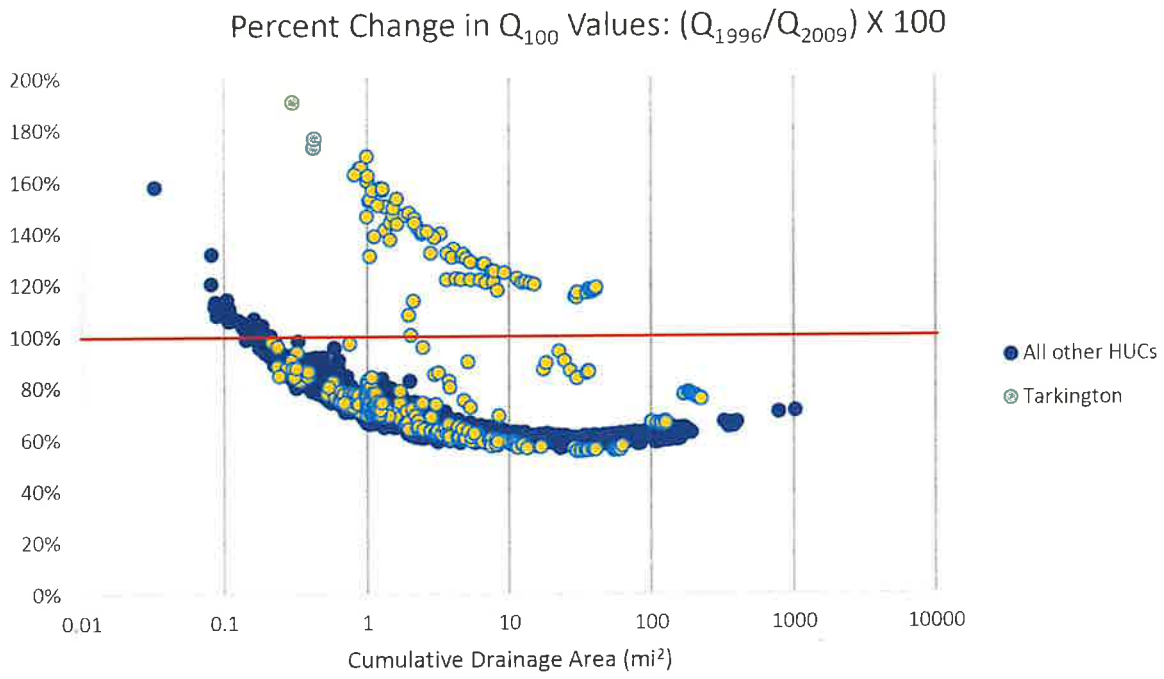


Figure 9. A comparison of Q_{100} values calculated with the 1996 and 2009 regression models for the EFSJR watershed. Tarkington basins are plotted in yellow; all other HUCs within the watershed are blue. 2009 regression flows are higher than 1996 regression flows for 93% of the basins. However, 1996 regression flows are higher in basins with small cumulative drainage area (< 0.1 square miles) or those with a negative Ω value (i.e., Tarkington).

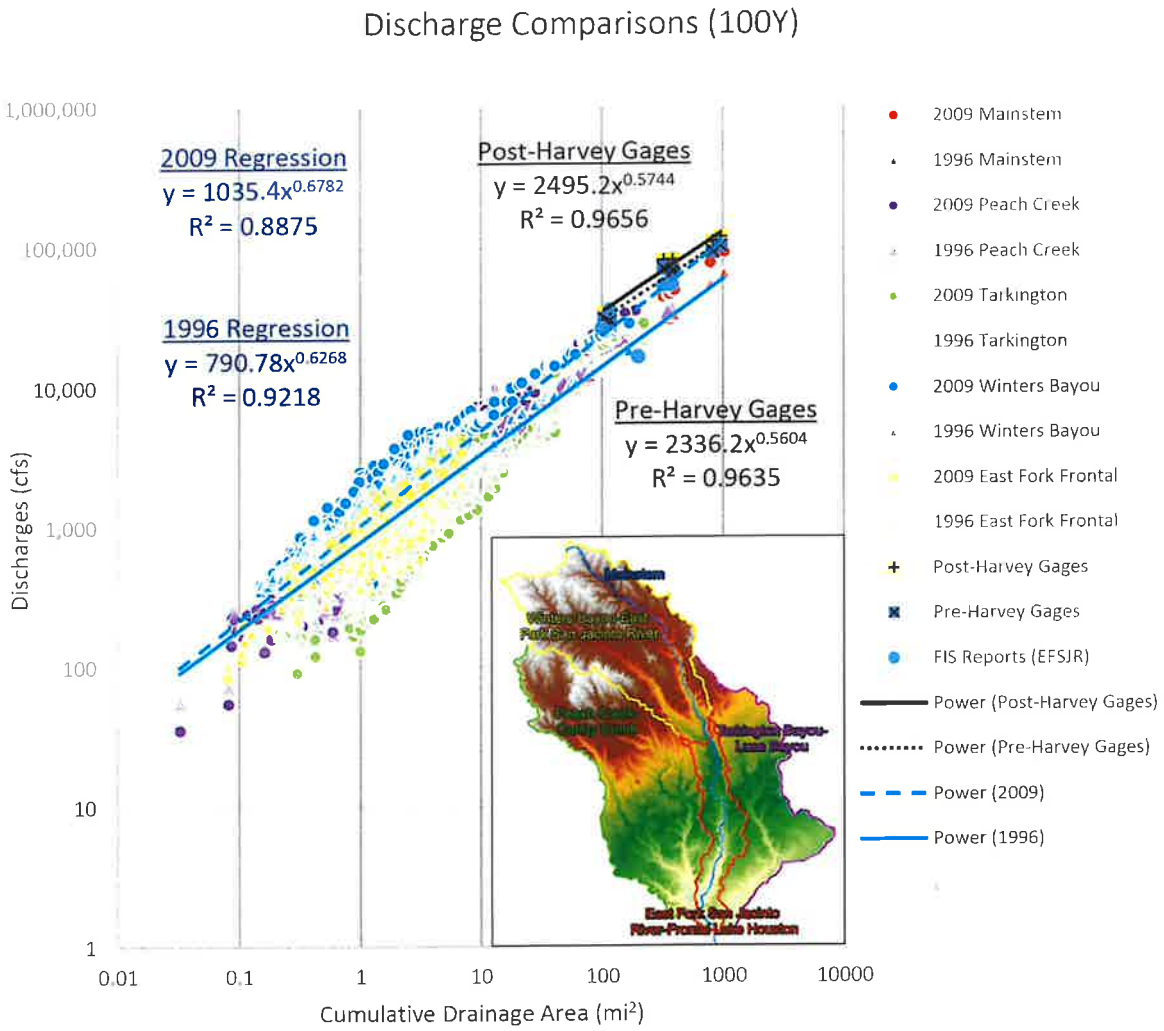


Figure 10. A comparison of Q_{100} values calculated from the regression models and the gage analyses. The HUCs are differentiated by color, as shown on the legend. The circles and triangles represent the 2009 and 1996 regression model discharges, respectively. The solid blue power trendline is fitted to all 2009 data points, and the dashed blue power trendline is fitted to all 1996 data points. In general, both 2009 and 1996 regression models under-predict streamflow when compared to the gage analyses. The 2009 model discharges are closer to the FIS discharges than those of the 1996 model.

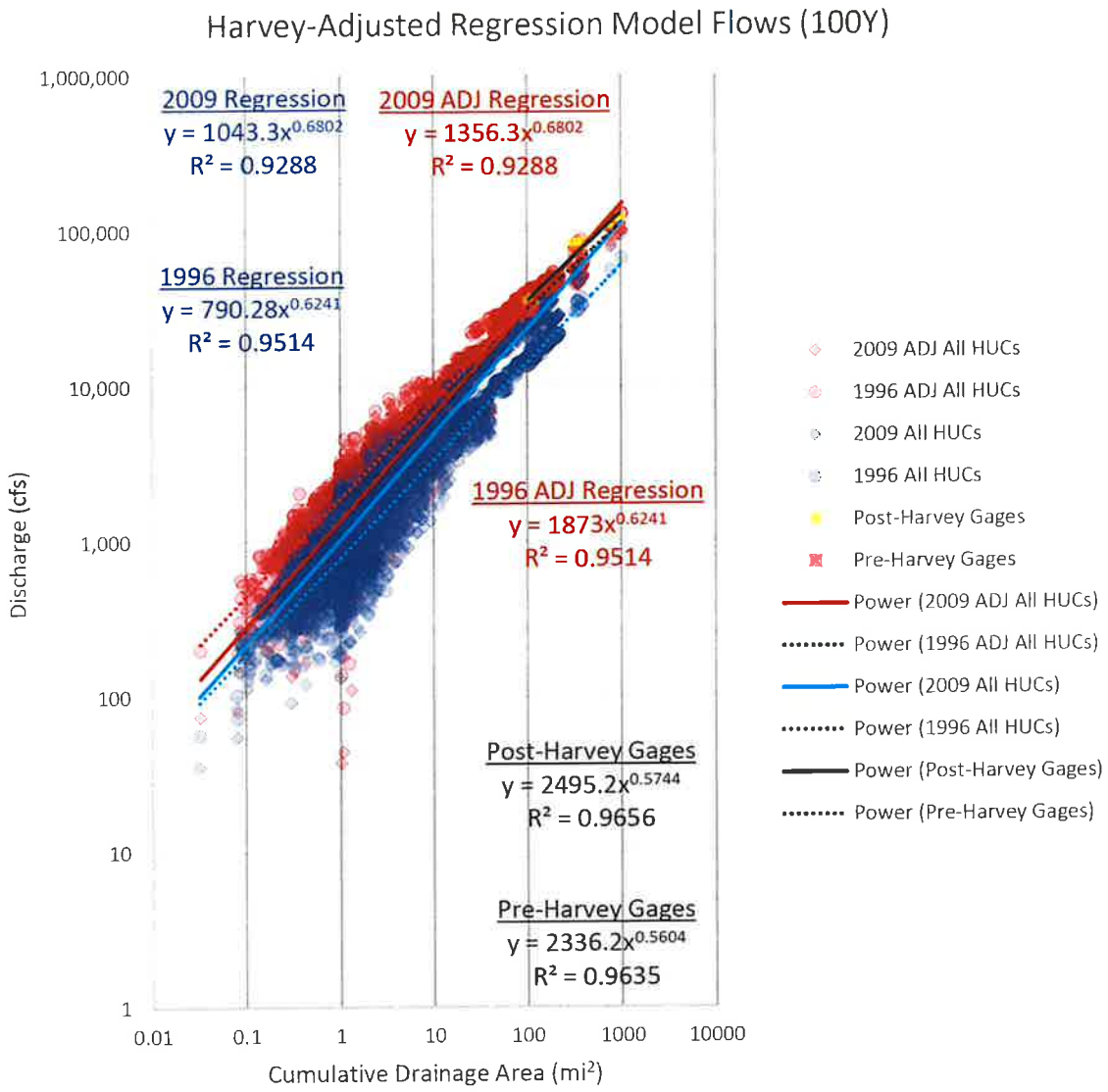


Figure 11. A comparison of Harvey-adjusted and non-adjusted regression model Q_{100} values. The solid black trendline is fitted to the post-Harvey gage analyses, representing the "target" trendline. The dotted blue trendline is fitted to the 1996 non-adjusted model. When flows are multiplied by the α-factor ($\alpha_{1996,\ 100Y} = 2.33$), the trendline translates upward (represented by the dotted red line). The solid blue trendline represents the 2009 non-adjusted model. When multiplied by its α-factor ($\alpha_{2009,\ 100Y} = 1.33$), the solid red trendline is the result.

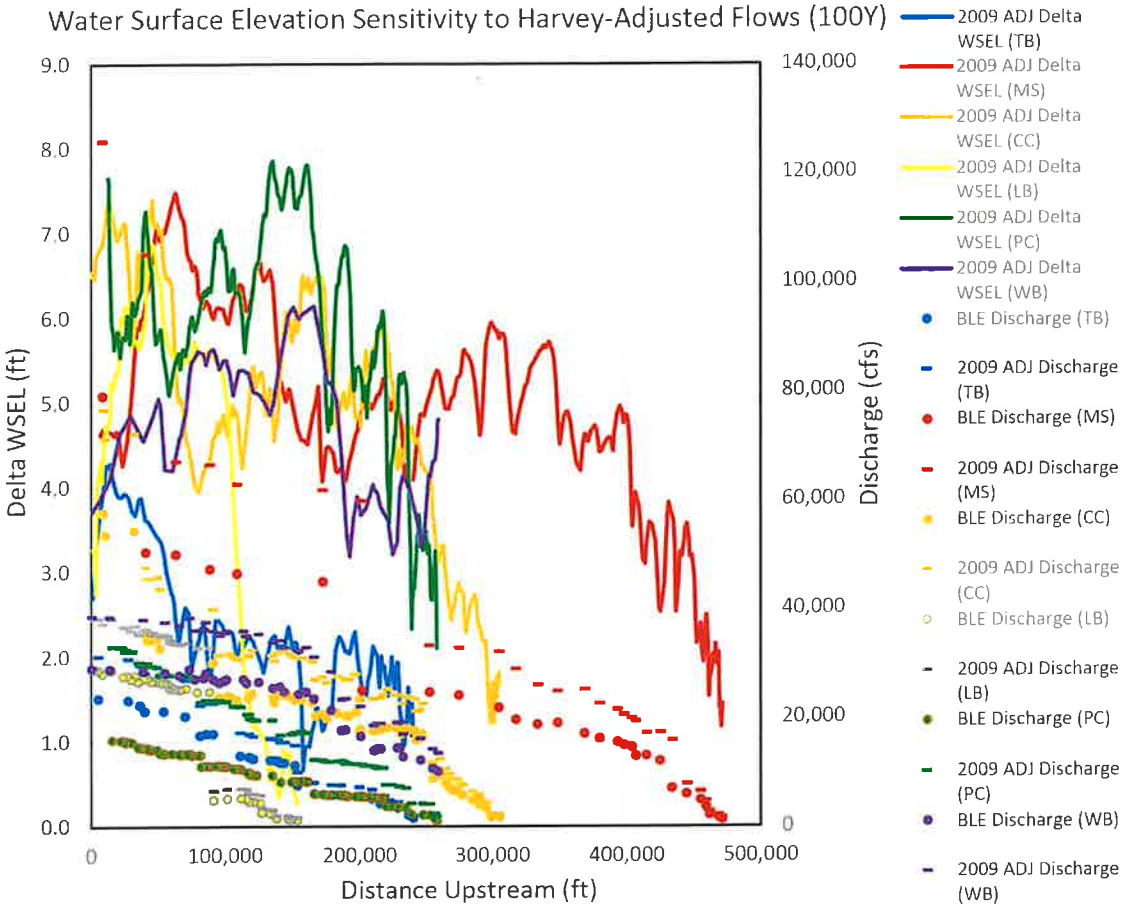


Figure 12. The sensitivity of water surface elevation to changes in Q_{100} for six streams in the EFSJR watershed. The streams studied were: the main stem of the EFSJR (MS), Winters Bayou (WB), Peach Creek (PC), Tarkington Bayou (TB), Caney Creek (CC), and Luce Bayou (LB). The solid lines (color-differentiated by stream) represent the increase in water surface elevation from the original BLE model due to the adjusted 2009 discharges. There is a positive correlation between the magnitude of the increase and the amount of flow in the stream.

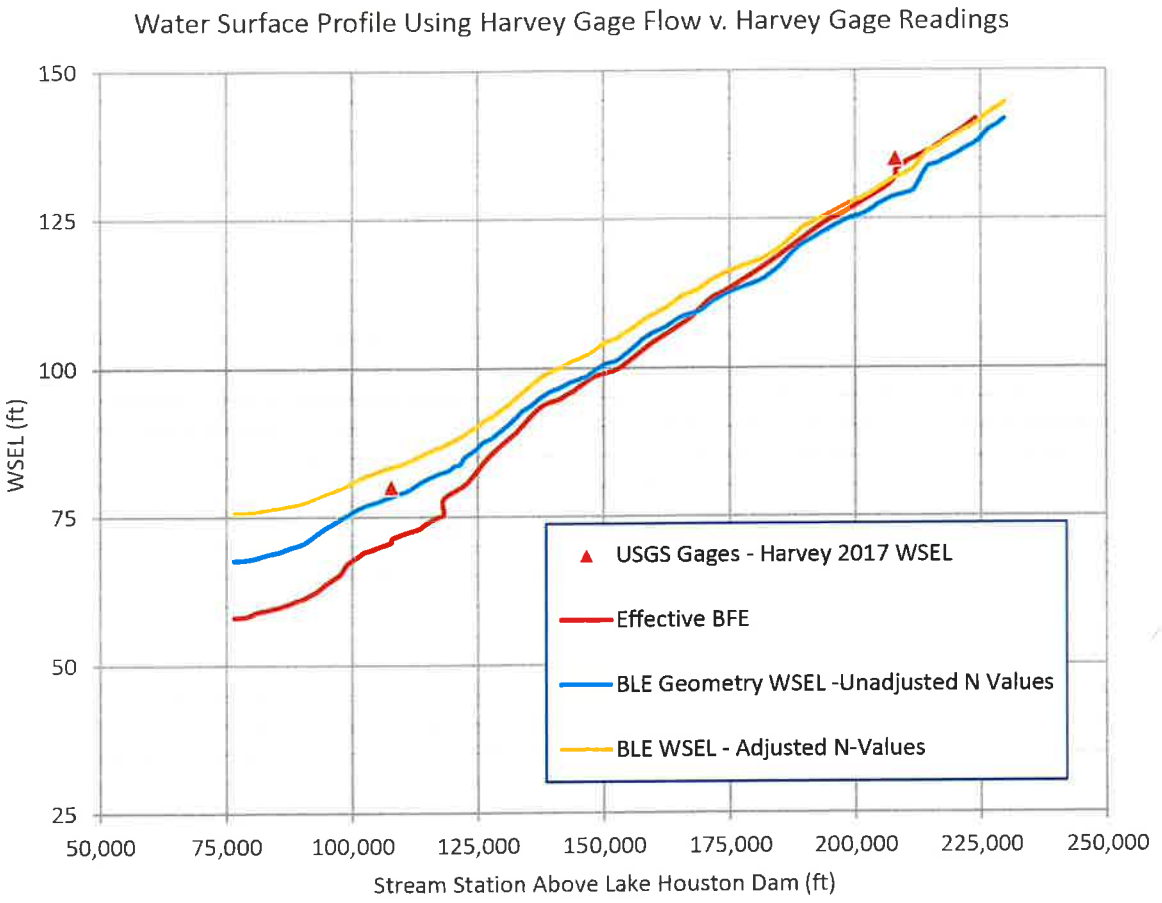


Figure 13. A hydraulic model utilizing the geometry resulting from the standard BLE process and peak flows recorded by USGS gages during Hurricane Harvey resulted in lower water surfaces than those recorded by the gages. A hydraulic model utilizing the BLE geometry with adjusted Manning's roughness coefficients and peak flows recorded by USGS gages during Hurricane Harvey resulted in similar water surfaces to those recorded by the gages.

Table 13. A tabular comparison of the modeled conditions as described in Figure 5. The larger discrepancy in water surface elevations along the East Fork San Jacinto mainstem between the modeled elevation and gage near Cleveland is due to erroneous values in the NLCD dataset. Correcting these values then adjusting according to the recommendations provided in the executive summary raises the water surface elevation to within 0.5 foot of the Cleveland reading during Harvey.

USGS Gage	Gage Location	Gage Peak Water Surface	Original Geometry Peak WS	Adjusted Geometry Peak WS	Orig. Geom WS - Gage WS	Adjusted Geom WS - Gage WS
08070000	E Fork San Jacinto River near Cleveland	135.13	131.27	134.63	-3.86	-0.50
08070200	E Fork San Jacinto River near New Caney	80.05*	78.06	83.12	-1.99	3.07
08070500	Caney Creek near Splendora	145.01	140.48	142.77	-4.53	-2.24
08071000	Peach Creek at Splendora	107.16	103.89	107.14	-3.27	-0.02

*Datum of gage changed from 43.98-ft above NGVD29 to NAVD88, 2001 adjustment, on October 1, 2016. New datum is 43.0-ft below previous datum. In summary, datum of gage is 0 feet above NAVD88.

Figure 14. The graphic shows land use type which is erroneously reported in the NLCD. At this location, the NLCD raster shows 'Developed – Open Space/Low Intensity' in the majority of the area. The GIS tool initially assigns a Manning's n-value of 0.013 to this, assumed to represent paving, which is then constrained to a minimum value of 0.05. As seen in the imagery, most of the area is either dense woods, which should be written as 0.12 according to the tool, or woody wetlands with dense tree cover, which should be written as 0.1 according to the tool. Correcting these values then adjusting according to the recommendations provided in the executive summary raises the water surface elevation to within 0.5 foot of the Cleveland gage reading during Harvey.

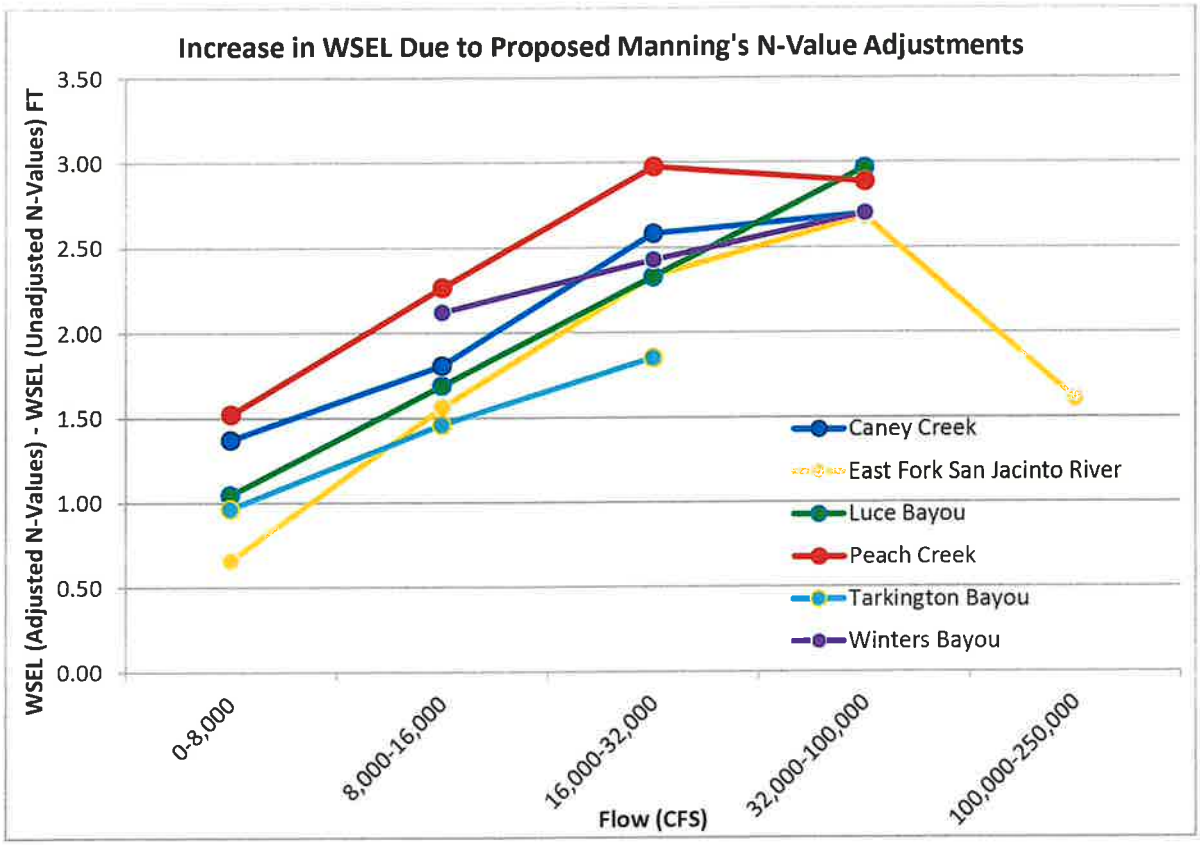


Figure 15. The change in water surface elevation based on the proposed Manning's roughness coefficient adjustments was plotted for several streams. As the flow in the stream increases the effects of the proposed adjustments are increased. There is a fluctuation in the plotting of the EFSJ mainstem because n-values were lowered through Lake Houston.

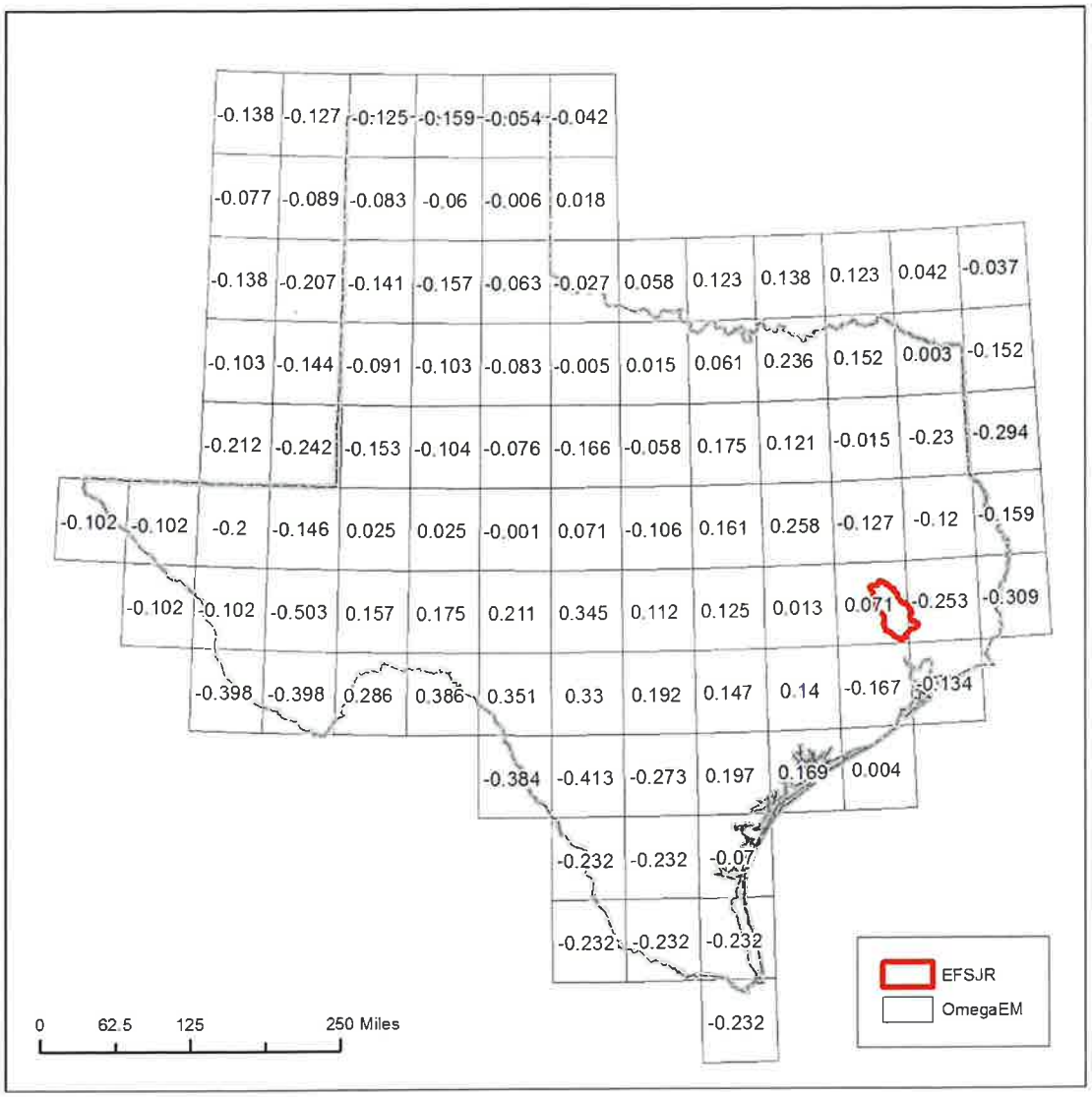
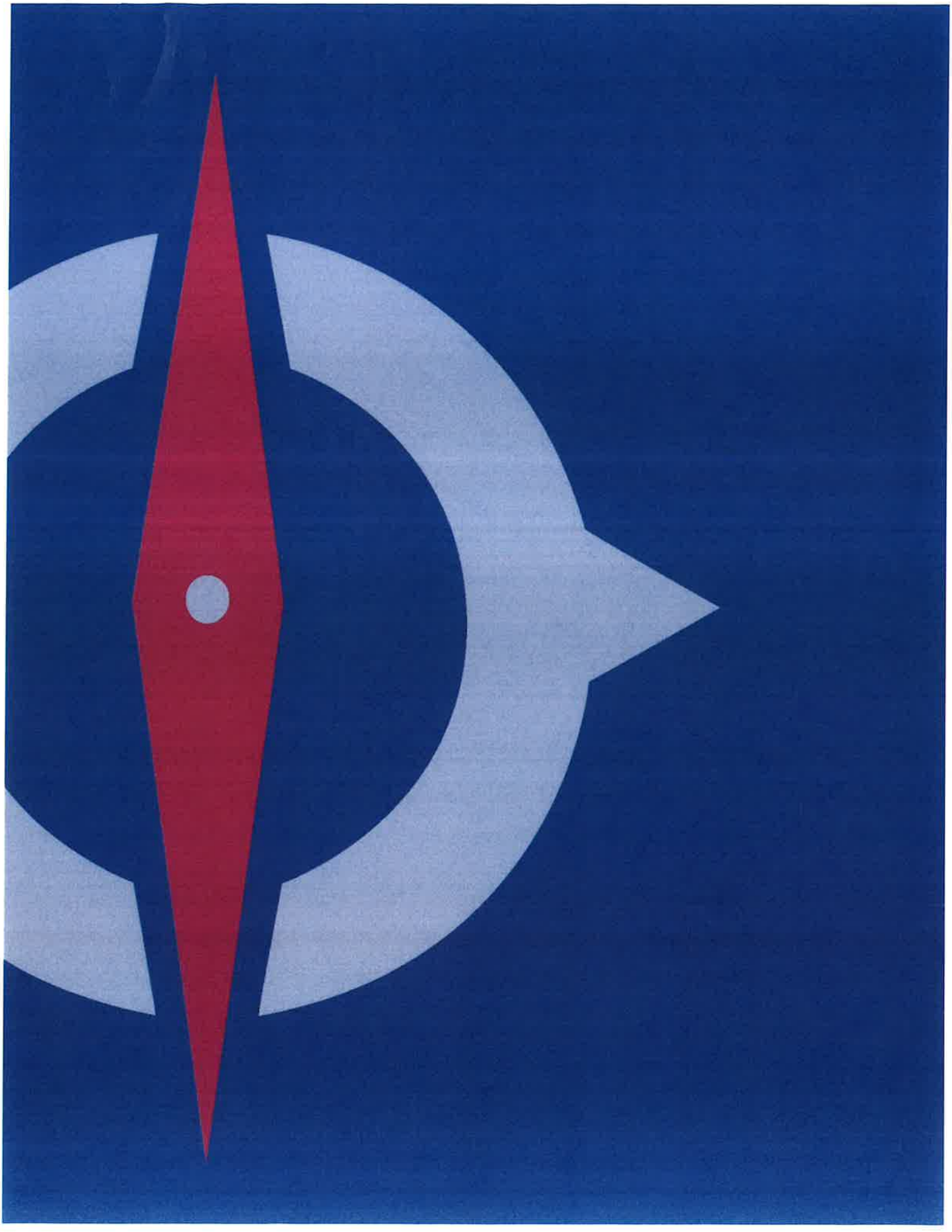


Figure 16. Study area for EFSJR superimposed on statewide map of Omega EM values. Omega EM parameter represents a generalized terrain and climate index for regionalization of peak-streamflow frequency. For full discussion of the development of the Omega EM parameter please consult the 2009 Texas regression report by William Asquith and Meghan Roussel (https://pubs.usgs.gov/sir/2009/5087/).



DEVELOPMENT CERTIFICATIONS FORM

Copy all pages of this form and all attachments for (1) community official, (2) building owner
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Building/Site Owner's Name: Black Eye Properties LLC	Permit Number:
A2. Building/Site Street Address: [redacted]	Date of Submittal:
City: [redacted] State:	ZIP Code:
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): Property ID: 20223 Legal Description: Smith J (A-497), Tract 4, Acres 9.5663	
A4. Latitude/Longitude: Lat. 30.533459° Long. -95.498110° Horizontal Datum: ☐ NAD 1927 ☑ NAD 1983	

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
Walker County	Walker	Texas

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)
48471C0525	D	08/16/2011	08/16/2011	X, A

B9. Indicate elevation datum used for/ on FIRM Panel in Item B7: ☐ NGVD 1929 ☑ NAVD 1988 ☐ Other/Source: _____

SECTION C – PROJECT DESCRIPTION AND ATTACHMENTS

(At a minimum a general project description and plan set shall be submitted with this form. The documents listed below shall be included with this form and any additional catalog of submittals may be attached as a separate sheet and referenced below

Document Name	Date of Document	Signatory/Author
FM 1375 Civil Package	05/11/2025	Golam Mostofa

SECTION D – BASE FLOOD ELEVATION UTILIZED IN DESIGN

(A copy of a Determination of Base Flood Elevation Form must be submitted and the number below correspond with the elevation that appears in subsection E3. For large projects subject to varying or multiple flood heights please place an "X" in the box and initial adjacent to D2)

D1) ☑ GM **The Base Flood Elevation utilized for the project design is:** 310.78 **ft**

D2) ☐ _____ This project is subject to multiple Base Flood Elevations, the BFE is provided in attached plans/submittals as project overlay, detailed method of determination, drainage plans, and BFE impact summary

SECTION E – INCREASES TO OR IMPACT ON FLOODWAY OR BASE FLOOD

(Required for all development projects within a regulated Area of Special Flood Hazard)

I, the below signed Engineer/Architect do hereby certify that: (Please Mark one of the following with an "X" and Initial)

E1) ☑ GM The development is in an area where no regulatory floodway has been designated and the below signed certifies that he/she has analyzed the effects of the proposed development, and found that the proposed development when combined with other existing and anticipated development, will not increase the water surface elevation of the base flood by more than 1 foot at any point within the community

E2) ☐ _____ The development is in an area where a regulatory floodway has been designated, and the below signed certifies that the development is not being constructed within the floodway, will not impact the floodway, and will not result in any increase to the surface elevation of the base flood by more than 1 foot.

E3) ☐ _____ The development is proposed to be partially or wholly located within a designated floodway, but the below signed certifies that hydrologic and hydraulic analyses have been performed in accordance with standard engineering practice and the proposed encroachment will not result in increased flood levels within the community during the occurrence of the base flood discharge. (analysis and "no-rise" certification attached)

Initials of Certifier GM

SECTION F – ALTERATION OR RELOCATION OF WATERCOURSE OR NATURAL DRAINAGE

(Required for all development projects within a regulated Area of Special Flood Hazard)

I, the below signed Engineer/Architect do hereby certify that: (Please Mark one of the following with an "X" and Initial)

F1) ☑ GM The development does not include plans to alter or relocate any watercourse or natural drainage

F2) ☐ _____ The development will alter or relocate a watercourse or drainage, and a description of such relocation or alteration is attached and has been designed to have no adverse impact on flooding or adjoining properties, and that the flood carrying capacity within the altered or relocated portion of any watercourse will be maintained. (In most cases where a watercourse or natural drainage has been altered or relocated a CLOMR and/or LOMR may be required.)

SECTION G – BUILDING CERTIFICATIONS

(Sections G-J are required for all projects involving a structure if not applicable to your project mark with "NA" in each blank)

I, the below signed Engineer/Architect do hereby certify that: (Mark with an "X" and initial **all that apply** / in most cases all 5 will apply):

G1) ☑ GM designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure/development components resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy,

G2) ☑ GM designed to use materials resistant to flood damage,

G3) ☑ GM designed to utilize methods and practices that minimize flood damages, including flood vents where appropriate.

G4) ☑ GM designed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. All electrical, heating, ventilation, plumbing, and mechanical equipment are designed at least twelve (12) inches above the BFE.

G5) ☑ GM The proposed plans for construction and methods used have been designed to comply with the current Walker County Floodplain Regulations, including but not limited to sections 5:01 and 5:02, and the applicable sections of existing guidance and technical bulletins as published by the Federal Emergency Management Agency (FEMA)

Copies of these publications can be found at:

http://www.fema.gov/floodplain-management/floodplain-management-publications

Including but not limited to:

Above the Flood: Elevating Your Floodprone House, FEMA 347
Below-Grade Parking Requirements, FIA-TB-6
Crawlspace Construction for Buildings Located in Special Flood Hazard Areas, FIA-TB-11
Design Guidelines for Flood Damage Reduction, FEMA 15
Elevated Residential Structures. FEMA 54
Elevator Installation, FIA-TB-4
Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe From Flooding, FIA-TB-10
Flood-proofing Non-Residential Structures (Full Document), FEMA 102
Non-Residential Floodproofing -- Requirements and Certification (Techincal Bulletin), FIA-TB-3
Flood Damage-Resistant Materials Requirements. (Technical Bulletin 2) (2008)
Free-of-Obstruction Requirements, (Technical Bulletin 5) (2008)
NFIP Technical Bulletins
Non-Residential Floodproofing -- Requirements and Certification, FIA-TB-3
Openings in Foundation Walls and Walls of Enclosures, (Technical Bulletin 1) (2008)
Protecting Building Utilities from Flood Damage, FEMA 348
Reducing Losses in High Risk Flood Hazard Areas: A Guidebook for Local Officials, FEMA 116
Selecting Appropriate Mitigation Measures for Floodprone Structures, FEMA 551
Wet Floodproofing Requirements, FIA-TB-7

SECTION H -BUILDING DESIGN ELEVATION CERTIFICATION

(All design elevations shall be given in the same elevation datum used for the elevation in section D1)

H1) The minimum designed elevation for the top of the lowest floor including basement 312 . 00

H2) The minimum designed elevation for machinery and equipment servicing building 312 . 00

SECTION I – FULLY ENCLOSED AREAS USABLE SOLELY FOR PARKING OF VEHICLES, ACCESS, AND STORAGE *(enclosed areas includes crawl spaces enclosed by walls or rigid skirting) Mark with an "X" and Intitial*

I1) ☑ GM There are no fully enclosed areas designed or intended below the lowest floor elevation given in H1 above.

I2) ☐ _____ There are fully enclosed areas below the bottom floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement. These areas have been designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. The design for meeting this requirement is hereby certified to meet or exceed the following minimum criteria: *a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. If openings are equipped with screens, louvers, valves, or other coverings or devices they will allow for the automatic entry and exit of floodwaters into and out of the fully enclosed areas.* **These areas have been designed with flood resistant materials and conform to FEMA's wet flood-proofing requirements, (see G5) and all machinery and equipment are designed to be elevated a minimum of 12 inches above the BFE shown in section D1.**

Initials of Certifier GM

SECTION J – NON-RESIDENTIAL FLOODPROOFING

I, the below signed Engineer/Architect do hereby certify that: (Please Mark one of the following with an "X" and Initial)

J1) [✓] GM All residential or non-residential structures, with the exception of areas addressed by Section I1 and I2, are designed to have their lowest floor including basement elevated at least twelve (12) inches above the BFE.

J2) [ ] The non-residential structure(s) shown on the attached plans and applied for under this permit are, together with attendant utility and sanitary facilities, designed so that below the base flood elevation the structure is watertightwith walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. (Additional certification and plans may be required for applications under this section)

SECTION K – DESIGN CERTIFICATION

This certification is to be signed and sealed by a registered engineer or licensed architect authorized by law to practice in the State of Texas. Terms utilized in this document shall have the meaning assigned to them in the Walker County Regulations for Flood Plain Management, the Code of Federal Regulations, and FEMA publications where such assignment and use exists.

I certify that the information on this form represents my best efforts to interpret the data available, and that the determinations herein where made in compliance with FEMA approved methodologies and standard engineering practices I understand that any false statement may be punishable by fine or imprisonment.

Certifier's Name	License Number
Golam Mostofa	TX-93031

Title: President

Company Name: Midstream & Terminal Services LLC

Address: 9950 West Park Dr., Ste 426

City	State	ZIP Code
Houston	TX	77063

Signature	Date	Telephone
Golam Mostofa	05/12/2025	281-404-4438

Additional Notes or Comments:

SECTION L – AS-BUILT CONSTRUCTION CERTIFICATION

This certification is to be signed and sealed by a registered engineer or licensed architect authorized by law to practice in the State of Texas after completion of the construction or development.

I, the below signed, certify that the project referenced above has been properly inspected and has been developed in compliance with the plans and information included and certified above, and that the finished development is completed in compliance with the requirements of the Walker County Floodplain Regulations, the specific provisions certified above, and the plans referenced in "Section C", with the exceptions listed below.

Certifier's Name	License Number

Additional Notes or Comments on Finished Construction

Place Seal Here

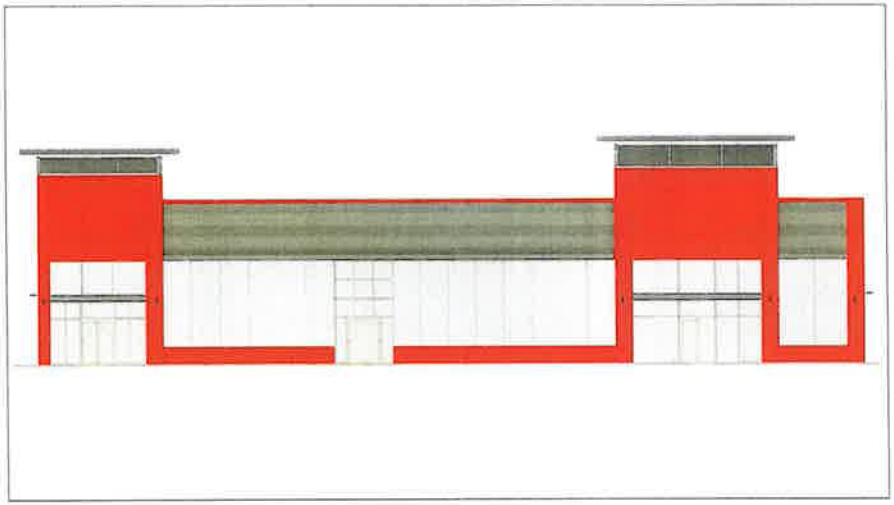
Signature	Date	Telephone

Initials of Certifier GM

EXPRESS MART # 23

2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

DRAWING INDEX		
DWG NO	REV	DESCRIPTION
C001	0	COVER SHEET
C002	0	GENERAL NOTES
C003	0	TOPOGRAPHIC SURVEY
C004	0	SITE LAYOUT PLAN
C005	0	SITE PAVING AND GRADING PLAN
C006	0	PAVING DETAILS
C007	0	EXISTING DRAINAGE PLAN
C008	0	SITE DRAINAGE PLAN
C009	0	DETENTION POND PLAN AND SECTIONS
C010	0	DRAINAGE CALCULATION (1 OF 2)
C011	0	DRAINAGE CALCULATION (2 OF 2)
C012	0	EXTREME EVENT OVERFLOW STANDARD DETAILS
C013	0	B-B INLET DETAILS
C014	0	SITE DRAINAGE DETAILS
C015	0	SITE UTILITY PLAN
C016	0	UTILITY DETAILS
C017	0	STORM WATER POLLUTION PREVENTION PLAN
C018	0	STORM WATER POLLUTION PREVENTION DETAILS
C019	0	RIP RAP DETAILS
C020	0	TRAFFIC CONTROL PLAN
C021	0	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL (1 OF 2)
C022	0	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL (2 OF 2)
C023	0	SAFETY END TREATMENT DETAILS
C024	0	INLET AZ TYPE
C025	0	TRENCH DRAIN DETAILS



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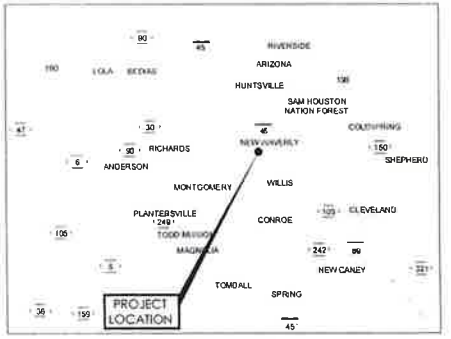


LOCATION MAP
SCALE NTS

VICINITY MAP
SCALE NTS

UNIT #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	GM	05/11/2025	2911

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	COVER SHEET	C001	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

CONSTRUCTION – GENERAL

1. A PRECONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO THE START OF CONSTRUCTION. THE DESIGN ENGINEER, OWNER, CONTRACTOR, SUBCONTRACTORS, DPD, AND COUNTY ENGINEER SHALL ATTEND THIS MEETING. ALL ROADS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AS APPROVED BY THE COUNTY ENGINEER AND IN ACCORDANCE WITH THE SPECIFICATIONS FOUND IN THE 2014 VERSION OF THE TEXAS DEPARTMENT OF TRANSPORTATION MANUAL STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES. UNLESS OTHERWISE STATED ON THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER.
2. ALL MATERIALS MUST BE SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER. THE OWNER SHALL PAY FOR ALL TESTING SERVICES AND SHALL FURNISH THE COUNTY ENGINEER WITH CERTIFIED COPIES OF THESE TEST RESULTS. THE COUNTY ENGINEER MUST APPROVE THE TEST RESULTS PRIOR TO CONSTRUCTING THE NEXT COURSE OF THE ROADWAY STRUCTURE. ANY MATERIAL THAT DOES NOT MEET THE MINIMUM REQUIRED TEST SPECIFICATIONS SHALL BE REMOVED, RE-COMPACTED OR REPLACED, AND RETESTED UNLESS AN ALTERNATIVE REMEDIAL ACTION IS APPROVED IN WRITING FROM THE COUNTY ENGINEER.
3. EXCEPT FOR ELECTRICAL LINES, ALL UNDERGROUND NONFERROUS UTILITIES WITHIN A RIGHT-OF-WAY OR EASEMENT MUST BE ACCOMPANIED BY FERROUS METAL LINES OR BE INSTALLED WITH DETECTABLE MARKING TAPE TO AID IN TRACING THE LOCATION OF SAID UTILITIES WITH A METAL DETECTOR.

PAVING AND GRADING NOTES

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER OF ANY DISCREPANCY AND/OR CONFLICT FOUND.
3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.
4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

STORM SEWER CONSTRUCTION NOTES

1. ALL CLOSED CONDUIT STORM SEWER SHALL BE REINFORCED CONCRETE PIPE IN ACCORDANCE WITH IN ACCORDANCE WITH 2014 TXDOT SPECIFICATION ITEM 464
2. REFER TO APPENDIX J FOR REINFORCE CONCRETE PIPE BEDDING AND BACKFILL DETAIL
3. THE DESIGN STORM FOR STORM SEWER DESIGN SHALL BE IN ACCORDANCE WITH TABLE 3.1. THE DESIGN STORM HGL SHALL NOT EXCEED 12-INCHES BELOW THE GUTTER FLOW LINE
4. THE STARTING HGL SHALL BE EQUAL TO THE TOP OF PIPE FOR THE DESIGN STORM AND THE 25-YEAR STORM EVENT WATER SURFACE ELEVATION OF THE RECEIVING WATERCOURSE FOR THE 100-YEAR STORM EVENT
5. STORM SEWER CONDUITS SHALL HAVE A MINIMUM VELOCITY OF 3 FEET PER SECOND AND A MAXIMUM VELOCITY OF 10 FEET PER SECOND WHEN FLOWING FULL
6. STORM MANHOLES SHALL HAVE A MAXIMUM SPACING OF 600 FEET MEASURED ALONG THE CONDUIT RUN. MANHOLES FOR STORM SEWER CONDUITS SHALL BE PLACED AT SIZE CHANGES, CROSS-SECTION CHANGES, GRADE CHANGES, INLET LEAD AND CONDUIT INTERSECTIONS AND DIRECTION CHANGES
7. AT CHANGE IN PIPE SIZE, MATCH THE SOFFITS OF THE TWO PIPES
8. A STRAIGHT LINE SHALL BE USED FOR DESIGN OF PRECAST INLET LEADS AND STORM SEWERS 30 INCHES IN DIAMETER OR LESS. PRECAST STORM SEWERS 36 INCHES IN DIAMETER AND LARGER MAY BE DEFLECTED AT JOINTS NOT TO EXCEED THE MANUFACTURER'S RECOMMENDATION
9. SOIL BORINGS WITH LOGS SHALL BE MADE ALONG THE ALIGNMENT OF ALL STORM SEWERS HAVING A CROSS-SECTION EQUAL TO OR GREATER THAN 42 INCHES IN DIAMETER OR EQUIVALENT CROSS-SECTION AREA. BORINGS SHOULD BE TAKEN AT INTERVALS NOT EXCEED 500 LINEAR FEET AND TO DEPTH NOT LESS THAN 3 FEET BELOW THE FLOW LINE OF THE SEWER
10. ANY STORM SEWER 48 INCHES OR SMALLER LOCATED UNDERNEATH OR WITHIN 1 FOOT OF A PAVING SECTION SHALL BE BEDDED AND BACKFILLED WITH 1,000-PSI CEMENT STABILIZED SAND
11. CURB INLETS SHALL BE DESIGNED TO PREVENT WATER FROM PONDING ABOVE THE CURB DURING THE 5-YEAR STORM EVENT
12. THE GUTTER RUN TO AN INLET SHALL NOT EXCEED 400 FEET
13. IN PROFILE VIEW, PROVIDE BOTH TOP-OF-CURB GROUND ELEVATIONS AT THE LEFT AND RIGHT ROW CURBS. SHOULD BE BELOW BOTH RIGHT-OF-WAY PROFILES TO FACILITATE DRAINAGE. THE RIGHT-OF-WAY MUST DRAIN TO THE STREET FOR CURBED ROADS AT A MINIMUM SLOPE OF ½ INCH PER FOOT AND A MAXIMUM SLOPE OF 1 FOOT PER 7 FEET. SHOW AND LABEL PROPOSED PROFILES WHERE CUT OR FILL IS NECESSARY
14. HOUSE FINISHED FLOOR ELEVATIONS SHALL BE SET MINIMUM OF 1 FOOT ABOVE NATURAL GROUND OR 18 INCHES ABOVE THE BASE FLOOD ELEVATION, WHICHEVER IS GREATER. THIS MINIMUM REQUIREMENT SHALL BE NOTED ON THE PLAT
15. DURING A 100-YEAR STORM EVENT, THE WATER ELEVATION SHALL NOT EXCEED THE ELEVATION AT THE ADJACENT ROW LINE. THE ENGINEER SHALL DEMONSTRATE PROPER CASCADING OF FLOW THROUGH THE STREETS OR ADEQUATE CONVEYANCE CAPACITY IN THE STORM SEWER PIPES AND INLETS TO ENSURE THAT RUNOFF FROM THE 100 YEAR EVENT IS CONTAINED WITHIN THE STREET ROW AS IT IS CONVEYED TO THE OUTLET POINT. SUPPORTING CALCULATIONS SHALL BE PROVIDED DEMONSTRATING PROPERTY CONVEYANCE OF RUNOFF FROM THE 1% ANNUAL CHANCE STORM
16. DRAINAGE INFRASTRUCTURE DESIGN AND SUPPORTING CALCULATIONS SHALL BE COMPLETED BY A REGISTERED PROFESSIONAL ENGINEER SHALL BE IN ACCORDANCE TO THE METHODS DESCRIBED IN THE CITY OF HUNTSVILLE ENGINEERING DESIGN CRITERIA MANUAL UNLESS OTHERWISE SPECIFIED IN THIS SECTION AND SHALL CONFORM TO STANDARD ENGINEERING PRACTICES AND PROCEDURES. ALL DATA AND SUPPORTING CALCULATIONS MUST BE PRESENTED TO THE COUNTY ENGINEER AS PART OF THE CONSTRUCTION PLANS
17. IF THE COUNTY ACCEPTS MAINTENANCE RESPONSIBILITY, THE COUNTY'S MAINTENANCE RESPONSIBILITY WILL BE LIMITED TO ONLY DRAINAGE IMPROVEMENTS THAT ARE LOCATED WITHIN THE ROAD RIGHT-OF-WAY. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS OUTSIDE THE RIGHT-OF-WAY WILL REMAIN WITH THE OWNER(S)
18. EASEMENTS SHALL BE PROVIDED WHERE NECESSARY FOR ALL DRAINAGE COURSES IN AND ACROSS PROPERTY TO BE PLATTED. THE LOCATION AND WIDTH SHALL BE SHOWN ON THE PLAT AND MARKED "PRIVATE DRAINAGE EASEMENT" OR "PRIVATE DRAINAGE AND UNDERGROUND UTILITIES EASEMENT". IN GENERAL, A "PRIVATE DRAINAGE EASEMENT" SHALL BE A MINIMUM OF 20 FEET IN WIDTH. ALL DRAINAGE EASEMENTS SHALL BE LOCATED IN SUCH A MANNER AS TO BE LOCATABLE ON THE GROUND. OWNER IS RESPONSIBLE FOR MAINTENANCE OF PRIVATE EASEMENTS
19. PROVIDE A MINIMUM 20-FOOT-BY-20-FOOT DRAINAGE EASEMENT ADJACENT TO THE RIGHT-OF-WAY UPSTREAM AND DOWNSTREAM OF EACH CULVERT WHERE IT CROSSES A STREET
20. DRAINAGE INFRASTRUCTURE DESIGN SHALL BE SUPPORTED WITH A LEGIBLE DRAINAGE AREA MAP THAT INCLUDES LABELED CONTOURS, FLOW ARROWS, DELINEATED ONSITE AND OFFSITE DRAINAGE AREAS, DRAINAGE AREA ACREAGE, COMPUTED PEAK FLOW RATES, AND ALL EXISTING AND PROPOSED DRAINAGE INFRASTRUCTURE CLEARLY LABELED
21. PROVIDE A CULVERT SCHEDULE NOTING THE SIZE, MINIMUM SLOPE, AND QUANTITY OF ALL DRIVEWAY CULVERTS ON A SHEET WITH AN OVERALL LAYOUT OF THE DEVELOPMENT
22. BOTH A PLAN AND PROFILE VIEWS SHALL BE SHOWN IN THE CONSTRUCTION PLANS FOR ALL PROPOSED DRAINAGE INFRASTRUCTURE. EACH PLAN AND PROFILE SHALL SHOW THE DESIGN FLOW, VELOCITY, INVERT ELEVATIONS, AND THE HYDRAULIC GRADE LINE FOR THE DESIGN STORM.

23. DETENTION FACILITIES

A. DETENTION PONDS SHALL BE DESIGNED, CONSTRUCTED, AND MAINTAINED TO MITIGATE THE INCREASED RATE OF RUNOFF DISCHARGE FROM THE PLATTED AREA IN ORDER TO MEET OR REDUCE THE RATE OF DRAINAGE OF THE WATERSHED, AT THE RELEASE POINT OF THE DEVELOPMENT, TO ITS PRE-DEVELOPED STATE. EXCEPTIONS MAY BE ALLOWED WHEN THE OWNER CAN DEMONSTRATE THAT DOWNSTREAM PROPERTIES WILL NOT BE ADVERSELY AFFECTED

B. THE DETENTION DESIGN FOR ALL ONSITE AND OFFSITE DETENTION PONDS SHALL BE SUBMITTED WITH EACH ENGINEERING PLAN SUBMITTAL

C. OFFSITE DETENTION PONDS SHALL BE LOCATED IN A DEDICATED EASEMENT, AND A COPY OF THE DEDICATED EASEMENT SHALL BE SUBMITTED WITH THE ENGINEERING PLANS

D. WHEN A DEVELOPMENT IS PLANNED TO BE SEPARATED INTO SEVERAL SECTIONS, A MASTER DRAINAGE AND DETENTION PLAN WILL NEED TO BE PROVIDED THAT INDICATES THAT THE POND IS DESIGNED CONSIDERING ULTIMATE DEVELOPED CONDITIONS

E. THE DETENTION POND AND DETENTION OUTLET STRUCTURES ARE TO BE DESIGNED TO MITIGATE INCREASED RUNOFF PEAK FLOW RATES FOR THE 5-YEAR, 25-YEAR, AND 100-YEAR STORM EVENTS

F. FOR WATERSHEDS LESS THAN 50 ACRES, A DETENTION STORAGE ESTIMATING METHOD, SUCH AS THE MODIFIED RATIONAL METHOD, MAY BE USED FOR DETENTION DESIGN. OTHERWISE, THE POND SHALL BE DESIGNED PER SECTION 812.8.G

G. FOR WATERSHEDS GREATER THAN OR EQUAL TO 50 ACRES, THE NRCS UNIT HYDROGRAPH METHOD ALONG WITH THE MODIFIED PULS LEVEL POOL ROUTING METHOD SHALL BE USED FOR DETENTION DESIGN

H. FOR BOTH CURBED AND UNCURBED STREETS, RUNOFF FROM THE 100 YEAR STORM EVENT SHALL BE CONVEYED IN A CONTROLLED MANNER, EITHER OVERLAND OR UNDERGROUND, TO THE DETENTION FACILITY OR OTHERWISE MITIGATED, AS NECESSARY

I. DETENTION PONDS SHALL HAVE A MINIMUM SIDE SLOPE OF 4 TO 1, A MINIMUM 10-FOOT MAINTENANCE ACCESS BERM, A MINIMUM OF 1 FOOT OF FREE BOARD, AND A MINIMUM 0.75% BOTTOM SLOPE

J. INLET PIPES OR CHANNELS SHALL BE SET A MINIMUM OF 6-INCHES ABOVE THE BOTTOM OF THE POND AND SHALL INCLUDE ADEQUATE EROSION PROTECTION

K. POND OUTLET ORIFICES SHALL NOT BE LESS THAN 6-INCHES IN DIAMETER AND THE MINIMUM OUTLET PIPE SHALL BE 18 INCHES

L. OUTLET PIPES SHALL BE SET A MINIMUM OF 6 INCHES ABOVE THE FLOW LINE OF THE RECEIVING WATERCOURSE AND SHALL INCLUDE ADEQUATE EROSION PROTECTION. THE OUTLET PIPE SHALL ENTER THE RECEIVING WATERCOURSE AT A 60-DEGREE ANGLE, PLUS OR MINUS 10 DEGREES

M. OUTLET EXIT VELOCITIES EXCEEDING 5 FEET PER SECOND SHALL HAVE RIPRAP EROSION PROTECTION AND EXIT VELOCITIES EXCEEDING 10 FEET PER SECOND SHALL HAVE CONCRETE ENERGY DISSIPATING DEVICES

N. DETENTION PONDS SHALL HAVE AN EMERGENCY OVERFLOW LOCATED AT THE 100 YEAR WATER SURFACE ELEVATION AND AT THE POND OUTLET. IT SHALL BE DESIGNED TO CONVEY THE 100-YEAR STORM EVENT ASSUMING THE MAIN OUTLET IS CLOGGED. THE EMERGENCY WEIR SHALL BE CONSTRUCTED WITH CONCRETE SLOPE PAVING

ROADWAY CONSTRUCTION

IN APPROVING THIS PLAT BY THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS, IT IS UNDERSTOOD THAT THE BUILDING OF ALL ROADS AND OTHER PUBLIC THOROUGHFARES AND ANY BRIDGES OR CULVERTS NECESSARY TO BE CONSTRUCTED OR PLACED IS THE RESPONSIBILITY OF THE OWNER(S) OF THE TRACT OF LAND COVERED BY THIS PLAT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PRESCRIBED BY THE COMMISSIONERS COURT OF WALKER COUNTY, TEXAS. SAID COMMISSIONERS COURT ASSUMES NO OBLIGATION TO BUILD OR MAINTAIN ANY OF THE ROADS OR OTHER PUBLIC THOROUGHFARES SHOWN ON THIS PLAT, OR OF CONSTRUCTING OR MAINTAINING ANY OF THE BRIDGES OR DRAINAGE IMPROVEMENTS IN CONNECTION THEREWITH. THE COUNTY WILL ASSUME NO RESPONSIBILITY FOR DRAINAGE WAYS OR EASEMENTS IN THE SUBDIVISION, OTHER THAN THOSE DRAINING OR PROTECTING THE ROAD SYSTEM AT SUCH TIME IF ANY THE ROADS ARE ADOPTED FOR PUBLIC MAINTENANCE

OWNER'S RESPONSIBILITIES

IT IS THE RESPONSIBILITY OF THE OWNER, NOT THE COUNTY, TO ASSURE COMPLIANCE WITH THE PROVISIONS OF ALL APPLICABLE STATE, FEDERAL AND LOCAL LAWS AND REGULATIONS RELATING TO THE PLATTING AND DEVELOPMENT OF THIS PROPERTY.
THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT. FLOODPLAIN DATA, IN PARTICULAR, MAY CHANGE. IT IS FURTHER UNDERSTOOD THAT THE OWNERS OF THE TRACT OF LAND COVERED BY THIS PLAT MUST INSTALL AND MAINTAIN AT THEIR OWN EXPENSE ALL TRAFFIC CONTROL DEVICES AND SIGNAGE THAT MAY BE REQUIRED BEFORE THE ROADS IN THE SUBDIVISION HAVE FINALLY BEEN ACCEPTED FOR MAINTENANCE BY THE COUNTY

DEVELOPMENT NOTES

NO STRUCTURE OR LAND WITHIN THIS PLAT SHALL HEREAFTER BE LOCATED OR ALTERED WITHOUT FIRST OBTAINING A DEVELOPMENT PERMIT FROM THE WALKER COUNTY FLOODPLAIN ADMINISTRATOR.
THE MINIMUM LOWEST FINISHED FLOOR ELEVATION SHALL BE IN MINIMUM COMPLIANCE WITH THE LOCAL, STATE, OR FEDERAL REGULATIONS WHICHEVER ELEVATION IS HIGHER

CONCRETE – GENERAL

1. UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE IN ACCORDANCE WITH ITEM 421 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND BE PLACED IN ACCORDANCE WITH THE APPLICABLE ITEM
2. ALL CONCRETE SHALL BE TESTED FOR COMPRESSIVE STRENGTH. ONE SET OF THREE CONCRETE TEST CYLINDERS SHALL BE MOLDED FOR EVERY 60 CUBIC YARDS OF CONCRETE PLACED FOR EACH CLASS OF CONCRETE PER DAY, OR AT ANY OTHER INTERVAL AS DETERMINED BY THE COUNTY ENGINEER. A SLUMP TEST SHALL BE REQUIRED WITH EACH SET OF TEST CYLINDERS. ONE CYLINDER SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT AN AGE OF SEVEN DAYS AND THE REMAINING TWO CYLINDERS SHALL BE TESTED AT 28 DAYS OF AGE

ENG.#	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

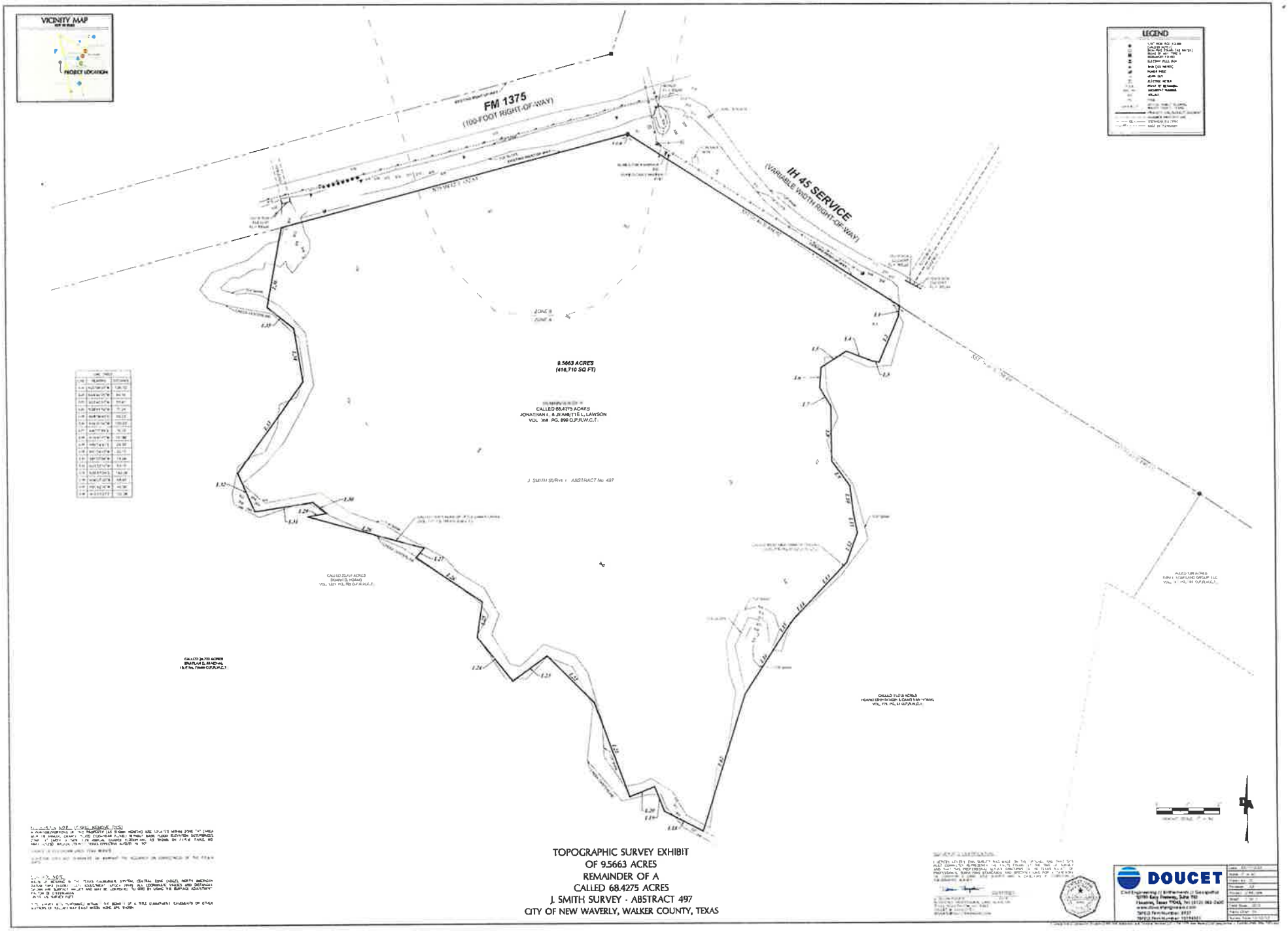
DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	23011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	GENERAL NOTES	C002	0

05/11/2025

EXPRESS MART #23
2868 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #428
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844



TOPOGRAPHIC SURVEY EXHIBIT
OF 9.5663 ACRES
REMAINDER OF A
CALLED 68.4275 ACRES
J. SMITH SURVEY - ABSTRACT 497
CITY OF NEW WAVERLY, WALKER COUNTY, TEXAS

FLOODPLAIN NOTE

A PORTION/PORTIONS OF THIS PROPERTY (AS SHOWN HEREON) ARE LOCATED WITHIN ZONE "A" (AREA WITH 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD) WITHOUT BASE FLOOD ELEVATION DETERMINED) ZONE "X" (AREA OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON F I R M PANEL NO 48471C0525D WALKER COUNTY TEXAS EFFECTIVE AUGUST 16 2011

CONTROL NOTE

BASIS OF BEARING IS THE TEXAS COORDINATE SYSTEM CENTRAL ZONE (4203) NORTH AMERICAN DATUM 1983 (NAD83) 2011 ADJUSTMENT (EPOCH 2010) ALL COORDINATE VALUES AND DISTANCES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY USING THE SURFACE ADJUSTMENT FACTOR OF 0 99990400
UNITS US SURVEY FEET

SITE DATA TABLE

PROPERTY ZONED COMMERCIAL ZONE

SETBACKS
FRONT = BUILDING LINE
LEFT SIDE = N/A
RIGHT SIDE = BUILDING LINE
REAR = N/A

1 SITE AREA 415,173 SFT = 9.586 ACRES

2 BUILDING AREA C STORE 4,806 SFT GROSS AREA
RETAIL 2,184 SFT GROSS AREA

3 ONE STORY, MAX HEIGHT = 24'-0"

4 PARKING REQUIRED 53 SPACES
PARKING PROVIDED 78 SPACES

5 EXISTING IMPERVIOUS AREA 0.00 ACRES = 0.00%
EXISTING PERVIOUS AREA 9.586 ACRES = 100%

6 PROPOSED IMPERVIOUS AREA 3.53 ACRES = 36.8%
PROPOSED PERVIOUS AREA 6.04 ACRES = 63.1%

LEGEND

——— PROPERTY LINE

[A] PROPOSED C-STORE

[B] PROPOSED RETAIL STORE

[C] PROPOSED GASOLINE CANOPY

[D] UNDERGROUND FUEL TANK

[E] PARKING AREA

[F] PROPOSED 8" MONOLITHIC CONCRETE CURB

[G] PROPOSED 6'-0" WHEEL STOP BOLTED INTO PAVING

[H] PROPOSED TRASH ENCLOSURE

[J] PROPOSED SAFETY BOLLARDS

[K] PROPOSED DETENTION POND

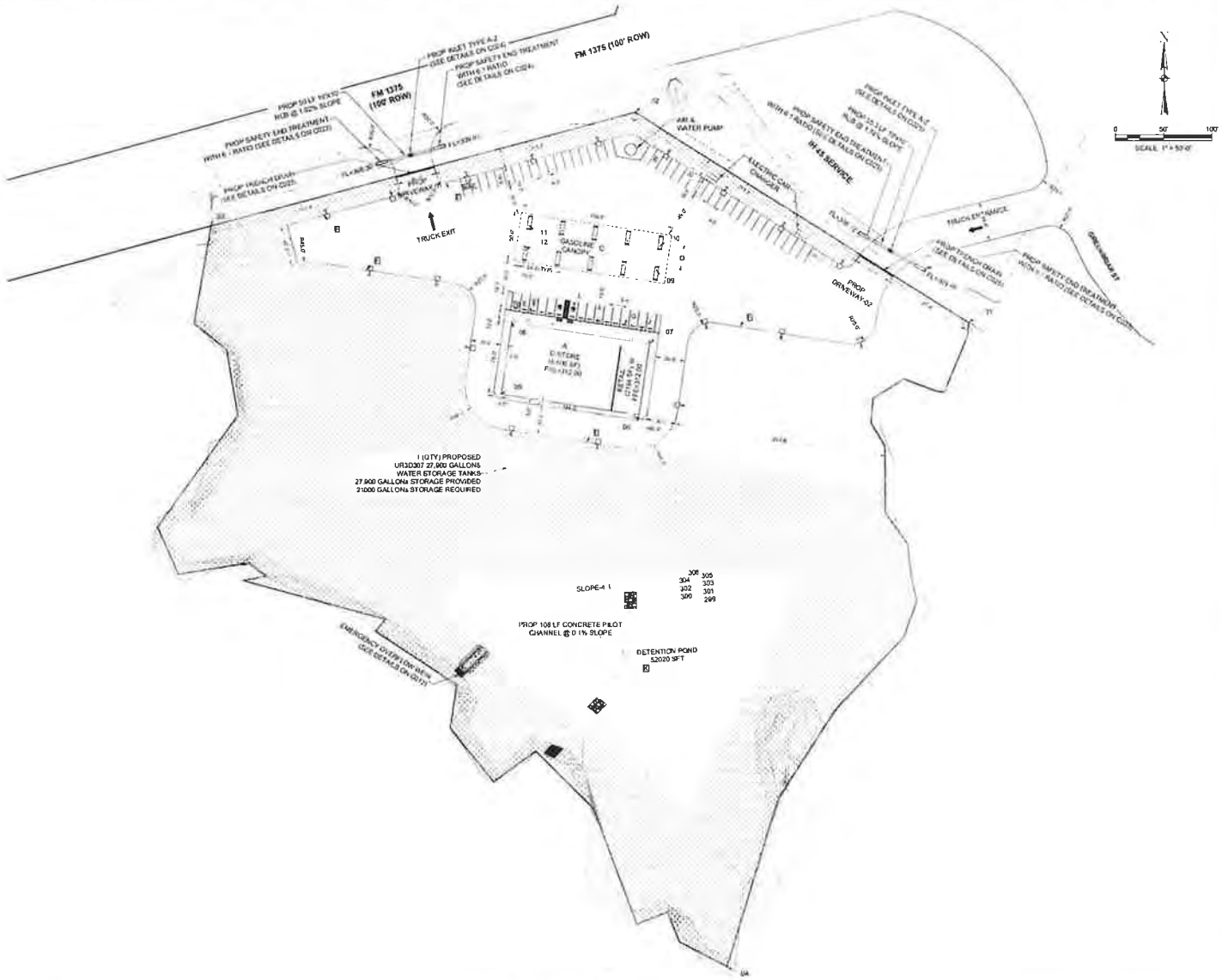
[L] PROPOSED HANDICAP PARKING

KEY NOTE

01	X= 3619074.29	Y=10191946.32
02	X= 3619752.98	Y=10192153.21
03	X= 3619250.43	Y=10192096.47
04	X= 3618821.38	Y=10191902.76
05	X= 3618992.21	Y=10191892.78
06	X= 3619334.51	Y=10191870.72
07	X= 3619349.99	Y=10191944.64
08	X= 3619003.73	Y=10191966.66
09	X= 3619253.52	Y=10192023.04
10	X= 3619737.70	Y=10191844.79
11	X= 3619522.36	Y=10192065.02
12	X= 3619519.12	Y=10192040.90

PARKING SYNOPSIS

OCCUPANCY TYPE	PARKINAG COUNT	REQUIRED	PROVIDED
C STORE	4,806/1,000 X 5	43(44)	58
RETAIL	2,184/1,000 X 4	8 (9)	
GAS CANOPY	20		20
TOTAL		53	78



01 SITE LAYOUT PLAN
C004 / SCALE: 1" = 50'-0"

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	MM	05/11/2025	23011

SCALE: 1"=50'-0"
DRAWING TITLE: SITE LAYOUT PLAN
DRAWING NUMBER: C004
REV: 0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #426
HOUSTON TEXAS 77063
(281) 404-4436 (281) 253-4849
FIRM NO. 18844

FLOODPLAIN NOTE

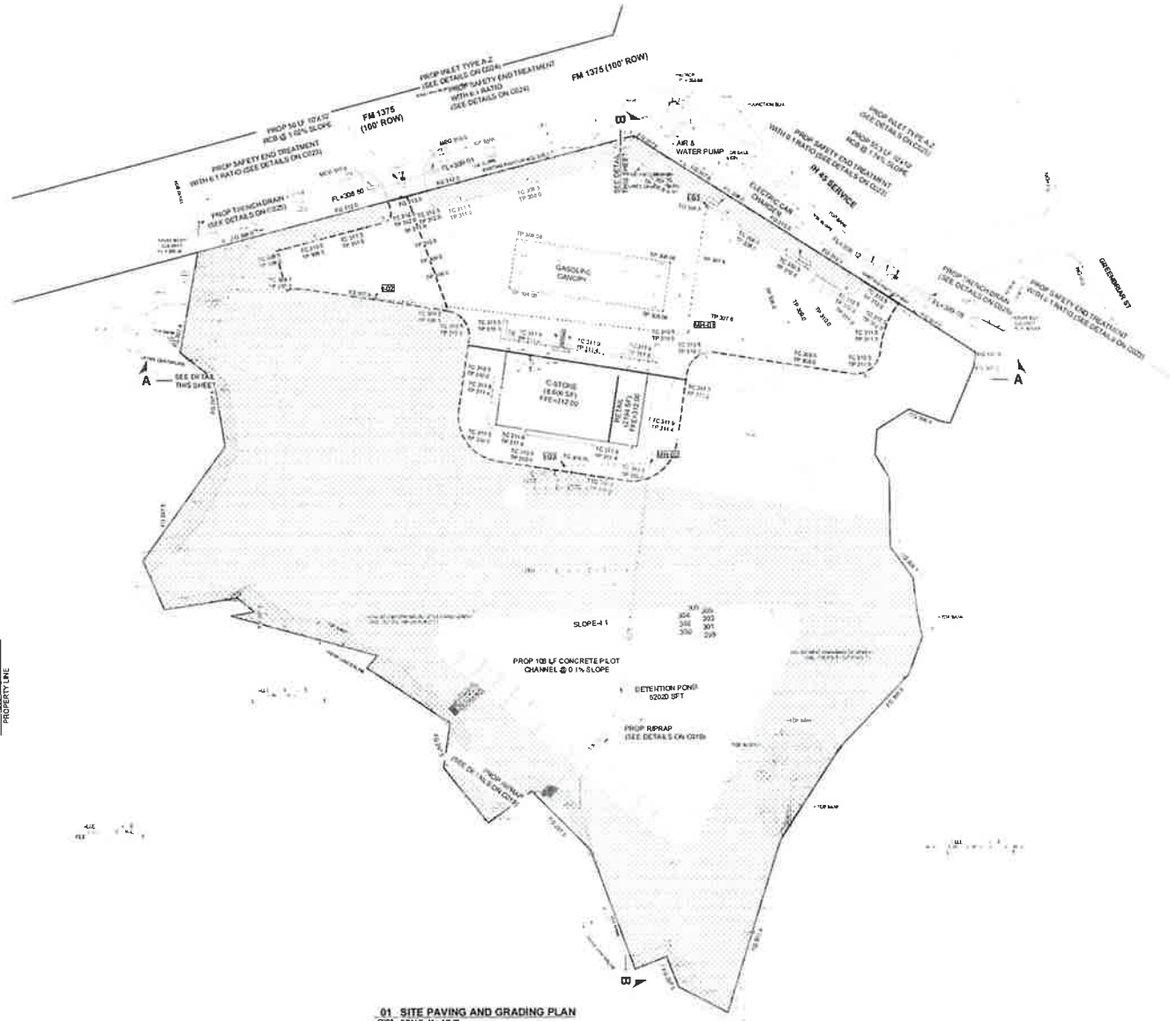
A PORTION/PORTIONS OF THIS PROPERTY (AS SHOWN HEREON) ARE LOCATED WITHIN ZONE "A" (AREA WITH 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD) WITHOUT BASE FLOOD ELEVATION DETERMINED) ZONE "X" (AREA OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON F I R M PANEL NO 48471C0525D, WALKER COUNTY, TEXAS EFFECTIVE AUGUST 16 2011

CONTROL NOTE

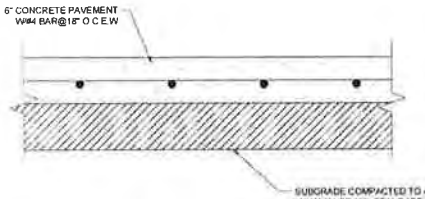
BASIS OF BEARING IS THE TEXAS COORDINATE SYSTEM, CENTRAL ZONE (4203) NORTH AMERICAN DATUM 1983 (NAD83) 2011 ADJUSTMENT (EPOCH 2010) ALL COORDINATE VALUES AND DISTANCES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY USING THE SURFACE ADJUSTMENT FACTOR OF 0.99994003
UNITS US SURVEY FEET

LEGEND

TP	TOP OF PAVEMENT
TC	TOP OF CURB
TG	TOP OF GRATE INLET
FG	FINISHED GROUND
NG	NATURAL GROUND
MEG	MATCH EXISTING GROUND
307	PROP CONTOUR LINE

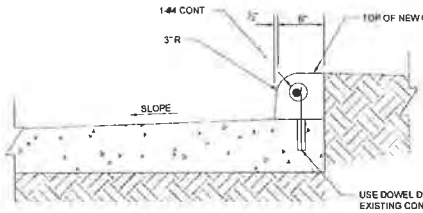

FM 1375 (100' ROW)
PROP 50 LF 10"x12" RCS @ 1.00% SLOPE
PROP SAFETY END TREATMENT WITH 6:1 RATIO (SEE DETAILS ON C025)
PROP 10" HDPE DRAIN (SEE DETAILS ON C025)
PROP INLET TYPE A-2 (SEE DETAILS ON C024)
PROP SAFETY END TREATMENT WITH 6:1 RATIO (SEE DETAILS ON C024)
AIR & WATER PUMP
PROP INLET TYPE A-2 (SEE DETAILS ON C025)
PROP 50 LF 10"x12" RCS @ 1.00% SLOPE
PROP SAFETY END TREATMENT WITH 6:1 RATIO (SEE DETAILS ON C025)
IH 45 SERVICE
ELECTRIC CAR CHARGER
GASOLINE CANOPY
C-STORE (6,606 SF) FFE=312.00
RETAIL (1,606 SF) FFE=312.00
EXISTING 8" WATER LINE
EXISTING 8" SANITARY SEWER LINE
EXISTING 12" WATER LINE
EXISTING 8" WATER LINE
EXISTING 6" WATER LINE
EXISTING 6" SANITARY SEWER LINE
EXISTING 8" SANITARY SEWER LINE
EXISTING 12" SANITARY SEWER LINE
EXISTING 4" SANITARY SEWER LINE
EXISTING 4" WATER LINE
EXISTING 2" WATER LINE
EXISTING 1" WATER LINE
EXISTING 3" WATER LINE
EXISTING 10" WATER LINE
EXISTING 16" WATER LINE
EXISTING 24" WATER LINE
EXISTING 30" WATER LINE
EXISTING 36" WATER LINE
EXISTING 42" WATER LINE
EXISTING 48" WATER LINE
EXISTING 54" WATER LINE
EXISTING 60" WATER LINE
EXISTING 66" WATER LINE
EXISTING 72" WATER LINE
EXISTING 78" WATER LINE
EXISTING

01



DRIVEWAY PAVING
(SEE PAVING PLAN)
N T S

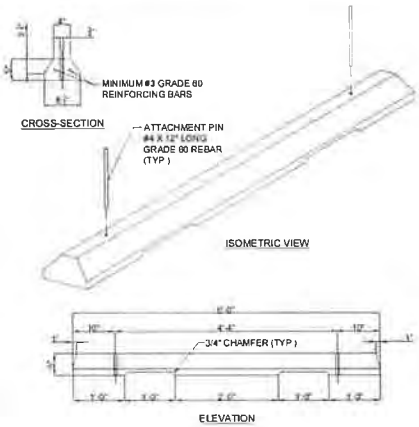
02



NOTE
#4 DOWELS@ 18"C-C WHEN PAVEMENT SECTION POURED WHEN CONCRET CURB IS TO BE PLACED ON EXISTING CONCRETE CURB BASE SET #4 BARS@ 18"C-C AS CHOWN USING TYPE II CEMENT

6" CONCRETE CURB DOWELED ON PAVEMENT
N T S

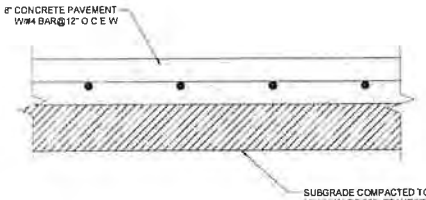
07



PRECAST REINFORCED CONCRETE WHEEL STOP DETAILS
N T S

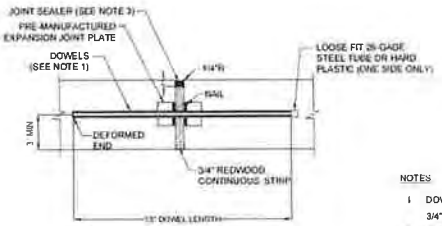
GENERAL NOTES
1 CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 537 "WHEEL STOPS"
2 CONCRETE FOR WHEEL STOP: MINIMUM 3 000 PSI IN 28 DAYS
3 REINFORCING STEEL: PER ASTM A615 GRADE 60
4 ATTACHMENT PINS SHALL HAVE 7 INCH EMBEDMENT.

03



TRASH AND FUEL TANK AREA PAVEMENT
N T S

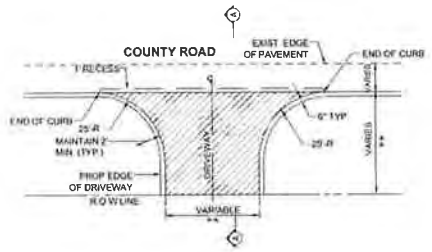
04



TYPICAL EXPANSION JOINT
N.T.S

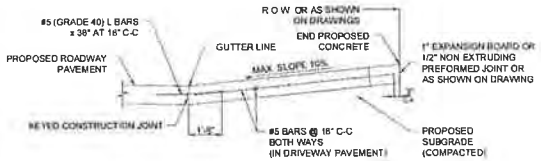
NOTES
1 DOWELS FOR PAVEMENT EXPANSION JOINTS SHALL BE 3/4" SMOOTH BARS@12" SPACING (TYP. U O N)
2 EXPANSION JOINTS SHALL BE PLACED AT THE END OF EACH CURB RETURN AND AT MAXIMUM SPACING OF 60
3 JOINT SEALER MATERIAL SHALL BE ASPHALT RUBBER IN ACCORDANCE WITH ASTM STANDARD B3405
4 EXPANSION JOINT SHALL EXTEND THROUGH CURBS

05



PLAN OF PRIVATE AND COMMERCIAL DRIVEWAY
N T S

06



DRIVEWAY SLOPES TO ROADWAY
N T S

DRIVEWAY #	ROADWAY	DRIVEWAY WIDTH
PROP DRIVEWAY-01	FM 1375	40' 0"
PROP DRIVEWAY-02	GREENBRIAR ST	40 -0"

08

SHEET #	REFERENCE DRAWING(S)	REV	DATE	DESCRIPTION	BY	CHK	APP'D	DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	CM	AR	MM	CM	05/11/2025	23011

SCALE: NTS | DRAWING TITLE: PAVING DETAILS | DRAWING NUMBER: C006 | REV: 0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77356

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

FLOODPLAIN NOTE

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CONTROL NOTE

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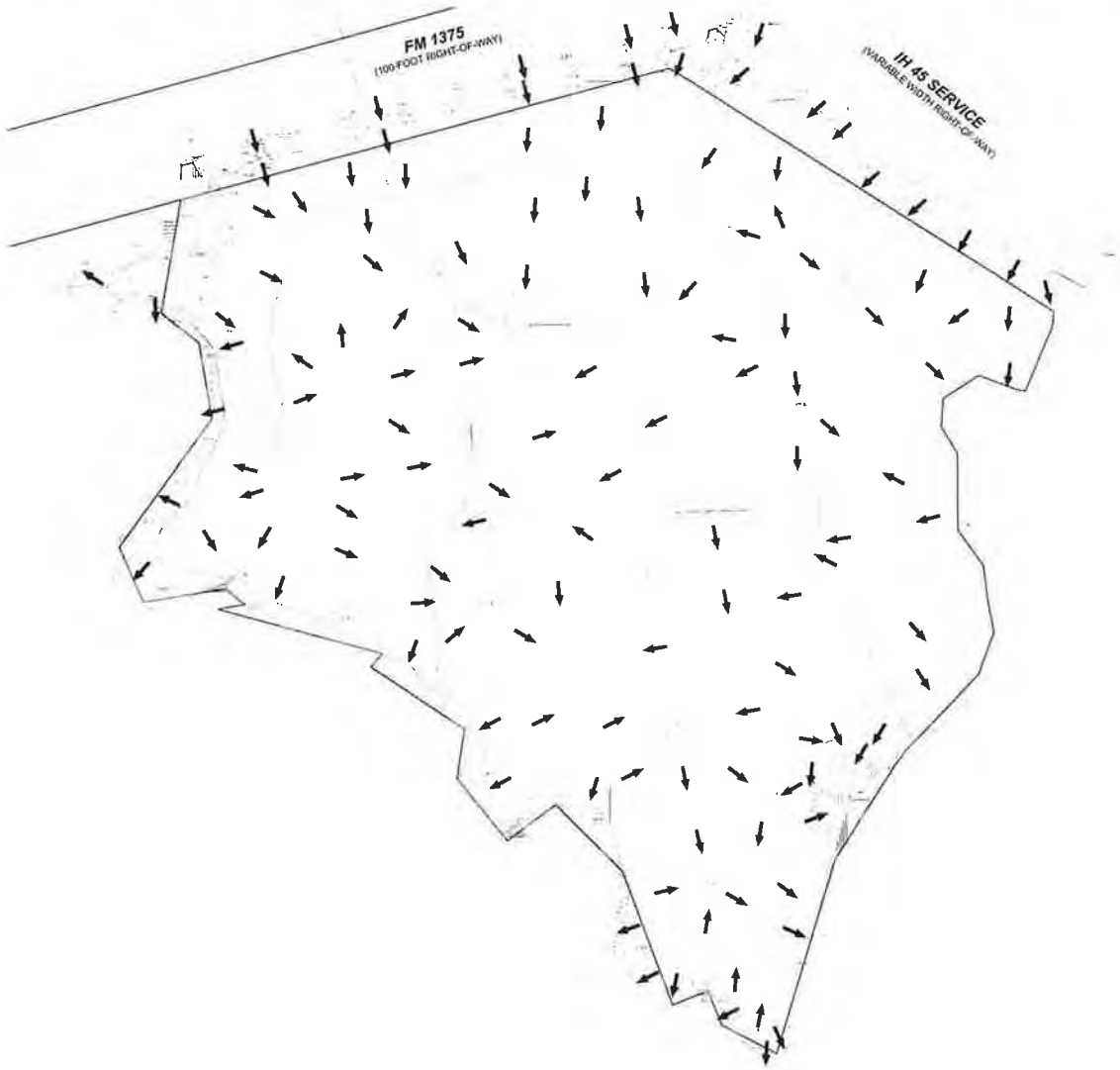
UNITS: US SURVEY FEET



0 50' 100'
SCALE 1" = 50'-0"

LEGEND

EXISTING ELEVATION

FLOW DIRECTION

01 EXISTING DRAINAGE PLAN
SCALE 1" = 50'-0"

SHEET #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APR
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	SM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	DM	05/11/2025	24011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
1"=50'-0"	EXISTING DRAINAGE PLAN	C007	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

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9950 WESTPARK DR. SUITE #428
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

FLOODPLAIN NOTE

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CONTROL NOTE

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UNITS US SURVEY FEET

LEGEND

- TOP OF PAVEMENT
- TC TOP OF CURB
- TG TOP OF GRATE INLET
- FG FINISHED GROUND
- NG NATURAL GROUND
- MATCH EXISTING GROUND
- SHEET FLOW
- 100YR CONTOUR LINE

KEY NOTE:

01 130 0 L F 24" HDPE @ 0 20% SLOPE
02 [illegible] L F 15" HDPE @ 0 35% SLOPE
03 135 0 L F 30" HDPE @ 0 20% SLOPE
04 66 4 L F 15" HDPE @ 0 35% SLOPE
05 160 2 L F 30" HDPE @ 0 20% SLOPE
06 42 6 LF 30" HDPE @ 0 10% SLOPE
07 24 8 L F 30" RCP @ 0 10% SLOPE

CULVERT CALCULATIONS

AREA A = 4 91 AC
WETTED PERIMETER P = 7 85 FT
HYDRAULIC RADIUS R = A/P = 4 91*43 560 / 7 85 = 2 83 FT
DISCHARGE Q = 1 49/n * A * R^(2/3) * S^(1/2) = 1 49 / 0 077 * 4 91 * 2 83^(2/3) * 0 01^(1/2) = 45 16 CFS

NOW

RIPRAP SIZE $D_{50} = 0.2 V_c^3 / (g (s-1)^2)^{1/3}$ (USACE)

WHERE $V_c = 5.45 * K * S^{0.25} = 5.45 * 1.0 * 0.1^{0.25} = 9.69$ FPS

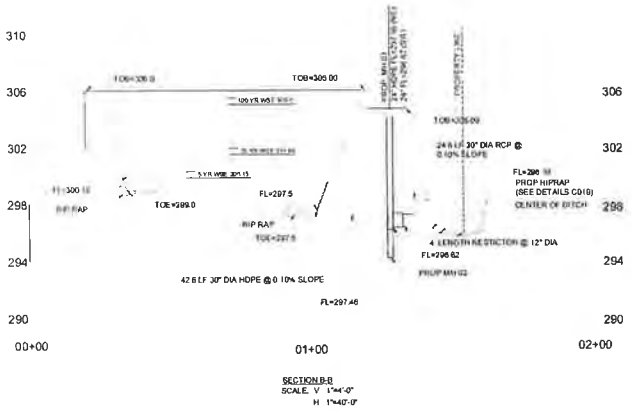
THEREFORE $D_{50} = 0.2 * 9.69^3 / (32.2 * (2.5-1)^2)^{1/3} = 1.16$ FT

RIPRAP APRON DIMENSIONS

LENGTH L = 4D = 4 x 2 5 = 10 FT
DEPTH H = 2.2 D_{50} = 2 2 x 1 1 = 2 4 FT ~ 2 FT
WIDTH W = 3D+(2.3L x 3 x 2.5 = (D/3) x 15 = 17 0 FT

WIDTH OF THE DITCH = 2 (W/2 + L x 2.5 + 1.5 x 2) = 68 5 FT

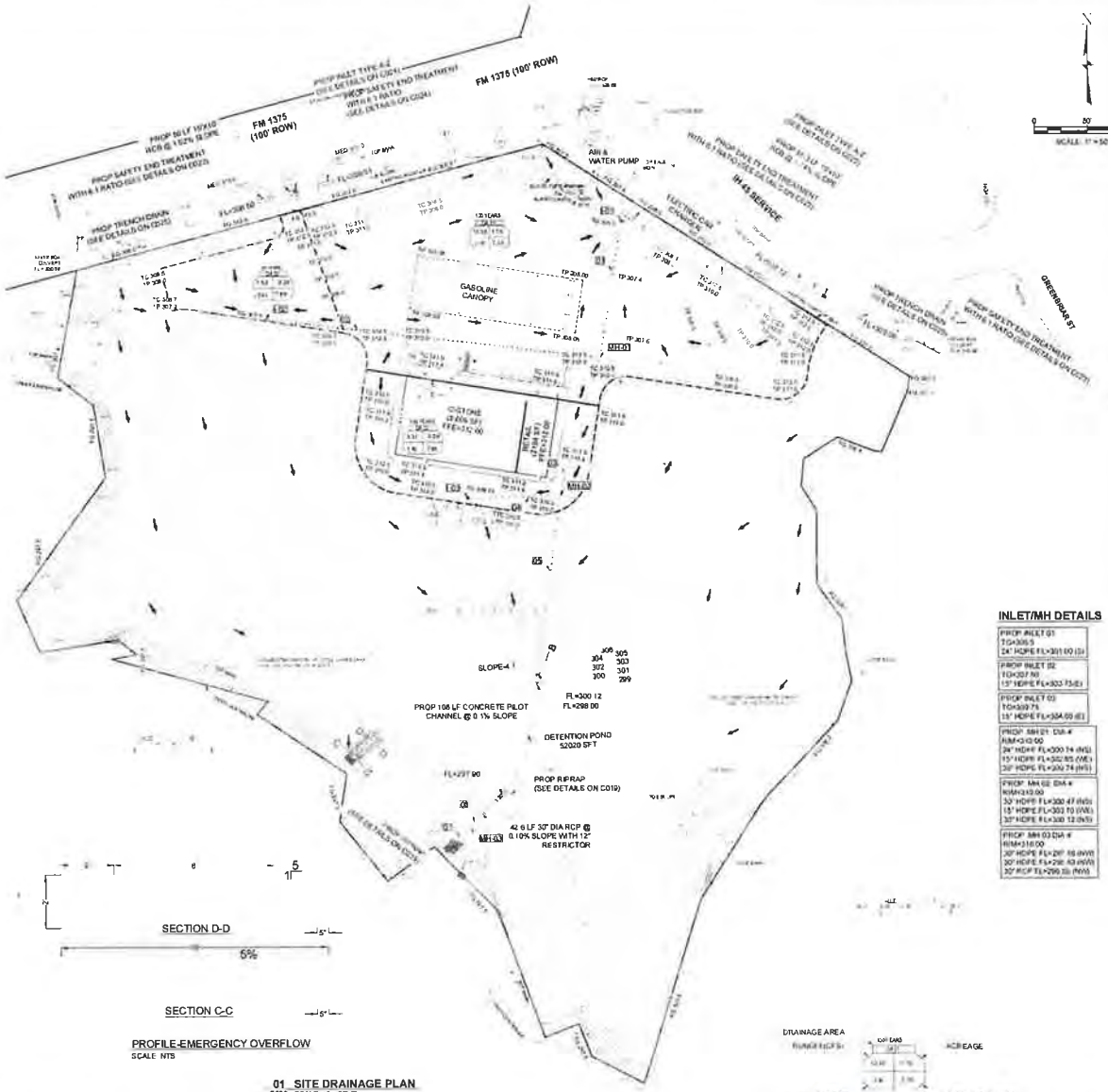
SINCE THE WIDTH OF THE DITCH ALONG CULVERT D2 IS LESS THAN 35 FT THE WIDTH FOR CULVERT D2 IS CONSIDERED TO BE 30 FT



SECTION B-B
SCALE V 1"=4'-0"
H 1"=40'-0"

SECTION C-C

PROFILE-EMERGENCY OVERFLOW
SCALE NTS



INLET/MH DETAILS

PROP INLET 01
TG=305 5
24" HDPE FL=301 00 (S)

PROP INLET 02
TG=307 90
15" HDPE FL=303 75 (E)

PROP INLET 03
TG=309 75
15" HDPE FL=304 00 (E)

PROP MH 01 DIA =
RIM=312 00
24" HDPE FL=300 74 (NW)
15" HDPE FL=302 85 (NE)
30" HDPE FL=300 74 (NW)

PROP MH 02 DIA =
RIM=310 00
30" HDPE FL=300 47 (NW)
15" HDPE FL=303 10 (NE)
30" HDPE FL=300 12 (NW)

PROP MH 03 DIA =
RIM=316 00
30" HDPE FL=297 16 (NW)
30" HDPE FL=297 43 (NW)
30" RCP FL=296 35 (NW)

DRAINAGE AREA
RUNOFF COEFFICIENT
ACREAGE
INTENSITY (100-YEAR STORM EVENT)

01 SITE DRAINAGE PLAN

C008 SCALE 1" = 50'-0"

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	QM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	QM	05/11/2025	25111

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
1"=50'-0"	SITE DRAINAGE PLAN	C008	0

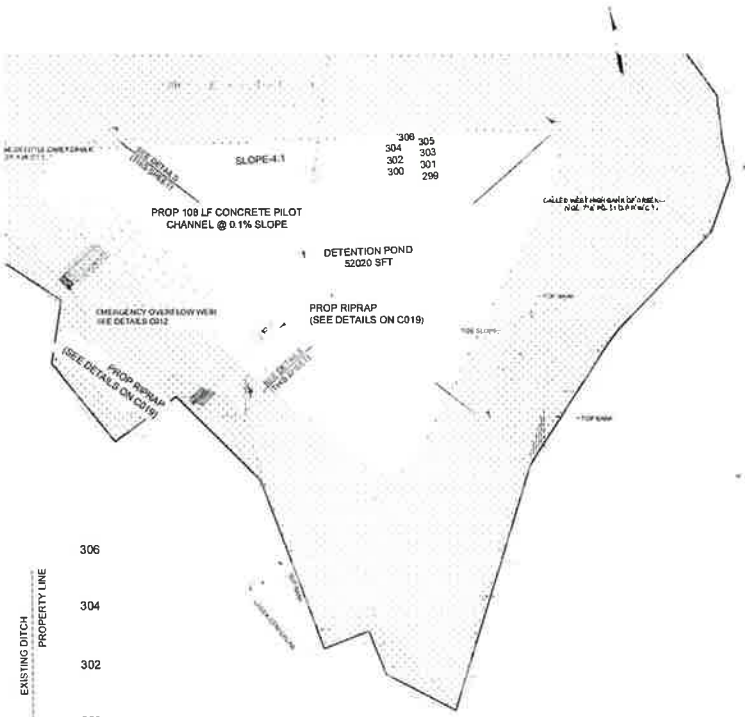
05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #420
HOUSTON TEXAS 77063
(281) 404-4436 (281) 253-4649
FIRM NO. 18844

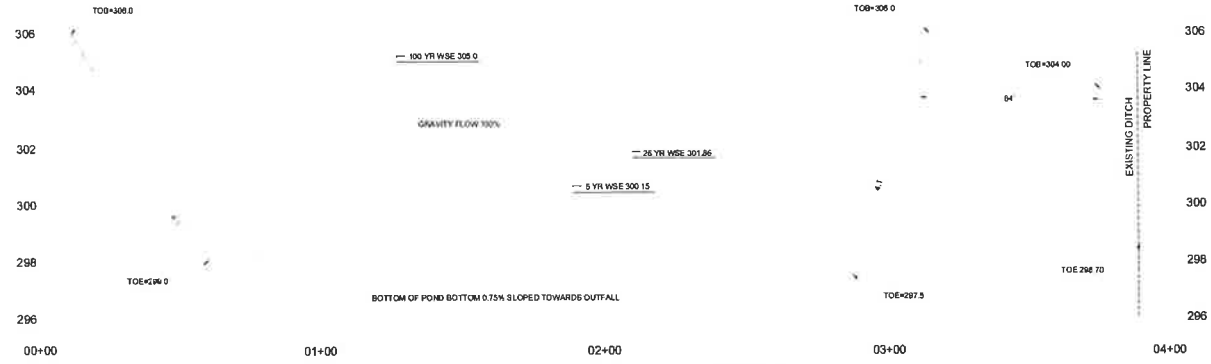
SECTION C-C

SCALE V 1"=2'-0"
H: 1"=20'-0"



PLAN: DETENTION POND

SCALE 1"=40'-0"



SECTION D-D

SCALE V 1"=2'-0"
H: 1"=20'-0"

ENG.#	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	24011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
SHOWN	DETENTION POND PLAN AND SECTION	C009	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

Peak Storm Runoff Calculations
Pre-Development Condition

Watershed Area

Total Area of Tract:	9.5663	Acres
Area affected in this phase of development (A):	9.5663	Acres

Time of Concentration (NRCS method)

$t_c = t_{sh} + t_{sc} + t_{ch}$

t_{sh} = sheet flow travel time
t_{sc} = shallow concentrated flow travel time
t_{ch} = channel flow travel time

$t_{sh} = [0.007 \times (n \times L)^{0.8}] / [P^{0.5} \times s^{0.4}]$

n =	0.24		
L = sheet flow length	100	ft	
P = 2 year 24 hr rainfall depth	4.05	in	
s = sheet flow slope	0.02	ft/ft	
t_{sh} = 0.199 hr =	11.94	min	

$t_{sc} = 1 / (3600 \times K \times s^{0.5})$

L = shallow concentrated flow length	760	ft	
K = 16.13 for unpaved surface =>	Unpaved Length =	760	ft
20.32 for paved surface =>	Paved Length =	-	ft
	Weighted K =	16.13	
Non-concentrated flow slope	S =	0.05	ft/ft
t_{sc} = 0.057 hr =	3.42	min	

$t_{ch} = 1 / [(3600 \times 1.49 \times R^{2/3} \times s^{1/2}) / n]$

Channel flow length	L =		ft
Channel slope	s =		ft/ft
Manning roughness coefficient	n =		
Flow cross sectional area	R =	N/A	ft
Wetted perimeter	w =		sf
Hydraulic radius = a / p	p =		ft
t_{ch} =	hr =	-	min

Computed T_c = 11.94 + 3.42 + 0 = 15.36 min

Non-Initial Time => Used Tc = 15.36 min

Rainfall Intensity (I)

Based on Depth Duration Frequency of Precipitation Annual Maxima for TEXAS

$I_{(2\,yr)}$ =	4.05 in/hr	$I_{(5\,yr)}$ =	5.29 in/hr	$I_{(10\,yr)}$ =	6.23 in/hr
$I_{(25\,yr)}$ =	7.47 in/hr	$I_{(50\,yr)}$ =	8.39 in/hr	$I_{(100\,yr)}$ =	9.33 in/hr

Watershed Runoff Coefficient (C)

Surface Type Analysis:

Gravel Area =	0.0 ac	C =	0.65
Paving (Concrete/Asphalt) =	0.0 ac	C =	0.90
Roof =	0.0 ac	C =	0.90
Yard (Poor Turf) =	0.0 ac	C =	1.00
Woods Area =	0.0 ac	C =	0.15
Undeveloped area =	10.210 ac - 9.566 ac	C =	0.35
	Weighted Runoff Coefficient =		0.35

Rational Method Frequency Factor Adjustment

2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
1.00	1.00	1.00	1.00	1.00	1.00
C 0.35	0.35	0.35	0.35	0.35	0.35

Peak Runoff (Q)

$Q = I \times C \times A$

$Q_{(2\,yr)}$ =	13.56 cfs	$Q_{(5\,yr)}$ =	17.73 cfs	$Q_{(10\,yr)}$ =	20.84 cfs
$Q_{(25\,yr)}$ =	25.00 cfs	$Q_{(50\,yr)}$ =	28.08 cfs	$Q_{(100\,yr)}$ =	31.23 cfs

Peak Storm Runoff Calculations
Post-Development Condition

(RATIONAL Method)

Watershed Area

Total Area of Tract:	9.5663	Acres
Area affected in this phase of development (A)	9.5663	Acres

Time of Concentration

Used T_c = 10.00 min

Rainfall Intensity (I)

Based on Data from scientific investigation report 2004-5041

"Atlas of Depth Duration Frequency of Precipitation Annual Maxima for TEXAS"

$I_{(2\,yr)}$ =	4.89 in/hr	$I_{(5\,yr)}$ =	6.41 in/hr	$I_{(10\,yr)}$ =	7.61 in/hr
$I_{(25\,yr)}$ =	9.16 in/hr	$I_{(50\,yr)}$ =	10.40 in/hr	$I_{(100\,yr)}$ =	11.59 in/hr

Watershed Runoff Coefficient (C)

Surface type analysis:

Pavement	0.570 ac	2.00 in	0.25 in	0.95
Sidewalk & Curbs	0.0 ac	0.0 in	0.0 in	0.95
Roof	1.000 ac	0.25 in	0.25 in	0.95
Ponds & Pits	5.000 ac	1.19 in	1.19 in	0.75
Parks & Open Space	0.0 ac	0.0 in	0.0 in	0.35
Total Impervious	1.570 ac	1.51 in	0.39 in	0.80
Total Pervious	2.000 ac	0.00 in	0.0 in	0.35

Weighted Runoff Coefficient = 0.53

Rational Method Frequency Factor Adjustment

2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
1.00	1.00	1.00	1.00	1.00	1.00
C 0.53	0.53	0.53	0.53	0.53	0.53

Peak Runoff (Q)

$Q = I \times C \times A$

$Q_{(2\,yr)}$ =	24.79 cfs	$Q_{(5\,yr)}$ =	32.60 cfs	$Q_{(10\,yr)}$ =	38.58 cfs
$Q_{(25\,yr)}$ =	46.44 cfs	$Q_{(50\,yr)}$ =	52.73 cfs	$Q_{(100\,yr)}$ =	58.81 cfs

100 - YEAR

DETENTION CALCULATIONS

Modified Rational Hydrograph Development

Watershed Area

Total Area of Tract:	9.5663	Acres
Area affected in this phase of development (A)	9.5663	Acres

Curve Number (CN)

Hydrologic Soil Groups = D

Antecedent Soil Moisture Condition = AMC II

Before Development Surface type analysis

Total Impervious Area =	1.570 ac	CN =	98.00
Pond / Wetland Area =	0.0 ac	CN =	100.0
Pervious Area (1) =	100.000 sf	CN =	80.00
Pervious Area (2) =	0.0 ac	CN =	71.00
		Weighted Curve Number (CN II) =	80.00
		Pre-Development adjusted Curve Number =	80.00

After Development Surface type analysis

Total Impervious Area =	1.570 ac	CN =	98.00
Pond / Wetland Area =	5.000 ac	CN =	100.0
Pervious Area (1) =	0.996 ac	CN =	80.00
Pervious Area (2) =	2.000 ac	CN =	71.00
		Proposed Curve Number =	89.41
		Post-Development adjusted Curve Number =	89.41

Excess Runoff Volume (V)

$P_e = (P - 0.2S)^2 / (P + 0.8S)$ $\quad S = (1000 / CN) - 10$ $\quad$ Where:

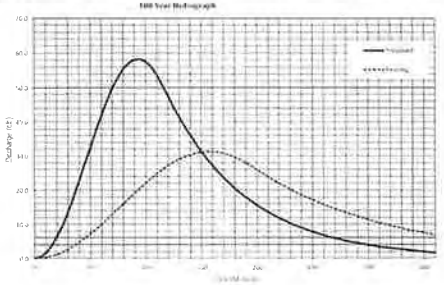
		Existing	Proposed
P =		14.56	in
CN =		80.00	89.41
S = Maximum soil retention		2.50	1.18	in
P_e =		11.08	13.47	in

Hydrograph Development Parameters

A = Total Area of Development	A =	9.57	ac
T_c = Time of Concentration	T_c =	5.60	min
P_e = Pre-Dev. 100-YR Excess Rainfall	P_e =	11.08	in
V_R = Pre-Dev. 100-YR Excess Rainfall Volume	V_R =	111,003	cf
Q_p = Pre-Dev. 100-YR Peak Discharge	Q_p =	81.23	cfs
T_p = Pre-Dev. Time to Peak	T_p =	15.09	min
P_e = Post-Dev. 100-YR Excess Rainfall	P_e =	13.47	in
V_R = Post-Dev. 100-YR Excess Rainfall Volume	V_R =	134,946	cf
Q_p = Post-Dev. 100-YR Peak Discharge	Q_p =	98.81	cfs
T_p = Post-Dev. Time to Peak	T_p =	9.87	min

Total Required Storage Volume = 244,287.46 cf ac 4.92 ac/ft

100 Year Hydrograph



10 - YEAR

DETENTION CALCULATIONS

Modified Rational Hydrograph Development

Watershed Area

Total Area of Tract:	9.5663	Acres
Area affected in this phase of development (A)	9.5663	Acres

Curve Number (CN)

Hydrologic Soil Groups = D

Antecedent Soil Moisture Condition = AMC II

Before Development Surface type analysis

Total Impervious Area =	1.570 ac	CN =	98.00
Pond / Wetland Area =	0.0 ac	CN =	100.0
Pervious Area (1) =	100.000 sf	CN =	80.00
Pervious Area (2) =	0.0 ac	CN =	71.00
		Weighted Curve Number (CN II) =	80.00
		Pre-Development adjusted Curve Number =	80.00

After Development Surface type analysis

Total Impervious Area =	1.570 ac	CN =	98.00
Pond / Wetland Area =	5.000 ac	CN =	100.0
Pervious Area (1) =	2.996 ac	CN =	80.00
Pervious Area (2) =	0.0 ac	CN =	71.00
		Proposed Curve Number =	89.41
		Post-Development adjusted Curve Number =	89.41

Excess Runoff Volume (V)

$P_e = (P - 0.2S)^2 / (P + 0.8S)$ $\quad S = (1000 / CN) - 10$ $\quad$ Where:

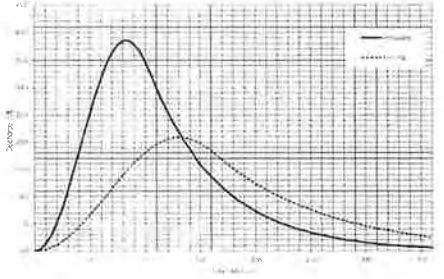
		Existing	Proposed
P =		9.60	in
CN =		80.00	89.41
S = Maximum soil retention		2.50	1.18	in
P_e =		6.60	7.75	in

Hydrograph Development Parameters

A = Total Area of Development	A =	9.57	ac
T_c = Time of Concentration	T_c =	5.60	min
P_e = Pre-Dev. 10-YR Excess Rainfall	P_e =	6.60	in
V_R = Pre-Dev. 10-YR Excess Rainfall Volume	V_R =	66,111	cf
Q_p = Pre-Dev. 10-YR Peak Discharge	Q_p =	48.40	cfs
T_p = Pre-Dev. Time to Peak	T_p =	15.09	min
P_e = Post-Dev. 10-YR Excess Rainfall	P_e =	7.75	in
V_R = Post-Dev. 10-YR Excess Rainfall Volume	V_R =	77,614	cf
Q_p = Post-Dev. 10-YR Peak Discharge	Q_p =	56.81	cfs
T_p = Post-Dev. Time to Peak	T_p =	9.87	min

Total Required Storage Volume = 119,192.50 cf ac 2.74 ac/ft

10 Year Hydrograph



ISSUE #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	25011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	DRAINAGE CALCULATION (1 OF 2)	C010	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEWWAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE 4420
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

Detention Summary

Affected Tract Area	=	9.5663	AC		
Detention Storage Volume rate	=	0.51	AC-FT/AC		
Detention ST. Volume Required	=	4.92	AC-FT		
	=	214297.16	CF		
Detention Pond depth	=	6	FT		
Detention pond Area "A1"	=	48074	SF		
Detention pond Area "A2"	=	27224	SF		
Detention pond VOL. V1	=	222948.43	CF	5.12	AC-FT
Total Volume Provided = (V1)	=	222948.43	CF	5.12	AC-FT
Check		Okay			

Restrictor Orifice & Release Rate Calculations

$Q = CA(2gh)^{0.5}$

C = Discharge Coefficient = 0.80
g = Gravitational Factor = 32.20

Ponding Elevations (WSE):
100-YR Water Surface Elevation in detention system: 305.00 ft
25-YR Water Surface Elevation in detention system: 301.86 ft
5-YR Water Surface Elevation in detention system: 300.15 ft
Primary Restrictor Pipe Flow Line: 299.00 ft

Head (H) , WSE to the centroid of the restrictor:
$H_{(5)}$ = 0.65 ft $H_{(25)}$ = 2.36 ft $H_{(100)}$ = 5.5 ft

Allowable Outfall Discharge, Qa (existing condition considered):
$Q_{(5)}$ = 17.73 cfs $Q_{(25)}$ = 25.00 cfs $Q_{(100)}$ = 31.23 cfs

Orifice Area (A) and required diameter (D):
$A_{(5)}$ = 3.42 s.f. $A_{(25)}$ = 2.54 s.f. $A_{(100)}$ = 2.07 s.f.
$D_{(5)}$ = 2.09 ft $D_{(25)}$ = 1.80 ft $D_{(100)}$ = 1.63 ft

Minimum Calculated D = 1.63 ft or 19.56 inches

Used Orifice D : 12.00 inches

Released discharge rate from site (Q):
Q_{5yr} = 4.07 cfs Q_{25yr} = 7.75 cfs Q_{100yr} = 11.83 cfs

DESIGN STORM : 10 - YEAR

STORM SEWER CALCULATIONS
WALKER COUNTY

Project FM 1375 & IH 45
Job No
PM PN

Date May 11 2025
Land Use Category Business Districts
Rainfall Frequency (years) 100 yr

b = 80
d = 8
e = 0.759

JUNCTIONS		DRAINAGE AREA CALCULATIONS							STORM SEWER LINE PIPE						DESIGN					HYDRAULIC GRADE LINE					STORM FLOWLINES	
From	To	Total Area	Runoff Coeff.	C A	Time of Intensity Conc. min.	I (In / Hr.)	Frequency Factor	Sum of Flows cfs	PIPE or BOX	Storm Sewer Material	Reach Length Feet	PIPE Dia (in)	PIPE AREA (sq ft)	# of Pipes/ Boxes	Slope %	Mannings "n"	Capacity cfs	Velocity fps	Actual Velocity fps	Hydraulic Gradient %	Change in Head Ft.	Elev. Up Stream	Elev. Down Stream	Flowline upstream	Flowline downstream
		Acres	C				Cf	Q																	
I-01	MH-01	1.76	0.80	1.41	26.05	5.50	1.00	7.76	PIPE	HDPE	130.90	24 in	3.14	1	0.20	0.012	10.96	3.49	3.78	0.100	0.131	305.51	305.38	301.00	300.74
I-02	MH-01	0.34	0.80	0.27	23.27	5.87	1.00	1.60	PIPE	HDPE	311.10	15 in	1.23	1	0.35	0.012	4.14	3.37	3.15	0.052	0.162	305.38	305.22	303.75	302.66
MH-01	MH-02	2.01	0.80	1.60	26.30	5.47	1.00	8.77	PIPE	HDPE	134.80	24 in	3.14	1	0.20	0.012	10.96	3.49	3.87	0.128	0.173	305.22	305.04	300.74	300.47
I-03	MH-02	0.54	0.80	0.43	23.97	5.77	1.00	2.49	PIPE	HDPE	92.80	15 in	1.23	1	0.35	0.012	4.14	3.37	3.51	0.126	0.117	305.04	304.93	304.00	303.68
MH-02	DET	2.54	0.80	2.04	26.79	5.41	1.00	11.01	PIPE	HDPE	173.70	30 in	4.91	1	0.20	0.012	19.87	4.05	4.15	0.061	0.107	302.73	302.62	300.47	300.12

DESIGN STORM : 100 - YEAR

STORM SEWER CALCULATIONS
WALKER COUNTY

Project FM 1375 & IH 45
Job No
PM PN

Date May 11 2025
Land Use Category Business Districts
Rainfall Frequency (years) 100 yr

b = 93
d = 8
e = 0.72

JUNCTIONS		DRAINAGE AREA CALCULATIONS							STORM SEWER LINE PIPE						DESIGN					HYDRAULIC GRADE LINE					STORM FLOWLINES	
From	To	Total Area	Runoff Coeff.	C A	Time of Intensity Conc. min.	I (In / Hr.)	Frequency Factor	Sum of Flows cfs	PIPE or BOX	Storm Sewer Material	Reach Length Feet	PIPE Dia (in)	PIPE AREA (sq ft)	# of Pipes/ Boxes	Slope %	Mannings "n"	Capacity cfs	Velocity fps	Actual Velocity fps	Hydraulic Gradient %	Change in Head Ft.	Elev. Up Stream	Elev. Down Stream	Flowline upstream	Flowline downstream
		Acres	C				Cf	Q																	
I-01	MH-01	1.76	0.80	1.41	26.05	7.33	1.00	10.35	PIPE	HDPE	130.00	24 in	3.14	1	0.20	0.012	10.96	3.49	3.97	0.178	0.232	305.76	305.52	301.00	300.74
I-02	MH-01	0.34	0.80	0.27	23.27	7.80	1.00	2.12	PIPE	HDPE	314.70	15 in	1.23	1	0.35	0.012	4.14	3.37	3.37	0.092	0.289	305.52	305.23	303.75	302.65
MH-01	MH-02	2.01	0.80	1.60	26.30	7.30	1.00	11.71	PIPE	HDPE	135.00	30 in	4.91	1	0.20	0.012	19.87	4.05	4.21	0.069	0.094	305.23	305.14	300.74	300.47
I-03	MH-02	0.54	0.80	0.43	23.97	7.68	1.00	3.31	PIPE	HDPE	86.40	15 in	1.23	1	0.35	0.012	4.14	3.37	3.74	0.223	0.193	305.14	304.95	304.00	303.70
MH-02	DET	2.54	0.80	2.04	26.79	7.22	1.00	14.70	PIPE	HDPE	173.20	30 in	4.91	1	0.20	0.012	19.87	4.05	4.43	0.109	0.190	302.81	302.62	300.47	300.12

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

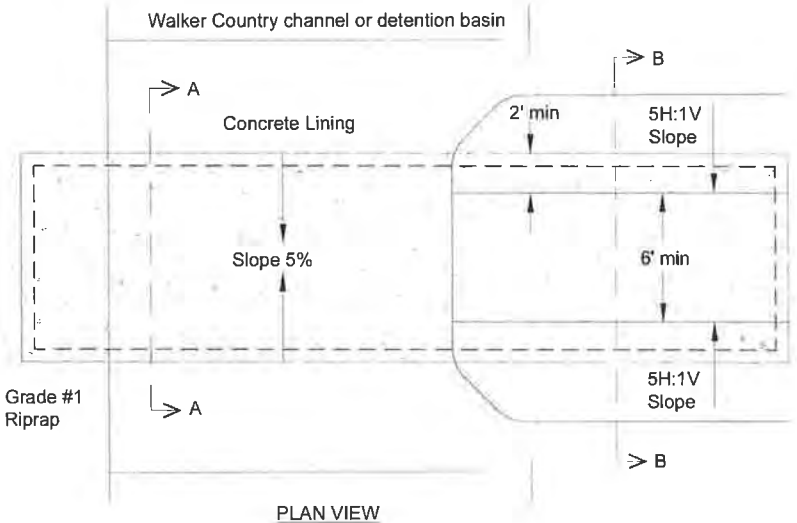
DRAWN BY AR | CHECKED BY MM | ENGINEER GM | DATE 05/11/2025 | MTS PROJECT NO 2511

SCALE NTS | DRAWING TITLE DRAINAGE CALCULATION (2 OF 2) | DRAWING NUMBER C011 | REV 0

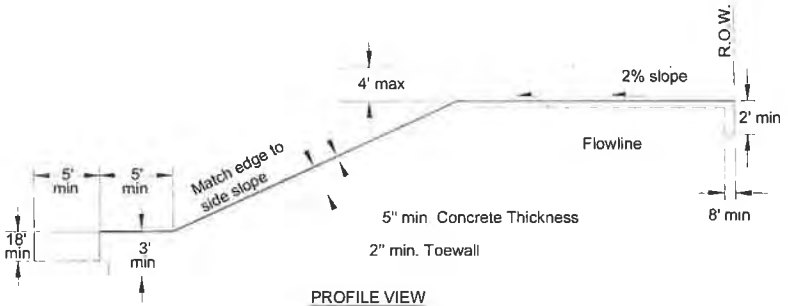
05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #428
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844



PLAN VIEW



PROFILE VIEW

SECTION A-A

SECTION B-B

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APR
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	CM

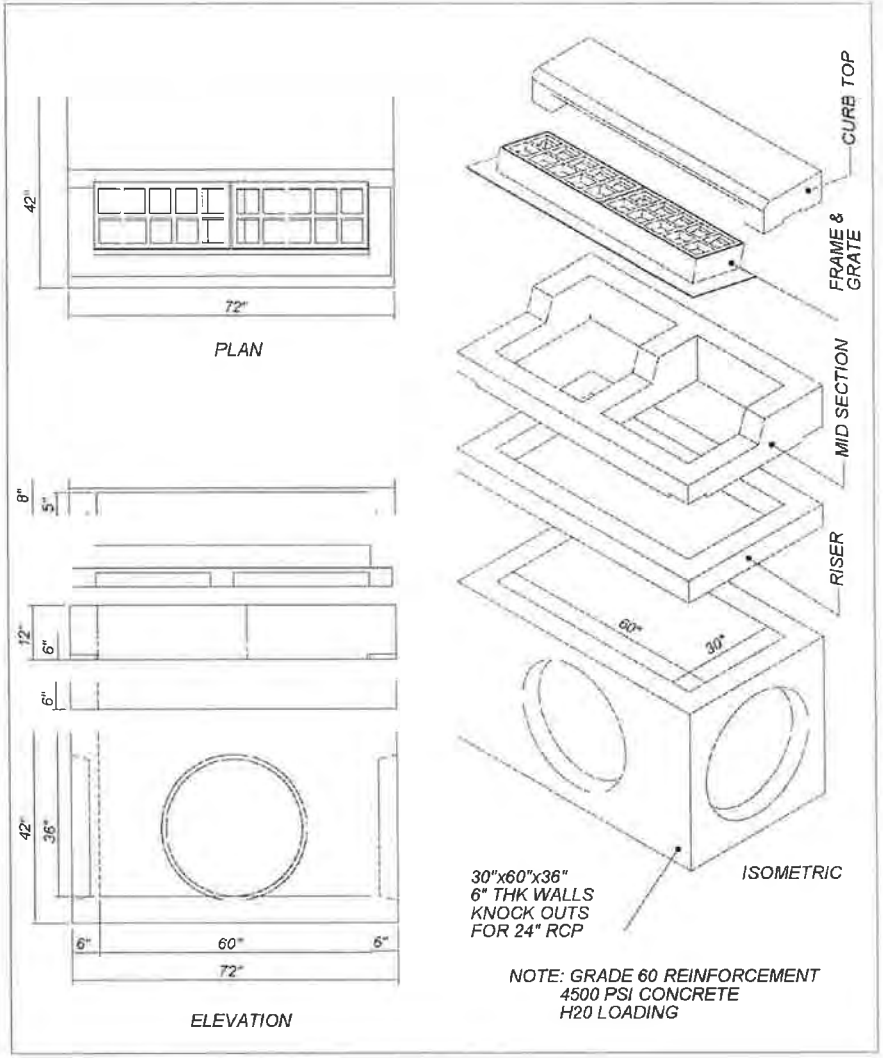
DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	CM	05/11/2025	23001

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	EXTREME EVENT OVERFLOW STANDARD DETAILS	C012	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844



DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APR
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS ENGINEERING
AR	MM	GM	05/11/2025	DWH

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	BB INLET DETAILS	C013	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

01

NOTES

1 DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED

2 PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12" THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6"

3 MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS MIN THICKNESS 5"

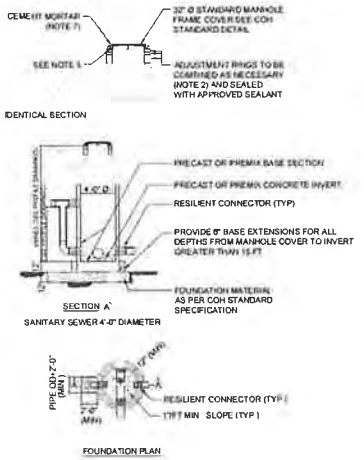
4 MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING

5 SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION

6 ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED

7 OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS

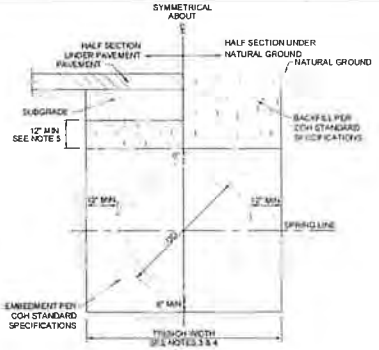
8 MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE #5 @ 8 EW PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION



SANITARY MANHOLE DETAIL

NTS

02



NOTES

1 WHERE SOIL CONDITIONS REQUIRE THE ENGINEER MAY ORDER USE OF GRANULAR MATERIAL IN LIEU OF CEMENT STABILIZED SAND BEDDING WHERE WET SAND IS

2 ENCOUNTERED REINFORCED CONCRETE PIPE SEWERS SHALL BE CONSTRUCTED USING APPROVED SPECIAL DESIGN AS SHOWN ON DRAWINGS

3 MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE NOMINAL PIPE SIZE 18" "A" LESS THAN 18"

4 MAX TRENCH WIDTH SHALL NOT BE GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES UNLESS OTHERWISE NOTED

5 SELECT BACKFILL FOR RIGID PAVEMENT FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT

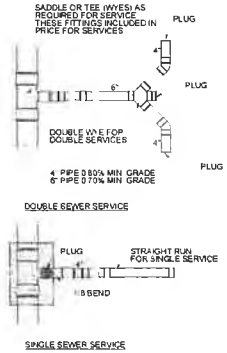
STORM SEWER BEDDING/BACKFILL

NTS

03

NOTE

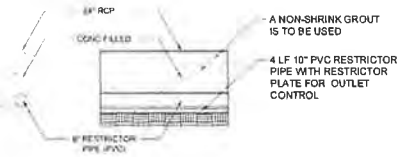
ALL SINGLE SEWER SERVICES AND DOUBLE SEWER SERVICES AS SHOWN ARE INTERCHANGEABLE AS REQUIRED TO CONNECT WITH STACKS DOUBLE WYES AND WYES AS REQUIRED TAPS FOR PVC PIPE TO BE PVC "I" OR "Y"-SADDLE



STANDARD SANITARY SEWER SERVICE LED DETAIL

NTS

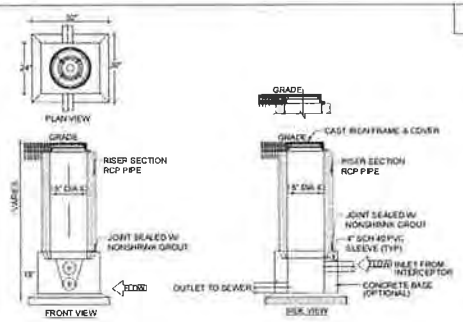
04



RESTRICTOR PIPE DETAIL

NTS

04



NOTES

1 SAMPLING WELL MUST BE INSTALLED UNDER A SEPARATE PLUMBING PERMIT
2 USE 15" T&G R C P FOR INSTALLATION FOR INSTALLATION 6'-0" DEEP AND LESS
3 USE 24" T&G R C P FOR INSTALLATION GREATER THAN 6'-0" DEEP (STD RING AND M H COVER REQUIRED)
4 SAMPLING WELL MUST BE SET IN A CIRCULAR OR SQUARE CONCRETE PAD (1'-0" GREATER THAN OUTSIDE DIAMETER OF PIPE)
5 INSIDE INSTALLATION NOT PERMITTED WHERE OUTSIDE INSTALLATION IS POSSIBLE
6 INSTALLATION INSIDE BUILDING MUST BE POURED IN PLACE (15 MIN) NO CONCRETE PIPE
7 LAWN INSTALLATION MUST BE 4" ABOVE FINISH GRADE
8 DRIVE & SIDEWALK INSTALLATION MUST BE BROUGHT TO FINISHED GRADE
9 TO BE INSTALLED ON PRIVATE PROPERTY IN AN ACCESSIBLE LOCATION TO CITY PERSONAL

* AS PER CITY OF HOUSTON SPECIFICATIONS DRAWINGS NO 448-S II

SPECIFICATIONS

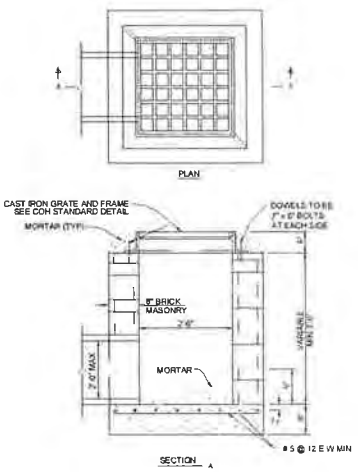
CONCRETE: CLASS I CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH

C I CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30 HEAVY-DUTY AASHTO H-20

SAMPLE WELL DETAIL

NTS

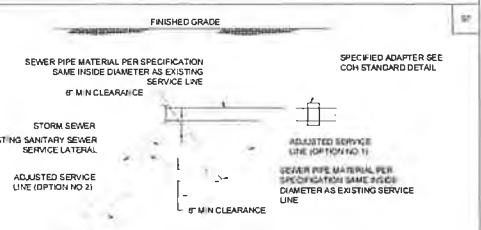
05



TYPE A INLET

NTS

05



SANITARY SEWER SERVICE LINE RECONNECTION FOR STORM SEWER CONFLICTS

SANITARY & STORM LINE CONFLICTS

NTS

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APR
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	GM	05/11/2025	23017

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	SITE DRAINAGE DETAILS	C014	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #420
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4649
FIRM NO. 18644

FLOODPLAIN NOTE:

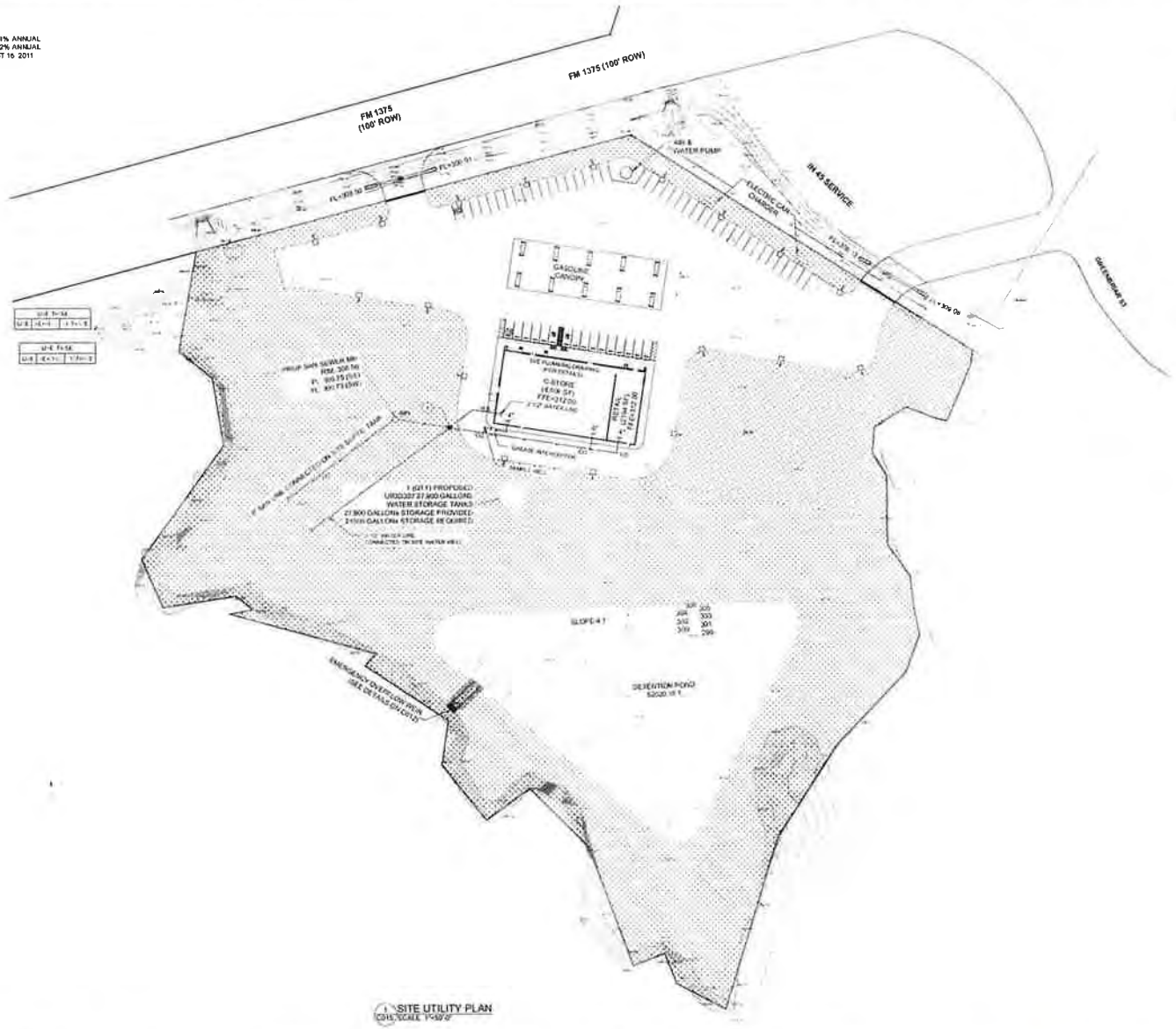
A PORTION/PORTIONS OF THIS PROPERTY (AS SHOWN HEREON) ARE LOCATED WITHIN ZONE "A" (AREA WITH 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD) WITHOUT BASE FLOOD ELEVATION DETERMINED) ZONE "X" (AREA OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON F I R M PANEL NO 4847 I C0525D WALKER COUNTY, TEXAS EFFECTIVE AUGUST 16 2011

LEGEND

- PROP. SANITARY LINE
- PROP. WATER LINES
- PROP CLEANOUT
- MANHOLE
- PROP MANHOLE

KEY NOTES

(1) AT CROSSING OF PIPES
2 ϕ WATER PIPE FL=303.83
8"ϕ SAN SAN LINE FL =301.16



1 SITE UTILITY PLAN
C015 SCALE: 1"=50'-0"

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

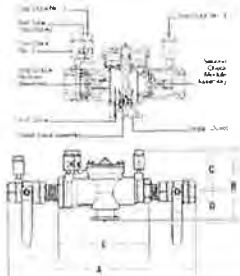
DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	23011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
1"=50'-0"	SITE UTILITY PLAN	C015	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #426
HOUSTON TEXAS 77063
(281) 404-4436 (281) 253-4849
FIRM NO. 18844

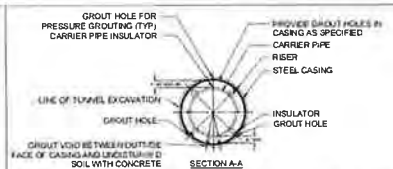


SIZE	DIMENSIONS (APPROX.)						WEIGHT	MODEL
	A in.	B in.	C in.	D in.	E in.		lbs.	
FOR IRRIGATION LINE	1 1/2	17 7/8	8	3 1/2	2 1/2	11 1/8	10	009M2-QT 1 1/2
FOR WATER LINE	2	21 3/8	7 3/8	4 1/2	3 1/4	13 1/2	20	009M2-QT 2"

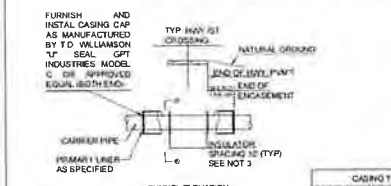
WATTS SERIES LF009

REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER

1 BACKFLOW PREVENT
NTS



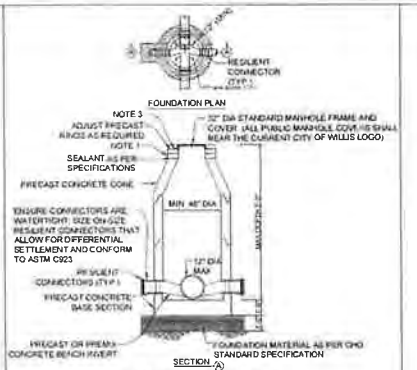
NOTE
1 THE ANNULAR SPACE ALL TUNNELS IN FPOA IS TO BE GROUTED



NOTES
1 LENGTH OF ENCASEMENT SHALL BE AS SHOWN ON THE PLAN & PROFILE DRAWING
2 LAY CASING PIPE IN OPEN CUT TUNNEL OR BORE AS NOTED ON PLAN & PROFILE DRAWING
3 SEE SPECIFICATION FOR APPROPRIATE MODEL ACCORDING TO PIPE DIAMETER OR PIPE MANUFACTURER RECOMMENDATIONS

CASING TABLE	
NOMINAL PIPE SIZE DIA IN INCHES	MIN CASING SIZE INSIDE DIA IN INCHES
3	10
4	12
6	14
8	16
10	18
12	20

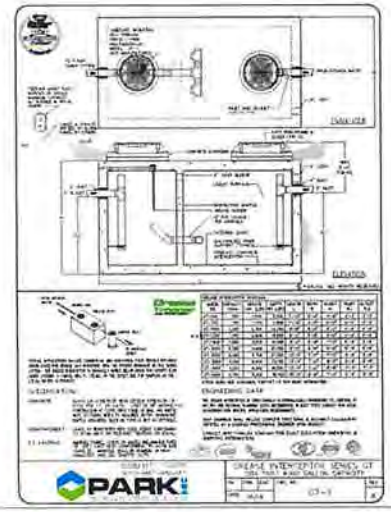
2 TUNNEL CASING DETAIL
NTS



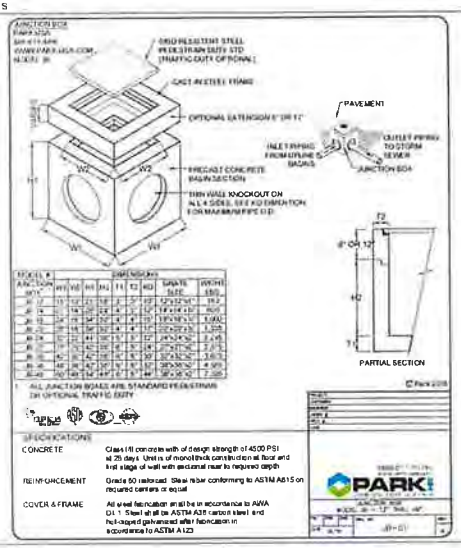
SANITARY SEWER BACKFILL OF SHAFTS

NOTES
1 A MINIMUM OF 3" PRECAST CONCRETE OR HDPE ADJUSTMENT RING SHALL BE PROVIDED THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 12"
2 MANHOLE INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING
3 SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION
4 OMIT CMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS
5 MINIMUM REINFORCING IN THE BASE BE #5 @ 8 EW
6 PROVIDE BACKFILL MATERIAL AS PER COH STANDARD SPECIFICATION

3 SANITARY MANHOLE DETAIL
NTS



4 GREASE INTERCEPTOR
NTS



JUNCTION BOX NO.	DIMENSIONS													GRATE SIZE	WEIGHT (LBS)
	W1	W2	W3	W4	H1	H2	T1	T2	H3						
JB-10	10"	10"	10"	10"	24"	24"	4"	6"	12"					12"x12"	75
JB-12	12"	12"	12"	12"	24"	24"	4"	6"	12"					12"x12"	100
JB-18	18"	18"	18"	18"	24"	24"	4"	6"	12"					12"x12"	150
JB-24	24"	24"	24"	24"	24"	24"	4"	6"	12"					12"x12"	200
JB-30	30"	30"	30"	30"	24"	24"	4"	6"	12"					12"x12"	250
JB-36	36"	36"	36"	36"	24"	24"	4"	6"	12"					12"x12"	300
JB-42	42"	42"	42"	42"	24"	24"	4"	6"	12"					12"x12"	350
JB-48	48"	48"	48"	48"	24"	24"	4"	6"	12"					12"x12"	400

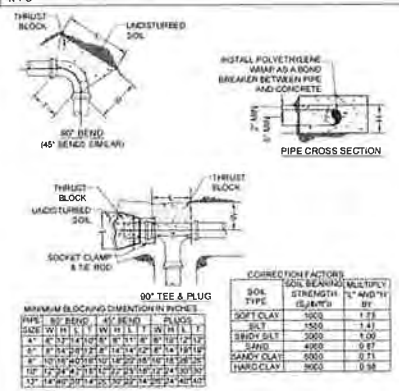
1 ALL JUNCTION BOXES ARE STANDARD PRECAST MH

OR OPTIONAL TRAFFIC DUTY

SPECIFICATIONS

CONCRETE	Class (A) concrete with a of design strength of 4500 PSI at 28 days. Units is of monolithic construction at floor and first stage of wall with horizontal reset to required depth
REINFORCEMENT	Grade 60 reinforced Steel rebar conforming to ASTM A615 on required centers or equal
COVER & FRAME	All steel fabrication and to be in accordance to AWA D1.1. Steel shall be ASTM A36 carbon steel and hot-dipped galvanized after fabrication in accordance to ASTM A123

5 JUNCTION BOX DETAIL FOR SANITARY LINE
NTS



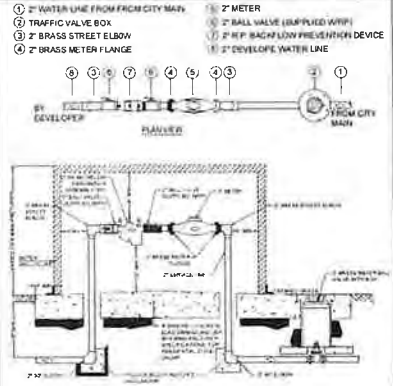
MINIMUM BLOCKING DIMENTION IN INCHES

PIPE SIZE	90° BEND W	90° BEND L	90° BEND T	45° BEND W	45° BEND L	45° BEND T	PLUGS W	PLUGS L	PLUGS T
4"	8"	12"	12"	8"	8"	12"	8"	8"	12"
6"	10"	14"	14"	8"	10"	14"	8"	10"	14"
8"	12"	16"	16"	10"	12"	16"	10"	12"	16"
10"	14"	18"	18"	12"	14"	18"	12"	14"	18"
12"	16"	20"	20"	14"	16"	20"	14"	16"	20"

CORRECTION FACTORS		
SOIL TYPE	SOIL BEARING STRENGTH (LB/FT²)	MULTIPLY "L" AND "H" BY
SOFT CLAY	1000	1.73
SILT	1500	1.41
SANDY SILT	2000	1.00
SAND	4000	0.87
SANDY CLAY	5000	0.71
HARD CLAY	9000	0.58

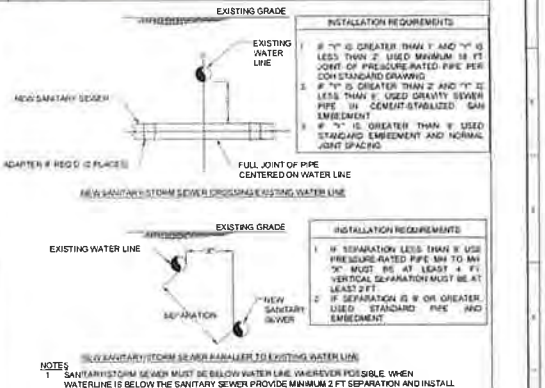
NOTES
1 DEPTH "W" MAY BE GRATER THAN SPECIFIED TO ALLOW WORKING SPACE
2 BLOCKING MAST BE PLACED AGAINST UNDISTURBED EARTH WHERE THIS IS NOT POSSIBLE THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY
3 PROVIDE CONCRETE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 03315 - CONCRETE FOR UTILITY CONSTRUCTION
4 BLOCKING DIMENTION SHOWN ARE BASED ON 3000 PSI SOIL BEARING STRENGTH AND 125 PSI INTERNAL WATER PRESSURE FOR OTHER SOIL CONDITIONS, MULTIPLY DIMENSIONS "L" AND "H" BY THE APPROPRIATE CORRECTION FACTOR

6 TRUST BLOCK DETAIL FOR WATER LINE
NTS



NOTE
1 12" FROM BACK OF WALK (FOR A 5' OR WIDER SIDEWALK)
2 24" FROM BACK OF WALK (FOR A 4' SIDEWALK)
3 FOR 2" LATERAL USE 2" RP BACKFLOW AND 1½" OR 2" METER
4 2" METER FLANGE MAY BE USED WITH A 1½" OR 2" SERVICE
5 SLOPE FLOOR TO DRAIN TO PORTS AT BOTH ENDS ENSURE POSITIVE SURFACE GRADE AWAY FROM ENCLOSURE

7 2" DOMESTIC WATER METER ASSEMBLY (ABOVE GROUND) WITH BACKFIOW PREVENTER



NOTES
1 SANITARY/STORM SEWER MUST BE BELOW WATER LINE WHEREVER POSSIBLE. WHEN WATERLINE IS BELOW THE SANITARY SEWER PROVIDE MINIMUM 2 FT SEPARATION AND INSTALL PIPE IN ACCORDANCE TO CHAPTER 7 TABLE 7.3 OF COH DESIGN MANUAL
2 WHEN PRESSURE-RATED PIPE IS REQUIRED PROVIDE PIPE WITH MINIMUM 150 psi PRESSURE RATING
3 ADAPTERS MUST BE FACTORY MOLDED OR FABRICATED WITH RING STIFFNES AT LEAST EQUAL TO THE ADJOINING SANITARY/STORM SEWER PIPE AND USING RESILIENT GASKET OR SEAL MATERIAL FLEXIBLE RUBBER "BOOT" TYPE ADAPTERS WILL NOT BE ACCEPTED
4 INSTALL FORCE MAINS SAME AS FOR GRAVITY SEWER, USING SPECIFIED PRESSURE PIPE
5 "Y" MUST ALWAYS BE GREATER THAN OR EQUAL TO 1 FT FOR PRESSURE RATED SS AND 2 FT FOR ON-PRESSURE RATED SS
6 "X" MUST BE GREATER THAN OR EQUAL TO 4 FT
7 ALTERNATIVES MAY BE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS
8 SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS - REFER TO PLUMBING CODE FOR APPLICABLE REQUIREMENTS

8 SANITARY / STORM CROSSING DETAIL
NTS

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/25	ISSUED FOR PERMIT	AS	MM	CM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AP	MM	CM	05/11/25	23011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	UTILITY DETAILS	C016	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

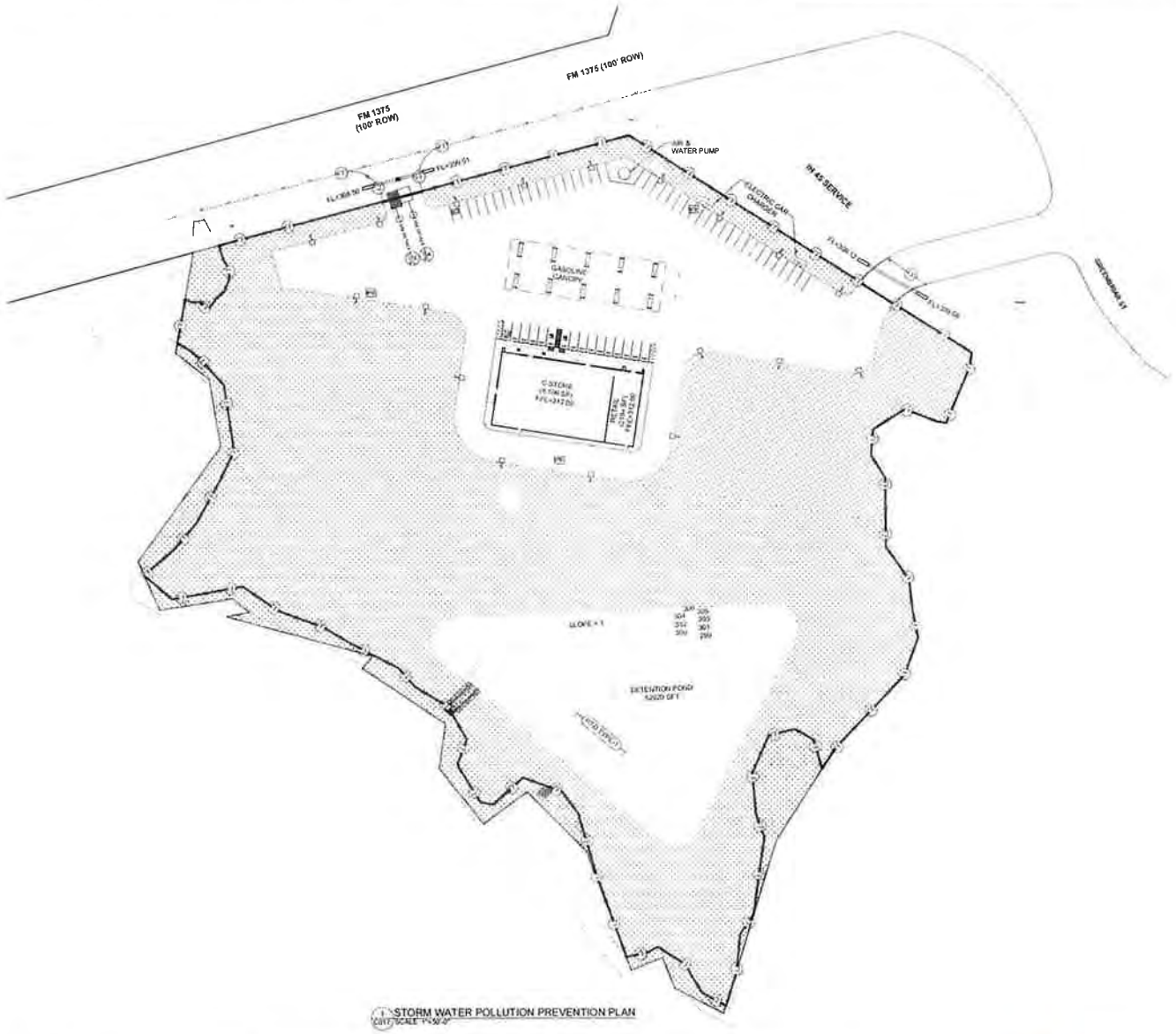
MTS ENGINEERING & DESIGN
9950 WESTPARK DR. SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4848
FIRM NO. 18844

FLOODPLAIN NOTE:

A PORTION/PORTIONS OF THIS PROPERTY (AS SHOWN HEREON) ARE LOCATED WITHIN ZONE "A" (AREA WITH 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD) WITHOUT BASE FLOOD ELEVATION DETERMINED) ZONE "X" (AREA OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON F I R M PANEL NO 48471C0525D WALKER COUNTY, TEXAS EFFECTIVE AUGUST 18 2011

LEGEND

- FF — FILTER FABRIC FENCE
- SCA — STABILIZED CONSTRUCTION ACCESS
- IPB — INLET PROTECTION BARRIERS (FOR STAGE I & II INLETS)
- CWA — CONCRETE TRUCK WASHOUT AREA
- ROCK FILTER DAM



1 C017 STORM WATER POLLUTION PREVENTION PLAN SCALE: 1"=50'-0"

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	21814

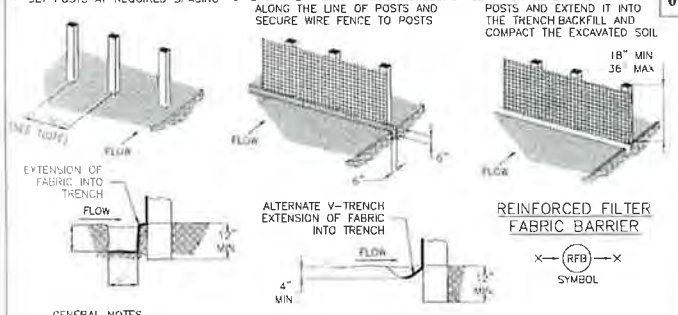
SCALE	DRAWING TITLE	DRAWING NUMBER	REV
1"=50'-0"	STORM WATER POLLUTION PREVENTION PLAN	C017	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #426
HOUSTON TEXAS 77063
(281) 404-4436 (281) 253-4849
FIRM NO. 18844

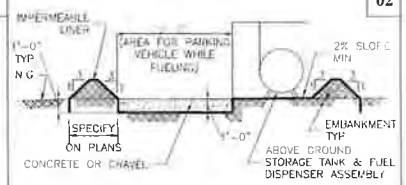
01 REINFORCED FILTER FABRIC BARRIER



GENERAL NOTES:

1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES
2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH

02 ABOVE GROUND TEMP VEHICLE & EQUIPMENT FUELING AREA WITH TANK

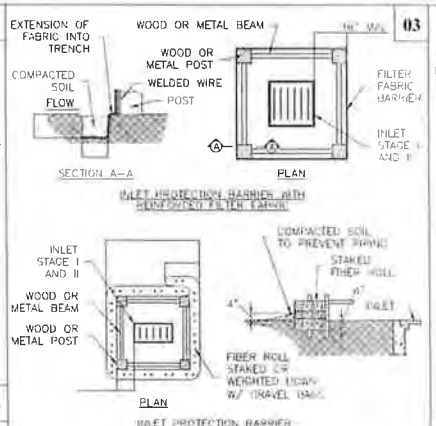


TFA SYMBOL

GENERAL NOTES:

1. THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY
2. PROVIDE A MINIMUM SLOPE OF 2 % TOWARD THE SUMP PIT
3. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS

03 INLET PROTECTION BARRIER WITH REINFORCED FILTER FABRIC



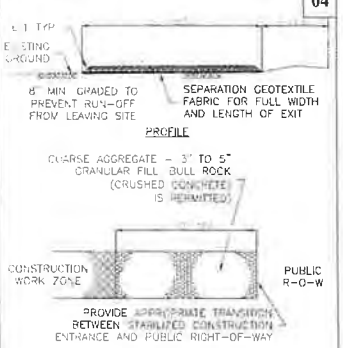
GENERAL NOTES:

1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER

INLET PROTECTION BARRIERS FOR STAGE I INLETS

IPB SYMBOL

04 STABILIZED CONSTRUCTION ACCESS

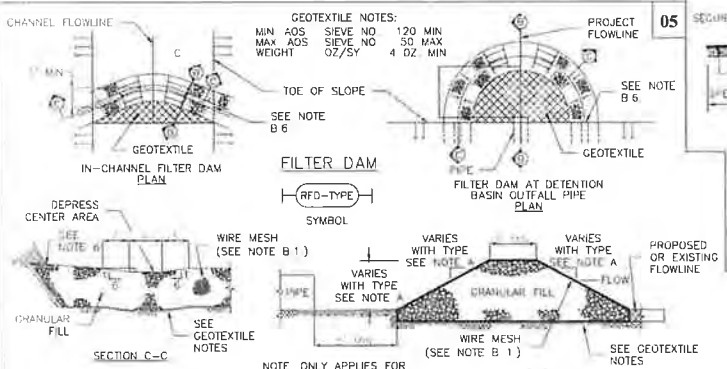


SCE SYMBOL

GENERAL NOTES:

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE
7. MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC

05 FILTER DAM



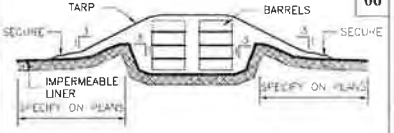
A TYPES OF FILTER DAMS

1. TYPE 1 (NON-REINFORCED)
   a. HEIGHT - 18-24 INCHES MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM
   b. TOP WIDTH - 2 FEET (MINIMUM)
   c. SLOPES - 2:1 (MAXIMUM)
2. TYPE 2 (REINFORCED)
   a. HEIGHT - 18-36 INCHES MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM
   b. TOP WIDTH - 2 FEET (MINIMUM)
   c. SLOPES - 2:1 (MAXIMUM)
3. TYPE 3 (REINFORCED)
   a. HEIGHT - 36-48 INCHES MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM
   b. TOP WIDTH - 2 FEET (MINIMUM)
   c. SLOPES - 3:1 (MAXIMUM)
4. TYPE 4 (GABION)
   a. HEIGHT - 30 INCHES (MINIMUM) MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM
   b. TOP WIDTH - 2 FEET (MINIMUM)
5. TYPE 5 AS SHOWN ON THE PLANS

B CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS

1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER
   a. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4
   b. 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No 02378 RIPRAP AND GRANULAR FILL
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT
5. SEE HCFCD SPECIFICATION SECTION NO 02364-FILTER DAMS
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE

06 BARREL STORAGE AREA

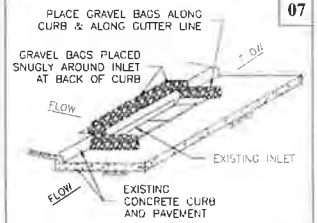


BSA SYMBOL

GENERAL NOTES:

1. ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED
2. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS 60 mil MINIMUM
3. CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS

07 INLET PROTECTION BARRIERS FOR STAGE II INLETS

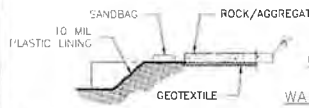


IPB-S SYMBOL

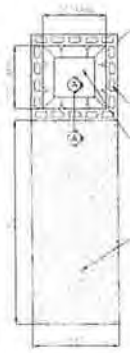
GENERAL NOTES:

1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER

08 CONCRETE TRUCK WASHOUT AREA

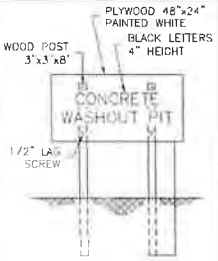


CTW SYMBOL



GENERAL NOTES

1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS
4. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCK'S EQUIPMENT



FIELD #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	CM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	CM	05/11/2025	23011

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	STORM WATER POLLUTION PREVENTION PLAN DETAILS	C018	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77356

MTS ENGINEERING & DESIGN
9550 WESTPARK DR. SUITE #420
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

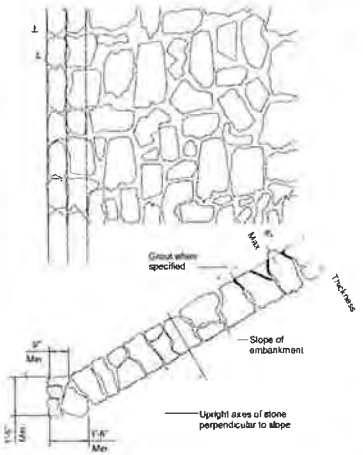


FIGURE 1 ~ TYPE R STONE RIPRAP

dry or grouted

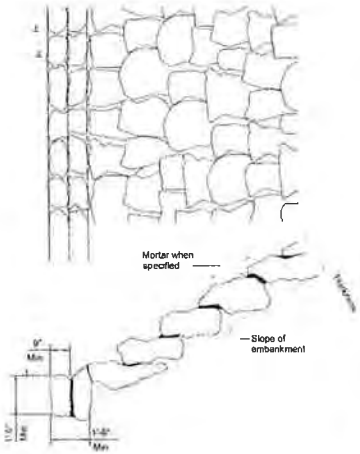


FIGURE 2 ~ TYPE F STONE RIPRAP

dry or mortared

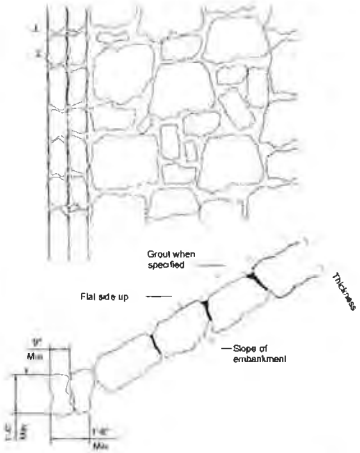


FIGURE 3 ~ TYPE F STONE RIPRAP

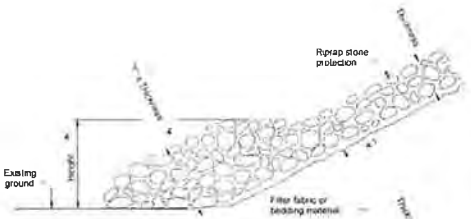
grouted

2 Provide bedding material instead of filter fabric if shown elsewhere in plans See Layout for thickness of bedding material

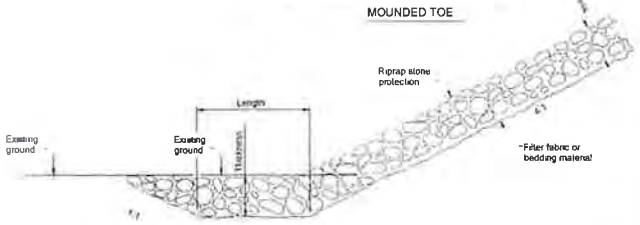
3 Minimum toe depth is the larger of the maximum scour depth or 2 times the riprap thickness

4 "Y" and Height need to be defined See layout or detail sheet for values if this option is used

5 List Stone Protection as size (XX inch) and thickness (YY inch) on the layout
Example Riprap (Stone Protection) XX inch Thickness = YY inch



MOUNDED TOE



EXTENDED ROCK FILLED TRENCH

PROTECTION STONE RIPRAP TOE OPTIONS

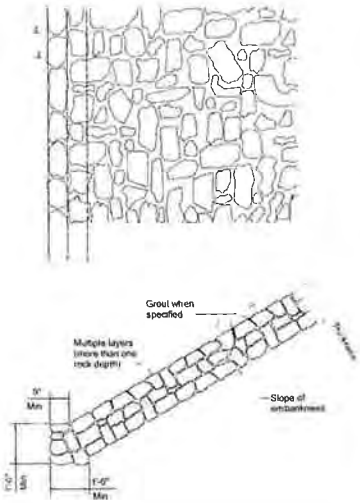


FIGURE 4 ~ COMMON STONE RIPRAP

dry or grouted

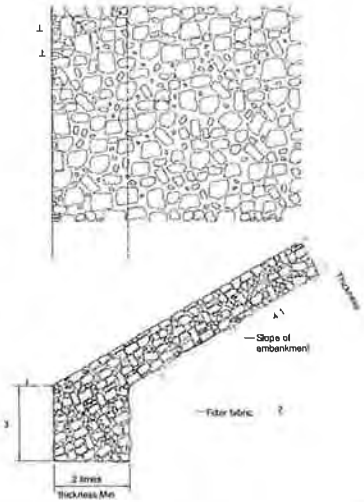


FIGURE 5 ~ PROTECTION STONE RIPRAP

SHEET 2 OF 2

Bridge Division Standard

STONE RIPRAP

SRR

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APR
		0	05/11/2025	ISSUED FOR PERMIT		MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
MM	GM	GM	05/11/2025	23XX

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	RIP RAP DETAILS	C019	0

05/11/2025

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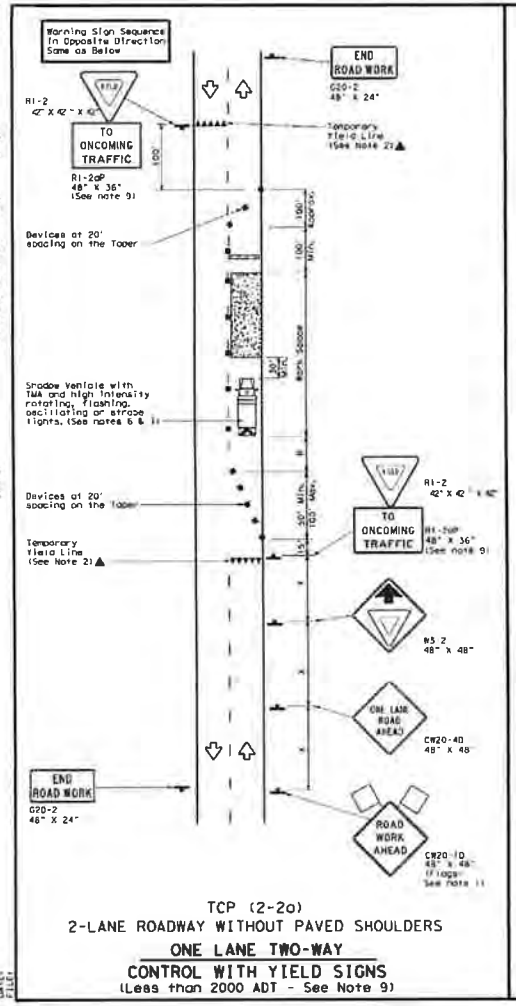
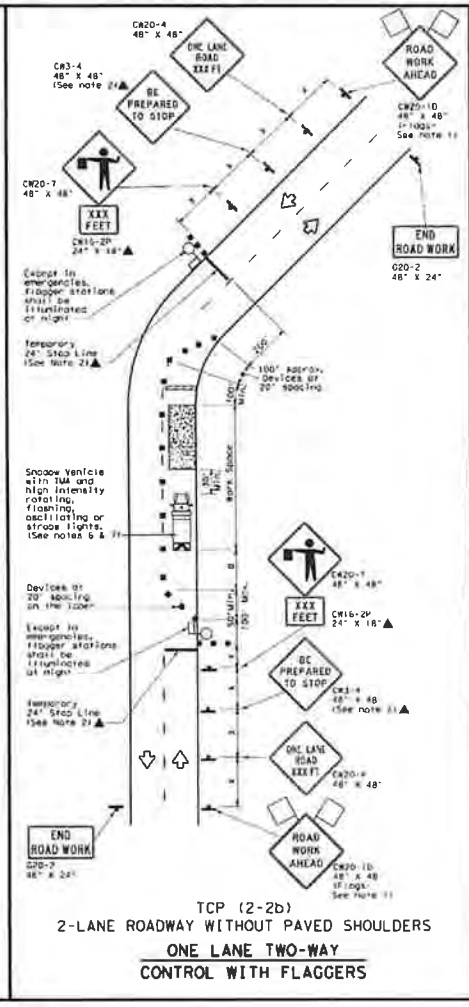
9950 WESTPARK DR SUITE #428
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844



TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND

	Type 3 Barricade	■■	Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed MPH	Formula	Minimum Desirable Taper Lengths * K 10' Offset	11' Offset	12' Offset	Suggested Minimum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "A" Distance	Suggested Longitudinal Buffer Space "B"	Recommended Sight Distance
30	L=WS²/60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50	L=WS	500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(ft) W=Width of Offset(ft) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CR3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(2-2)-12

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AR	MM	CM	05/11/25	2489

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	TRAFFIC CONTROL PLAN	C020	0

05/11/2025

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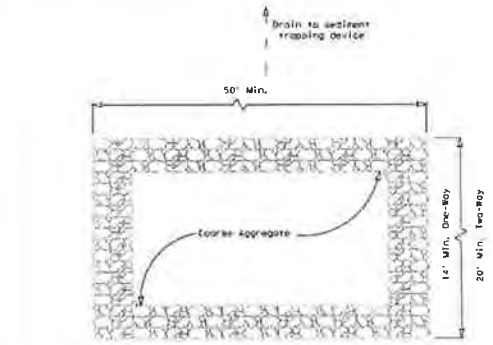
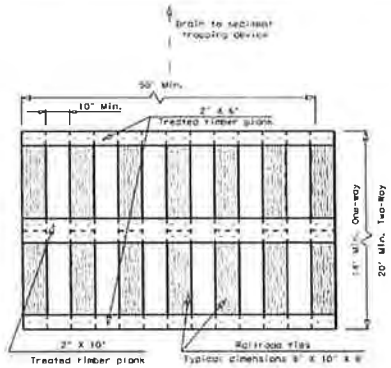
FIRM NO. 18844

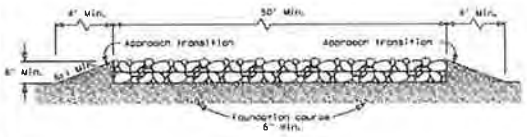
DATE: 9/2025
FILE: ec16



PLAN VIEW



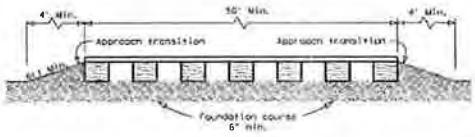
PLAN VIEW



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

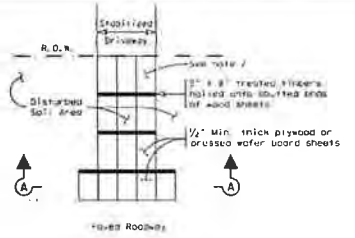
ROCK CONSTRUCTION (LONG TERM)



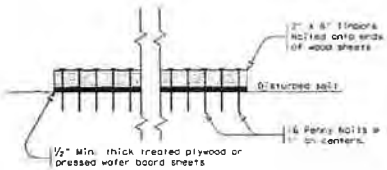
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)



PLAN VIEW



SECTION A-A

CONSTRUCTION EXIT (TYPE 3)

SHORT TERM

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation | Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

CONSTRUCTION EXITS

EC(3)-16

ECA LSS# | EJS | AHMTS

HDST# | VCT# SEC18A-16S

ISSUE#	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APV
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DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	CM	05/11/2025	2501

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	TEMPORARY EROSION,SEDIMENT AND WATER POLLUTION CONTROL (1 OF 2)	C021	0

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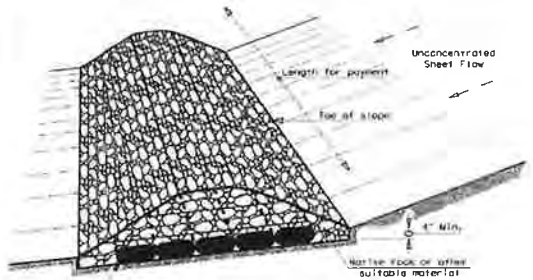
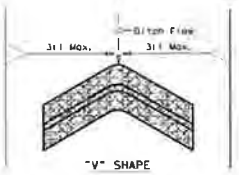
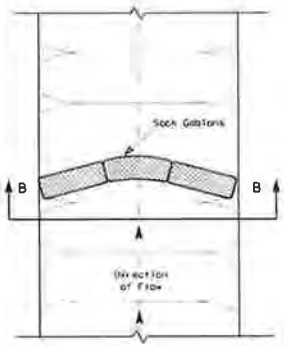


FILTER DAM AT TOE OF SLOPE

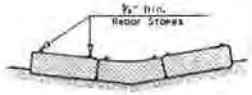
RFD1



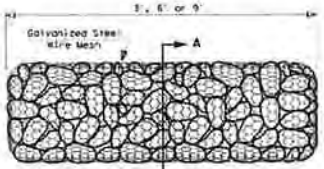
"V" SHAPE PLAN VIEW



PLAN VIEW

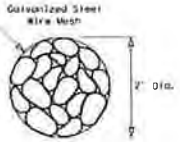


SECTION B-B

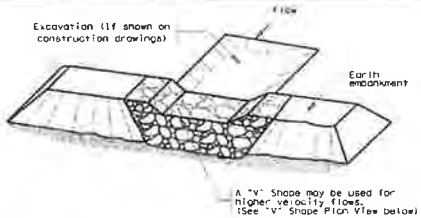


TYPE 4 (SACK GABIONS)

RFD4

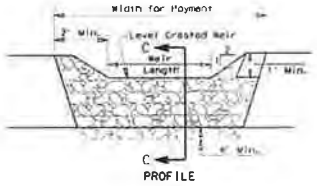


SECTION A-A

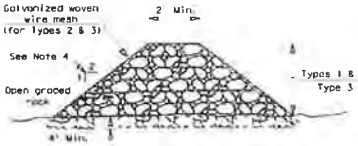


FILTER DAM AT SEDIMENT TRAP

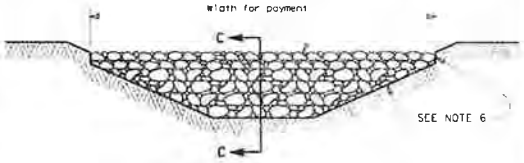
RFD1 OR RFD2



PROFILE



SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 OR RFD2 OR RFD3

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/ft^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, ground inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment (open runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼".
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

EC(2)-16

DATE:
FILE:

UNIT #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/25	ISSUED FOR PERMIT	AR	MM	DM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	DM	05/11/2025	24015

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	TEMPORARY EROSION,SEDIMENT AND WATER POLLUTION CONTROL (1 OF 2)	C022	0

05/11/2025

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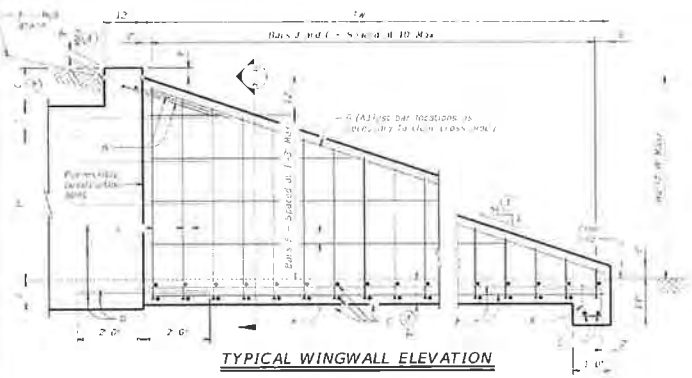
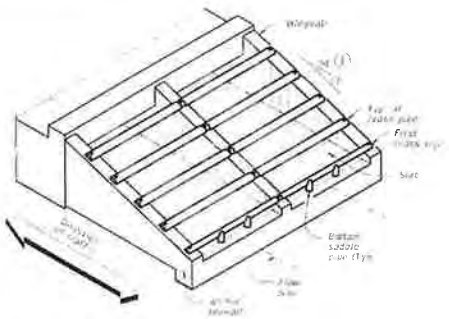
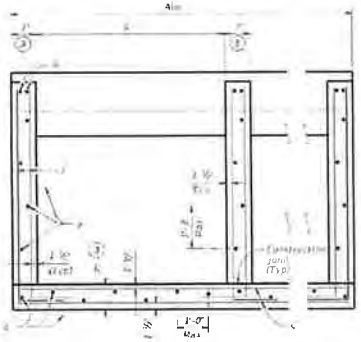


TYPICAL WINGWALL ELEVATION

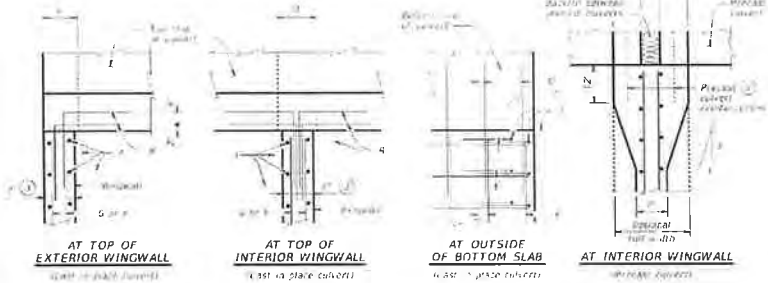


ISOMETRIC VIEW OF TYPICAL INSTALLATION

WING DIMENSION CALCULATIONS:



SECTION A-A



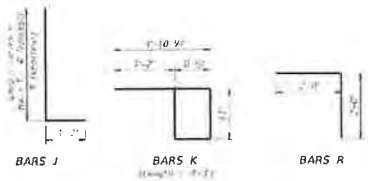
AT TOP OF EXTERIOR WINGWALL

AT TOP OF INTERIOR WINGWALL

AT OUTSIDE OF BOTTOM SLAB

AT INTERIOR WINGWALL

PLAN VIEWS OF CORNER DETAILS



BARS J BARS K BARS R

TABLE OF REINFORCING BAR SIZES AND SPACING

Bar	Size	Spacing
E	#4	12" Max.
G	#4	Match E or B
J	#4	1'-0" Max.
K	#4	1'-0" Max.
M	#5	As shown
N	#5	As shown
P	#4	12" Max.
R	#4	1'-0" Max.
S	#4	As shown

(1) Provide 1 on flatter slope.

(2) [illegible] elsewhere in the plans. For culverts [illegible] and curbs taller than 1'-0", refer to [illegible] Details (by Extended Curb Design, [illegible]).

(3) Wingwall and slab thickness may be [illegible] the adjacent barrel wall [illegible]. Where [illegible] no change is required to the barrel reinforcing. Where [illegible] a new bar lap length is required, a new bar lap length is required, a new bar lap length is required.

(4) For culverts with [illegible] provide 3" projection [illegible] No chamfer is required [illegible].

(5) For culverts with [illegible] may be omitted. Where [illegible] Connection detail on the Box Culvert Layout and Miscellaneous Details (by P.M.D.) sheet [illegible].

MATERIAL NOTES:

[illegible] Provide concrete [illegible] 4,000 psi. Provide [illegible] conforming to ASTM A615 (Type I) [illegible] ASTM A706 or AASHTO M 31 or API 5L/5L52. Provide [illegible] A36 or [illegible]. Galvanize all steel [illegible] after fabrication [illegible] as specified on plans. After fabrication, [illegible] Specification for Structural Steel Buildings" [illegible] Texas Transportation Institute [illegible].

GENERAL NOTES:

[illegible] AASHTO LRFD [illegible] Specifications. The safety end treatment [illegible] is not to be used in those installations where [illegible] of vehicles are likely to traverse the [illegible] to the [illegible]. Cracks [illegible] in excess of 0.01 inch [illegible] shall be sealed as required by Article 300.4 of Item 300, "Asphalt Treatments and Bases" of Texas Department of Transportation [illegible] Specifications.

The [illegible] for the safety end treatment [illegible] resulting from the [illegible] given herein are for Contractor's [illegible].

[illegible]

SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT

FOR BOX CULVERTS
(MAXIMUM Hw = 7'-0")
TYPE I – PARALLEL DRAINAGE

SETB-PD

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP'D
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	CM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	CM	05/11/2025	2911

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NTS	SAFETY END TREATMENT DETAILS	C023	0

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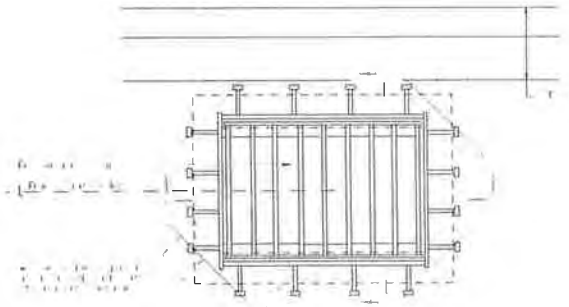
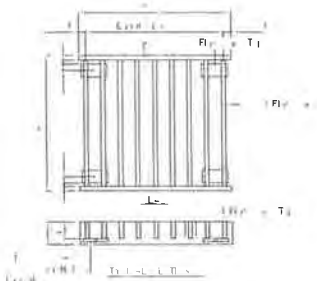
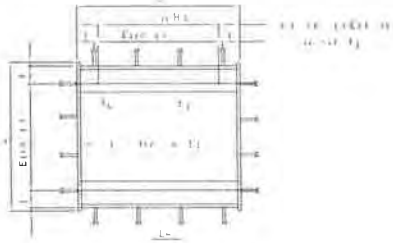
FIRM NO. 18844



PLAN



GRATE DETAIL



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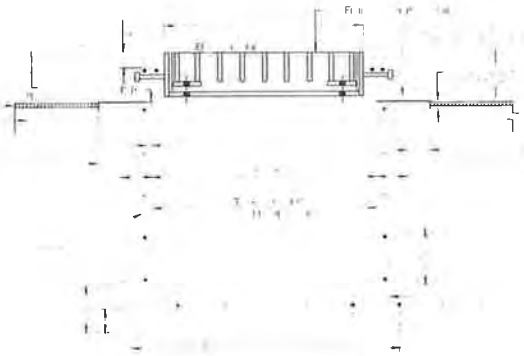
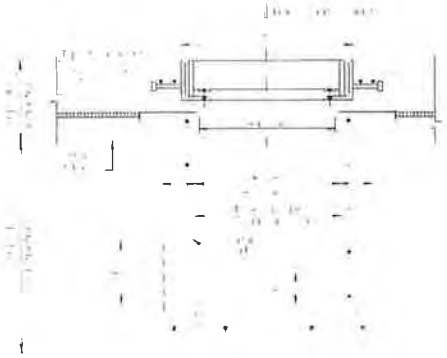
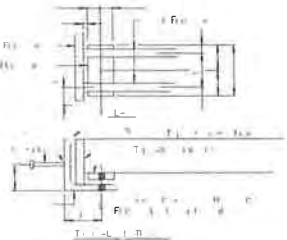


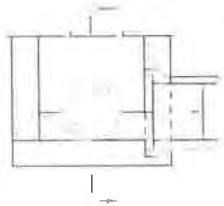
SECTION A–A



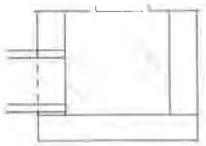
SECTION B–B



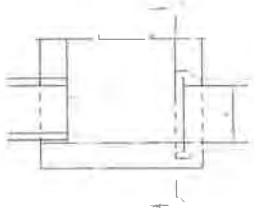
WELDMENT DETAIL



PART SECTION AT INVERT



SECTION C–C



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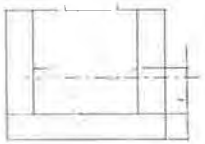

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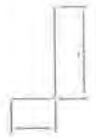


BARS J (#5)

THE PROJECT SPECIFIC DETAIL BY TXDOT

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	CM

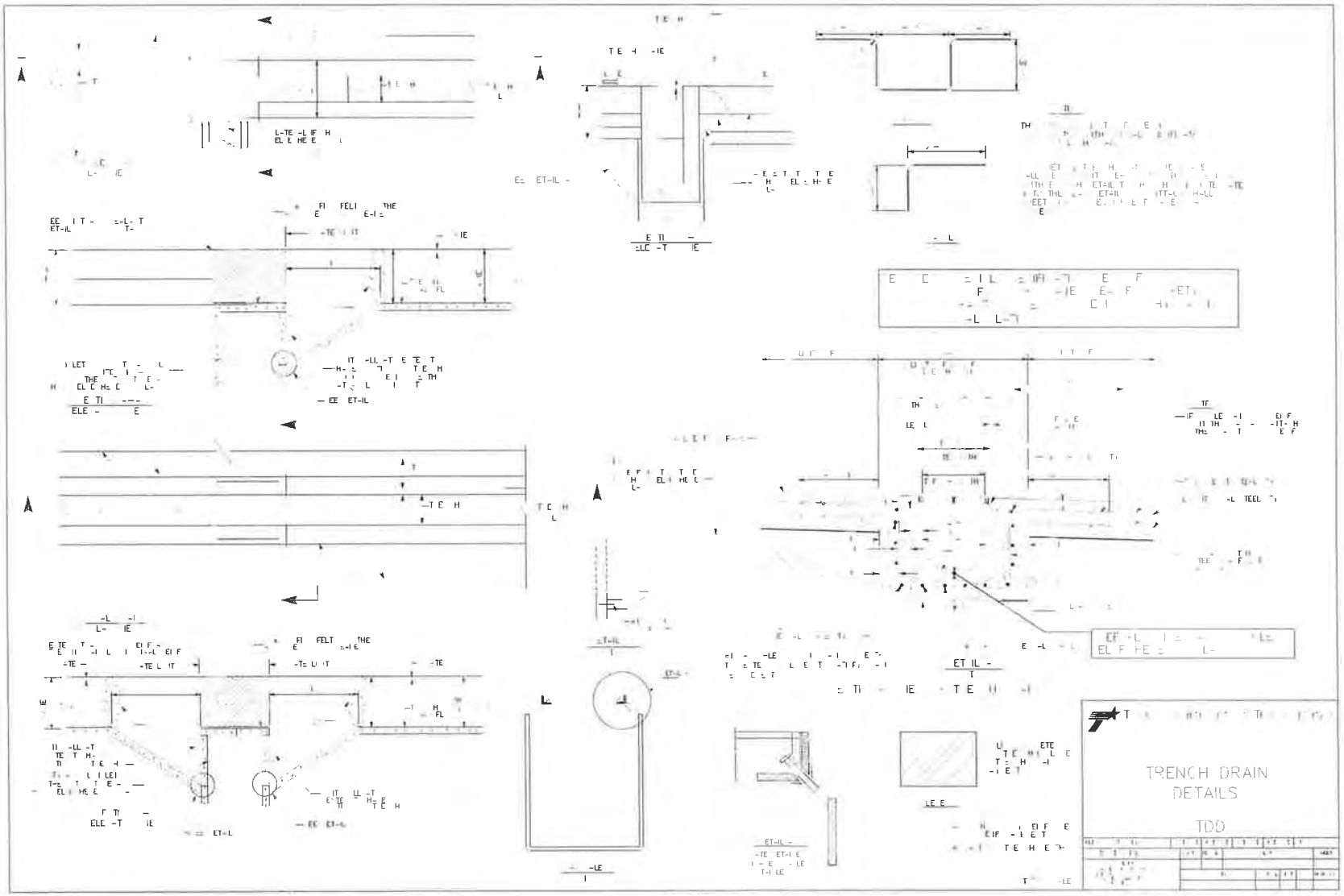
DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO
AR	MM	CM	05/11/2025	27617

SCALE	DRAWING TITLE	DRAWING NUMBER	REV.
NTS	INLET AZ TYPE	C024	0

05/11/2025

EXPRESS MART #23
2888 IH 45 SOUTH
NEW WAVERLY TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #426
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18644



TRENCH DRAIN DETAILS

TDD

DWG #	REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP
		0	05/11/2025	ISSUED FOR PERMIT	AR	MM	GM

DRAWN BY	CHECKED BY	ENGINEER	DATE	MTS PROJECT NO.
AR	MM	GM	05/11/2025	23031

SCALE	DRAWING TITLE	DRAWING NUMBER	REV
NTS	TRENCH DRAIN DETAILS	C025	0

05/11/2025

EXPRESS MART #23
2988 IH 45 SOUTH
NEW WAVERLY, TX 77358

MTS ENGINEERING & DESIGN
9950 WESTPARK DR SUITE #428
HOUSTON TEXAS 77063
(281) 404-4438 (281) 253-4849
FIRM NO. 18844

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name Ruth Filar	Application Number:
A2. Property Owner's Street Address [redacted]	Date of Submittal 7-11-25
City [redacted] State [redacted] ZIP Code [redacted]	
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]
A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.) Property ID# 19338	

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT
(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. Survey and Abstract	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page
William O'Neal Survey, Abstract No.424	19338	00000442/Vol 1107, Pg 89

B4. Existing or Proposed Name of Subdivision	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No)
NA	NO

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS
Please list any supporting documents or submittals included with the variance request as attachments.

Description of Attachment(s)	Exhibit #
C.1 Parent Tract Survey	1
C.2 Proposed New Tracts	2
C.3 Signed Agreement Among Current Owners for North Tract Division w/ Easement	3
C.4 Road Contractor Confirmation on Road Width Needed and Quote	4

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) 11.1 of the Subdivision Regulations of Walker County, Texas as follows:

All lots, including those subject to an exception, must have the minimum frontage length, as described in Appendix B2.1, on existing County road unless otherwise specifically allowed by these regulation.

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?

Yes _____ No X

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

The existing parent tract includes a 30 ft easement on the west side extending the entire length of the tract. The current owners are asking to keep this easement for use of all tracts as the land will be divided amonst family and not to be sold. As the property is long and the tract sizes are restricted on allotted acreage per tract, any required frontage for the North most tract would require a majority of the acreage to be used as a frontage road. We also ask for a variance for the east side flag to only 25ft width to reduce the acreage allotted to frontage access due to the tract length. We have received confirmation from a dirt road contractor that 25ft is sufficient especially since it is a straight line.

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?

Yes X No _____

If yes please explain below:

The proposed division of the tracts has been a final agreement in more than a year's worth of delibration between three siblings that currently jointly own this property through inheritance. They have gone through consultations and a mediation to come to this final agreement and have signed off on this as a binding contract that they all agree to. Any changes would result in mental anguish and suffering and further strain family relations.

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?

Yes _____ No X Please list the additional measures below.

SECTION F – SUBDIVISION APPLICATION DETAILS

(The # of Proposed Lots shall include any Reserve or Remainders Created by the Subdivision)

F1. Original Acreage	F2. Original # of Tracts	F3. # of Proposed Lots	F4. Proposed Name of Subdivision
23.066	1	3	NA

SECTION G – ENGINEERING AND PROPOSED IMPROVEMENTS

G1. Will the proposed subdivision utilize a public water system?		Yes	✓	No
G2. Will the proposed subdivision utilize individual on-site sewage facilities?	X	Yes		No
G3. Will the proposed subdivision include the construction of road, drainage, or other improvements regulated by the WCSR?		Yes *	✓	No
G4. If the answer to G3 is "Yes" then what is the estimated cost of construction of all regulated improvements?				
G5. If the answer to G3 is "Yes" then what is the approximate length of all proposed roads in linear feet?				
G6. Will the proposed subdivision access from or across a Texas Department of Transportation system road?	X	Yes		No

SECTION H – CERTIFICATIONS AND ACKNOWLEDGEMENTS

I, the below signed individual, am the legal owner or legal representative of the owner of the property described in this application, and do hereby certify that the information contained in this application is a true and correct under penalty of law. The below signature further represents my understanding, agreement, and acceptance of the following items:

1. Authorization is hereby given to Walker County and its representatives to enter onto the private property described in the application for the purpose of inspection and regulation related to this application and the applicable regulations.
2. I have read and understand the requirements of the Walker County Subdivision Regulations, and understand it is my responsibility to comply with all the requirements therein.
3. The completion and acceptance of this application by Walker County in no way shall be construed as a guarantee that the proposed construction will be approved for installation. This application may be rejected as incomplete for 10 business days after the original submittal of the application at any point without any refund of the application fee. This includes that no refund shall be given for applications submitted incomplete or applications withdrawn. The applicant also recognizes that additional resubmittals, applications, or responses after the initial application may result in a fee increase to the original application fee, and that any increase in the fee must be paid when the additional submittal is submitted.
4. The completion and acceptance of this application is not an authorization to perform any activity. A final approval of the application and approval of the plat for filing must be made in writing prior to any subdivision of property or filing of any plat. I understand that any approvals made related to this application are made subject to the minimum requirements of the Walker County Subdivision Regulations.
5. If no direct variance is granted to the Walker County Subdivision Regulations or other State of Federal requirements then no approval under this application shall be construed to provide a waiver to compliance with those regulations and the Owner/Applicant is still fully responsible for compliance with said regulations.
6. The fee for the subdivision applications may be calculated based on variable factors including cost of construction, number of lots, length of road centerline, and the quantity of revisions, replacement applications, and responses. The initial calculated fee charged at the original submittal may increase during the application timeline if any of these variables change or are calculated in error. Any increase in the fee must be paid as part of any submittal of a revision, replacement, or response to an application.
7. I hereby release, indemnify, and hold harmless Walker County and its employees and agents for any and all claims, costs, or liabilities, expressly including alleged negligence, or for any damages to property or persons arising from the inspection, construction, development, design, or review related to this application or occurring under any permit issued in relation to this application. I understand that I and my agents are completely and wholly responsible for the design and construction of all necessary improvements to local, State, and Federal Standards.
8. I certify that all necessary permits from those Federal, State, or local government agencies (including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 (Corps of Engineers), Texas Commission on Environmental Quality, Texas Historical Commission, United States Fish and Wildlife (Endangered Species), Texas Water Development Board, TXDOT, and City Approvals, etc.) have been obtained.

Signature	Date	Printed Name
Ruth Filar	7-10-25	Ruth Filar

THE STATE OF Texas § COUNTY OF Harris §

Before me Sharon K. Lawrence a notary public on this day personally appeared Ruth Filar, known to me (or proved to me) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he executed the same for purposes and consideration there in expressed.

Given under my hand and seal of officer this 10th Day of July, 2025

SHARON K LAWRENCE
Notary ID #3158585
My Commission Expires
October 9, 2025

Sharon K. Lawrence NOTARY STATE OF TEXAS
my commission exp 10/9/25

Initials of Applicant RF

Exhibit #1

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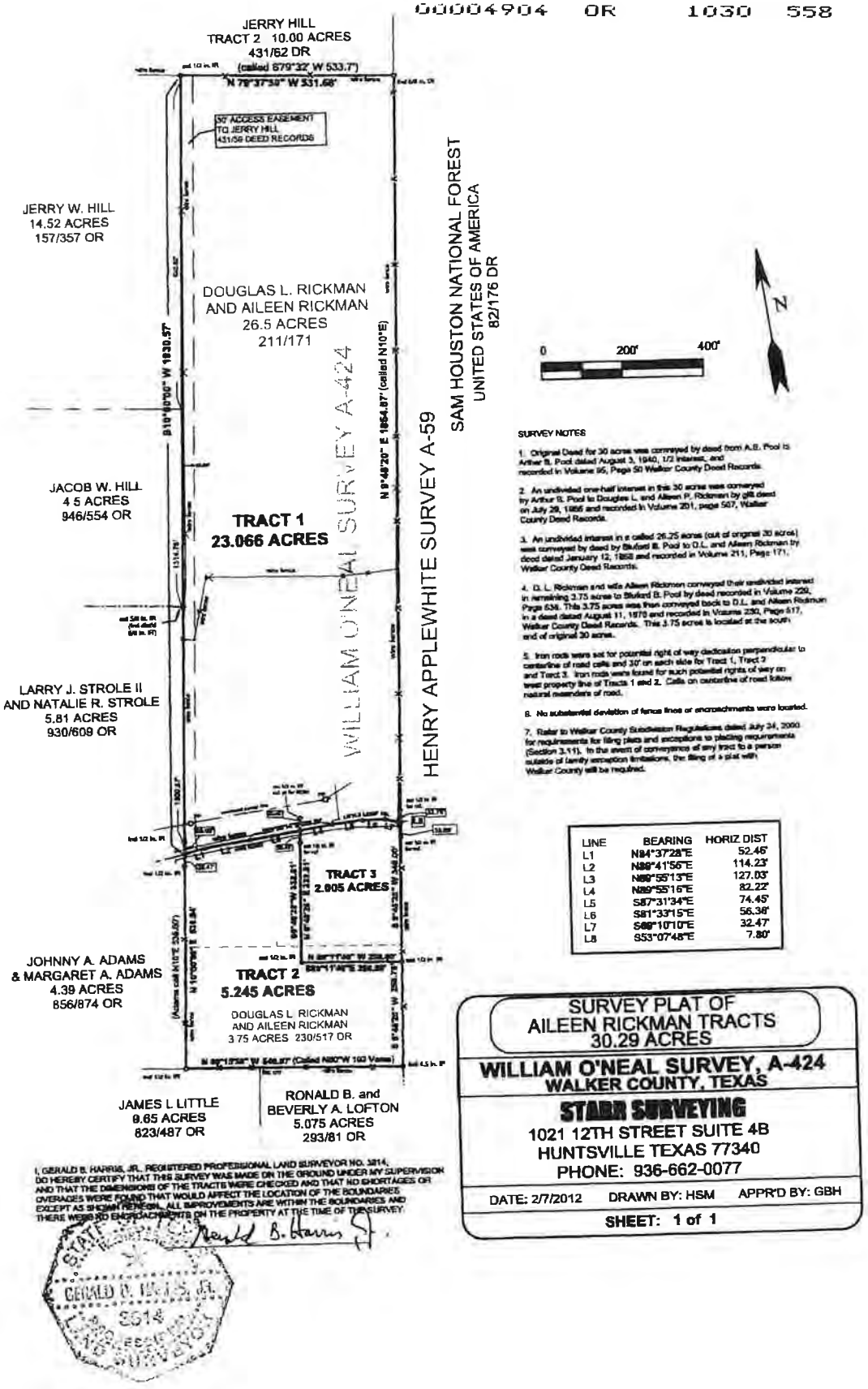
00004904 OR 1030 558



SURVEY NOTES

1. Original Deed for 30 acres was conveyed by deed from A.E. Pool to Arthur B. Pool dated August 3, 1940, 1/2 interest, and recorded in Volume 95, Page 50 Walker County Deed Records.

2. An undivided one-half interest in this 30 acres was conveyed by Arthur B. Pool to Douglas L. and Aileen P. Rickman by gift deed on July 29, 1986 and recorded in Volume 201, page 507, Walker County Deed Records.

3. An undivided interest in a called 26.25 acres (out of original 30 acres) was conveyed by deed by Buford B. Pool to D.L. and Aileen Rickman by deed dated January 12, 1988 and recorded in Volume 211, Page 171, Walker County Deed Records.

4. D. L. Rickman and wife Aileen Rickman conveyed their undivided interest in remaining 3.75 acres to Buford B. Pool by deed recorded in Volume 229, Page 636. This 3.75 acres was then conveyed back to D.L. and Aileen Rickman in a deed dated August 11, 1978 and recorded in Volume 230, Page 517, Walker County Deed Records. This 3.75 acres is located at the south end of original 30 acres.

5. Iron rods were set for potential right of way dedication perpendicular to centerline of road calls and 30' on each side for Tract 1, Tract 2 and Tract 3. Iron rods were found for such potential rights of way on west property line of Tracts 1 and 2. Calls on centerline of road follow natural meanders of road.

6. No substantial deviation of fence lines or encroachments were located.

7. Refer to Walker County Subdivision Regulations dated July 24, 2000 for requirements for filing plats and exceptions to platting requirements (Section 3.11). In the event of conveyance of any tract to a person outside of family exception limitations, the filing of a plat with Walker County will be required.

LINE	BEARING	HORIZ DIST
L1	N84°37'28"E	52.45'
L2	N89°41'56"E	114.23'
L3	N89°55'13"E	127.03'
L4	N89°55'16"E	82.22'
L5	S87°31'34"E	74.45'
L6	S81°33'15"E	56.36'
L7	S69°10'10"E	32.47'
L8	S53°07'45"E	7.80'

I, GERALD B. HARRIS, JR., REGISTERED PROFESSIONAL LAND SURVEYOR NO. 3514, DO HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND UNDER MY SUPERVISION AND THAT THE DIMENSIONS OF THE TRACTS WERE CHECKED AND THAT NO SHORTAGES OR OVERAGES WERE FOUND THAT WOULD AFFECT THE LOCATION OF THE BOUNDARIES EXCEPT AS SHOWN HEREON. ALL IMPROVEMENTS ARE WITHIN THE BOUNDARIES AND THERE WERE NO ENCROACHMENTS ON THE PROPERTY AT THE TIME OF THIS SURVEY.

Gerald B. Harris Jr.

GERALD B. HARRIS, JR.
3514
REGISTERED
PROFESSIONAL
LAND SURVEYOR

SURVEY PLAT OF
AILEEN RICKMAN TRACTS
30.29 ACRES

WILLIAM O'NEAL SURVEY, A-424
WALKER COUNTY, TEXAS

STARR SURVEYING
1021 12TH STREET SUITE 4B
HUNTSVILLE TEXAS 77340
PHONE: 936-662-0077

DATE: 2/7/2012 DRAWN BY: HSM APPR'D BY: GBH

SHEET: 1 of 1

Exhibit 'A'

Exhibit #1

Bk Vol Pg
00004904 OR 1030 559

FIELD NOTES
TRACT NO. 1 – 23.066 Acres
Out of Douglas L. and Aileen R. Rickman 26.25 Acre Tract
WILLIAM O'NEAL SURVEY, Abstract No. 424

BEING 23.066 acres, more or less, situated in the WILLIAM O'NEAL SURVEY, Abstract No. 424, Walker County, Texas and being out of and a part of a called 26.25 acre tract conveyed by Bluford B. Pool to Douglas L. Rickman and wife, Aileen R. Rickman by deed dated January 12, 1968 and recorded in Volume 211, Page 171, Walker County Deed Records, the same 26.25 acre tract being a part of a called 30 acre tract conveyed by Arthur B. Pool to Douglas L. Rickman and Aileen R. Rickman and described in a deed dated July 29, 1966, and recorded in Volume 201, Page 507, Walker County Deed Records, said 23.066 acres being described by metes and bounds as follows:

BEGINNING at the northeast corner of the herein described 23.066 acre tract, the same being the northeast corner of the 26.25 acre Rickman tract, being also the southeast corner of a 10.00 acre tract described as "Tract 2" in a deed conveyed by Douglas L. Rickman and Aileen R. Rickman to Jerry Hill, dated June 18, 1984, and described in Volume 431, Page 62, Walker County Deed Records, and also being in the east line of said WILLIAM O'NEAL SURVEY and a west line of the HENRY APPLEWHITE SURVEY, Abstract A-59, said west line being the west line of a tract more particularly described as "Except No. 4, Tract J1-1", in a deed from Delta Land and Timber Company to the United States of America, dated December 27, 1935, and described in Volume 82, Page 176, Walker County Deed Records, a 5/8 inch iron rod found at a fence corner;

THENCE N 79°37'59" W, generally along a fence line and with the common boundary of the 26.25 acre Rickman tract and the 10.00 acre Hill tract, 531.68 feet to a ½ inch iron rod set for the northwest corner of the herein described 23.066 acre tract, the same being the northeast corner of a called 14.52 acre tract conveyed by deed by Betty Little Childress to Jerry W. Hill, dated December 5, 1991, and described in Volume 157, Page 357, Walker County Official Records;

THENCE S10°00"W ,generally with a fence line and along the common boundary of said 26.25 acre Rickman tract and 14.52 acre Hill tract, passing a ½ inch iron rod found for the southeast corner of Hill tract at 823.62 feet, same being the northeast corner of a 4.50 acre tract conveyed to Jacob W. Hill by deed dated March 3, 2010 and described in Volume 946, Page 554, Walker County Official Records, and passing at 1314.76 feet a 5/8 inch rod found disturbed and reset for the southeast corner of the Jacob Hill tract and the northeast corner of a 5.81 acre tract conveyed by deed from Thomas M. Weaver and Naomi L. Weaver to Larry J. Strole II and Natalie R. Strole, dated February 23, 2010 and described in Volume 930, Page 609, Walker County Official Records, passing a ½ inch iron rod found for reference at 1900.57 feet, and continuing a total of 1930.57 feet to a point in the centerline of Little Loop Road for the southwest corner of the herein described 23.066 acre tract, same being also the southeast corner of said 5.81 acre Strole tract and the northeast corner of a 4.39 acre tract conveyed to Johnny H. Adams and Margaret A. Adams by Fred W. Sawyers et. al. by deed dated April 30, 2008, and described in Volume 856, Page 874, Walker County Official Records;

THENCE in an easterly direction along centerline of said road with the following calls:

1) N 84°37'28" E, 52.46 feet, a 60d nail;
2) N 87°41'56" E, 114.23 feet, a 60d nail;
3) N 89°55'14" E, 209.25 feet, a 60d nail;
4) S 87°31'34" E, 74.45 feet, a 60d nail;
5) S 81°33'15"E, 56.36 feet, a 60d nail;
6) N 69°10'10" E 32.47 feet, a 60d nail;

Exhibit 'A'-1

Exhibit #1

THENCE along centerline of said road S 53°07'48" E 7.80 feet to a point in said road for southeast corner of herein described 23.066 acre tract, same being in the east line of said 26.25 acre Rickman track and the east line of O'NEAL SURVEY, and also in a west line of APPLEWHITE SURVEY, said point being N9°48'20"E 606.76 feet from a 1 ½ inch iron pipe found for the southeast corner of said 30.00 acre Rickman tract.

THENCE N9°48'20"E , passing at 32.76 a ½ inch rod set for reference, continuing a total of 1854.57 feet generally with a fence line and along the east line of the WILLIAM O'NEAL SURVEY and west line of the HENRY APPLEWHITE SURVEY to the POINT OF BEGINNING, containing 23.066 acres.

Gerald B. Harris Jr.

GERALD D. HARRIS JR.
5914

Gerald B. Harris, Jr.
Starr Surveying
1021 12th. Street, Ste 4B
Huntsville, Texas 77340
936-435-1881

Exhibit 'A'-2

Exhibit #1

Bk Vol Pg
2004904 OR 1030 561

FIELD NOTES

TRACT NO. 2 – 5.245 Acres

Out of Douglas L. and Aileen R. Rickman 26.25 Acre Tract and 3.75 Acre Tract

WILLIAM O'NEAL SURVEY, Abstract No. 424

BEING 5.245 acres, more or less, situated in the WILLIAM O'NEAL SURVEY, Abstract No. 424, Walker County, Texas and being out of and a part of a called 26.25 acre tract conveyed by Bluford B. Pool to Douglas L. Rickman and wife, Aileen R. Rickman by deed dated January 12, 1968 and recorded in Volume 211, Page 171, Walker County Deed Records, and a called 3.75 acre tract conveyed by Bluford B. Pool to Douglas L. Rickman and wife, Aileen R. Rickman by deed dated August 11, 1970 and recorded in Volume 230, Page 517, Walker County Deed Records, said 5.245 acres being described by metes and bounds as follows:

BEGINNING at the southeast corner of said 3.75 acre Rickman tract, the same being the southeast corner of a called 30 acre tract conveyed by Arthur B. Pool to Douglas L. Rickman and Aileen R. Rickman and described in a deed dated July 29, 1966 and recorded in Volume 201, Page 507, Walker County Deed Records, being also the northeast corner of a 5.075 acre tract conveyed by deed by Bobbie Jo Little to Ronald B. Lofton and Beverly A. Lofton, dated July 17, 1996 and described in Volume 293, Page 81, Walker County Official Records, said corner being in the east line of said WILLIAM O'NEAL SURVEY and the west line of the HENRY APPLEWHITE SURVEY, Abstract A-59, and a tract more particularly described as "Except No. 4, Tract J1-1", in a deed from Delta Land and Timber Company to the United States of America, dated December 27, 1935, and described in Volume 82, Page 176, Walker County Deed Records, a 1½ inch iron pipe found at a fence corner;

THENCE N80°15'50"W, generally along a fence line, passing at 350.80 feet the northwest corner of said 5.075 acre Lofton track, same being the northeast corner of a called 9.65 acre track conveyed to James L. Little by deed dated August 20, 2007,and described in Volume 823, Page 487, Walker County Official Records, and continuing along the south line of the 3.75 acre Rickman tract a total of 540.07 feet to a ½ inch iron rod found for the southwest corner of the herein described 5.245 acre tract, the same being the southeast corner of a 4.39 acre tract conveyed to Johnny H. Adams and Margaret A. Adams by Fred W. Sawyers et. al. by deed dated April 30, 2008, and described in Volume 856, Page 874, Walker County Official Records;

THENCE N10°00' E, generally along a fence line, passing at 506.17 feet a ½ inch iron rod found for reference, a total of 536.64 feet to a point in the centerline of Little Loop Road for northwest corner, same being the northeast corner of said 4.39 acre Adams tract and also being the southeast corner of a 5.81 acre tract conveyed by deed by Thomas M. Weaver and Naomi L. Weaver to Larry J. Strole II and Natalie R. Strole, dated February 23, 2010 and recorded in Volume 930, Page 609, Walker County Official Records;

THENCE in an easterly direction along centerline of said road with the following calls:

1) N 84°37'28" E, 52.46 feet, a 60d nail;
2) N 89°41'56" E, 114.23 feet, a 60d nail;
3) N 89°55'13" E, 127.03 feet to a point for the northerly northeast corner of herein described 5.245 acre tract;

THENCE S 9°48'20" W, across said 26.25 acre Rickman, passing at 30.45 feet a ½ inch iron rod set for reference, and passing at 289.11 feet the north line of said 3.75 acre Rickman track, continuing a total of 332.81 feet to a ½ inch iron rod set for an interior northeast corner of the herein described 5.245 acre tract;

THENCE S80°11'40" E, across said 3.75 acre Rickman tract, 250.00 feet to a ½ inch iron rod set for the easterly northeast corner of the herein described 5.245 acre tract, same being a point in the east line of said 3.75 acre Rickman tract and the WILLIAM O'NEAL SURVEY, and the west line of the APPLEWHITE SURVEY;

THENCE S9°48'20" W 258.76 feet to the POINT OF BEGINNING and containing 5.245 acres of land.

STATE OF TEXAS
REGISTERED
GERALD B. HARRIS, JR.
3914
PROFESSIONAL
LAND SURVEYOR

Gerald B. Harris, Jr.
Starr Surveying
1021 12th. Street, Ste 4B
Huntsville, Texas 77340
936-435-1881

Exhibit 'A'-3

Exhibit #1

Bk	Vol	Pg
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FIELD NOTES
TRACT NO. 3 – 2.005 Acres
Out of Douglas L. and Aileen R. Rickman 26.25 Acre Tract and 3.75 Acre Tract
WILLIAM O'NEAL SURVEY, Abstract No. 424

BEING 2.005 acres, more or less, situated in the WILLIAM O'NEAL SURVEY, Abstract No. 424, Walker County, Texas and being out of and a part of a called 26.25 acre tract conveyed by Bluford B. Pool to Douglas L. Rickman and wife, Aileen R. Rickman by deed dated January 12, 1968 and recorded in Volume 211, Page 171, Walker County Deed Records, and a called 3.75 acre tract conveyed by Bluford B. Pool to Douglas L. Rickman and wife, Aileen R. Rickman by deed dated August 11, 1970 and recorded in Volume 230, Page 517, Walker County Deed Records, said 2.005 acres being described by metes and bounds as follows:

COMMENCING at the southeast corner of said 3.75 acre Rickman tract, the same being the southeast corner of a called 30 acre tract conveyed by Arthur B. Pool to Douglas L. Rickman and Aileen R. Rickman dated July 29, 1966, and described in a deed recorded in Volume 201, Page 507, Walker County Deed Records, and also being in the east line of said WILLIAM O'NEAL SURVEY and a west line of the HENRY APPLEWHITE SURVEY, Abstract A-59, and a tract more particularly described as "Except No. 4, Tract J1-1", in a deed from Delta Land and Timber Company to the United States of America, dated December 27, 1935, and described in Volume 82, Page 176, Walker County Deed Records, a 1½ inch iron pipe found at a fence corner;

THENCE N9°48'20"E 258.76 feet, generally with the east fence line of said 3.75 acre Rickman tract and west line of APPLEWHITE SURVEY, to a ½ inch iron rod set for the POINT OF BEGINNING, said being the southeast corner of the herein described 2.005 acre tract;

THENCE N80°11'40"W 250.00 feet across said 3.75 acre Rickman tract to a ½ inch iron rod set for southwest corner of herein described 2.005 acre tract ;

THENCE N9°48'20"E, passing at 43.70 feet the north line of said 3.75 acre Rickman tract, crossing said 26.25 acre Rickman tract, passing at 302.36 feet a ½ inch iron rod set for reference, and continuing for a total of 332.81 feet to a point in the centerline of Little Loop Road for the northwest corner of the herein described 2.005 acre tract;

THENCE in an easterly direction along centerline of said road with the following calls:

1) N 89°55'16" E, 82.22 feet, a 60d nail;

2) S 87°31'34" E, 74.45 feet, a 60d nail;

3) S 81°33'15"E, 56.36 feet, a 60d nail;

5) N 69°10'10" E 32.47 feet, a 60d nail;

THENCE along centerline of said road S 53°07'48" E 7.80 feet to a point in said road for northeast corner of herein described 2.005 acre tract, same being in the east line of said 26.25 acre Rickman track and the west line of O'NEAL SURVEY, and also a west line of APPLEWHITE SURVEY.

THENCE S9°48'20" W, passing at 33.69 feet a ½ inch iron rod set for reference, and passing at 304.00 feet the northeast corner of said 3.75 acre Rickman tract, continuing a total of 348.00 feet to the POINT OF BEGINNING and containing 2.005 acres of land;

Gerald B. Harris

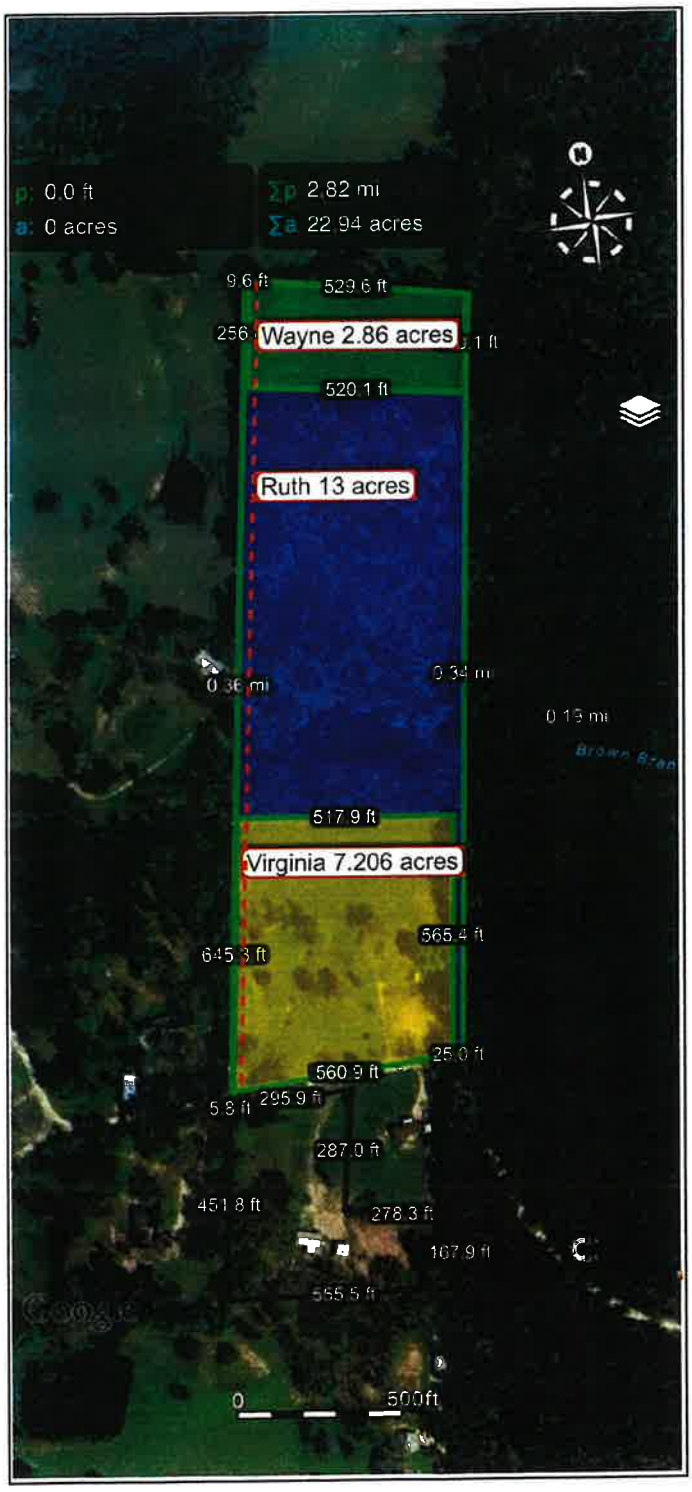
STATE OF TEXAS
REGISTERED
GERALD B. HARRIS, JR.
3914
PROFESSIONAL
LAND SURVEYOR

Gerald B. Harris, Jr.
Starr Surveying
1021 12th. Street, Ste 4B
Huntsville, Texas 77340
936-435-1881

Exhibit 'A'-4

EXHIBIT # 2

Proposed New Tracts



KEY:

- - - 30FT EASEMENT

Exhibit #3

HANEY PASCHAL & ROMOSER, P.C.
ATTORNEYS AT LAW

JACK HANEY**
P. JACOB PASCHAL
JEREMY S. ROMOSER
DEVAN D. DAWSON
SARAH E. HEBERT
MICHAEL S. FOREMAN
CHRISTOPHER THOMPSON*

*OF COUNSEL
**DECEASED

FIRST NATIONAL BANK BUILDING
1300 ELEVENTH STREET, SUITE 405
HUNTSVILLE, TEXAS 77340
TELEPHONE: (936) 295-3712
FACSIMILE: (936) 295-3714
www.HMP-Attorneys.com

April 11th, 2025

Re: Mediated Settlement Agreement: Property

This CONFIDENTIAL MEDIATED SETTLEMENT AGREEMENT (the "Agreement") is made and entered into between the Parties on the Date of Agreement, both as defined herein, and subject to the terms as follows:

- The parties agree to partition the property in accordance with Exhibit A, attached hereto
- The drawing attached as Exhibit A is intended to be an approximation. The surveyor will make the ultimate determination of the angle and end point of the boundary line.
- The surveyor will be instructed to make the parcels as close to the agreed acreage as is feasible.
- The parties agree the property distribution attached as exhibit A. Douglas Wayne Rickman agrees to take the 5.25 acres on the south side of the property and 2.86 acres on the far north side of the property. Douglas Wayne Rickman shall have an easement to access the northern most property on the far west side of the property.
- This agreement is intended to be the basic terms. Michael Foreman will draft the final, full agreement of the parties within 30 days from the date of this Agreement.
- The parties agree that any reasonable and necessary expenses to effectuate the above terms of this settlement will be split evenly, except that each party will bear their own attorney's fees.
- The parties agree to sign deeds to effectuate the transfer of ownership to the property

Exhibit #3

Approved and Agreed to:

Ruth Laverne Filar

Virginia Mae Lawson

Wayne Rickman

Exhibit #3

XA
MSF
SWR

EXHIBIT #4

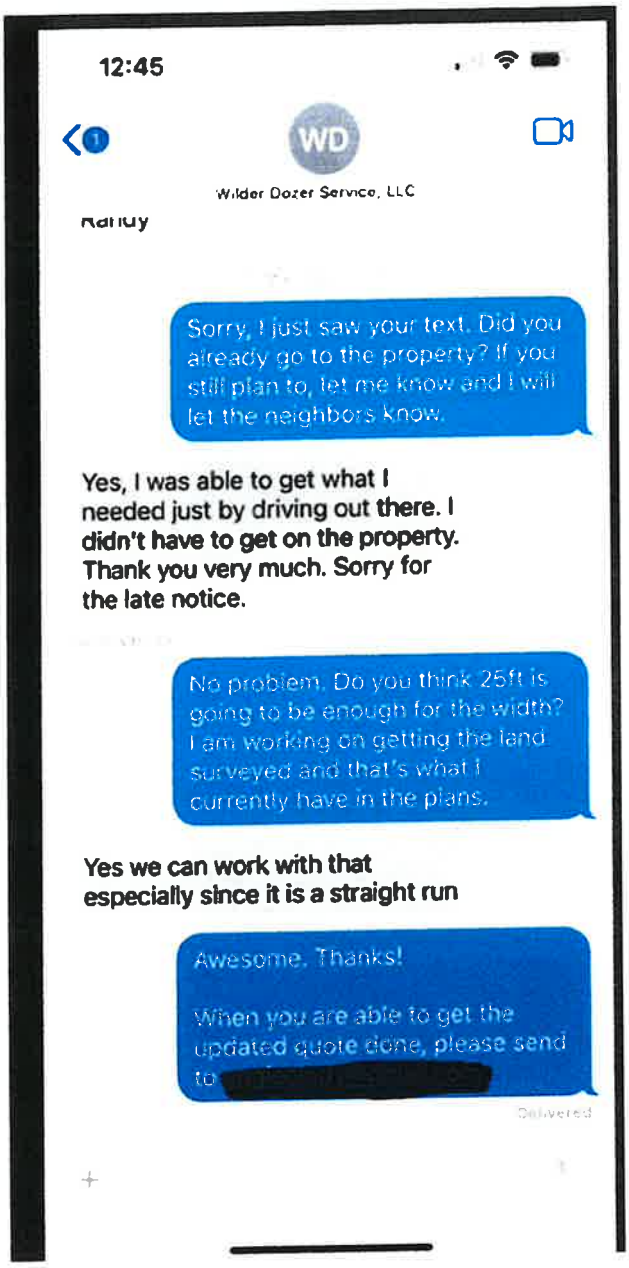

12:45
WD
Wilder Dozer Service, LLC
Randy
Sorry, I just saw your text. Did you already go to the property? If you still plan to, let me know and I will let the neighbors know.
Yes, I was able to get what I needed just by driving out there. I didn't have to get on the property. Thank you very much. Sorry for the late notice.
No problem. Do you think 25ft is going to be enough for the width? I am working on getting the land surveyed and that's what I currently have in the plans.
Yes we can work with that especially since it is a straight run
Awesome. Thanks!
When you are able to get the updated quote done, please send to
[redacted]
Delivered

EXHIBIT #4

Wilder Dozer Service, LLC
110 Allen Rd
Huntsville, TX 77320 USA
+19366619637
wilderdozerservice@gmail.com
www.WilderDozerService.com

ADDRESS
Cindy Bonura

Estimate 1005

DATE 06/02/2025

P.O. NUMBER
600' linear drive way

SERVICE DATE	ACTIVITY	QTY	RATE	AMOUNT
	Select fill for 600'X12' driveway (Loads)	85	155.00	13,175.00
	Limestone road base (Tons)	350	42.50	14,875.00
	Culverts 12"X24'	2	425.00	850.00
	Labor and equipment			14,000.00

TOTAL **$42,900.00**

Accepted By

Accepted Date

VARIANCE REQUEST TO THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS

Copy all pages of this form and all attachments for (1) community official, (2) building owner.
If any section is not applicable to the proposed development project please mark that section "NA"

SECTION A – PROPERTY INFORMATION	FOR COUNTY USE ONLY
A1. Property Owner's Name Ebanks Family Living Trust	Application Number:
A2. Property Owner's Street Address [redacted]	Date of Submittal: 7/18/2025
City: [redacted] State: [redacted] ZIP Code: [redacted]	
A3. Property Owner's Email Address [redacted]	A4. Property Owner's Telephone Number [redacted]
A5. Property Description of Parent Tract (Lot and Block Numbers, Legal Description, etc.) Wilson T (A-51), Tract 4, Acres 19.82	

SECTION B – INFORMATION FOR PROPOSED SUBDIVISION TRACT

(For projects involving multiple map panels an additional sheet may be listed below or included in an additional attachment)

B1. Survey and Abstract	B2. Tax ID Number(s) of Parent Tract	B3. Deed Volume/Page
Wilson, T (A-51)	0051-133-0-00400	Inst. 101504

B4. Existing or Proposed Name of Subdivision	B5. Is the application for a division of a lot in an Existing Platted Subdivision? (Yes/No)
Ebanks Division	No

THE ABOVE NAMED APPLICANT DOES HEREBY MAKE AN APPEAL TO THE COMMISSIONER'S COURT OF WALKER COUNTY FOR A VARIANCE TO THE REGULATORY REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF WALKER COUNTY, TEXAS.

SECTION C – LIST OF ATTACHMENTS

Please list any supporting documents or submittals included with the variance request as attachments.

Description of Attachment(s)	Exhibit #
C.1 Survey of proposed division	A
C.2	
C.3	
C.4	

SECTION D –VARIANCE REQUEST

(All Variance requests need to include the specific variance along with the Section(s) of the Regulation to which they apply)

D.1 A Variance is requested to Section(s) 3.1 and 3.11 of the Subdivision Regulations of Walker County, Texas as follows:

Seeking a variance to Section(s) 3.1 and 3.11 of WCSR to be able to move forward with sale of called Lot 2 (12.013 ac.) on attached Exhibit prior to applying for/completing minor plat requirements as required in WCSR.

SECTION E – APPLICANT'S JUSTIFICATION AND PRESENTATION FACTORS EFFECTING VARIANCE

(All variance requests to the Walker County Subdivision Regulations need to be included along with the Section(s) of the Regulation to which they apply)

E.1 Is the variance related to the design or construction of improvements to be constructed within the subdivision?

Yes _____ No X

If "Yes" the request should be accompanied by an engineer's opinion and justification for the variance.

E.2 Please explain the cause or reason the variance is being requested (attach additional pages as "Exhibit E.2"):

This parent tract is being subdivided into two parcels: a 12-acre tract that is currently under contract for sale, and a 7-acre tract that will be retained by the current owner – a right of first refusal will be granted to the purchaser of the 12 acres. Each daughter tract already contains a single-family residence with an existing septic system, and no new development or infrastructure is being proposed.

The 12-acre tract is currently under contract to close on **July 31, 2025**, and the buyers have indicated they are not willing to extend beyond that date. However, we understand that the minor platting process may not be completed until the end of August.

We are committed to completing the minor plat in full compliance with county regulations, and we respectfully ask for a temporary variance to allow the sale of the 12-acre tract to proceed before the minor plat is formally recorded. We will ensure that the plat is submitted, processed, and recorded promptly after closing, and we are not requesting any change to the platting requirements themselves—only a brief accommodation to the timing of the conveyance.

E.3 Will the failure to grant the variance requested result in any exceptional hardship to the applicant?

Yes X No _____

If yes please explain below:

The elderly seller is trying to get his estate affairs in order. He has been trying to sell this property for several years with no success. This is the first buyer willing to purchase in its current condition. This would cause the loss of a large sale if variance is not granted.

E.4 Does the applicant propose any additional conditions, mitigation, or additional requirements not addressed within the Walker County Subdivision Regulations that will or have been met by the applicant as a condition of the variance being granted?

Yes X No _____ Please list the additional measures below.

1) No further division of property to occur. 2) No development to occur. 3) Current Owner will retain Lot 1 - All 3 conditions will be met until such time as plat is applied for/approved/filed to record meeting all WCSR requirements.

SECTION F –VARIANCE(S) GRANTED

F.1 A VARIANCE TO THE WALKER COUNTY SUBDIVISION REGULATIONS IS GRANTED AS FOLLOWS:

F.2 THE FOLLOWING CONDITIONS ARE ATTACHED TO THE VARIANCE:

SECTION G - NOTICE, ACKNOWLEDGEMENT, AND CERTIFICATIONS

NOTICE

ALL DEVELOPMENT MUST BE IN STRICT COMPLIANCE WITH THE CONDITIONS STATED HEREIN AND ANY OTHER CONDITIONS STATED WITHIN THE APPLICATION OR DURING THE PRESENTATION TO COMMISSIONERS COURT. ANY VARIATION MAY RESULT IN THE IMMEDIATE SUSPENSION OR CANCELLATION OF THIS VARIANCE. VIOLATION OF THE CONDITIONS OF THIS VARIANCE MAY ALSO RESULT IN THE COMMISIONERS COURT SEEKING INJUNCTIVE RELIEF, CIVIL, OR CRIMINAL PENALTIES.

WARNING

THE APPLICANT ACKNOWLEDGES THAT HE/SHE IS RESPONSIBLE TO ENSURE THAT ANY VARIANCE DOES NOT DAMAGE OR THREATEN THE PUBLIC OR ADJACENT PROPERTIES AND COMPLIES WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

DISCLAIMER

THE COMMISSIONER'S COURT OF WALKER COUNTY AND ANY OFFICER OR EMPLOYEE OF WALKER COUNTY ARE NOT LIABLE FOR DAMAGES OR LOSS RESULTING FROM THE GRANTING OF THIS VARIANCE. THIS VARIANCE IS GRANTED IN RELIANCE UPON THE STATEMENTS AND EVIDENCE SUPPLIED BY THE APPLICANT AND HIS/HER AGENTS IN THE APPLICATION AND PRESENTATION TO COMMISSIONERS COURT.

I, Walker Powell, Agent for Ebanks Family Living Trust, do hereby acknowledge that I have reviewed the provisions, notices, warnings and disclaimers stated above and that I understand them, agree with them and intend to fully comply with them.

Signature of Owner/Applicant	Date
	7/16/25

SECTION H – ACTION ON VARIANCE BY COMMISSIONER'S COURT

After careful consideration of the reason(s) for the request of variance, the Commissioner's Court of Walker County, Texas has determined that it is within the scope of the variance procedures as outlined in the Walker County Subdivision Regulations to _____ this request for variance.

Commissioner's Court Signature	Printed Name	Date

Signature of Owner/Applicant acknowledging conditions after court action.	Date

0' 100' 200' 300'

Scale: 1" = 100'

LEGEND

●	SET 5/8" IRON ROD W/CAP "TPS 100834-00"
○	FOUND SURVEY MONUMENT (DESCRIBED)
	CALCULATED CORNER
⊕	3-INCH BRASS DISK IN 6-INCH CONCRETE COLUMN
•	CENTERLINE OF ROAD POINT
•	LOT PC/PT
I.R.	IRON ROD
W/CAP	WITH CAP
CON MON	CONCRETE MONUMENT
VOL. / PG.	VOLUME / PAGE
CAB.	CABINET
O.P.R.M.C.T.	OFFICIAL PUBLIC RECORDS OF MONTGOMERY COUNTY, TEXAS
R.P.R.M.C.T.	REAL PROPERTY RECORDS OF MONTGOMERY COUNTY, TEXAS
D.R.M.C.T.	DEED RECORDS OF MONTGOMERY COUNTY, TEXAS
M.R.M.C.T.	MAP RECORDS OF MONTGOMERY COUNTY, TEXAS
M.C.A.D.	MONTGOMERY COUNTY APPRAISAL DISTRICT
C.F. NO.	CLERK'S FILE NUMBER
R.O.W.	RIGHT-OF-WAY
B.L.	BUILDING LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
FND	FOUND
(1)	BLOCK NUMBER
[A]	RESERVE
	CENTERLINE OF ROAD
	APPROXIMATE SURVEY LINE
	APPROXIMATE 100-YEAR FLOODPLAIN
	EASEMENT
	BUILDING LINE

EASEMENT LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	N03° 34' 40"E	157.45'
L2	N64° 41' 27"E	80.39'
L3	N13° 09' 58"E	86.38'
L4	S13° 09' 58"W	87.75'
L5	S64° 41' 27"W	80.66'
L6	S03° 34' 40"W	170.37'

EASEMENT CURVE TABLE					
CURVE #	RADIUS	ARC LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	78.71'	77.09'	056° 06' 57"	N38° 04' 26"E	74.05'
C2	69.51'	55.73'	045° 56' 07"	N42° 23' 12"E	54.25'
C3	234.54'	108.36'	026° 28' 13"	N26° 49' 46"E	107.40'
C4	204.54'	92.15'	025° 48' 45"	S26° 31' 51"W	91.37'
C5	99.51'	81.38'	046° 51' 14"	S41° 49' 06"W	79.13'
C6	48.71'	48.80'	057° 24' 00"	S37° 49' 21"W	46.79'

11,959 ACRES
U S FORESTRY
NO DEED FOUND

S45°43'06"E - 600.30'

19.82 ACRES
VOYAGER GROUP LTD
C.F. NO. 49337 O.P.R.S.J.C.T.

N44°50'09"E - 1473.72'

LOT 2
12.013 ACRES

171.90'

812.83'

N44°49'02"E - 648.80'

30.10'

S45°40'00"E - 557.50'

C3
C4
L3
L4
C2
L2
C5
L5
C1
C6
L1
L6

30' ACCESS & UTILITY EASEMENT

S44°20'34"W - 1334.59'

LOT 2
BLOCK 1

MINOR PLAT
THE EBANKS FAMILY TRUST
25.52 ACRE TRACT

LOT 4
7.381 ACRES

51.67'
25' B.L.
16' U.E.
N59°47'28"W - 382.87'
331.20'
N59°47'28"W - 390.70'
0.428 ACRE DEDICATED TO RIGHT-OF-WAY
32.44'
N63°28'24"W - 182.10'
N63°28'24"W - 255.82'
N63°28'24"W - 246.18'
51.67'
490.25'

14.64 ACRES
DENISE RENEE FLORES
VOLUME 1269 PAGE 346 D.R.S.J.C.T.

31.69 ACRES
RHONDA JENSEN
VOLUME 1269 PAGE 346 D.R.S.J.C.T.

31.73 ACRES
BRIAN S & MARY E WELBORN
VOLUME 813 PAGE 1883 D.R.S J.C.T.

INSERT PLAT TITLE

BEING A SUBDIVISION OF XXXX ACRES SITUATED IN THE XXXX SURVEY, ABSTRACT NO. XXXX, MONTGOMERY COUNTY, TEXAS.

X LOTS X BLOCKS X RESERVES (ACREAGE)
INSERT MONTH AND YEAR

Annette Olivier

From: [redacted]
Sent: Saturday, July 12, 2025 10:44 AM
To: Annette Olivier
Subject: My Family RV Park

This is Jimmy Henry, Texas MIJEN Enterprises LLC, My Family RV Park.

I would like to request a one-year extension on our building permit #2023-0157. Let me know when it will be on court.

Regards.

Jimmy
[redacted]

GTS
TECHNOLOGY SOLUTIONS

GTS Technology Solutions, Inc.
9211 Waterford Centre Blvd Suite 275
Austin, Texas 78758
Phone: 512.452.0651

QUOTE

Quote Number: **Q-04697**
Quoted Date: 05/14/2025
Expiration Date: 06/12/2025
Account Exec: Daniel Ware
Inside Sales Rep: Nicole Gottlich
nicole.gottlich@gts-ts.com
Terms: NET 30

QUOTE FOR:
Walker County

Provide group name

LINE	ITEM	DESCRIPTION	SPECIFICATIONS	CONTRACT	QTY	PRICE	EXTENDED PRICE
1	520-AARU	Dell Slim Soundbar - SB521		DIR-TSO-3763-R	1	$ 40.30	$ 40.30
2	210-BLXJ	Dell 22 Monitor - P2225H		DIR-TSO-3763-R	2	$ 170.99	$ 341.98
			Dell Limited Hardware Warranty Advanced Exchange Service, 3 Years				
3	210-BKWN	OptiPlex Small Form Factor Plus 7020 with DVD	OptiPlex Small Form Factor Plus 7020 XCTO Intel Core i7 processor 14700 vPro (33 MB cache, 20 cores, 28 threads, up to 5.4 GHz Turbo, 65W) Windows 11 Pro, English, Brazilian Portuguese PT-BR, French, Spanish Activate Your Microsoft 365 For A 30 Day Trial 16 GB: 1 x 16 GB, DDR5 M.2 2230 256GB PCIe NVMe SSD Class 35 M.2 22x30 Thermal Pad	DIR-TSO-3763-R	1	$ 1,531.01	$ 1,531.01

GTS
TECHNOLOGY SOLUTIONS

QUOTE

Quote Number: **Q-04697**

1st M.2 2280 SSD Screw
NO RAID
Intel Integrated Graphics
OptiPlex SFF Plus with 260W Bronze Power Supply
System Power Cord (Philipine/TH/US)
DVD+/-RW Bezel
8x DVD+/-RW/RAM 9.5mm Slimline Optical Disk Drive
CyberLink Media Essentials for Windows
No Media Card Reader
No Wireless LAN Card
No Additional Video Ports
Dell Pro Wireless Keyboard and Mouse - KM5221W - English - Black
Mouse included with Keyboard
No Cover Selected
Dell Additional Software
ENERGY STAR Qualified
SERI Guide (ENG/FR/Multi)
Watch Dog SRV
Quick Start Guide, OptiPlex SFF Plus
Trusted Platform Module (Discrete TPM Enabled)
Shipping Material
Shipping Label
Regulatory Label for OptiPlex SFF Plus PSU DAO
Intel® Rapid Storage Technology Driver
Intel Core i7 Processor Label
Desktop BTO Standard shipment

GTS
TECHNOLOGY SOLUTIONS

QUOTE

Quote Number: **Q-04697**

No Additional Add In Cards
No Additional Network Card
Selected (Integrated NIC included)
Custom Configuration
EPEAT 2018 Registered (Silver)
Internal Speaker
No vPro® support
Dell Limited Hardware Warranty
Plus Service
ProSupport Plus: Accidental
Damage Service, 5 Years
ProSupport Plus: Keep Your Hard
Drive, 5 Years
ProSupport Plus: Next Business Day
Onsite 5 Years
ProSupport Plus: 7x24 Technical
Support, 5 Years
Thank you for choosing Dell
ProSupport Plus. For tech support,
visit www.dell.com/contactdell or
call 1-866-516-3115

Prices do NOT include taxes, insurance, shipping, delivery, setup fees, or any cables or cabling services or material unless specifically listed above. If a customer requests expedited or special delivery, causes carrier delays or requests redelivery, customer will be responsible for any additional charges for these services directly billed by the carrier. All prices are subject to change without notice. Supply subject to availability. Dell maintains a strict zero-return policy. Therefore, purchases of incorrect quantity, specifications, items, or configurations are non-refundable and non-returnable. Please ensure that you have reviewed your quote thoroughly. ***This quote does not include the applicable sales tax for our commercial customers***	**Sales Total:** **$ 1,913.29** **Freight & Misc:** **$ 0.00** **Tax Total:** **$ 0.00** **Total (USD):** **$ 1,913.29**

Annette Olivier

From: Dan Early
Sent: Wednesday, March 19, 2025 6:12 PM
To: Annette Olivier; Andrew Isbell
Cc: IT
Subject: RE: P/D Computers

Here is the list of the Planning computers that IT is aware of. If we have missed any computers, please send us the FAS # and serial number. There are 3 surface pro tablets and 3 desktop computers that have not connected to the network in a while. The 3 offline desktops could be used to replace the 2 OptiPlex 9010 and 1 OptiPlex 9020.

Computer Name	Description	Operating System	Last Logon Time	Make	Model	Serial Number	Warranty Status	IT Recommendation
PLANNINGCONF	Conference Room	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 9010	27HJ9Y1	Ended August 31, 2018	Replace
WC11482		Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 9010	27HH9Y1	Ended August 31, 2018	Replace
WC11923	Spare	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 9020	9LTY942	Ended April 9, 2019	Replace
WC12512	JHenderson	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 7050	6KH0KH2	Ended May 26, 2022	Upgrade to Windows 11
WC12513	MMcKenzie - OLD	Windows 10 Enterprise	2/7/2024	Dell	OptiPlex 7050	6KHFJH2	Ended May 26, 2022	Upgrade to Windows 11
WC12686	AOlivier - OLD	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 7050	CTMMHQ2	Ended August 30, 2023	Upgrade to Windows 11
WC12687	JWickersham	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 7050	3TWTHQ2	Ended September 6, 2023	Upgrade to Windows 11
WC12963	KGlover	Windows 10 Enterprise	12/23/2024	Dell	OptiPlex 7080	64LTQ53	Ending September 16, 2025	Upgrade to Windows 11
WC12964	GMonjaras	Windows 10 Enterprise	3/19/2025	Dell	OptiPlex 7080	64CTQ53	Ending September 16, 2025	Upgrade to Windows 11
WC13287-LT		Windows 10 Enterprise	11/28/2023	Microsoft	Surface Pro 8	0F00GGQ221601J	Ended May 23, 2023	Upgrade to Windows 11
WC13288-LT		Windows 10 Enterprise	6/6/2024	Microsoft	Surface Pro 8	0F00GHT221601J	Ended May 23, 2023	Upgrade to Windows 11
WC13289-LT		Windows 10 Enterprise	7/3/2024	Microsoft	Surface Pro 8	0F00GEV221601J	Ended May 23, 2023	Upgrade to Windows 11
WC13483	JAlms	Windows 11 Enterprise	3/19/2025	Dell	OptiPlex 7000	JP4PBW3	Ending March 12, 2028	
WC13484	AIsbell	Windows 11 Enterprise	3/19/2025	Dell	OptiPlex 7000	9X5PBW3	Ending March 12, 2028	
WC13681	AOlivier - New	Windows 11 Enterprise	1/4/2024	Dell	OptiPlex 7010	HCKS2Z3	Ending September 23, 2028	
WC13682	MMcKenzie - New	Windows 11 Enterprise	3/19/2025	Dell	OptiPlex 7010	JCKS2Z3	Ending September 23, 2028	

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"Because Cops Deserve the Best"

www.WolfcomUSA.com

Honor - Courage - Integrity
Above All Else

QUOTE

SQ-00014523

PRICE BEAT GUARANTEE
Send us any Competitor's Quote and We'll BEAT IT!

Customer Name	ECU- Walker County DA- TX
Customer Address Line	1313 University Ave
Customer City	Huntsville
Customer State/Region	TX
Customer Country	United States

Created By	Marko
Quote Date	05/29/2025
Expires	09/30/2025
Tax ID Number	90-0116535
DUNS Number	185957425
Cage Code	722M6

Image	Item Code	Description	Comments	Qty	Sales Price	Discounted Pr	Total
	0178	Halo 2.0 Body Worn Camera Includes: 360-Degree Clip	2-year warranty excluding clips	2.00	650.00	650.00	1,300.00
	0243	Halo 2.0 KF Magnetic Mount		2.00	99.00	99.00	198.00

Shipping	Price
Shipping	12.99

Sub Total	1,498.00
Shipping	12.99
Tax Total	0.00
Total	1,510.99

Comments: