

MINUTES
BROOKSHIRE-KATY DRAINAGE DISTRICT

August 14, 2023

The Board of Supervisors of Brookshire-Katy Drainage District (the "District") met in regular session, open to the public, at 7:00 p.m. at 1111 Kenney Street, Brookshire, Texas, inside the boundaries of the District, and the roll was called of the members of the Board:

Arnold England	President
Pat Keeling	Vice President
David Welch	Secretary
Blake Beckendorff	Supervisor
John Chisum	Supervisor

and all of the above were present except Supervisor Welch, thus constituting a quorum.

Also attending the meeting were Stan Kitzman, General Manager of the District; Buddy Brand, Assistant General Manager of the District; Wendy Sidwell, District Administrator; Rod Pinheiro, P.E., Steve Berkenhoff, P.E., Michael McCarthy, P.E., of Quiddity Engineering ("Quiddity" or "Engineer"); Blair Bozoarth of Sunterra Development; Brooke Bacuetes of Waller County; Chance Vinklarek, P.E., of LJA Engineering, Inc.; and Andrew P. Johnson, III, and William Petrov, attorneys, and Mirna Croon, paralegal, of Johnson Petrov, LLP ("Johnson Petrov" or "Attorney").

Agenda Item No. 2
INVOCATION AND PLEDGE OF ALLEGIANCE

The meeting was opened with the Invocation and Pledge of Allegiance.

Agenda Item No. 3
PUBLIC COMMENT

There was no public comment.

Agenda Item No. 4
MINUTES OF JULY 10, 2023 BOARD MEETING, AND JULY 24, 2023 SPECIAL MEETING

Upon motion by Supervisor Keeling, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board approved the minutes of the July 10, 2023 Board meeting, and July 24, 2023 Special Meeting.

Agenda Item No. 5
TEXAS COUNTY & DISTRICT RETIREMENT SYSTEM ("TCDRS") - RETIREMENT 2024 CONTRIBUTION RATE

Ms. Sidwell reviewed the TCDRS Plan Assessment for Plan Year 2024, a copy of which is attached hereto as Exhibit "A". Ms. Sidwell stated that the TCDRS representative recommended no changes to the current benefits plan.

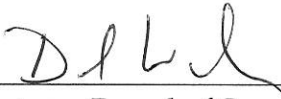
Upon motion by Supervisor Beckendorff, seconded by Supervisor Keeling, after full discussion and with all Supervisors present voting aye, the Board voted to make no changes to the TCDRS Plan for Year 2024 continuing with retirement contribution rate of 9 percent, retirement matching rate of 6 percent; and to increase the retirement contribution rate for employees to 7 percent.

SIGNED this 11th day of SEPTEMBER 2023.



President, Board of Supervisors

ATTEST:



Secretary, Board of Supervisors

- | | |
|-------------|--------------------------|
| Exhibit "A" | TCDRS Plan |
| Exhibit "B" | Engineering Report |
| Exhibit "C" | General Manager's Report |
| Exhibit "D" | Financial Report |

Agenda Item No. 6

SERVICE AGREEMENT WITH CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
("SERVICE AGREEMENT")

Upon motion by Supervisor Beckendorff, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board approved the Service Agreement for the meter pole installation at the new Administration Building at a cost of \$24,487.

Agenda Item No. 7

ENGINEER'S REPORT

Mr. McCarthy reviewed the Engineer's Report, a copy of which is attached hereto as Exhibit "B".

- (a) Upon motion by Supervisor Keeling, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board approved Permit Application No. 2023-18- Final Drainage Plans for Cardiff Business Park Proposed Office Warehouse Paving and Drainage to Serve Proposed Lot 2 as recommended by Quiddity.
- (b) - (c) Upon motion by Supervisor Chisum, seconded by Supervisor Keeling, after full discussion and with all Supervisors present voting aye, the Board (i) approved Permit Application No. 2022-102 for Safrin Jordan Ranch, as recommended by Quiddity; and (b) approved Detention Facilities Maintenance Agreement between the District and Safrin, Inc. in connection with Permit Application No. 2022-102.
- (d) Upon motion by Supervisor Chisum, seconded by Supervisor Keeling, after full discussion and with Supervisor Beckendorff voting nay, the Board approved Permit Application for Sunterra, Phase V Drainage Impact Analysis, as recommended by Quiddity.
- (e) - (f) Upon motion by Supervisor Keeling, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board (i) approved Preliminary Plat for West Katy Warehouse Unrestricted Reserve A Replat No. 1 - Preliminary Plat, as recommended by Quiddity; and (ii) the Detention Facilities Maintenance Agreement with Childress Family Investments in connection with West Katy Warehouse - Permit No. 2023-23.
- (g) Upon motion by Supervisor Chisum, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board waived the District's drainage fees estimated to be \$1,000 to 1,500 for the City of Katy - Davies Easement.
- (h) Mr. Bozoarth updated the Board on the Sunterra Development. He reported that Sections IV and V will start construction simultaneously in November 2023. He also stated that the Sunterra Development is the number one selling master-planned community in Houston and the number three selling master-planned community in the nation.

Agenda Item No. 8
GENERAL MANAGER'S REPORT

Next, Mr. Brand reviewed the General Manager's Report, a copy of which is attached hereto as Exhibit "C". Discussion regarding violations of District rules by the Awry Ready Mix Concrete was tabled until later in the meeting.

Next, upon motion by Supervisor Chisum, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board scheduled the budget workshops for August 21, 2023 at 8:30 a.m. and August 23, 2023 at 8:30a.m. and further set the Public Hearing on Proposed Tax Rate for Monday, September 11, 2023 at 7:00p.m.

Agenda Item No. 9
FINANCIAL REPORT

Ms. Sidwell presented to and reviewed with the Board the July 2023 bills. Upon motion by Supervisor Beckendorff, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board approved paying the July 2023 bills.

Ms. Sidwell then presented to and reviewed with the Board the Financial Report, a copy of which is attached hereto as Exhibit "D". Upon motion by Supervisor Beckendorff, seconded by Supervisor Chisum, after full discussion and with all Supervisors present voting aye, the Board approved the Financial Report along with checks listed therein.

Next, upon motion by Supervisor Beckendorff, seconded by Supervisor Keeling after full discussion and with all Supervisors present voting aye, the Board authorized transferring the net amount of \$392, 931.27 of the New Facilities Budget Line item from the General Fund to Building Fund.

Agenda Item No. 8 (continued)
GENERAL MANAGER'S REPORT

Mr. Petrov reviewed a draft Notice of Violation of the District's Rules and Regulations for Awry Ready Mix Concrete Plant ("Awry"). The Board also reviewed the Awry Ready Mix Concrete Plant Detention Pond Inspection Report prepared by Quddity Engineering dated July 14, 2023. It was reported that the Waller County Environmental Department inspected the plant after receiving several complaints. The District found several violations of the Permit issued in 2018. The Board discussed the violations at length.

Next, upon motion by Supervisor Chisum, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board (i) accepted the Awry Ready Mix Concrete Plant Detention Pond Inspection Report dated July 14, 2023; and (ii) authorized the General Manager to execute and send the Notice of Violation to Awry.

ADJOURNMENT

With no additional matters to discuss, upon motion by Supervisor Chisum, seconded by Supervisor Keeling, and with all Supervisors voting aye, the Board adjourned the meeting at 9:14 p.m.

[EXECUTION PAGE FOLLOWS]



Exhibit "A"

Plan Assessment for Plan Year 2024
Brookshire - Katy Drainage District – 554
Participation Date – 2/1/1987

It's that time of year again — time to look at your TCDRS retirement plan and decide whether or not your benefits are adequate and affordable. This plan assessment will give you an overview of the benefits you provide as well as how much it will cost to provide these benefits in the upcoming plan year.

2024 Plan

Basic Plan Options

Employee Deposit Rate	7%
Employer Matching	160%

Retirement Eligibility

Age 60 (Vesting)	10 years of service
Rule of	80 years total age + service
At Any Age	30 years of service

Optional Benefits

Partial Lump Sum	No
Group Term Life	None

Retirement Plan Funding

Total Normal Cost Rate	13.57%
Employee Deposit Rate	<u>-7.00%</u>
Employer-Paid Normal Cost Rate	6.57%
UAAL / (OAAL) Rate	<u>1.79%</u>
Required Rate	8.36%
Elected Rate	9.00%

Total Contribution Rate

Retirement Plan Rate	9.00%
(greater of required and elected rate)	
Group Term Life Rate	<u>N/A</u>
Total Contribution Rate	9.00%

Valuation Results (Dec. 31, 2022)

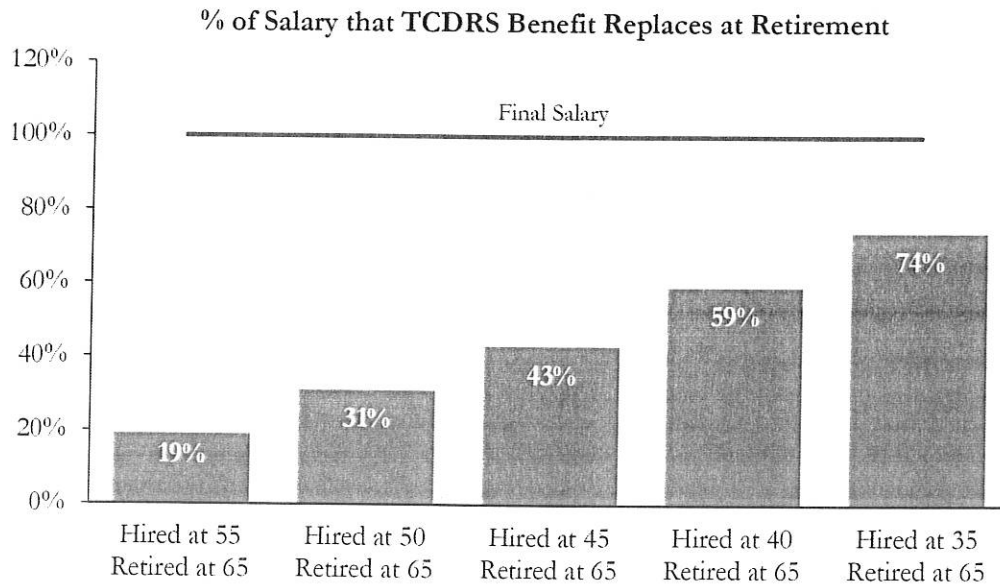
Actuarial Accrued Liability	\$1,329,948
Actuarial Value of Assets	<u>\$1,195,263</u>
Unfunded / (Overfunded) AAL	\$134,685
Funded Ratio	89.9%

Notes:

No COLAs have been adopted.

What You Are Providing

The TCDRS benefit is based on employee deposits, which earn 7% compound interest each year, and employer matching at retirement. The following chart shows the estimated TCDRS benefit as a percentage of final salary prior to retirement for a new hire:

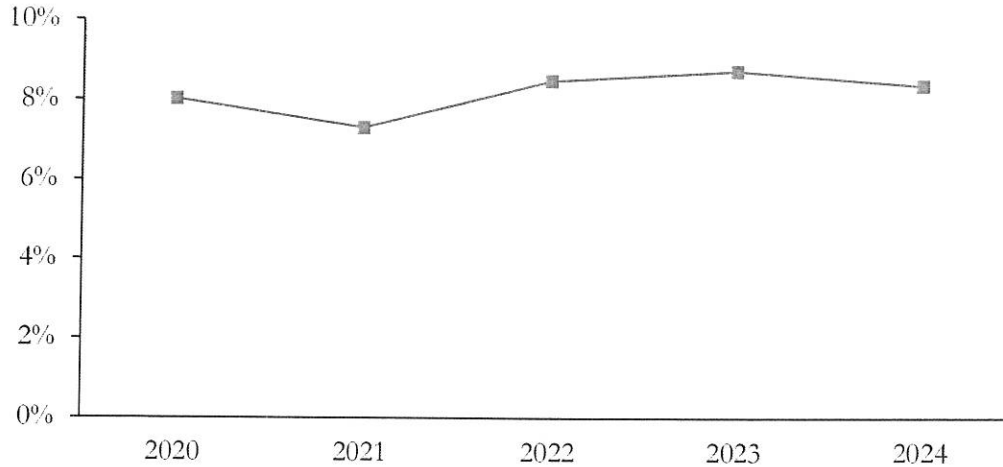


Assumptions

- Employees are new hires and will work for you until retirement.
- Your current plan provisions will remain in effect through an employee's retirement.
- Current laws governing TCDRS will continue as they are.
- Graded salary scales give bigger raises early in careers, with smaller raises later in careers (see Summary Valuation Report at [TCDRS.org/Employer](https://www.tcdrs.org/Employer)).
- Based on Single Life benefit.

Reasons for Rate Change

Below is a record of your required rate history for your retirement plan over the last five years.



Reasons for Rate Change	2020-2021	2021-2022	2022-2023	2023-2024
Beginning Rate	8.02%	7.30%	8.48%	8.73%
Plan Changes Adopted	0.00%	0.00%	1.17%	N/A
Investment Return	0.01%	0.02%	-0.08%	0.13%
Elected Rate/Lump Sum	0.00%	-0.07%	-0.06%	-0.02%
Demographic/Other Changes	-0.73%	-0.09%	-0.41%	-0.48%
Assumptions/Methods	<u>0.00%</u>	<u>1.32%</u>	<u>-0.37%</u>	<u>0.00%</u>
Ending Rate	7.30%	8.48%	8.73%	8.36%
Valuation Year	2019	2020	2021	2022
Funded Ratio	89.4%	87.1%	89.2%	89.9%

A complete Summary Valuation Report for the Dec. 31, 2022 valuation will be available mid-May at TCDRS.org/Employer.

Next Steps

If you are interested in making plan changes, please contact your Employer Services Representative at 800-651-3848. Your benefit selections are due by Dec. 15, 2023.

CenterPoint Energy Houston Electric, LLC
Applicable: Entire Service Area

CNP 8038

6.3 AGREEMENTS AND FORMS

6.3.1 FACILITIES EXTENSION AGREEMENTS

6.3.1.1 FACILITIES EXTENSION AGREEMENT FOR DISTRIBUTION VOLTAGE FACILITIES

This Facilities Extension Agreement for Distribution Voltage Facilities is entered into by and between Brookshire - Katy Drainage District, herein called "Retail Customer" and CenterPoint Energy Houston Electric, LLC, herein called "Company" (hereinafter referred to as Agreement) for the extension of Company's Delivery System distribution voltage facilities, including temporary facilities (hereinafter referred to as facilities extension or extension), as described herein.

This Agreement covers the facilities extension to Retail Customer location at 1111 Kenney Ave Brookshire, TX 77423

The Company agrees to accept payment of \$24,487.00 Dollars to be paid by the Retail Customer, as a Non-Refundable Construction Payment in connection with the Retail Customer request to extend Company facilities to the above described location as follows: Cost for overhead relocation.

- Unless otherwise stated by Company in writing, the Non-Refundable Construction Payment amount above is valid for twelve months.

In consideration of said Non-Refundable Payment, to be paid to Company by Retail Customer prior to commencement of construction, Company agrees to install and operate lines and equipment necessary to distribute electric service to the identified location under the following General Conditions:

- Company shall at all times have title to and complete ownership and control over facilities installed by Company.
- Retail Customer must make satisfactory payment arrangements (if payment is required to extend Company facilities) and sign and return this Agreement before Company can proceed with the requested extension.

CenterPoint Energy Houston Electric, LLC

Applicable: Entire Service Area

CNP 8038

- Extension of service facilities is contingent on acquisition of all necessary easements and rights of way.

If the facilities extension requested by Retail Customer calls for construction of underground Delivery System facilities at distribution voltages, Retail Customer must also agree to Company's additional specifications and terms and conditions determined by Company for the construction of underground electric service facilities.

The Company's Tariff for Retail Delivery Service, on file with the Public Utility Commission of Texas, is incorporated into this Agreement, including without limitation Sections 5.2.1 (limitation of liability), 5.2.4 (force majeure), and 5.2.6 (disclaimer of warranties) thereof.

Nothing herein contained within this Agreement shall be construed as a waiver or relinquishment by Company of any right that it has or may hereafter have to discontinue service for or on account of default in the payment of any bill owing or to become owing thereafter for any other reason or cause stated in Company's Tariff.

This Agreement shall not be binding upon Company unless and until it is signed by an authorized representative of the Company.

CenterPoint Energy Houston Electric, LLC

By Kyle Jahn

Kyle Jahn

(name printed or typed)

Title Service Consultant

Date 07/17/2023

Retail Customer

By _____

(name printed or typed)

Title _____

Date _____



2322 W Grand Parkway North, Suite 150
Katy, Texas 77449
Tel: 832.913.4000
www.quiddity.com

August 9, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Cardiff Road Partners, LP
Cardiff Business Park Proposed Office Warehouse Paving & Drainage to Serve Proposed Lot 2
– **Final Drainage Plans**
Permit No. 2023-18
Quiddity, Inc. Job No. R0002-1003-75

Dear Mr. England:

The Brookshire-Katy Drainage District (District) received a permit application as follows:

Applicant: ML Deer Construction

Permit Type: Tract Development w/o Platting – Final Drainage Plans

Location: 1315 Cardiff Road, Brookshire, Texas 77423

Survey: H.& T.C. Rail Road Company Survey Section 77, Abstract 156, Waller County, Texas

Previous Approvals: The District approved the Final Drainage Plans for the Cardiff Business Park master development (entire 10.81-acre site) on March 11, 2019, under Permit No. 2018-56.

Description: The proposed Cardiff Business Park Proposed Office Warehouse Paving & Drainage to Serve Proposed Lot 2 (Development) is located to the west of Cardiff Road and north of US-Hwy 90. The Development encompasses 1.87 acres and is part of an overall 10.81-ac tract. The Development includes a proposed warehouse building and on-site private paving and drainage improvements. The prior construction on the site that was completed under Permit No. 2018-56 included a 21,600 square foot building, underground private storm sewer, private detention pond and outfall, and associated parking areas.

The drainage for the site will be conveyed through an internal private underground storm sewer system, which outfalls into an existing private detention pond on the eastern side of the tract, which then outfalls to the ditch along Cardiff Road. The existing storm sewer, detention pond, and outfall were included in the plans titled "Cardiff Business Park Proposed Office Warehouse Paving and Drainage to serve 10.810 Acres Tract" that was approved by the District on March 11, 2019, under Permit No. 2018-56.



QUIDDITY

Mr. Arnold England, President

August 9, 2023

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Floodplain Permit: Fill is proposed within the floodplain and a permit will be required (although not provided) for this project. Waller County is the Floodplain Administrator for the receiving waterways. All local floodplain fill requirements must be coordinated through Waller County for approval.

DFMA: The existing private detention facility is part of an executed Detention Facilities Maintenance Agreement (DFMA) with the District.

Technical Review: Based on our review of the final drainage plans (plans), the permit application generally complies with the District's Rules and Regulations (R&R); we interpose no objection and recommend its approval by the District's Board of Supervisors.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, a Professional Engineer has prepared, dated, signed, and sealed the plans submitted. This Professional Engineer is licensed to practice in the State of Texas, conveying these professional responsibilities and accountability.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. The proposed Development shall be constructed per the District's approved plans and in conformance with the District's R&R.

For the Applicant: Please be advised that in an effort to comply with the District's policy to maintain zero net increase in stormwater runoff rates and to ensure that no adverse impacts are attributable to the proposed Development, all detention facilities (i.e., drainage infrastructure and outfall(s)) must be constructed and functional before beginning construction of any impervious improvements.

At least two business days prior to starting construction of the Detention Facilities and Drainage Infrastructure, the Developer's contractor shall notify the District's General Manager in writing. The Pre-Construction Notification form can be found on the District's website under Permit Application and Engineering Documents (<https://www.bkdd.dst.tx.us/page/BKDD.Home>).



Mr. Arnold England, President
August 9, 2023
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The Applicant shall not use this letter to commence any construction activities prior to receiving the **approved permit** from the governing entity with jurisdiction.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

Michael H. McCarthy, PE

MHM/dme

<https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1003-75 Cardiff Business Park Building 2 Permit/Plan Reviews/Plat Letters/Cardiff Bus. Park Office Warehouse - DP Letter 071823.docx>

cc: Mr. Richard Rolland – Cardiff Rd. Partners, LP rrolland@credtexas.com
Mr. Luis Herrera – ML Deer Construction luis@mldeer.com
Mr. Maurice Mullaly, PE, PMP, CP Eng – DAC Engineering maurice.mullaly@dacengineers.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendrick D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkkdlegal@johnsonpetrov.com



QUIDDITY

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Katy, Texas 77449
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August 9, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Safrin, Inc.
Safrin Jordan Ranch – **Final Plat**
Permit No. 2022-102
Quiddity, Inc. Job No. R0002-1003-29

Dear Mr. England:

The Brookshire-Katy Drainage District (District) received a permit application as follows:

Applicant: Windrose Land Services

Permit Type: Tract Development with Platting – Final Plat

Location: North of Kingsland Boulevard, east of Woods Road, and south of Interstate 10

Survey: H & T.C.R.R. Co. Survey No. 76, Abstract 322, Waller County, Texas

Previous Approvals: The District approved the Preliminary Plat for Safrin Jordan Ranch on July 11, 2022, under Permit No. 2022-70.

Description: The proposed Safrin Jordan Ranch (Development) is located at the intersection of Kingsland Boulevard and Woods Road. The Development encompasses 2.2957 acres and includes 0 lots, 1 reserve, and 1 block. The Development lies within Waller County Road Improvements District No. 1.

The proposed Development includes the construction of a convenience store building, two pump stations, underground utilities, and a concrete parking lot. The drainage for the site will be conveyed through an internal underground storm sewer system which connects to on-site underground detention tanks, which will outfall to the Waller County Road Improvement District No. 1 (WCRID No. 1) storm sewer system along Kingsland Boulevard, which outfalls into the WCRID No. 1 regional drainage/detention system, which then outfalls to Willow Fork of Buffalo Bayou. The construction of the WCRID No.



Mr. Arnold England, President

August 9, 2023

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1 storm sewer along Kingsland Blvd. was included in the plans titled "Water Distribution, Sanitary Sewer, Paving & Drainage to serve Kingsland Blvd. from Jordan Ranch Blvd. to Woods Rd." and approved by the District under Permit No. 2021-69 on September 13, 2021.

An executed Detention Facilities Maintenance Agreement was provided to the District for approval and execution.

Technical Review:

Based on our review of the final drainage plans (plans) and final plat, the permit application generally complies with the District's Rules and Regulations (R&R); we interpose no objection and recommend its approval by the District's Board of Supervisors.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, the plans and plat submitted have been prepared, dated, signed, and sealed by a Professional Engineer and a Land Surveyor, respectively. They are licensed to practice in the State of Texas, conveying these professional responsibilities and accountability.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. The proposed Development shall be constructed per the District's approved plans and in conformance with the District's R&R.

For the Applicant:

Please be advised that in an effort to comply with the District's policy to maintain zero net increase in stormwater runoff rates and to ensure that no adverse impacts are attributable to the proposed Development, all detention facilities (i.e., drainage infrastructure and outfall(s)) must be constructed and functional before beginning construction of any impervious improvements.



Mr. Arnold England, President
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At least two business days prior to starting construction of the Detention Facilities and Drainage Infrastructure, the Developer's contractor shall notify the District's General Manager in writing. The Pre-Construction Notification form can be found on the District's website under Permit Application and Engineering Documents (<https://www.bkdd.dst.tx.us/page/BKDD.Home>).

The Applicant shall not use this letter to commence any construction activities prior to receiving the **approved permit** from the governing entity with jurisdiction.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Michael H. McCarthy'.

Michael H. McCarthy, PE

MHM/dme

<https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1003-29 Safrin Jordan Ranch Permit Review/Plan Reviews/Plat Letters/Safrin Jordan Ranch - Final Plat Letter 080823.docx>

cc: Mr. Steven Henderson – Windrose Land Services steven.henderson@windroseservices.com
Mr. Mario E. Lanza, PE – M Lanza Engineering, PLLC mlanza@mlanzaengineering.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Justin Beckendorff, Waller County Commissioner Precinct 4 via email j.beckendorff@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com



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August 8, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Sunterra Phase V – Drainage Impact Assessment
Land Tejas 2,303 Acre Tract - Sunterra
Waller County, Texas
Quiddity Job No. R0002-1004-06

Dear Mr. England:

The referenced Sunterra Phase V Drainage Impact Assessment (Report) has been reviewed pursuant to the Brookshire-Katy Drainage District's (District) Rules and Regulations. A copy of the Report is attached for further information.

The goals of this review are to apply the District's policy and criteria where appropriate. This review addresses issues regarding hydraulic and hydrologic drainage design criteria only. Design criteria regarding the site layout of the proposed Sunterra Phase V (Development) and drainage and detention facilities will be reviewed upon submittal of the final plat and plans.

Technical Review & Findings:

The Development is the final phase of the Sunterra development and includes the addition of approximately 320 acres of land for future residential and commercial development. The Development is located east of future Bartlett Road, west of Pitts Road, south of Farm to Market 529, and north of Beckendorff Road. The property lies within both Waller County and Harris County. The Report aims to analyze the drainage and detention requirements for the Development and certify no adverse impacts to the Development, adjacent properties, or downstream facilities in accordance with the District's Rules and Regulations (R&R). The Sunterra development started before the District R&R changed on February 28, 2022, to include and adopt the Atlas 14 flow criteria. However, it was designed to satisfy Atlas 14 flow criteria adopted by Harris County.

The Development includes the construction of Detention Pond Y, Detention Pond Z, Offsite Channel-VI, Offsite Channel-VII, and accompanying pipe and culvert crossings connecting the proposed and existing facilities within the Sunterra development. These proposed facilities are included in Exhibit 1 within the Report.



Mr. Arnold England, President

August 8, 2023

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Detention Pond Y includes the construction of a wet bottom detention pond that provides a total of 208.83 acre-feet of storage volume (129.21 ac-ft used for the Atlas 14 100-yr storm event) and minimum of 1-ft of freeboard. The detention storage rate applied from Detention Pond Y is 1.34 ac-ft/ac. Detention Pond Z includes the construction of a wet bottom detention pond that provides a total of 127.99 acre-feet of storage volume (92.79 ac-ft used for the Atlas 14 100-yr storm event) and minimum of 1-ft of freeboard. The detention storage rate applied from Detention Pond Z is 0.78 ac-ft/ac. Detention Pond Z will outfall to Detention Pond Y, which will outfall into Detention Pond V. Detention Pond V was included in the plans titled "Sunterra Phase 3 North Detention and Mass Grading" and approved under Permit No. 2022-02 on April 11, 2022.

Detention Pond V outfalls into Detention Pond O, which outfalls into Detention Pond N. Detention Pond O and Pond N were included in the plans titled "Sunterra Mass Grading and Detention Phase IIB," which were approved under Permit No. 2021-34 on September 13, 2021.

Detention Pond N outfalls to the Phase IB Detention Pond, which outfalls into Cane Island Branch of Buffalo Bayou. The Phase IB Detention Pond was included in the plans titled "Sunterra Phase IB Mass Grading and Detention" that were approved under Permit No. 2020-90 on April 26, 2021.

The Report includes details for the Atlas 14 100-year peak water surface elevations within Cane Island Branch at Clay Road. Figure 3 from the Report indicates that the peak water surface elevations for the Atlas 14 100-yr and lower return periods are below top of banks in Cane Island Branch and lower in the proposed condition as compared to the existing condition. Figure 3 also shows that while the peak flow rates and water surface elevations in Cane Island Branch decrease, the flow rates, and water surface elevations remain higher for several days in the proposed condition. Given the prolonged increase in flow rates and water surface elevation past the peak event, the Report indicated the water surface elevations were contained within the top of bank of Cane Island Branch using flows from the Atlas 14 100-yr storm event followed by the Atlas 14 25-yr storm event approximately four days later. Furthermore, there is a minimum of 1 ft of freeboard in all detention ponds for Atlas-14 100-year and lower return period storms, with the exception of existing Pond H, Pond G, and Pond F. These ponds were constructed under the non-adopted Atlas 14. Additionally, the non-Atlas 14 500-year peak water surface elevation exceeds the top of bank by approximately 0.19 ft and 0.22 ft for Detention Ponds F and G, respectively. To mitigate this difference in criteria, the Report confirms the lowest slab elevations of all homes surrounding these ponds are higher than the non-Atlas 14 500-year and Atlas 14 100-yr peak water surface elevations in the ponds by a minimum of 1 ft, as shown in Exhibit 1. The peak water surface elevations in the detention basins are summarized in Tables 3, 4, and 5. The peak water surface elevations in Cane Island Branch is summarized in Table 6 within the Report.

Drainage Impact Assessments for Previous Phases:

The District previously received and accepted the Drainage Impact Assessments for Sunterra Phase IA, IB, IIA, IIB, III South, III North, III North Amendment, and IV.



Mr. Arnold England, President

August 8, 2023

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Conclusion:

Based on our review of the Report, the Development does not result in an increase in the proposed condition peak discharge rates or water surface elevations in Cane Island Branch including downstream facilities, when compared to those under the existing conditions. When the subsequent permit applications are submitted to the District for approval of the final detention and drainage plans, the Report will need to be updated to conform to the final design drawings for the detention ponds. Additionally, the permit applications must include a certification from a professional engineer licensed to practice in the state of Texas that the lots surrounding the proposed and existing detention facilities are not adversely impacted from the proposed improvements and the drainage plans are in full compliance with this Report.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. We offer no objections to this Sunterra Phase V Drainage Impact Assessment and recommend the District accept this Report.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, the Report submitted has been prepared, dated, signed, and sealed by a Professional Engineer who is licensed to practice in the State of Texas, conveying their professional responsibilities and accountability.

Sincerely,

Michael McCarthy, PE

MHM/dme

https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1004-06 Sunterra Phase V Permit Review/3.0 - LETTERS/Sunterra Phase V Drainage Impact Assessment Letter_080823.docx

Enclosures

cc: Mr. Shamar O'Bryant - Land Tejas via email sobryant@landtejas.com
Mr. Kyle Blank, PE – Quiddity Engineering via email kblank@quiddity.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendric D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Yancy Scott, PE – CFM , Waller County Engineer via email sitedevelopment@wallercounty.us
Mr. Andrew Johnson III – Johnson Petrov, LLP via email ajohnson@johnsonpetrov.com



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August 4, 2023

Mr. Rod Pinheiro, PE
Quiddity Engineering
6330 West Loop South
Bellaire, Texas 77401

Subject: Drainage Impact Analysis for Sunterra Phase V
County: Fort Bend

Dear Mr. Pinheiro:

This is in response to a comment letter dated July 28, 2023, regarding Quiddity Engineering submittal of the Drainage Impact Analysis for Sunterra Phase V. The comments are listed below, along with Quiddity Engineering's responses.

1. **Models:** The Stockdick temporary Culverts within the model are above the weir elevation showing them to allow flow over the weir before through the culverts in the model. Please raise the weir height or lower the culverts. These culverts were still in the submittal model.

Quiddity Response: The Stockdick temporary culverts were copied over from a previous geometry erroneously. The proposed conditions geometry in this submittal does not include these culverts.

2. **Models:** Some pipes within the north ditch of Section V show only 0.2' of coverage on top of them. Is this constructable and safe in the field, please explain.

Quiddity Response: Pipe Crossings I through IV have all been changed to 6'x3' RCBs. The names of these have been changed to Culvert Crossing-I through Culvert Crossing-IV. These crossings in Offsite Channel-VII have been lowered. All culvert crossings in Offsite Channel-IV have at least 2' of top coverage from the top of the box.

3. **Report:** Ponds Y and Z provide a total detention volume of 336.82. The 219.72 ac-ft is the volume used during the 100-yr. Revise accordingly.

Quiddity Response: The report text in the Proposed internal Drainage Section has been revised. It now states that Ponds Y and Z provide a total of 336.82 ac-ft of detention volume. This is the volume from the static water surface elevation to top of bank.



Rod Pinheiro, PE

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4. **Report Tables and Figures:** Peak flows and WSE do not appear to match CIB-7 from Table 6 for the Atlas 14 100-yr condition. Please provide reasoning.

Quiddity Response: The peak flows listed in Table 6 were taken from the old effective steady state model while the peak flows in Figure 3 are from the models included in this submittal. Because this is not a good comparison the peak flow comparison has been removed from Table 6.

5. **Report Exhibits:** Is the Phase IV Area meant to be shaded dark gray? MG appears to be similar to Ph. V area.

Quiddity Response: The shading scale of proposed mass grading was only accurate for the mass grading for Phase V. The mass grading raster files have been combined into a single file so that the mass grading elevation scale is accurate for all grading shown. Because of this Exhibits 1 look slightly different but no elevations have changed.

We appreciate your assistance with this submittal. If you have any additional questions, please feel free to contact Kyle Blank, PE, CFM at kblank@quiddity.com or at our office at 713-777-5337.

Sincerely,

A handwritten signature in black ink, appearing to be "K Blank", written over a light blue horizontal line.

Kyle Blank, PE, CFM

JTR/

K:\16537\16537-0002-00 1,040 Katy Tract Detention_Drainage Phas\Project Management\Deliverables\BKDD\DA\10-Phase_V\Report files\Word\Sunterra PhaseV Response to Comments 20230804.docx

Enclosures



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August 4, 2023

Rod Pinheiro, PE
BKDD Engineer
c/o Quiddity
2322 West Grand Parkway North, Suite 150
Katy, Texas 77449

Re: Drainage Impact Assessment
Sunterra Phase V

Dear Mr. Pinheiro:

Sunterra (formerly known as the Dollins/Freeman Tract Development) encompasses the 2,303-acre land development project that will be completed in several phases. The development area is divided into two tracts: 1,264-acre (Northern) tract and 1,039-acre (Southern) tract.

The Northern tract is bounded by Stockdick Road to the south, large rural parcels to the west, and Pitts Road to the east. The Northern tract contains Phase V, Phase IV, Phase III North, and a portion of Phase IIB.

Phase V will involve a total of 320 acres of land development. The entirety of this development will be within the Northern Tract and North of Beckendorff Road.

Quiddity Engineering, LLC, formerly known as Jones|Carter, completed a drainage impact assessment and proposed ultimate drainage plan for the overall development of the approximately 2,303-acre tract. The analysis was reviewed and approved by Harris County Flood Control District (HCFCD) in November 2021.

This memo describes the drainage impact assessment performed for the development of Sunterra Phase V. Phase V is the final development phase. Exhibit 5 presents the phases of the Sunterra Development. Phase V development includes Phase V, Phase IV, Pod M/NN, Phase III North, Phase III South, Phase IIB, Phase IIA, Phase IA, Phase IB, Offsite Channels (I, III, Channel-A, IV, and V), Stockdick Road Segment Nos. 1, 2A, 3, and 4, and Cane Island Branch channel expansion (see Exhibit 1). Our drainage impact assessment confirmed that all increases in peak flood water surface elevations (WSEL) due to the project will be limited to the development tract. Therefore, Phase V will not cause adverse impact to the adjacent tracts or downstream areas in the watershed during the Atlas 14 100-year return period storm event in accordance with the current Brookshire-Katy Drainage District (BKDD) and Waller County drainage criteria. Summary of the proposed Phase V development and the drainage plan with results of our analysis and conclusion are presented in the sections below.



Rod Pinheiro, PE

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Proposed Development

Phase V of the development comprises 320 acres located west of Bartlett Road and north of Beckendorff Road.

The existing ground has an average elevation ranging from 168.1-feet to 163.0-feet. Mass grading of the Phase V area will have a total volume of approximately 724,000 cubic yards of excavation and approximately 1,015,000 cubic yards of fill to an approximate elevation of 165.2-feet at the lots.

Phase V includes the construction of Pond Y and Pond Z. See Table 1 and Exhibit 1 for the detention pond connection and pipe information.

Phase V includes the construction of Offsite Channel-VI and Pipe Crossing V5. Offsite Channel-IV will be 1,900' long and have a 50' top width. This channel will drain south and outfall into Offsite Channel-V via the 4' RCP Crossing V5.

Phase V includes the construction of Offsite Channel-VII. This channel will be 4,400' long and have a 50' top width. There will be four culvert crossings in Offsite Channel-VII, Culvert Crossing-I, II, III, and IV. Offsite Channel-VII will outfall into Pond Z via the 8' x 6' RCB Box Crossing Z.

Offsite Berm-IIIN and Offsite Channel-IV previously approved under Phase IIIN will be removed in Phase V. Offsite Berm-IVN previously approved under POD M/NN will be removed under Phase V. Temporary Offsite Channel-I previously approved under Phase IV will be removed in Phase V.

Phase IV included the construction of Pond T and the expansion of Pond Q. Phase IV also included the construction of box crossings V2, V3, and V4, Temporary Offsite Channel-I, and a 2,000 linear foot extension of Offsite Channel-I. The temporary Road crossing across Beckendorff Road into Pond V was replaced with box crossing V3.

Temp Channel-I previously approved under POD M/NN and offsite sheet flow inlets into Pond S previously approved under Phase II B, were removed as the area they drained was developed.

Phase IV included the removal of the restriction to Box Crossing G. This crossing was expanded to the ultimate size of dual 6' x 4' RCBs previously restricted to a single 2' x 4' RCB in the Phase III North Condition.

Phase III North included the development of Pond V, Pond W, Pond X, and Pond R. Phase III North included the construction of Offsite Berm-IIIN, Offsite Berm-IVN, Offsite Channel IV, and Offsite Channel V as shown on Exhibit 1. There will be six 24" reinforced concrete pipes (RCP) connecting the west side of Offsite Berm-IIIN to the roadside ditch along the west side of Pitts Road.



Rod Pinheiro, PE

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Previously approved Offsite Berm 2b located in the Phase III North area was removed and the inundation area will no longer exist as the area will be developed. Previously approved in Phase IA, the temporary 2-3' RCP Crossings that conveyed flow from Stockdick roadside ditch into Channel A was removed. The area that drained to these temporary outfalls will now drain to Pond R. Previously approved in Phase IIB, offsite sheetflow inlets that discharge into Pond P, Pond O, and Pond U were removed and the area was developed in Phase III North.

Phase III South development consisted of a 159 acres of land development the entirety being south of Stockdick Road. Phase III South included the development of Pond M. Pond M will drain into the Pond L that was approved under Phase IIB. See Table 1 and Exhibit 2 for the detention pond connection and pipe information.

Phase III South drainage work included the construction of three (4-ft, 2.5-ft, and 3-ft diameter) RCP pipe connections from Offsite Channel-III into Pond M. In addition, Phase III South proposed the northern roadside ditch improvement along Clay Road between Schlipf Road and Bartlett Road.

The approved Phase IIB addressed 437-acres of land development, 305 acres being north of Stockdick Road and 132 acres South of Stockdick. The northern portion of Phase IIB included six detention ponds (Pond N, Pond O, Pond P, Pond Q, Pond S and Pond U). These ponds are interconnected using submerged box culverts and they drain into Phase IB Pond. The southern portion of Phase IIB contains three detention ponds (Pond J, Pond K and Pond L). These ponds drain into Phase IA approved Pond A. See Table 1, Exhibit 1, and Exhibit 2 for the detention pond connection and pipe information.

Offsite Berm 1 was removed in Phase III South and the prior inundation area was included in the development.

Offsite Berm 2b included in Phase IIB as an improvement of the existing rice field levee along the eastern boundary of the Northern Tract between the Phase IIB area and Beckendorff Road. This berm has crest elevation of 163.5-feet and a 24-inch diameter CMP drainage pipe that drains the temporary storage area into an existing roadside ditch on the west side of Pitts Road.

The Phase IIA development consisted of a 137-acre area which includes a Welcome Center on an approximate 2-acre tract and located approximately 200-ft from the intersection of Clay Road and Bartlett Road. The exact location and configuration of this facility is still undetermined at this time, but a 2-acre commercial development at this location was assumed for purposes of this impact analysis. Stockdick Road Segment No. 2A construction, included in Phase IIA, extended Stockdick Road from its intersection with Bartlett Road to the west approximately 0.5 miles as one-half of a boulevard section.

The Phase IB development included 181 acres of land development south of Stockdick Road, on the east side of Cane Island Branch. Phase IB also included the Stockdick Road Segment No. 1 construction that extended Stockdick Road from its intersection with Pitts Road to its intersection with Bartlett Road as one-half of a boulevard section. The average elevation of the road will be 164-feet. Stockdick Segment No. 1 Road included a 4-6' x 6' reinforced concrete box (RCB) culvert crossing that drains the area north of the road into the Phase IB Pond.

The Cane Island Branch expansion in Phase IB involved channel widening on the existing reach between Pitts Road and Bartlett Road. The channel was widened on the north side by an average width of 30-feet.

Rod Pinheiro, PE

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Proposed Internal Drainage

Phase V areas north of Beckendorff Road (320.0 acres) will drain to Ponds Y and Pond Z. Approximately 164.4 acres will drain to Pond Z and 155.6 acres will drain to Pond Y. Pond Y and Z will both have a static water surface elevation of 151.5' and will provide a total of 336.82 acre-feet of detention volume. Internal Channel-I will outfall into Pond Z via Box Crossing Z. Box Crossing Z consists of a single 8' x 6' RCB. Pond Z will outfall into Pond Y via Box Crossing Y. Box Crossing Y consists of a single 8' x 6' RCB. Pond Y will outfall into Pond V via Box Crossing V3. Previously approved under Phase IV, Box crossing V3 consists of dual 6' x 6' RCB's. See Table 1 and Exhibit 1 for detailed pond connection information.

Phase IV areas total 223.4 acres. The runoff from the Phase IV drainage service areas (210.5 acres) drains into two proposed detention ponds, Ponds Q and T. Approximately 116.2 acres drains to Pond T and 94.3 acres drains to Pond Q. Ponds Q and T have a static water surface elevation of 151.0-ft and provide a total of 567.3 acre-feet of detention volume. The 7.3 acres added to Offsite Channel-I along the western border of the development drains south to Pond S. The 5.6 acre Offsite Channel-V drains east to Pond V. Pond T outfalls into Pond Q via Box Crossing T. Box Crossing T consists of dual 6' x 6' RCBs, See table 1 for detailed pond connection information.

Phase III North Amendment areas located on the east side of Bartlett Road (373.7 acres) drains into six detention ponds (Pond V, Pond W, Pond X, Pond U, Pond O, and Pond P). Approximately 305.4 acre of the development drains into Pond V, Pond W, and Pond X. Specifically, 175.5 acres including Pod M/NN drains to Pond V, 61.0 acres drains to Pond W, and 68.9 acres drains to Pond X. Pond V, Pond W, and Pond X have equal static water surface elevations of 151.5-ft and these ponds provide a combined maximum detention volume of 300.22 acre-feet. Detained flow from these three ponds discharges into Pond O though 3-6'x6' RCB.

Of the remaining 134.7 acres east of Bartlett Road, 13.2 acres drains directly to Pond U, 31.6 acres drains to directly to Pond O, and 23.5 acres drains directly to Pond P. These three ponds, Pond U, Pond O, and Pond P were approved under Phase IIB. See Table 1 and Exhibit 1 for the connection of detention ponds and pipe information.

Phase III North Amendment areas west of Bartlett Road (66.4 acres) drain to Pond Q, Pond R, and Pond S. Specifically 27.6 acres drains to Pond R, 19.5 acres drains to Pond Q and 19.3 acres drains to Pond S. Pond R provides 29.66 acre-feet of detention volume with the same static (151.5-ft) as the Phase IIB ponds. The detained flow from Pond R discharges into Pond Q though a single 6'x6' box culvert. Pond Q and Pond S were constructed under Phase IIB. See Table 1 and Exhibit 1 for the detention pond connection and pipe information.

Phase III South areas drain into three detention ponds (Pond M, Pond K, and Pond C). Pond M provides a total detention volume of 50.1 acre-feet of storage. Detained flow from Pond M and Pond K is discharged into Pond A. Detained flow from Pond M is discharged into Pond L through a 8'x6' RCB built in Phase III South. Detained flow from Pond K is discharged into Pond J through a 6'x6' RCB built in Phase IIB. Detained flow from Pond C is discharged into Pond D through a 6'x6' RCB built in Phase IA. These ponds have an equal static water surface elevation of 156.5-ft.



Rod Pinheiro, PE

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Phase IIB areas located south of Stockdick Road drains into three detention ponds (Pond J, Pond K and Pond L) that provide a total combined detention volume of 58 acre-feet of storage. Detained flow from these ponds is discharged into Pond A. These three ponds have the same static water surface elevation (156.6-ft) as Phase IA ponds.

The Phase IIB area located north of Stockdick Road drains into six connected detention ponds (Pond N, Pond O, Pond P, Pond Q, Pond S, and Pond U) that provide a total combined detention volume of 641 acre-feet of storage. Detained flow from these ponds is discharged into Phase IB Pond through 3-6' x6' Box crossings installed in Stockdick Road. These ponds have an equal static water surface elevation of 151.5-ft.

The Phase IIA area drains into two detention ponds identified as Pond G and Pond H. Pond G provides 86.63 acre-feet storage volume. This pond drains into the Phase IA detention Pond F through a single 6'x6' RCB. Pond H provides 95.95 acre-feet storage volume, and it drains into Channel A through two outfall pipes (i.e., a 6'x4' RCB at 157.6-feet elevation and a 1.5' diameter low flow pipe at 157.35-feet elevation). Pond H has a 25-ft wide overflow weir at a 162-ft spillway elevation.

Phase IA area drains into six detention ponds (Ponds A through F) that provide a combined storage volume of 349.9 acre-feet. The detention ponds are connected to each other by fully submerged reinforced concrete (RC) box crossings that are sized to route the flow between the ponds as well as to maintain equal water surface elevations within the ponds (see Table 1 for summary of pipes). In full development condition, all Phase IA ponds have a static water surface elevation of 156.6-feet, which is set by the upstream invert elevation of the most downstream outfall pipe (Box Crossing G). The flow from the Phase IA development is routed by gravity through the connected detention ponds and is discharged into the Cane Island Branch through Box Crossing G. Box Crossing G is constructed to the ultimate size of 2-6' x 4' RCB but was temporarily restricted in Phase IA to a single 1.5'x4' RCB opening. Figure 5 presents the flow hydrograph of the outfall pipe. Additionally, Bartlett Road crosses Cane Island Branch upstream of Box Crossing G with dual 6'x6' RCBs restricted to a 4.5'x6' or equivalent opening.

Phase IB area drains into Phase IB Pond that provides 562 acre-feet of total storage volume. Phase IB Pond has a static water surface elevation of 151-ft and drains into Cane Island Branch by gravity. The outfall structure was installed with the ultimate size of 2-7'x6' RCB's and it is restricted to 1-3'x6' RCB width in the Phase IIB conditions. A 25-ft wide extreme event spillway is included for Phase IB Pond. Figure 6 presents the flow hydrograph of the Phase IB pond outfall pipe in Phase IIB conditions.

Proposed Offsite flow Drainage

Our pre-development condition analysis showed that there is approximately 14.9 square miles of area that drains to the development as offsite sheetflow from the northwest. In the Phase V condition this offsite sheetflow is blocked by the proposed development fill. This blocked sheetflow from the west will be drained into Pond V via Offsite Channel-VI. The sheetflow entering the site from the north will be intercepted by Offsite Channel-VII and drained into Internal Channel-I.

The proposed offsite drainage works under Phase V are:

- Construction of 1,900 L.F. Offsite Channel-VI. This Channel will have a 50' top width, 5' bottom width, depth of 5', and 4:1 side slopes.
- Construction of 4,400 L.F. Offsite Channel-VII. This Channel will have a 60' top width, 5' bottom width, depth of 6', and 3:1 side slopes.
- Construction of Culvert Crossing I. This crossing will be a 6' x 3' RCB within Offsite Channel-VII.
- Construction of Culvert Crossings II. This crossing will be a 6' x 3' RCB within Offsite Channel-VII.
- Construction of Culvert Crossings III. This crossing will be a 6' x 3' RCB within Offsite Channel-VII.
- Construction of Culvert Crossings IV. This crossing will be a 6' x 3' RCB within Offsite Channel-VII.
- Construction of Pipe Crossing V5. This crossing is proposed to be a 4' RCP. This crossing will connect the southern end of Offsite Channel-VI to Offsite Channel-V under Beckendorf Road.
- Construction of Box Crossing Z. This box crossing will connect internal Channel-I to Pond Z. Box Crossing Z will be a single 8' x 6' RCB.
- Construction of Box Crossing Y2. This box crossing will connect Pond Z to Pond Y. Box Crossing Y2 will be a single 8' x 6' RCB.
- Expansion of restriction to Box Crossing S. Box Crossing S was restricted to a single 3' x 6' RCB in Phase IV. This crossing will be expanded to a single 7' x 6' RCB and a single 6.5' x 6' RCB.
- Restriction of Box Crossing M. Box crossing M will be restricted to a single 4' x 6' RCB and a single 6' x 6' RCB.

Phase IV provided the expansion of Offsite Channel-I by 2,000 L.F. to extend north to Beckendorf Road. This channel has a 60' top width, 10' bottom width, depth of 4', and 6:1 side slopes. Phase IV provided Box Crossing V2 connecting Offsite Channel-V to Pond V, this crossing consists of dual 6' x 6' RCBs. Phase IV provided Box Crossing V3 under Beckendorff Road. This crossing consists of dual 6' x 6' RCBs. Box Crossing V3 replaced the temporary 48" RCP Road crossing approved in the Phase III North Amendment. Phase IV provided Box Crossing V4 under Bartlett Road. Box Crossing V4 allows offsite flow from Offsite Channel V to pass under Bartlett Road. Box Crossing V4 is a single 6' x 6' RCB. Phase IV provided Temporary Offsite Channel-I. Temporary Offsite Channel -I included an approximate 1,750 L.F. extension of an existing swale that runs north to south on the tract north of Beckendorff. This existing swale was expanded into a channel that is 1.5' deep, has a 15' bottom width, a 30' top width, and 5:1 side slopes. Phase IV provided Box Crossing T, connecting Pond T to Pond Q. This crossing consists dual 6' x 6' RCBs. Finally, Phase IV provided the removal of the restriction to Box Crossing G. This crossing consists dual 6' x 4' RCBs.



Rod Pinheiro, PE

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Phase III North provided widening a portion of the roadside ditch on the north side of Beckendorff Road into 2,200 linear feet long 40' wide, 6' deep channel (Offsite Channel-IV) graded to drain west. This included a temporary 48" RCP (US elev. 152') culvert crossing across Beckendorff Road connecting Offsite Channel-IV to Pond V. Phase III North provided Offsite Channel-V. This channel will be 3,600' in length, 100' wide, and 10' deep. It will run from the western property boundary along the southern side of Beckendorff Road. The channel will drain from west to east and outfall into Pond V.

Phase III South provided three reinforced concrete pipes connecting Offsite Channel I to Pond M. These pipes allow part of the offsite sheetflow flowing from the east of the tract to be mitigated by the detention capacity in Pond M. Phase III South included widening of the roadside ditch on the north side of Clay Road by 20-feet to total width of 40-feet. This included a 24" RCP culvert crossing to convey flow from the ditch to pass under Bartlett Road. Phase III South provided the cleaning of existing roadside ditches and culvert road crossings at the corner of Schlipf and Clay Road to improve drainage.

The approved Phase IIB provided Offsite Channel I to collect the offsite sheetflow north of Stockdick Road and discharge it to the internal drainage system. This channel is 110-feet wide, and it runs south along the western perimeter of the Northern Tract. This channel included an existing BKDD drainage channel at the location, and it drains into Channel A across Stockdick Road through 2-6'x4' RCB crossings. Offsite Channel I is also connected with the Phase IIB Pond S through a single 3-ft diameter reinforced concrete pipe and an overflow weir.

Channel A is provided in Phase IA, and it is located within the Southern Tract at the east side of Schlipf Road and at the south side of Stockdick Road. This channel drains offsite sheet flow at the area into the Cane Island Branch approximately 0.8 miles east of Schlipf Road. This channel provided 49 acre-feet of storage volume along with conveyance.

Hydrology and Hydraulic (H&H) Analysis

The H&H analysis was performed in a Two-Dimensional (2D) Rain-on-Grid (ROG) modeling method using Hydrologic Engineering Center's River Analysis System Version (HEC-RAS) 6.3 software. Existing Condition and Proposed Condition peak water depth grid, peak water surface elevation grid and Flow Stage hydrographs at key locations were generated in the 2D model. These results were compared to assess the drainage impact of the project and to develop the proposed drainage plan.

The 2D ROG model generates runoff directly from the effective (excess) rainfall hyetograph and routes the flow on the ground surface and through structures producing grided results such as water surface elevation, depth, and velocity for the entire modeled area. The analysis was performed using the old non-Atlas 14 500-year, Atlas 14 100-year, Atlas 14 25-year, Atlas 14 10-year and Atlas 14 2-year storm events per current Waller County and BKDD drainage criteria.

The existing condition HEC-RAS model was created using the H-GAC 2018 LiDAR data, 2020 topo data created for this project, and drainage plans of the adjacent Lake House Development. The result of the existing condition model was verified using survey recorded high water marks from the 2017 Hurricane Harvey event. Table 7 presents a comparison of Hurricane Harvey high water mark elevations with Atlas 14 100-Year and old 500-Year water surface elevations from the 2D model.

The Phase V HEC-RAS model was developed from the existing condition model by incorporating surface information of the proposed grading created within AutoCAD Civil 3D. In the HEC-RAS model geometry, the detention ponds are represented by the 2D mesh. The box crossings and the spillways are represented by storage area connections. Appropriate manning's roughness values, entrance head loss, and exit head loss coefficients were used in the hydraulic model to reflect ground condition as well as the pipe and outfall design. The H&H analysis was carried out for the non-Atlas 14 500-year, Atlas 14 100-year, 25-year, 10-year and 2-year return period storm events. Comparison of the Atlas 14 100-year water surface elevations (i.e., the difference between the proposed condition and the existing condition) is presented on Exhibit 1. Table 6 presents the Phase V conditions for the Atlas 14 100-year peak water surface elevations and flows at key locations in Cane Island Branch. The key locations are also shown on Exhibit 1 and 2. Exhibits 3 and 4 show the Atlas 14 100-year maximum depth grid output from the model.

An additional Impact assessment was performed by creating a consecutive events scenario where the non-Atlas 14 25-year storm occurs 4 days after the non-Atlas 14 100-year storm event. The results of the simulation show that the proposed Phase V peak flows and water surface elevations of Cane Island Branch at Clay Road were higher than that of the existing condition. However, the stage hydrographs show that the peak flow in the later non-Atlas 14 25-year storm event is within the banks of Cane Island Branch. Figure 4 shows the flow and stage hydrographs of this analysis.

Conclusion

Based on our analysis, we conclude that:

1. The Phase V condition does not cause adverse impact to adjacent or downstream areas in the watershed during the Atlas 14 100-year return period storm event in accordance with the current BKDD Rules and Regulations. The Phase V grading with detention pond connection pipes and outfalls provides adequate storage and conveyance within the development tract to pass the internal and offsite sheet flow by limiting all the impacts to within the development area.
2. The proposed Phase V condition Atlas 14 100-year, 25-year, 10-year and 2-year peak water surface elevations are below the top of banks of all existing and proposed detention basins. There is more than 1-foot of freeboard in the detention ponds for the Atlas 14 100-year and lower return period storms. The non-Atlas 14 500-year peak WSEL is above top of bank for Pond F and Pond G by 0.19 and 0.22-feet respectively. Ponds F, G, H, K, L, and M have from 0.08' to 0.86' of freeboard for the Atlas 14 100-year storm. The slab elevation of all homes near Ponds F, G, H, K, L, and M will be higher than the non-Atlas 14 500-year and Atlas 14 100-year peak water surface elevation in the ponds. The lowest slab elevations for these areas are shown on Exhibit 2. The peak water surface elevations in the detention basins are summarized on Tables 3, 4, and 5.
3. Compared to the existing condition, the proposed Phase V condition will have a net reduction in the peak flow and water surface elevations downstream of the development tract i.e., in Cane Island Branch and at adjacent areas south of Clay Road and east of Pitts Road in Phase V peak flows (see Exhibit-1, Exhibit-2, Figure 1, and Figure 2).
4. Flow and stage hydrographs downstream of the project site (i.e., at the intersection of Cane Island Branch and Clay Road) show an increase in flow and water surface elevation after the peak time. However, this flow is less than the flow under existing conditions and therefore will not be an adverse impact to the areas in the floodplain due to the change in hydrograph of Cane Island Branch downstream of the project site (see enclosed existing and proposed Phase V conditions flow and stage hydrographs downstream of the project site).



Rod Pinheiro, PE

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5. The Waller County Flood Damage Prevention Ordinance Article 4 Section B #9 states that a development is required to demonstrate that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community. Our analysis shows that Phase V will cause no increase in water surface elevation in Cane Island Branch or the adjacent areas and hence it meets Waller County's criteria.

Sincerely,

Kyle J. Blank, PE, CFM



A handwritten signature in black ink, appearing to be "KJ Blank", written over a horizontal line.

JR/kjb

"\\jonescarter.corp\cfs\Projects\16537\16537-0002-00 1,040 Katy Tract Detention_Drainage Phas\Project Management\Deliverables\BKDD\10-Phase_V\Report files\Word\Sunterra_Phase_V report 20230413.docx"

Rod Pinheiro, PE

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Enclosures:

- **Table 1:** Summary of Pipes Connecting Detention Ponds.
- **Table 2:** Total Available and Atlas 14 100-year Phase V Condition Utilized Detention Volumes
- **Table 3:** Phase V Peak Water Surface Elevations in the Detention Ponds
- **Table 4:** Non-Atlas 14 Ultimate Condition Peak Water Surface Elevation in the Detention Ponds
- **Table 5:** Comparison of Peak Water Surface Elevations (Phase V Vs Full Developed Condition).
- **Table 6:** Atlas 14 100-Year Peak Water Surface Elevations and Peak Flow Comparison between Existing Condition and Phase V Condition at Key Locations of Cane Island Branch
- **Table 7:** Comparison of Hurricane Harvey High Water Mark Elev. with Atlas 14 100-Year & Non-Atlas 14 500-Year Water Surface Elevations.
- **Table 8:** Drain Time of Pond Groups based on Outfall into Cane Island Branch.

- **Figure 1:** Atlas 14 100-Year Water Surface Profile at Clay Road
- **Figure 2:** Atlas 14 100-Year Flow Hydrographs at Clay Road
- **Figure 3:** Flow and Stage Hydrographs of Cane Island Branch Immediately D/S of Clay Road
- **Figure 4:** Flow and Stage Hydrographs of 100-Year and 25-Year Consecutive Events, Cane Island Branch at Clay Road.
- **Figure 5:** Phase V Condition Box Crossing G (Pond E Outfall) Atlas 14 100-Year Flow Hydrograph.
- **Figure 6:** Phase V Condition Box Crossing S (Bain 1B Outfall) Atlas 14 100-Year Flow Hydrograph.

- **Exhibit-1:** Phase V Drainage 1,264 ac. Tract Analysis-(Atlas 14 100-Year)
- **Exhibit-2:** Phase V Drainage 1,039 ac. Tract Analysis-(Atlas 14 100-Year)
- **Exhibit-3:** Existing Condition Atlas 14 100-Year Max. Water Depth
- **Exhibit-4:** Phase V Condition Atlas 14 100-Year Max. Water Depth
- **Exhibit-5:** Sunterra Phase Exhibit

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Table 1: Summary of Pipes Connecting Detention Ponds.

Pipe	Length (ft)	Material	Upstream Pond	Downstream Pond	U/S FL (ft)	D/S FL (ft)	Span (ft)	Rise (ft)	Barrels
Box Crossing A	254	RC	G	F	146.77	146.51	6	6	1
Box Crossing B	731	RC	F	E	146.42	145.69	6	6	1
Box Crossing C	288	RC	D	E	146.50	146.21	6	6	1
Box Crossing D	270	RC	C	D	143.78	143.51	6	6	1
Box Crossing E	421	RC	B	E	144.45	144.03	9	6	2
Box Crossing F	342	RC	A	B	144.50	144.17	8	6	2
Box Crossing G (Outfall)	164	RC	E	Cane Island Branch	156.60	156.44	6	4	2
Pond H outfall Pipe 1	112	RC	H	Channel A	157.60	157.1	6	4	1
Pond H outfall Pipe 2	117	RC (Circular)	H	Channel A	157.35	156.2	1.5	-	1
Box Crossing I	832	RC	K	J	146.6	145.77	6	6	1
Box Crossing J	213	RC	J	A	146.6	146.39	6	6	1
Box Crossing K	228	RC	L	A	146.6	146.37	9	6	1
Box Crossing L	325	RC	M	L	150.1	149.6	8	6	1
Box Crossing M	310	RC	N	Phase IB Pond	151.5	151.0	6 (1 – restricted to 4')	6	2
Box Crossing N	340	RC	O	N	144.0	144.0	6	6	3
Box Crossing O	310	RC	U	O	144.0	144.0	6	6	1
Box Crossing P	311	RC	P	O	144.0	144.0	6	6	3
Box Crossing Q	352	RC	Q	P	144.5	144.5	6	6	3
Box Crossing R	325	RC	S	Q	144.0	144.0	9	6	2
Box Crossing S	201	RC	Phase IB Pond	Cane Island Branch	151.0	150.0	7 (1 -Restricted to 6.5)	6	2
Box Crossing T	220	RC	T	Q	145.0	145.0	6	6	2
Box Crossing V	270	RC	V	O	145.6	145.5	6	6	3
Box Crossing V2	250	RC	O.S Ch. V	V	156.0	154.4	6	6	2
Box Crossing V3	210	RC	Y	V	157.5	156.5	6	6	2
Box Crossing V4	166	RC	O.S Ch. V	O.S Ch. V	158.0	157.0	6	6	1
Box Crossing W	310	RC	W	V	148.61	147.61	6	6	2
Box Crossing X	300	RC	X	W	155.97	154.5	6	6	1
Box Crossing Y	315	RC	R	Q	151.5	151.0	6	6	1
Box Crossing Y2	350	RC	Z	Y	143.3	141.3	8	6	1
Box Crossing Z	350	RC	O.S. Ch. VII	Z	157.1	144	8	6	1

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Table 2: Total Available and Atlas 14 100-year Phase V Utilized Detention Volumes

Pond	Total Available Volume (Ac-Ft)	Volume used during 100-year Phase V Condition (Ac-Ft)
Phase IB Pond	562.00	488.52
A	76.90	66.56
B	23.32	19.90
C	57.71	49.90
D	19.88	17.09
E	46.69	39.65
F	47.71	42.49
G	86.63	79.65
H	95.95	88.11
J	23.55	19.90
K	21.66	18.33
L	12.81	12.75
N	60.17	45.03
M	62.60	52.54
O	446.81	353.76
P	22.43	19.04
Q	308.57	218.33
R	52.30	33.73
S	24.32	20.84
T	258.70	157.29
U	47.54	39.16
V	429.32	278.13
W	58.39	36.19
X	18.32	10.95
Y	208.83	129.21
Z	127.99	92.79

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Table 3: Phase V Peak Water Surface Elevations in the Detention Ponds

Detention Pond	Location	Phase V Peak Atlas 14 WSEL (ft)				
		2-Year	10-Year	25-Year	100-Year	Non-A14 500-Year
Phase IB Pond	1,039-Ac Tract	153.55	156.36	157.30	158.93	159.29
A	"	156.46	158.76	159.75	162.82	163.35
B	"	156.46	158.75	159.73	162.75	163.27
C	"	156.46	158.75	159.71	162.73	163.25
D	"	156.46	158.75	159.71	162.71	163.24
E	"	156.46	158.75	159.70	162.69	163.23
F	"	156.46	158.75	159.70	163.66	163.95
G	"	156.46	158.75	159.70	163.68	163.98
H	"	158.45	160.73	162.45	163.98	164.24
J	"	156.46	158.76	159.75	162.87	163.58
K	"	156.46	158.76	159.75	162.90	163.70
L	"	156.47	158.77	159.77	162.90	163.39
N	1,264-Ac Tract	153.56	156.40	157.39	160.56	161.54
M	1,039-Ac Tract	156.47	158.78	159.81	163.12	163.45
O	1,264-Ac Tract	153.56	156.40	157.40	160.98	162.11
P	"	153.56	156.40	157.41	161.05	162.29
Q	"	153.54	156.40	157.41	161.19	162.64
R	"	153.54	156.40	157.41	161.19	162.64
S	"	153.54	156.40	157.41	161.33	163.02
T	"	153.54	156.40	157.41	161.19	162.64
U	"	153.56	156.40	157.40	160.98	162.11
V	"	153.56	156.40	157.41	161.06	162.17
W	"	153.56	156.40	157.41	161.06	162.17
X	"	157.00	157.35	157.66	161.09	162.26
Y	"	153.56	156.40	157.41	161.14	162.20
Z	"	153.56	156.40	157.42	162.42	163.15

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Table 4: Non-Atlas 14 Ultimate Condition Peak Water Surface Elevation in the Detention Ponds

Non-Atlas 14 Return Period	Peak WSEL (ft)			
	Ponds (A, B, C, D, E, F, G, J, K, L, M)	Pond H	Phase IB Pond	Ponds (N, O, P, Q, R, S, T, U, V, W, X)
500-Year	162.76	163.63	162.49	163.59
100-Year	160.97	162.52	159.16	159.34
25-Year	160.34	161.15	157.66	158.03
10-Year	159.03	160.14	156.65	156.65
2-Year	157.98	159.09	154.98	154.98

Table 5: Comparison of Peak Water Surface Elevations (Phase V Vs Full Developed Condition).

Ponds Y and Z in 1,264 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	165.5				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	162.68	163.69	-1.01	2.82	1.81
Atlas 14 100-Year	161.78	162.66	-0.88	3.72	2.84

Ponds N, O, P, Q, R, S, T, U, V, W, X in 1,264 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	164.59				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	162.30	163.59	-1.29	2.29	1.00
Atlas 14 100-Year	161.06	162.66	-1.60	3.53	1.93

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Pond H in 1,039 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	164.63				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	164.24	163.63	0.61	0.39	1.00
Atlas 14 100-Year	163.98	163.04	0.94	0.65	1.59

Phase IB Pond in 1,039 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	163.49				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	159.29	162.49	-3.20	4.20	1.00
Atlas 14 100-Year	158.93	162.06	-3.13	4.56	1.43

Ponds A, B, C, D, E, J, K, L, M in 1,039 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	163.76				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	163.38	162.76	0.62	0.38	1.00
Atlas 14 100-Year	162.83	162.23	0.60	0.93	1.53

Pond F in 1,039 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	163.76				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	163.95	162.76	1.19	-0.19	1.00
Atlas 14 100-Year	163.66	162.23	1.43	0.10	1.53

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Pond G in 1,039 Acre Tract	Phase V Condition (1)	Full Development (2)	WSEL Difference (1)-(2)	Phase V Condition	Full Dev.
TOB (ft)	163.76				
Return Period	WSEL (ft)		Delta (ft)	Free-Board (ft)	
500-Year	163.98	162.76	1.22	-0.22	1.00
Atlas 14 100-Year	163.68	162.23	1.45	0.08	1.53

Table 6: Atlas 14 100-Year Peak Water Surface Elevations and Peak Flow Comparison between Existing Condition and Phase V Condition at Key Locations of Cane Island Branch.

Map ID	Location	Water Surface Elevation (ft)		
		Existing Condition	Phase V Condition	Difference (Phase V. – Ex. Cond.)
CIB-1	Schlipf Road	164.99	164.02	-0.97
CIB-2	Confluence with Sheet flow Channel	162.89	161.68	-1.21
CIB-3	Bartlett Road (downstream)	161.67	160.95	-0.72
CIB-4	Outfall of Lake House Pond	160.19	159.42	-0.77
CIB-5	County Boundary	158.58	158.20	-0.38
CIB-6	At Pitts Road	157.93	157.87	-0.06
CIB-7	At Clay Road	157.07	156.97	-0.10
	At Morton Road	150.74	150.46	-0.28

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Table 7: Comparison of Hurricane Harvey High Water Mark Elevation with Atlas 14 100-year & Non-Atlas 14 500-Year Water Surface Elevation

Ref. No	Location		HWM Survey Elev. (ft)	2D Model 100-Yr Elv. (ft)	2D Model 500-Yr Elv. (ft)	Note
	x	y				
1089	2970130.637	13864759	158.013	158.11	158.21	MX-DEBRIS LINE
1090	2959870.165	13866808	164.701	164.33	164.51	MX-WATER LINE ON PIPE
1091	2959475.011	13868202	164.412	164.80	164.96	MX-WATER LINE ON PIPE

Table 8: Drain Time of Pond Groups based on Outfall into Cane Island Branch

Pond Group	Phase V Drain Time for Atlas 14 100-Year (Days)
North*	6.20
South**	3.04
Pond H	3.00

*North Pond Group includes Ponds N, O, P, Q, R, S, T, U, V, W, X, Y and Z

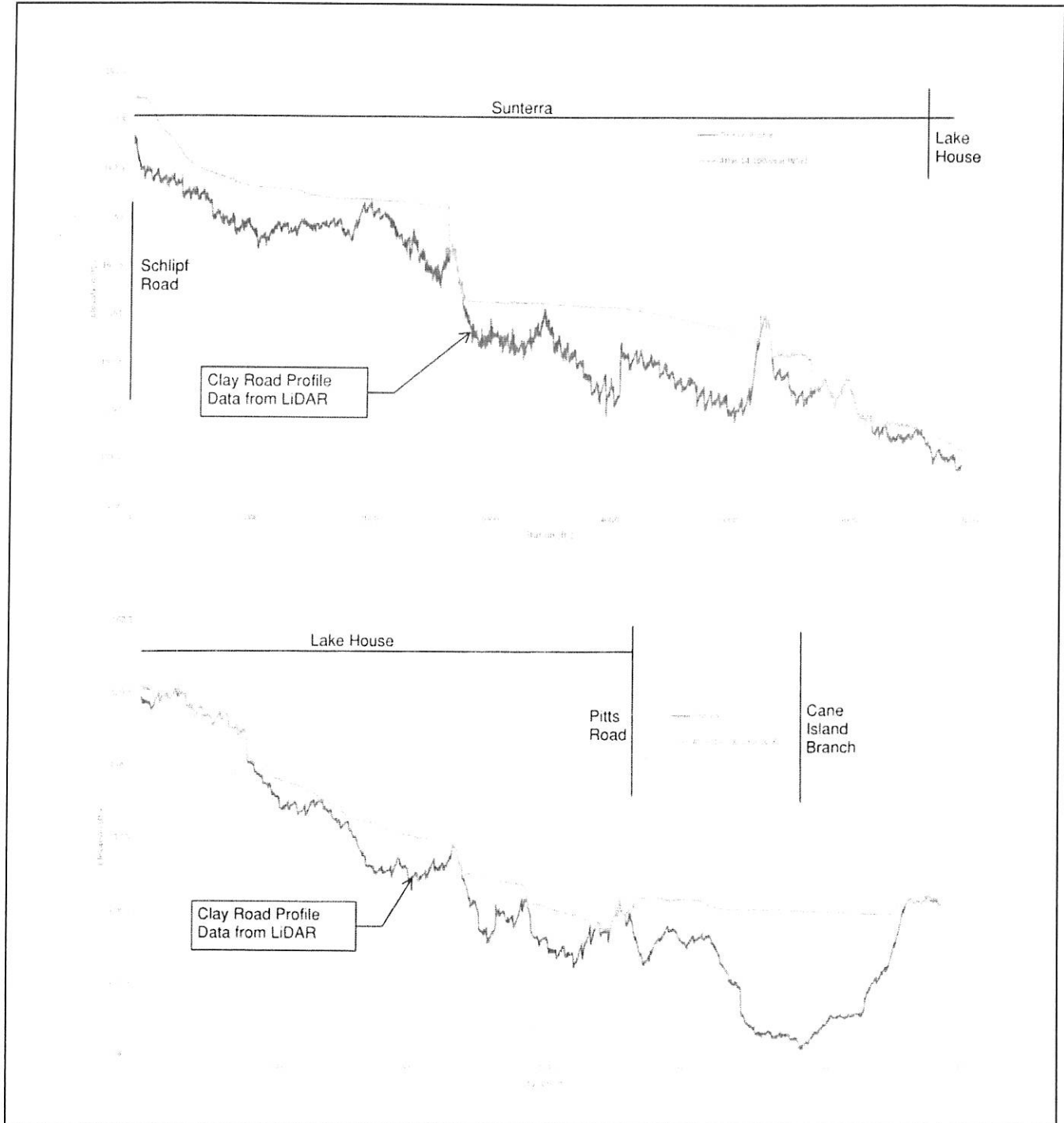
**South Pond Group includes Ponds A, B, C, D, E, F, G, J, K, L, M, and IB

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Figure 1: Atlas 14 100-Year Water Surface Profile at Clay Road

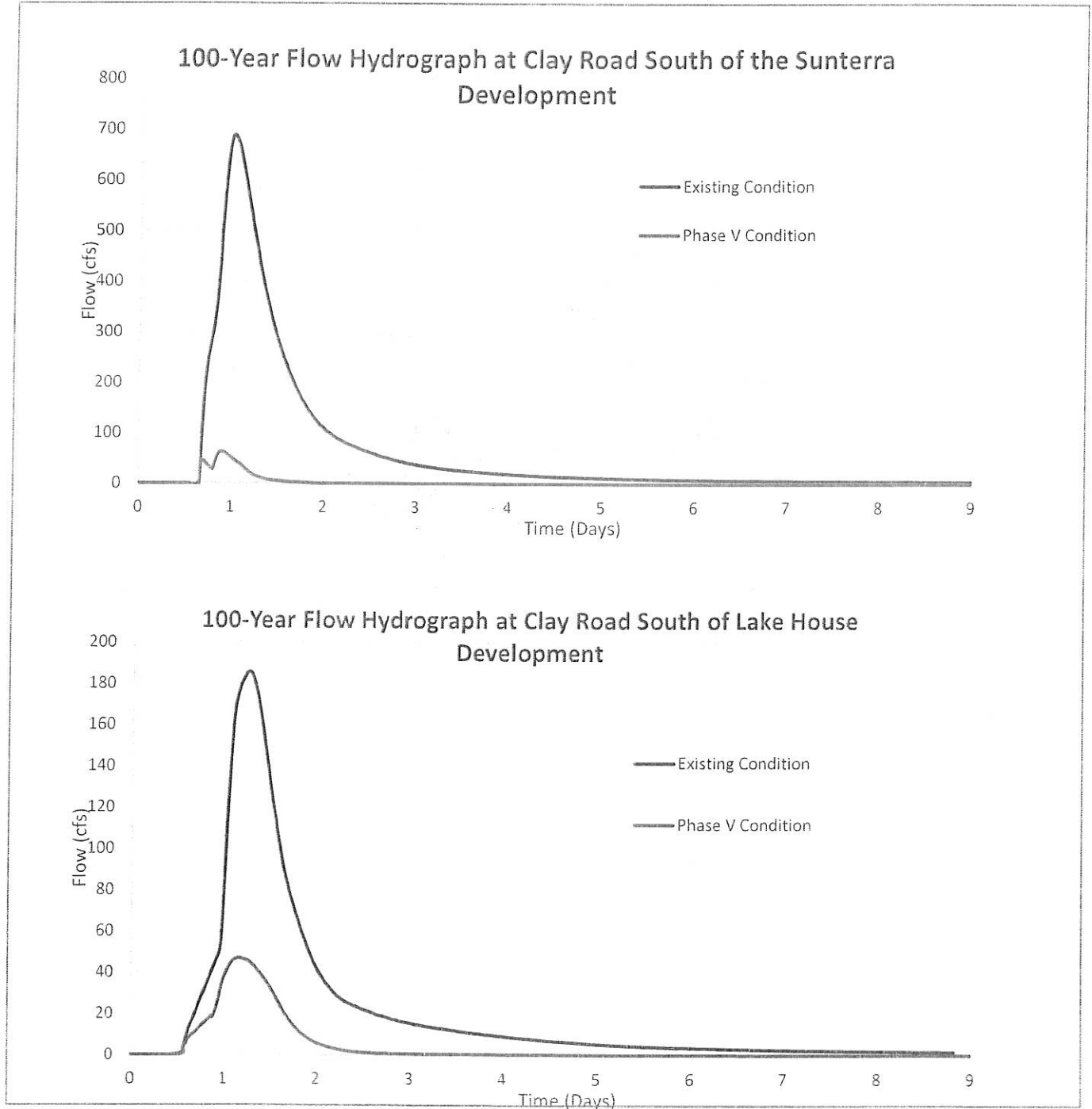


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Figure 2: Atlas 14 100-Year Flow Hydrographs at Clay Road

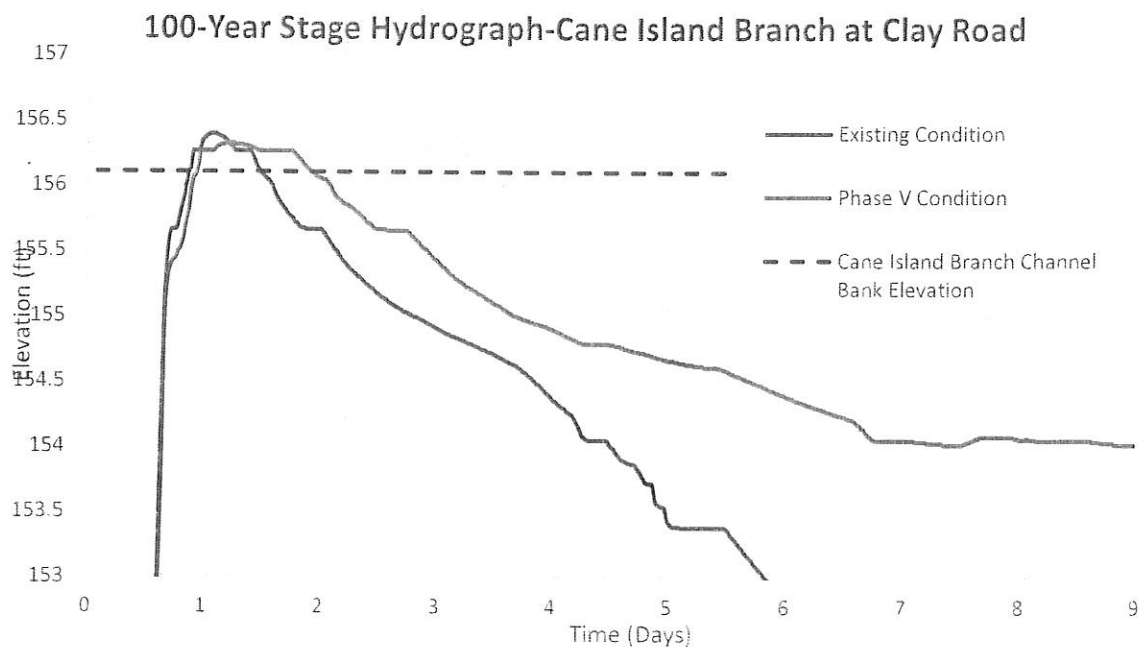
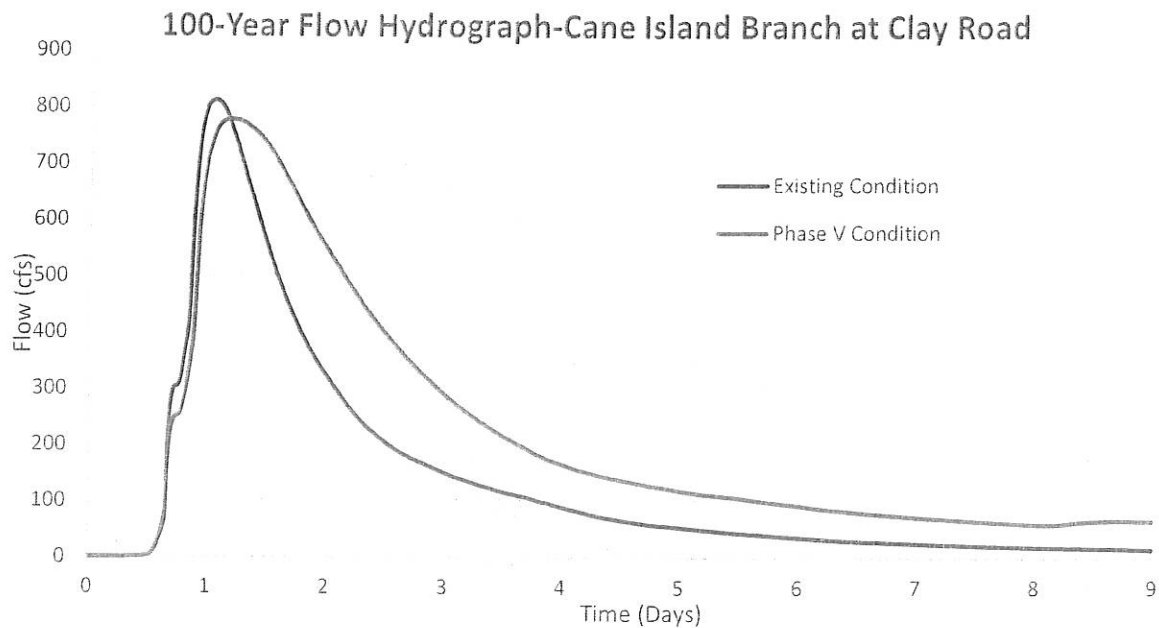


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Figure 3: Atlas 14 100-Year Flow and Stage Hydrographs of Cane Island Branch Immediately D/S of Clay Road

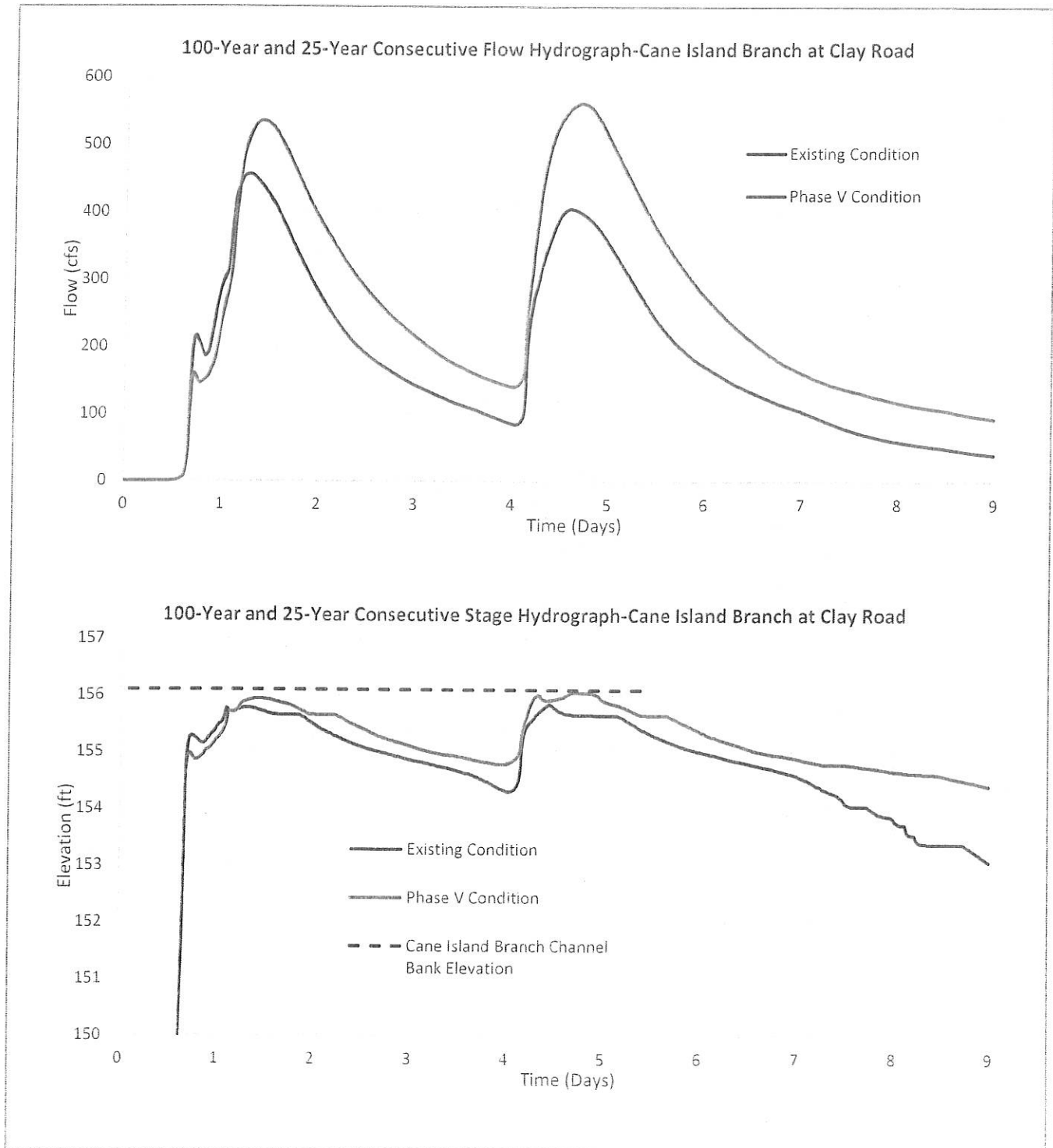


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Figure 4: Flow and Stage Hydrographs of Non-Atlas 14 100-Year and 25-Year Consecutive Events, Cane Island Branch at Clay Road



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Figure 5: Phase V Condition Box Crossing G (Pond E Outfall at Cane Island Branch) Atlas 14 100-Year Flow Hydrograph.

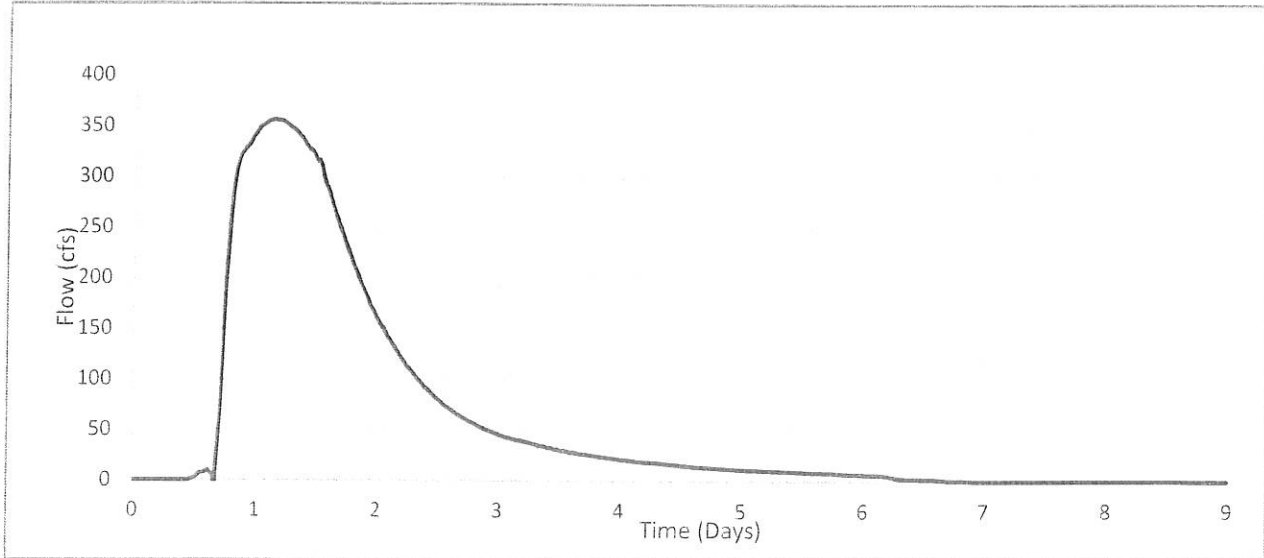
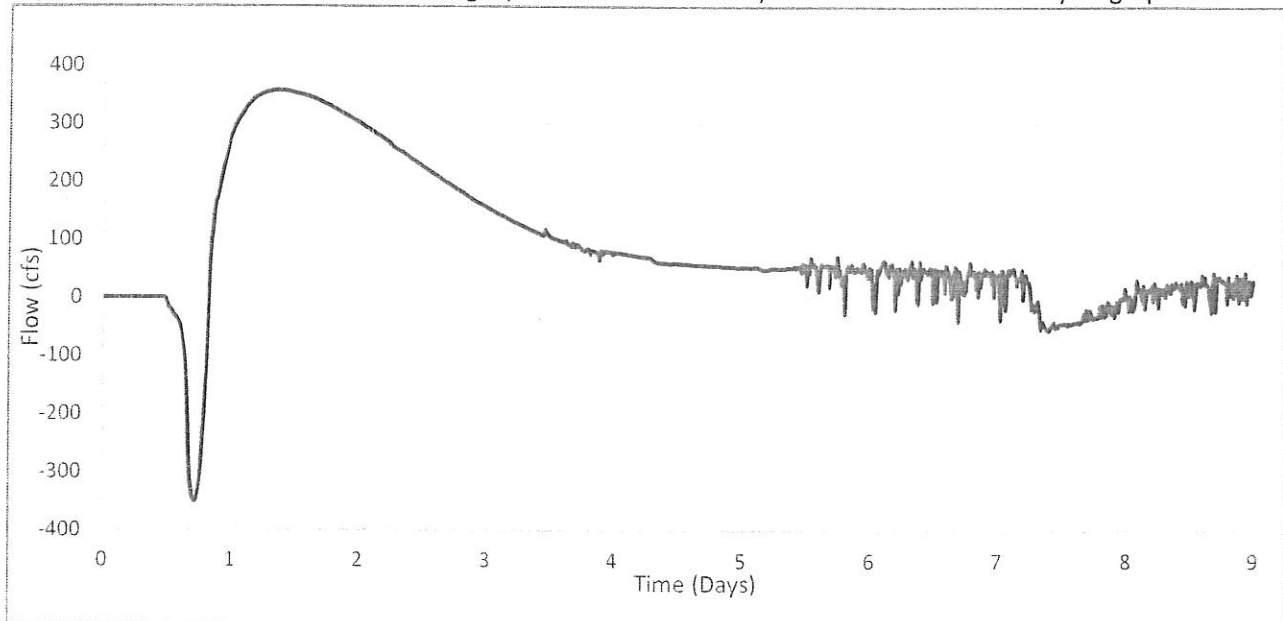


Figure 6: Phase V Condition Box Crossing S (Phase IB Pond Outfall) Atlas 14 100-Year Flow Hydrograph.





Blackshire Katy

VICINITY MAP

LEGEND

- Hurricane Harvey High Water Mark Locations
- Dollins/Freeman Tract

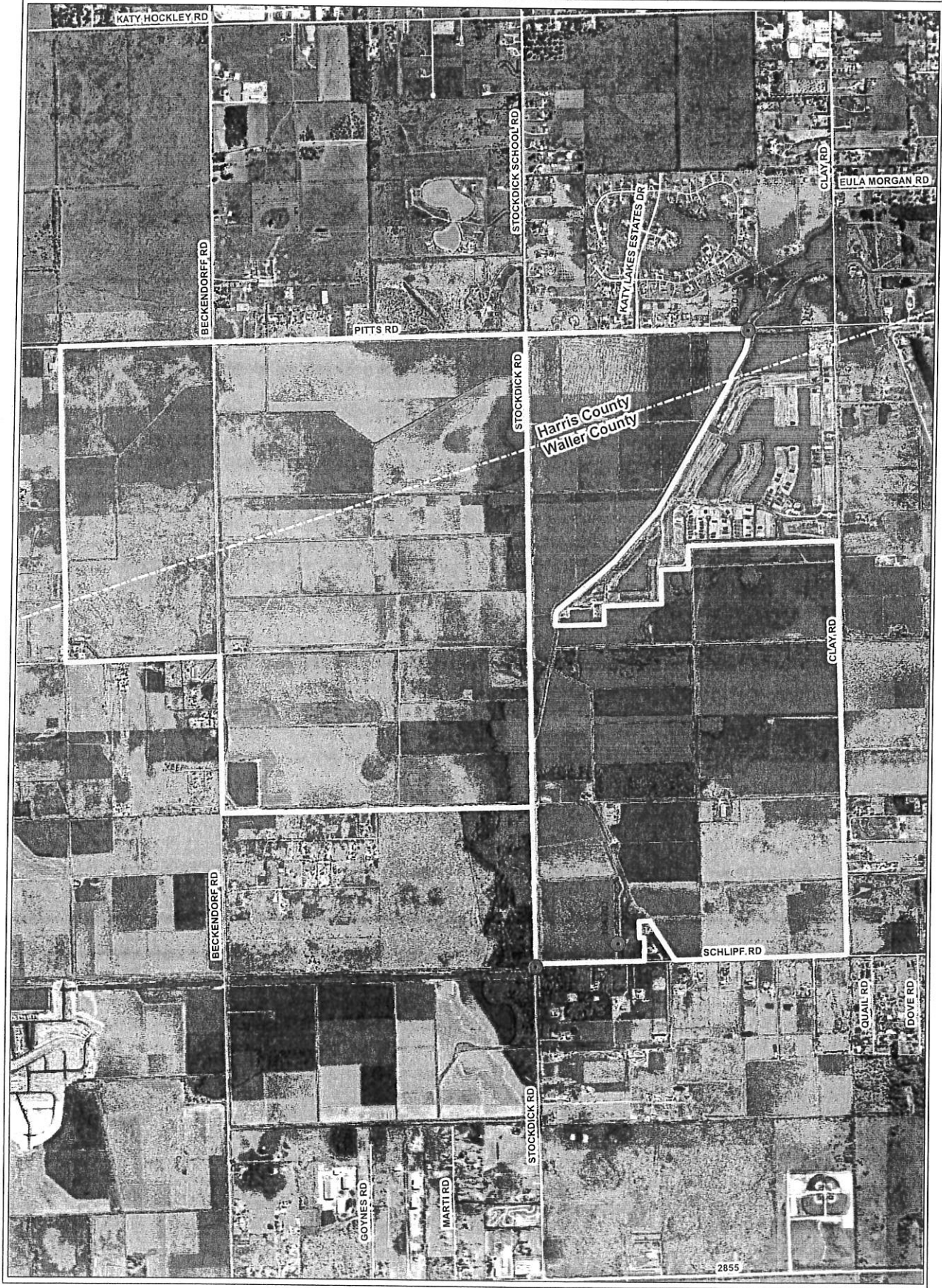
Max. Water Depth <VALUE>

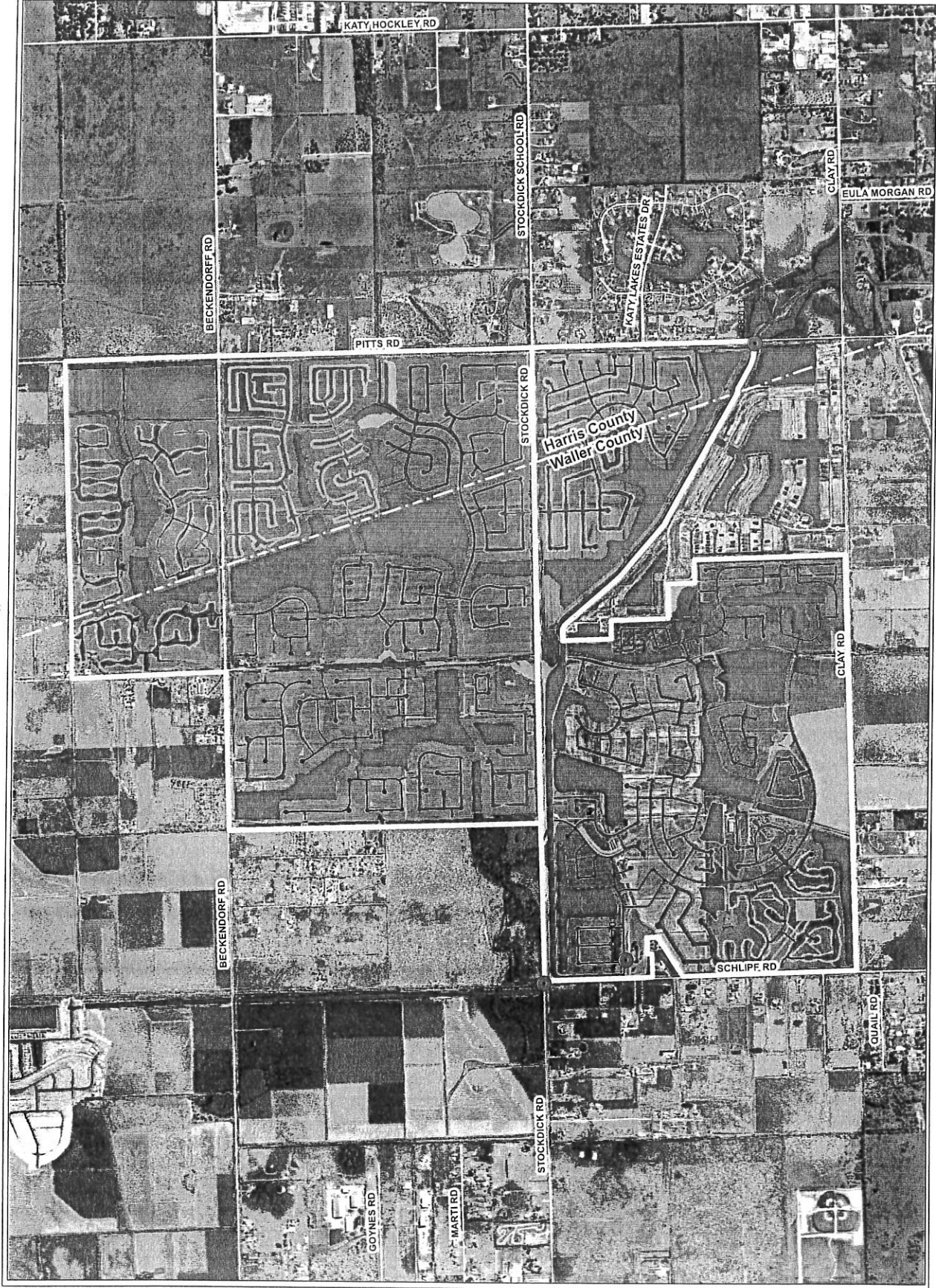
0.0' - 0.5'
0.5' - 1.0'
1.0' - 1.5'
1.5' - 2.0'
2.0' - 2.5'
>2.5'

EXHIBIT-3:
EXISTING CONDITION
100-Year Max. Water Depth

DOLLINS/FREEMAN TRACT
HARRIS/WALLER COUNTY, TEXAS

1 inch equals 1,500 feet





Brookshire Katy

VICINITY MAP

LEGEND

- Hurricane Harvey High Water Mark Locations
- Dollins/Freeman Tract

Max Water Depth

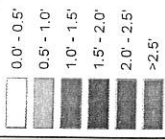


EXHIBIT-4: PHASE V

100-Year Max. Water Depth

DOLLINS/FREEMAN TRACT
HARRIS/ WALLER COUNTY, TEXAS



1 inch equals 1,500 feet

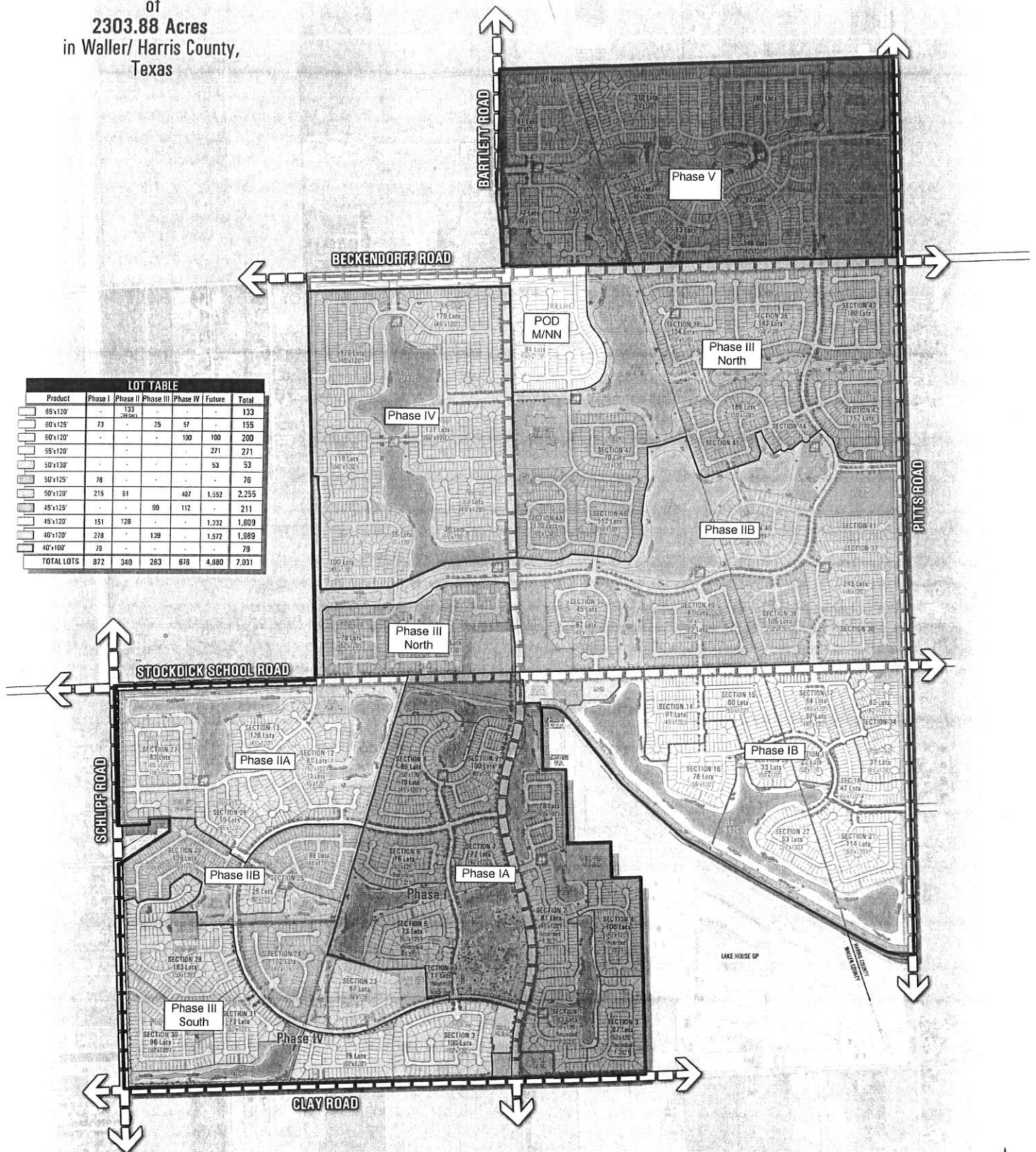


QUIDDITY

A Conceptual Land Use Plan

of
2303.88 Acres
in Waller/ Harris County,
Texas

Product	Phase I	Phase II	Phase III	Phase IV	Future	Total
55'x120'	-	133	-	-	-	133
60'x125'	73	-	25	57	-	155
60'x120'	-	-	-	100	100	200
55'x120'	-	-	-	-	221	221
50'x130'	-	-	-	-	53	53
50'x125'	78	-	-	-	-	78
50'x120'	215	81	-	407	1,552	2,255
45'x125'	-	-	99	112	-	211
45'x120'	151	128	-	-	1,332	1,609
40'x120'	278	-	129	-	1,572	1,989
40'x100'	79	-	-	-	-	79
TOTAL LOTS	872	340	263	676	4,880	7,031



NORTH
SCALE: 1"=400'
DATE: 10.11.2021

THIS PLAN WAS PREPARED USING REASONABLY RELIABLE SOURCES AND IS SUBJECT TO CHANGE. PERSONS IN DETAILING AND/OR SURVEYING, THIS PLAN HAS NOT BEEN REVIEWED BY ANY GOVERNMENT AGENCY. ADDITIONAL SURVEYING AND/OR SURVEYING INFORMATION MAY BE REQUIRED. THIS PLAN IS AN ARTIST'S CONCEPTION AND IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. ALL PLANS FOR FACILITIES OR LAND USES ARE SUBJECT TO CHANGE WITHOUT NOTICE.



2322 W Grand Parkway North, Suite 150
Katy, Texas 77449
Tel: 832.913.4000
www.quiddity.com

August 9, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Childress Family Investments, Inc.
West Katy Warehouse Unrestricted Reserve A Replat No. 1 – **Preliminary Plat**
Quiddity, Inc. Job No. R0002-1003-51

Dear Mr. England:

The Brookshire-Katy Drainage District (District) received a permit application as follows:

Applicant: Windrose Land Services

Permit Type: Tract Development with Platting – Preliminary Plat

Location: South of U.S. Highway 90 (US-Hwy 90), east of Igloo Road, west of Brookline Road, north of Interstate Highway 10

Survey: H. & T. C. Railroad Company Survey, Section 103, Abstract 169, Waller County, Texas

Previous Approvals: The District approved the Preliminary Plat for West Katy Warehouse on October 24, 2022, under Permit No. 2022-99. The District approved the Final Plat for West Katy Warehouse on May 8, 2023, under Permit No. 2023-23.

Description: The proposed West Katy Warehouse (Development) is located adjacent to Willow Fork. The Development encompasses 11.7141 acres and includes 0 lots, 2 reserves, and 1 block. The property lies within the City of Katy and is currently under construction.

The Development includes the construction of an approximately 128,950-square-foot warehouse and office building, underground utilities, and concrete parking. The drainage for the site will be conveyed through an internal underground storm sewer system which outfalls into a proposed private joint detention pond located on the southeastern corner of the site, which will then outfall into Willow Fork of Buffalo Bayou.



Mr. Arnold England, President
August 9, 2023
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The purpose of this replat is to include the joint detention pond within a restricted reserve and resubmit the plat for District approval. The private detention pond was originally included within a private detention pond easement.

DFMA: The property owner will be required to execute a Detention Facilities Maintenance Agreement (DFMA) for this Development. The Board will consider approval of this agreement once recommended by the District's attorney.

Technical Review: Based on our review, the Preliminary Plat of West Katy Warehouse Unrestricted Reserve A Replat No. 1 generally complies with the District's Rules and Regulations. We interpose no objection and recommend the District accept this Preliminary Plat.

It is to be understood that the acceptance of the Preliminary Plat by the District's Board of Supervisors does not constitute official acceptance of the proposed Development by the District but does constitute an authorization to begin and proceed with the preparation of the Final Plat.

For the Applicant: The submittal of the Final Plat for the proposed development shall include the necessary information/ documents for review.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael H. McCarthy'.

Michael H. McCarthy, PE

MHM/dme

<https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1003-51 West Katy Warehouse Unrestricted Reserve/Plan Reviews/Plat Letters/West Katy Warehouse Unrestricted Reserve Replat No. 1 - Preliminary Plat Letter 080923.docx>

cc: Mr. Ray Childress – Childress Family Investments, Inc. – ray@childressrealty.com
Ms. Lucy Magana – Windrose Land Services lucy.magana@windroseservices.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Justin Beckendorff, Waller County Commissioner Precinct 4 via email j.beckendorff@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com

BROOKSHIRE-KATY DRAINAGE DISTRICT
MONTHLY EQUIPMENT MILEAGE/HOUR, AND EXPENSE REPORT

July 2023

TRACTORS

EQUIPMENT	YEAR MODEL	LIFETIME HOURS	HOURS THIS MONTH	FISCAL YTD HOURS	EXPENSES THIS MONTH	FISCAL YTD EXPENSES
JD 5100E BAT-WING TRACTOR	2019	2,502	84	509	\$0.00	\$3,237.30
JD R15 15' Flex-Wing Cutter	2019	-	-	-	\$0.00	\$0.00
JD 6145M 2019 BOOM MOWER	2019	2,215	112	397	\$0.00	\$13,787.28
JD 6145M 2021 BOOM MOWER	2021	1,099	16	493	\$310.00	\$950.57
JD 6150M BOOM MOWER	2015	5,961	58	636	\$868.60	\$4,468.75
JD 930M Z-TRAK MOWER	2018	553	9	76	\$67.97	\$297.19

HEAVY EQUIPMENT

EQUIPMENT	YEAR MODEL	LIFETIME HOURS	HOURS THIS MONTH	FISCAL YTD HOURS	EXPENSES THIS MONTH	FISCAL YTD EXPENSES
CAT D6k2 DOZER	2019	1,230	17	360	\$0.00	\$2,830.40
CAT 323 EXCAVATOR	2018	3,643	91	816	\$565.08	\$9,089.67
CAT 416E BACKHOE	2012	3,081	35	235	\$307.15	\$943.27
JD 755A TRACK LOADER	1982	2,600	1	35	\$0.00	\$886.42
NORAM 65E MOTOR GRADER	2014	2,897	5	96	\$0.00	\$6,115.77

VEHICLES

EQUIPMENT	YEAR MODEL	LIFETIME MILES	MILES THIS MONTH	FISCAL YTD MILES	EXPENSES THIS MONTH	FISCAL YTD EXPENSES
F-250 4X4 w/FUEL TANK (CREW)	2020	12,498	172	4,172	\$0.00	\$51.48
TACOMA SR 4X4 (INSPECTOR)	2019	38,536	1,064	9,036	\$177.13	\$1,592.81
F-150 4X4 (GENERAL MANAGER)	2017	77,849	922	11,656	\$16.50	\$1,690.51
F-250 4X4 (FOREMAN)	2016	102,440	56	7,484	\$0.00	\$181.60
F-750 DUMP TRUCK	2011	37,471	511	2,863	\$0.00	\$4,577.95
FREIGHTLINER HAUL TRUCK	2000	384,674	24	803	\$0.00	\$3,905.45
DODGE RAM 4X4 (2301)	2023	1,398	322	1,398	\$0.00	\$1,021.78
DODGE RAM 4X4 (2302)	2023	3,200	921	3,200	\$0.00	\$940.81
CHEVROLET C-60 FARM TRUCK	1977	UNKNOWN	UNKNOWN	UNKNOWN	\$0.00	\$16.50

TRAILERS

EQUIPMENT	YEAR MODEL	EXPENSES THIS MONTH	FISCAL YTD EXPENSES
LOAD MAX TRAIL 20' TANDEM	2020	\$0.00	\$0.00
CARRY-ON 6'x8' 2-WHEEL	2017	\$0.00	\$0.00
NUTTALL LOWBOY	1985	\$0.00	\$0.00
SPRAYER TANK TRAILER	?	\$0.00	\$0.00
HOME-MADE 4-WHEEL	1980	\$0.00	\$0.00

General Fund	\$2,709,510.93
Payroll Fund	\$131,438.33
Petty Cash	\$1,529.21
Building Fund	\$1,101,253.96
Capital Improvement Fund	\$600,707.11
Texpool Fund	\$3,029.08
Amegy Bank Checking	\$69,600.84
Austin Co. State Bank CD	\$244,392.06
Bank of Shiner CD	\$182,076.20
Bank of Brenham CD	\$245,000.00
Citizens State Bank CD	\$240,956.67
Fayetteville Bank CD	\$179,143.97
First Nat. Bank Bellville CD	\$179,881.22
Industry State Bank CD	\$246,720.99
TOTAL RECONCILED BALANCE	\$6,135,240.57
<i>All accounts are reconciled.</i>	

RESERVES:
\$1,518,171.11

FUNDS						
	TexPool	Prosperity Bank General Fund	Prosperity Bank Payroll Fund	Amegy Bank Grant - Checking	Prosperity Bank Building Fund	Prosperity Bank Capital Imprvmnts
Fund Balance						
Beginning Balance 7/1	\$3,016.48	\$2,768,470.47	\$177,708.16	\$69,600.84	\$1,101,113.68	\$600,630.59
Deposits and Credits	\$12.60	\$103,071.09	\$1,962.44	\$0.00	\$140.28	\$76.52
Debits and Withdrawals	\$0.00	\$137,568.33	\$36,657.96	\$0.00	\$0.00	\$0.00
Ending Balance 7/31	\$3,029.08	\$2,733,973.23	\$143,012.64	\$69,600.84	\$1,101,253.96	\$600,707.11
Less Total Outstanding Drafts/Deposits (Net Amount)	\$0.00	-\$14,670.76	-\$11,574.31	\$0.00	\$0.00	\$0.00
Adjusted Ending Balance 7/31	\$3,029.08	\$2,719,302.47	\$131,438.33	\$69,600.84	\$1,101,253.96	\$600,707.11
Monthly Interest Earned	\$12.60	\$353.38	\$20.44	\$0.00	\$140.28	\$76.52

CERTIFICATES OF DEPOSIT							
	Austin County State Bank	Bank of Shiner	Citizens State Bank	Fayetteville Bank	First National Bank of Bellville	Industry State Bank	Bank of Brenham
Fund Balance							
Beginning Balance 7/1	\$244,392.06	\$182,076.20	\$240,956.67	\$179,143.97	\$179,881.22	\$246,720.99	\$245,000.00
Deposits and Credits	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Debits and Withdrawals	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ending Balance 7/31	\$244,392.06	\$182,076.20	\$240,956.67	\$179,143.97	\$179,881.22	\$246,720.99	\$245,000.00
Interest/Earned	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

BUDGET	
22-23 FY Budget	\$3,997,825.15
YTD Expenses	\$2,139,428.54
New Equipment	\$178,455.67
3560 Fourth St. (6.893 Acres)	\$392,894.02
Total Budgeted Expenses YTD	\$2,710,778.23

3560 Fourth St. (6.893 Acres)	
Delegated from Civil Penalties Received	\$400,000.00
Delegated from 22-23 FY Budget - Line Item: Cap Imprvmnt	\$392,894.02
Total Purchase Price for Property	\$792,894.02

MINUTES
BROOKSHIRE-KATY DRAINAGE DISTRICT

August 21, 2023

The Board of Supervisors of Brookshire-Katy Drainage District (the "District") met in a budget workshop, open to the public, at 8:30 a.m. on the 21st day of August, 2023, at 1111 Kenney Street, Brookshire, Texas, inside the boundaries of the District, and the roll was called of the members of the Board:

Arnold England	President
Pat Keeling	Vice President
David Welch	Secretary
Blake Beckendorff	Supervisor
John Chisum	Assistant Secretary

and all of the above were present, thus constituting a quorum.

Also attending the meeting were Stan Kitzman, General Manager; Buddy Brand, Assistant General Manager of the District; Wendy Sidwell, District Administrator; Steve Berkenhoff, P.E., Rod Pinheiro, P.E. and Michael McCarthy, P.E., of Quiddity Engineering ("Quiddity" or "Engineer"); and Andrew P. Johnson, III, and William Petrov, attorneys, of Johnson Petrov, LLP ("Johnson Petrov" or "Attorney").

Agenda Item No. 1
CALL TO ORDER

The President called the meeting to order.

Agenda Item No. 2
DISCUSS BROOKSHIRE-KATY DRAINAGE DISTRICT'S 2023-2024 BUDGET

The Board reviewed and discussed the Budget for Fiscal Year Ending September 30, 2024. No action was taken.

ADJOURNMENT

With no additional matters to discuss, upon Motion by Supervisor Welch and seconded by Supervisor Chisum, and with all Supervisors voting aye, the Board adjourned the meeting at 11:34 a.m.

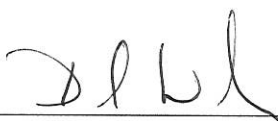
[EXECUTION PAGE FOLLOWS]

SIGNED this 11th day of SEPTEMBER 2023.



President, Board of Supervisors

ATTEST:



Secretary, Board of Supervisors

MINUTES
BROOKSHIRE-KATY DRAINAGE DISTRICT

August 24, 2023

The Board of Supervisors of Brookshire-Katy Drainage District (the "District") met in special session, open to the public, at 8:45 a.m. on the 24th day of August, 2023, at 1111 Kenney Street, Brookshire, Texas, inside the boundaries of the District, and the roll was called of the members of the Board:

Arnold England	President
Pat Keeling	Vice President
David Welch	Secretary
Blake Beckendorff	Supervisor
John Chisum	Assistant Secretary

and all of the above were present, thus constituting a quorum.

Also attending the meeting were Stan Kitman, General Manager; Buddy Brand, Assistant General Manager of the District; Wendy Sidwell, District Administrator; and Andrew P. Johnson, III, and William Petrov, attorneys, of Johnson Petrov, LLP ("Johnson Petrov" or "Attorney").

Agenda Item No. 1
CALL TO ORDER

The President called the meeting to order.

Agenda Item No. 2
DISCUSS BROOKSHIRE-KATY DRAINAGE DISTRICT'S 2023-2024 BUDGET

Mr. Kitman discussed the Budget. No action was taken.

Agenda Item No. 3
DISCUSS AND TAKE ACTION TO PUBLISH OFFICIAL NOTICE OF PUBLIC HEARING ON PROPOSED 2023-2024 TAX RATE IN THE KATY TIMES

Upon motion by Director Welch, seconded by Director Chisum, after full discussion and with all Directors present voting aye, the Board proposed a tax rate of \$0.060420 per \$100 of assessed valuation and authorized the District Administrator to (i) publish notice of a proposed tax rate of \$0.060420 per \$100 of assessed valuation; and (ii) publish notice of a public hearing at 1111 Kenney Street, Brookshire, Texas on such proposed rate for September 11, 2023 at 7:00 p.m. in the Katy Times.

ADJOURNMENT

With no additional matters to discuss, upon motion by Supervisor Welch, seconded by Supervisor Chisum, and with all Supervisors voting aye, the Board adjourned the meeting at 9:15 a.m.

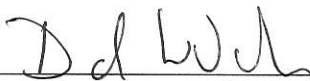
[EXECUTION PAGE FOLLOWS]

SIGNED this 11th day of SEPTEMBER 2023.



President, Board of Supervisors

ATTEST:



Secretary, Board of Supervisors

MINUTES
BROOKSHIRE-KATY DRAINAGE DISTRICT

August 28, 2023

The Board of Supervisors of Brookshire-Katy Drainage District (the "District") met in special session, open to the public, at 8:30 a.m. on the 28th day of August, 2023, at 1111 Kenney Street, Brookshire, Texas, inside the boundaries of the District, and the roll was called of the members of the Board:

Arnold England	President
Pat Keeling	Vice President
David Welch	Secretary
Blake Beckendorff	Supervisor
John Chisum	Assistant Secretary

and all of the above were present except Supervisor Chisum, thus constituting a quorum.

Also attending the meeting were Stan Kitzman, General Manager; Buddy Brand, Assistant General Manager of the District; Wendy Sidwell, District Administrator; Steve Berkenhoff, P.E., and Michael McCarthy, P.E., of Quiddity Engineering ("Quiddity" or "Engineer"); Brooke Bacuetes of Waller County; Jordan Konesheck, P.E. and Joshua Bouquet of Pape-Dawson Engineers; and Andrew P. Johnson, III, and William Petrov, attorneys, and Mirna Croon, paralegal, of Johnson Petrov, LLP ("Johnson Petrov" or "Attorney").

Agenda Item No. 2
INVOCATION AND PLEDGE OF ALLEGIANCE

The meeting was opened with the Invocation and Pledge of Allegiance.

Agenda Item No. 3
PUBLIC COMMENT

There was no public comment.

Agenda Item No. 4
PERMIT APPLICATION FOR DRAINAGE IMPACT ASSESSMENT ("DIA") FOR DEWBERRY HILLS

Mr. McCarthy presented a recommendation letter related to DIA for Dewberry Hills, a copy of which is attached hereto as Exhibit "A".

Upon motion by Supervisor Keeling, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board approved the DIA for Dewberry Hills, as recommended by Quiddity.

Agenda Item No. 5
PERMIT APPLICATION FOR DRAINAGE IMPACT ASSESSMENT ("DIA") FOR EMPIRE WEST ATLAS 14 ANALYSIS

Mr. McCarthy presented a recommendation letter related to DIA Empire West Atlas 14 Analysis, a copy of which is attached hereto as Exhibit "A-1".

Upon motion by Supervisor Keeling, seconded by Supervisor Welch, after full discussion and with all Supervisors present voting aye, the Board approved the DIA for Empire West Atlas 14 Analysis, as recommended by Quiddity.

[Mr. Petrov entered the meeting.]

Agenda Item No. 6

PERMIT APPLICATION FOR TRACT DEVELOPMENT WITH PLATTING FOR KIDDIE ACADEMY SUNTERRA - FINAL PLAT, PERMIT NO. 2023-52

Mr. McCarthy presented a recommendation letter related to Permit Application No. 2023-52, a copy of which is attached hereto as Exhibit "A-2".

Upon motion by Supervisor Welch, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board approved Permit Application No. 2023-52 for Kiddie Academy Sunterra - Final Plat, as recommended by Quiddity.

Agenda Item No. 7

PERMIT APPLICATION FOR TRACT DEVELOPMENT WITHOUT PLATTING FOR GEIMAN SPORTS COMPLEX PHASE II - BUILDING 3 - FINAL DRAINAGE PLANS, PERMIT NO. 2023-13

Mr. McCarthy presented a recommendation letter related Permit Application No. 2023-13, a copy of which is attached hereto as Exhibit "A-3".

Upon motion by Supervisor Welch, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board approved Permit Application No. 2023-13 for Geiman Sports Complex, Phase II - Building 3 Final Drainage Plans, contingent upon outfalls being constructed in accordance with the District's rules and Detention Pond Detail Referenced on Sheet C10.

[Mr. Johnson entered the meeting.]

Agenda Item No. 8

ENGAGEMENT LETTER FROM ANGIE EVANS, CPA, PLLC FOR THE 2022-2023 FISCAL YEAR AUDIT

Upon motion by Supervisor Beckendorff, seconded by Supervisor Welch, after full discussion and with all Supervisors present voting aye, the Board approved the Engagement Letter from Angie Evans, CPA, PLLC, a copy of which is attached hereto as Exhibit "B".

Agenda Item No. 9

REQUEST TO CHANGE PAYROLL PROCESSES FOR EXEMPT PERSONNEL TO BIWEEKLY BEGINNING PAY PERIOD SEPTEMBER 15, 2023

Upon motion by Supervisor Welch, seconded by Supervisor Keeling, after full discussion and with all Supervisors present voting aye, the Board authorized changing the payroll processes for exempt personnel to biweekly effective with the September 15, 2023 pay period.

Agenda Item No. 10

ADOPT A SOCIAL MEDIA POLICY

Upon motion by Supervisor Welch, seconded by Supervisor Beckendorff, after full discussion and with all Supervisors present voting aye, the Board approved the Resolution Adopting a Social Media Policy, a copy of which is attached hereto as Exhibit "B".

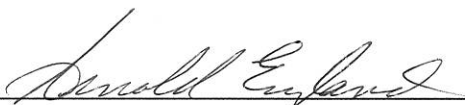
Mr. Petrov presented to and reviewed with the Board, a memo entitled "Legislative Update for the 88th Texas Legislature (2023)", which summarizes the actions of the recently concluded legislative session, with particular attention to changes in law that directly affect the District.

ADJOURNMENT

With no additional matters to discuss, upon motion by Supervisor Welch, seconded by Supervisor Keeling, and with all Supervisors voting aye, the Board adjourned the meeting at 9:56 a.m.

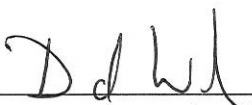
[EXECUTION PAGE FOLLOWS]

SIGNED this 11th day of SEPTEMBER 2023.



President, Board of Supervisors

ATTEST:



Secretary, Board of Supervisors

- | | |
|---------------|--|
| Exhibit "A" | Engineering Recommendation Dewberry Hills |
| Exhibit "A-1" | Engineering Recommendation Empire West |
| Exhibit "A-2" | Engineering Recommendation Kiddie Academy Sunterra |
| Exhibit "A-3" | Engineering Recommendation Geiman Sports Complex |
| Exhibit "B" | Social Media Policy |



August 23, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Dewberry Hills – Drainage Impact Assessment
Waller County, Texas
Quiddity Job No. R0002-1003-68

Dear Mr. England:

The referenced Dewberry Hills Drainage Impact Assessment (Report) has been reviewed pursuant to the Brookshire-Katy Drainage District's (District) Rules and Regulations (R&R). A copy of the Report is attached for further information.

The goals of this review are to apply the District's policy and criteria where appropriate. This review addresses issues regarding hydraulic and hydrologic drainage design criteria only. The drainage plans for the proposed Dewberry Hills (Development) were submitted to the District and are under review.

Technical Review & Findings:

The Development includes 213 acres of land for future single family development. The Development is located east of FM 362, south of FM 529, and west of FM 2855. The Report aims to analyze the drainage and detention requirements for the Development and certify no adverse impacts to the Development, adjacent properties, or downstream facilities in accordance with the District's R&R.

The Development includes the construction of two wet bottom detention ponds, Pond 1 and Pond 2, that provide a combined total of 221 acre-feet of storage volume for the 100-yr storm event and minimum of 1-ft of freeboard. The detention storage rate applied for the Development is 1.038 ac-ft/ac. Pond 1 will connect to Pond 2 with a single 6-ft x 6-ft reinforced concrete box. Pond 2 will outfall into an existing District channel through a proposed 48-inch reinforced concrete pipe (RCP) outfall. A proposed 70-ft wide extreme event spillway will be sized to convey the peak 100-yr flow from the site and outfall into the District's channel. The flow from the District's channel will eventually discharge into Willow Fork of Buffalo Bayou.

The District currently maintains the referenced channel within an existing 40-ft drainage easement that runs along the eastern boundary of the Development. The Development proposes to make improvements to the existing District channel and construct a new channel along its northern boundary to capture and route the approximate 1,000 acres of offsite sheetflow that enter into the Development during a 100-yr storm event. The Development proposes to dedicate an additional 120-ft of drainage easement to the District along its eastern boundary for a total of a 160-ft wide drainage easement. Additionally, the Development proposes to dedicate a 160-ft wide drainage easement to the District along its northern boundary that will connect to the existing District channel on the eastern side of the Development. The channel improvements will include a 50-ft bottom width, a depth ranging from 4 ft to 5.5 ft, 4:1 side slopes, and 20-ft wide maintenance berms on both sides. Additionally, it is our understanding a Municipal Utility District will assume maintenance responsibilities for the channel once it is constructed.



Mr. Arnold England, President

August 23, 2023

Page 2

The Report includes details for the 2, 10, and 100 year peak flow rates and water surface elevations within the District's channel, including facilities downstream of the Development. Exhibits 9-11, Tables 2-3, and Figure 1 from the Report indicate that both the peak flows and water surface elevations within the District's channel, including downstream facilities, show no adverse impacts in the proposed condition as compared to the existing condition for storm events up to and including the Atlas 14 100-yr storm event as a result of this Development.

Conclusion:

Based on our review of the Report, the Development does not show any adverse impacts from the proposed peak discharge rates or water surface elevations in the District's channel, including downstream facilities, when compared to those under the existing conditions for storm events up to and including the Atlas 14 100-yr storm event. Additionally, the permit applications for the subsequent drainage plans must include a certification from a professional engineer licensed to practice in the state of Texas that the future developments will cause no adverse impact to the receiving drainage and detention facilities, including downstream facilities, in full compliance with this Report.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. We offer no objections to this Dewberry Hills Drainage Impact Assessment and recommend the District accept this Report.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, the Report submitted has been prepared, dated, signed, and sealed by a Professional Engineer who is licensed to practice in the State of Texas, conveying their professional responsibilities and accountability.

Sincerely,

Michael H. McCarthy, PE

MHM/dme

https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1003-68 Dewberry Hills Permit Review/Plan Reviews/Plan Review Letters/Dewberry Hills Drainage Impact Assessment Letter_082323.docx

Enclosures

cc: Mr. Chuck Birt – LGI Homes - Texas LLC cbirt@lgihomes.com
Mr. Jordan Konesheck, PE – Pape-Dawson Engineers, Inc. via email jkonesheck@pape-dawson.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendrick D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com



2322 W Grand Parkway North, Suite 150
Katy, Texas 77449
Tel: 832.913.4000
www.quiddity.com

August 23, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Empire West Atlas 14 Analysis (11.54-acre and 36.82-acre tracts) – Drainage Impact Assessment
276 acre development – Empire West
Waller County, Texas
Quiddity Job No. R0002-1004-05

Dear Mr. England:

The referenced Empire West Atlas 14 Analysis Drainage Impact Assessment (Report) has been reviewed pursuant to the Brookshire-Katy Drainage District's (District) Rules and Regulations (R&R). A copy of the Report is attached for further information.

The goals of this review are to apply the District's policy and criteria where appropriate. This review addresses issues regarding hydraulic and hydrologic drainage design criteria only. Design criteria regarding the site layout of the proposed drainage and detention facilities will be reviewed upon submittal of the final plat and plans.

Technical Review & Findings:

The Empire West development proposes the buildout of its two remaining industrial tracts - 11.54-acre and 36.82-acre tracts (Development). The Report aims to analyze the detention requirements for the Development, using Atlas 14 criteria, and certify no adverse impacts to the Development, adjacent properties, or downstream facilities in accordance with the District's (R&R). The Development is located south of US Hwy 90, north of Interstate 10, west of Woods Road, and within Waller County.

The Report outlines the technical analysis and findings to justify excess detention capacity within the Empire West development to accommodate the Atlas 14 100-yr flows from the Development. The Report indicates there is excess detention storage capacity within the Empire West detention ponds to accommodate the additional runoff from the Development. The District previously accepted the Drainage Impact Assessment for the Empire West development under the report titled "333-acre Brookshire Tract Drainage Impact Study" dated March 2020. The previously approved drainage impact assessment was designed to pre-Atlas 14 criteria in conformance with the District's R&R at the time of permit approval. The Report analyzed the entire Empire West development using Atlas 14 criteria and the results indicate there is excess detention storage capacity within the existing "Main Pond" and "I-10 Pond" to contain the Atlas 14 100-yr water surface elevations within top of bank for both ponds. The "Main Pond" will maintain 0.1-ft of freeboard and the "I-10 Pond" will maintain 6.0-ft of freeboard during the Atlas 100-yr storm event when the entire service area is analyzed using Atlas 14.

Drainage Impact Assessments for Previous Phases:

The District previously received and accepted the Drainage Impact Assessment for the Empire West development under the report titled "333-acre Brookshire Tract Drainage Impact Study" dated March 2020.



Mr. Arnold England, President

August 23, 2023

Page 2

Conclusion:

Based on our review of the Report, there is sufficient detention storage capacity within the existing Empire West development to accommodate the Atlas 14 100-yr runoff flows from this Development. The Report does not indicate an increase in the proposed condition peak discharge rates or water surface elevations in Brookshire Creek, including downstream facilities, when compared to those under the existing conditions for storm events up to and including the Atlas 14 100-yr storm event. Additionally, the permit applications for the subsequent drainage plans must include a certification from a professional engineer licensed to practice in the state of Texas that the future developments will cause no adverse impact to the receiving drainage and detention facilities, including downstream facilities, in full compliance with this Report.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. We offer no objections to this Empire West Atlas 14 Drainage Impact Assessment and recommend the District accept this Report.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, the Report submitted has been prepared, dated, signed, and sealed by a Professional Engineer who is licensed to practice in the State of Texas, conveying their professional responsibilities and accountability.

Sincerely,

Michael McCarthy, PE

MHM/dme

https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1004-05 Empire West Permit Review/3.0 - LETTERS/Empire West Drainage Impact Assessment Letter_082323.docx

Enclosures

cc: Mr. Kyle Fletcher – SRPF B/Spartan West X, LP via email kyle.fletcher@streamrealty.com
Mr. Steven Golz, PE, CFM, ENV SP – BGE, Inc. via email sgolz@bgeinc.com
Mr. Nick Bailey, PE – BGE, Inc. via email nbailey@bgeinc.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendric D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com



August 24, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: KA Great Minds West LLC
Kiddie Academy Sunterra – **Final Plat**
Permit No. 2023-52
Quiddity Job No. R0002-1004-07

Dear Mr. England:

The Brookshire-Katy Drainage District (District) has received a permit application as follows:

Applicant: ALJ Lindsey, LLC

Permit Type: Tract Development with Platting – Final Plat

Location: Intersection of Bartlett Road and Clay Road

Survey: J.W. McCutcheon Survey Section 130, Abstract 308, Waller County, Texas

Previous Approvals: The District approved the Preliminary Plat for Kiddie Academy Sunterra on June 12, 2023.

Description: The proposed Kiddie Academy Sunterra (Development) is located east and adjacent to the intersection of Bartlett Road and Clay Road. The Development includes a replat of Sunterra Market Reserve in order to create two unrestricted reserves in the final replat titled Bartlett Road Corner Reserve. The Development includes a proposed commercial development located within Unrestricted Reserve "B" of Bartlett Road Corner Reserve which is approximately 1.7589 acres.

The drainage for the Development is proposed to be routed through an underground private storm sewer system which crosses an approximate 1.4895-acre undeveloped Unrestricted Reserve "A" of Bartlett Road Corner Reserve before connecting to the existing public storm sewer stubs along Bartlett Road. The proposed underground storm sewer that crosses Unrestricted Reserve "A" will be placed within a 10-ft storm sewer easement that will be dedicated with the recordation of the Final Plat of Bartlett Road Corner Reserve. The flow within the Bartlett Road storm sewer will then connect to the storm sewer system within Sunterra Beach Drive. The construction of the existing public storm sewer along Bartlett Road was included in the plans titled "Water, Sanitary, Drainage & Paving Facilities on Bartlett Road-Segment No. 1" under Permit No. 2021-02 and approved by the District on February 8, 2021. The construction of the existing public storm sewer along Sunterra Beach Drive was included in the plans titled "Water, Sanitary, Drainage & Paving Facilities on Sunterra Beach Drive Seg 1 & Sunterra Shores Drive Seg 1" under Permit No. 2020-73 and approved by the District on March 8, 2021.



Mr. Arnold England, President

Page 2

August 24, 2023

The flow from the referenced connections at Bartlett Road and Sunterra Beach Drive will outfall into Detention Pond C, which outfalls into Detention Pond D, which will then outfall into Detention Pond E. Detention Pond E outfalls into Cane Island Branch of Buffalo Bayou.

Detention Ponds C, D, and E were included in the construction plans titled "Sunterra Mass Grading and Detention Phase I" that were approved under Permit No. 2020-18 on August 10, 2020 and in the plans titled "Sunterra Phase IA Pipes and Outfalls" that were approved under Permit No. 2020-64 on November 9, 2020.

DFMA:

Detention Ponds C, D, and E are part of an executed Detention Facilities Maintenance Agreement with the District.

Technical Review:

The Sunterra development started before the District Rules and Regulations changed on February 28, 2022, to include and adopt the Atlas 14 flow criteria. However, it was designed to satisfy Atlas 14 flow criteria adopted by Harris County.

Based on our review of the final drainage plans (plans) and final plat, the permit application generally complies with the District's Rules and Regulations (R&R); we interpose no objection and recommend its approval by the District's Board of Supervisors.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, the plans and plat submitted have been prepared, dated, signed, and sealed by a Professional Engineer and a Land Surveyor, respectively. They are licensed to practice in the State of Texas, conveying these professional responsibilities and accountability.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. The proposed Development shall be constructed per the District's approved plans and in conformance with the District's R&R.

For the Applicant:

Please be advised that in an effort to comply with the District's policy to maintain zero net increase in stormwater runoff rates and to ensure that no adverse impacts are attributable to the proposed Development, all detention facilities (i.e., drainage infrastructure and outfall(s)) must be constructed and functional before beginning construction of any impervious improvements.



Mr. Arnold England, President

Page 3

August 24, 2023

Please note: at least two business days prior to starting construction of any Detention Facilities and Drainage Infrastructure, the Developer's contractor shall notify the District's General Manager in writing. The Pre-Construction Notification form can be found on the District's website under Permit Application and Engineering Documents (<https://www.bkdd.dst.tx.us/page/BKDD.Home>).

The applicant shall not use this letter to commence any construction activities prior to receiving the **approved permit** from the governing entity with jurisdiction.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

Michael McCarthy, PE

MHM/dme

https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1004-07 Kiddie Academy Sunterra Permit Review/3.0 - LETTERS/Kiddie Academy Sunterra - Final Plat Approval Ltr 082323_.docx

cc: Mr. David Denton – ALJ Lindsey, LLC ddenton@aljindsey.com
Ms. Amanda Rabijs – Windrose Services amanda.rabijs@windroseservices.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendric D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com



August 25, 2023

Mr. Arnold England, President
Brookshire-Katy Drainage District
PO Box 608
Brookshire, Texas 77423

Reference: Shawn Geiman
Geiman Sports Complex Phase II – Building 3– **Final Drainage Plans**
Permit No. 2023-13
Quiddity, Inc. Job No. R0002-1003-70

Dear Mr. England:

The Brookshire-Katy Drainage District (District) received a permit application as follows:

<u>Applicant:</u>	G&G Engineering and Consulting, LLC
<u>Permit Type:</u>	Tract Development w/o Platting – Final Drainage Plans
<u>Location:</u>	3330 Schlipf Road, Katy, Texas 77493
<u>Survey:</u>	H. & T.C. Rail Road Company Survey Section 77, Abstract 156, Waller County, Texas
<u>Previous Approvals:</u>	N/A
<u>Description:</u>	The proposed Geiman Sports Complex Phase II – Building 3 (Development) is located to the east of Schlipf Road, north of Morton Road, and south of Clay Road. The Development includes the construction of an approximate 10,000 square foot building, and on-site private paving and drainage improvements. The Development encompasses approximately 1 acre of improvements out of a 33.514 acre tract. Phase 1 development (Permit No. 2020-86) included the construction of two approximate 10,000 square foot buildings, underground private storm sewer, private detention pond and outfall, and associated parking areas over approximately 6 acres of the 33.514 acre tract. The drainage for the site will be conveyed through a proposed internal private underground storm sewer system, which outfalls into an existing private detention pond on the eastern side of the tract, which then outfalls to a private ditch along the southern boundary of the 33.514 acre property, which then continues east and then south to Morton Road. The existing storm sewer, detention pond, and outfall were included in the plans titled "Private Site Work to serve (2) Proposed Buildings" that was approved by the District on May 10, 2021, under Permit No. 2020-86.



Mr. Arnold England, President

August 25, 2023

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DFMA: The existing private detention facility is part of an executed Detention Facilities Maintenance Agreement (DFMA) with the District.

Technical Review: Based on our review of the final drainage plans (plans), the permit application generally complies with the District's Rules and Regulations (R&R); we interpose no objection and recommend its approval by the District's Board of Supervisors.

Please note that this recommendation does not necessarily mean that the proposed design and all the calculations provided in the accompanying documentation have been completely checked and verified. Omissions in this review do not relieve the Development from complying with the District's R&R or any other regulatory requirements from a different entity having jurisdiction. Moreover, a Professional Engineer has prepared, dated, signed, and sealed the plans submitted. This Professional Engineer is licensed to practice in the State of Texas, conveying these professional responsibilities and accountability.

At this time, no deviation or variance requests from the District's R&R have been requested or granted. The proposed Development shall be constructed per the District's approved plans and in conformance with the District's R&R.

For the Applicant: Please be advised that in an effort to comply with the District's policy to maintain zero net increase in stormwater runoff rates and to ensure that no adverse impacts are attributable to the proposed Development, all detention facilities (i.e., drainage infrastructure and outfall(s)) must be constructed and functional before beginning construction of any impervious improvements.

At least two business days prior to starting construction of the Detention Facilities and Drainage Infrastructure, the Developer's contractor shall notify the District's General Manager in writing. The Pre-Construction Notification form can be found on the District's website under Permit Application and Engineering Documents (<https://www.bkdd.dst.tx.us/page/BKDD.Home>).



Mr. Arnold England, President

August 25, 2023

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The Applicant shall not use this letter to commence any construction activities prior to receiving the **approved permit** from the governing entity with jurisdiction.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

Michael H. McCarthy, PE

MHM/dme

<https://jonesandcarter.sharepoint.com/sites/BKDDTeamSite/Shared Documents/BKDD All Permits/R0002-1003-75 Cardiff Business Park Building 2 Permit/Plan Reviews/Plat Letters/Cardiff Bus. Park Office Warehouse - DP Letter 071823.docx>

cc: Mr. Shawn Geiman via email shawneetrees@yahoo.com
Mr. David Gregory – G&G Engineering and Consulting, LLC via email dgregory@g-gdesign.com
Mr. Chris Miller, PE – G&G Engineering and Consulting, LLC via email cmiller@g-gdesign.com
Honorable Carbett "Trey" J. Duhon, III, Waller County Judge via email t.duhon@wallercounty.us
Mr. Kendric D. Jones, Waller County Commissioner Precinct 3 via email k.jones@wallercounty.us
Mr. Ross McCall, PE – Waller County Engineer via email r.mccall@wallercounty.us
Mr. Andrew Johnson, III – Johnson Petrov, LLP via email bkddlegal@johnsonpetrov.com

CERTIFICATE FOR RESOLUTION

STATE OF TEXAS
COUNTY OF WALLER
BROOKSHIRE-KATY DRAINAGE DISTRICT

§
§
§

We, the undersigned officers of the Board of Supervisors (the "Board") of **BROOKSHIRE-KATY DRAINAGE DISTRICT** (the "District"), hereby certify as follows:

The Board convened in regular session, open to the public, on Monday, August 28, 2023, at 8:00 a.m., at the regular meeting place thereto, and the roll was called of the members of the Board, to-wit:

Arnold England	President
Pat Keeling	Vice President
David Welch	Secretary
Blake Beckendorff	Supervisor
John Chisum	Supervisor

All members of the Board were present except the following: _____, thus constituting a quorum. Whereupon other business, the following was transacted at such Meeting: A written

RESOLUTION ADOPTING A SOCIAL MEDIA POLICY

was duly introduced for the consideration of the Board. It was then duly moved and seconded that such Order be adopted; and after full discussion, such motion, carrying with it the adoption of such Order prevailed, carried, and became effective by the following vote:

AYES: _____

NOES: _____

A true, full and correct copy of the aforesaid Resolution adopted at the Meeting described in the above foregoing paragraph is attached to and follows this Certificate; such Resolution has been duly recorded in the Board's minutes of such Meeting; the above and foregoing paragraph is a true, full, and correct excerpt from the Board's minutes of such Meeting pertaining to the adoption of such Resolution; the persons named in the above and foregoing paragraph are the duly chosen, qualified, and acting officers and members of the Board as indicated therein; each of the officers and members of the Board are duly and sufficiently notified officially and personally, in advance, of the time, place, and purpose of such Meeting, and that such Resolution would be introduced and considered for adoption at such meeting, and each of the officers and members consented, in advance, to the holding of such Meeting for such purpose; and such Meeting was open to the public and public notice of the time, place, and purpose of such Meeting was given, all as required by Chapter 551 of the Texas Government Code and Section 49.063 of the Texas Water Code, as amended.

RESOLUTION ADOPTING A SOCIAL MEDIA POLICY

STATE OF TEXAS
COUNTY OF WALLER
BROOKSHIRE-KATY DRAINAGE DISTRICT

§
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WHEREAS, Brookshire Katy Drainage District (the “District”) is a political subdivision of the State of Texas operating pursuant to Chapters 49 and 53 of the Texas Water Code; and

WHEREAS, on June 14, 2023, the Governor signed into law SB 1893, with an effective date of September 1, 2023; and

WHEREAS, SB 1893 provides that a district shall adopt a policy prohibiting the installation of or use of an application, developed or provided by ByteDance Limited (developer of Tik-Tok) or specified by a proclamation of the governor, on any device owned or leased by the governmental entity, including districts; and

WHEREAS, the Board has heretofore adopted a Social Media Policy in compliance with SB 1893.

NOW, THEREFORE, BE IT ORDERED BY THE BOARD OF DIRECTORS OF BROOKSHIRE KATY DRAINAGE DISTRICT THAT:

Section 1. The Board hereby finds that it is necessary to adopt a social media policy as laid out in Exhibit “A.”

Section 3. If any word, phrase, clause, sentence, paragraph, section or other part of this Resolution or the application thereof to any person or circumstance, shall ever be held to be invalid or unconstitutional by any court of competent jurisdiction, neither the remainder of this Resolution, nor the application of such word, phrase, clause, sentence, paragraph, section, or other part this Resolution to any other persons or circumstances, shall be affected thereby.

Section 2. This Resolution takes effect immediately upon its passage.

PASSED, APPROVED AND ADOPTED this the 28th day of August, 2023.

Secretary, Board of Supervisors

President, Board of Supervisors

* * * * *

EXHIBIT A
SOCIAL MEDIA POLICY

Brookshire-Katy Drainage District Social Media Policy

Adopted: August 28, 2023

I

INTRODUCTION

1.1 PURPOSE

On June 14, 2023, Governor Greg Abbott signed into law SB 1893, requiring all political subdivisions to ban the video-sharing application TikTok and any other software application developed by ByteDance from all governmental owned and leased devices. SB 1893 also directed the Texas Department of Information Resources (DIR) to develop a plan providing political subdivisions guidance on managing governmental owned and leased devices.

In addition to TikTok, Brookshire-Katy Drainage District (the “District”) may add other software and hardware products with security concerns to this policy. Throughout this Policy, "Prohibited Applications" shall refer to TikTok, any additional hardware or software developed by ByteDance and any additional hardware or software added to this Policy.

1.2 SCOPE

This policy applies to all District owned and leased devices and all full and part-time employees including paid or unpaid interns, and users of state networks. All District employees are responsible for complying with the terms and conditions of this policy.

II

POLICY

2.1 STATE-OWNED AND LEASED DEVICES

The use or download of Prohibited Applications or websites is prohibited on all District owned and leased devices, including but not limited to cell phones, tablets, desktops and laptop computers, and other internet capable devices.

The District shall identify, track, and control state-owned and leased devices to prohibit the installation of or access to all Prohibited Applications.

2.2 ONGOING AND EMERGING TECHNOLOGY THREATS

To provide protection against ongoing and emerging technological threats to the District’s sensitive information and critical infrastructure, the state and DIR will regularly monitor and evaluate additional applications posing concerns for inclusion in this Policy.