



**TOWN OF SHADY SHORES
PLANNING AND ZONING COMMISSION
SPECIAL CALLED SESSION
AUGUST 6, 2020; 7:00 PM
VIRTUAL MEETING
SHADY SHORES COMMUNITY CENTER
101 S. SHADY SHORES ROAD
SHADY SHORES, TX 76208**

AGENDA

Topic: Planning and Zoning Commission
Time: Aug 6, 2020 07:00 PM Central Time (US and Canada)

Join Zoom Meeting
<https://us02web.zoom.us/j/84828815319?pwd=RWl0R0hncWlsZTZvdHEwenpJS2pzUT09>

Meeting ID: 848 2881 5319
Passcode: 674348
One tap mobile
+13462487799,,84828815319#,,,,,0#,,674348# US (Houston)

-

1. CALL TO ORDER
2. ROLL CALL
Establish a quorum
3. REGULAR BUSINESS
 1. Minutes- Consider and act on the minutes of the June 11, 2020 Planning and Zoning Commission Meeting.
 2. Public Hearing- Conduct a public hearing relative to a request for a zoning change and replat made by Tom Spencer.

A) Open Public Hearing
B) Applicant
C) Those in favor
D) Those opposed
E) Rebuttal
F) Close Public Hearing
 3. Spencer Replat/Zoning Change Request- Consider and act on an application for a zoning change and replat made by Tom Spencer for the property legally known as B. Eaves Survey, Abstract 388 , Block 12, Lots 1-14.

4. Public Hearing- Conduct a public hearing relative to apporval of a final plat for Hidden Valley Airpark Phase VI.
 - A) Open Public Hearing
 - B) Applicant
 - C) Those in favor
 - D) Those Opposed
 - E) Rebuttal, if desired
 - F) Close Public Hearing

5. Hidden Valley Phase VI- Consider and act on approval of a final plat for Hidden Valley Airpark Phase VI

4. FUTURE AGENDA ITEMS

5. ADJOURN

I, _____, _____ of the Town of Shady Shores do hereby certify that the above notice of the Planning and Zoning Commission was posted on the bulletin board at the Community Center, 101 S. Shady Shores Road, Shady Shores, Texas on _____ Day of _____, _____, at _____ .M.

IN ADDITION, A QUORUM OF CITY COUNCIL MEMBERS MAY CHOOSE TO ATTEND THE PLANNING AND ZONING MEETING POSTED ABOVE. THEREFORE, THIS IS NOTICE OF A CITY COUNCIL MEETING AT THE SAME TIME AND PLACE, WITH THE SAME AGENDA AS THE P&Z MEETING. IN THE EVENT A QUORUM OF COUNCIL IS PRESENT AT THE MEETING, NO ACTION OF THE COUNCIL WILL BE TAKEN. THIS NOTICE IS POSTED AT THE TIME STATED ABOVE.

Wendy Withers, Town Secretary



AGENDA MEMORANDUM

DATE: August 6, 2020
TO: Planning and Zoning Commission
FROM: Wendy Withers, Town Administrator
SUBJECT: Minutes- Consider and act on the minutes of the June 11, 2020 Planning and Zoning Commission Meeting.

BACKGROUND/INFORMATION:

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

1. PZ MIN 6.11.2020

REVIEWED BY:



**SHADY SHORES PLANNING AND ZONING COMMISSION
JUNE 11, 2020; 7:00 PM
SHADY SHORES COMMUNITY CENTER
101 S. SHADY SHORES ROAD
SHADY SHORES, TX 76208**

MINUTES

In response to the coronavirus pandemic, effective March 16, 2020, Texas Governor Abbott suspended certain Open Meeting rules to allow meetings of government bodies that are accessible to the public to decrease large groups of people from assembling. The suspension temporarily removes the requirement that government officials and members of the public be physically present at a meeting location. The meeting was held via Zoom Teleconference Meeting ID **849 3109 0647.**

MEMBERS PRESENT

Allen Lea	Chairman	Present
Rebecca Morgan	Vice-Chairman	Present
Paul Brown	Commissioner	Present
Linda Winter	Commissioner	Present
Kenneth Wells	Commissioner	Present
Lynn Grimes	Commissioner	Present

Also Present: Wendy Withers, Town Administrator; Jim Shepherd, Town Attorney

* All members and staff were present in person. The meeting was also held via Zoom so that residents could dial in to view.

1. CALL TO ORDER

Chairman Allen Lea called the meeting to order at 7:00 pm.

2. ROLL CALL

Establish a quorum

Chairman Lea called the roll and a quorum was established for the record.

3. REGULAR BUSINESS

1. Minutes- Consider and act on the minutes of the February 27, 2020 Special Called Planning and Zoning Commission Meeting.

Rebecca Morgan made a motion to approve the minutes. Linda Winter seconded the motion.

Discussion: None

Ayes: Brown, Morgan, Winter, Wells

Nays: None

The motion passed unanimously.

2. Consider and act on an Ordinance adopting the 2018 Fire Code and amendments and the adoption of updated building and energy codes.
Planning and Zoning Members discussed the various code and what effect changing codes would have on developers and building permits within the Town of Shady Shores.

Kenneth Wells made a motion to recommend adoption of the 2018 Edition of the International Fire Code, with amendments; the 2018 Edition of the International Building Code (Sec. 3.02.031), the 2018 International Residential Code (Sec. 3.02.071), the 2017 National Electric Code (Sec. 3.02.121), 2018 International Plumbing Code (Sec. 3.02.161), 2018 International Mechanical Code (Sec. 3.02.201). Paul Brown seconded the motion.

Discussions: None

Ayes: Brown, Morgan, Winter, Wells, Lea

Nays: None

The motion passed unanimously.

4. WORKSESSION

1. Parking Ordinance- Consider and act on making a recommendation regarding parking on Garza Road as well as the Big Sandy Boat Ramp.

Town Attorney Jim Shepherd stated that the State Law allows us to pass ordinances about parking, Transportation Code allows us to regulate stopping starting, including designating one-way streets. Commissioners discussed the various parking issues on Lakeshore Road and N. Garza.

Rebecca Morgan made a motion to recommend that the Town Council pass an Ordinance restricting parking on Lakeshore Road between Oberman and COE and on North Garza from Brown Terrace. Paul Brown seconded the motion.

Discussion: None

Ayes: Brown, Morgan, Wells, Lea, Winter

Nays: None

The motion passed unanimously.

2. Worksession- Conduct a worksession relative to proposed changes to the Zoning Ordinance and the Subdivision Ordinance.

There was no action taken on this agenda item.

5. FUTURE AGENDA ITEMS

Zoning Ordinance and Subdivision Ordinance.

Subdivision Ordinance

Public Hearing notice to the residents just to change the Ordinance. variance, or a whole new zoning classification.

6. ADJOURN

Rebecca Morgan made a motion to adjourn. Linda Winter seconded the motion. The meeting was adjourned at 8:18 pm.

PASSED AND APPROVED THIS THE _____ DAY OF _____, 2020.

APPROVED:

2 PZ MINUTES 6.11.2020

ALLEN LEA, CHAIRMAN

ATTEST:

WENDY WITHERS, TOWN ADMINISTRATOR/SECRETARY



AGENDA MEMORANDUM

DATE: August 6, 2020

TO: Planning and Zoning Commission

FROM: Wendy Withers, Town Administrator

SUBJECT: **Public Hearing- Conduct a public hearing relative to a request for a zoning change and replat made by Tom Spencer.**

- A) Open Public Hearing
- B) Applicant
- C) Those in favor
- D) Those opposed
- E) Rebuttal
- F) Close Public Hearing

BACKGROUND/INFORMATION:

Conduct a public hearing relative to a zoning change request and a request for a replat made by Tom Spencer. The Historical district zoning is only available in those portions of the Town of Shady Shores designated on the Comprehensive Plan for that Zoning, which are areas of the Town developed prior to the incorporation of the Town, or since, in small lots in the subdivision averaging 1,500 square feet or less; on right of ways or prescriptive easements of less than 20 feet in width. No other vacant or developed areas of Shady Shores are to be rezoned as H-1200-4300. Areas rezoned to H-1200-4300 will be required to replat the existing lot or lots to comply with the new zoning. Lots located on rights-of-way of less than 20 feet in width will be required to dedicate up to five feet of the lot to the city for additional right-of-way as a part of the zoning and replat required of the property.

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

None

REVIEWED BY:



AGENDA MEMORANDUM

DATE: August 6, 2020
TO: Planning and Zoning Commission
FROM: Wendy Withers, Town Administrator
SUBJECT: **Spencer Replat/Zoning Change Request- Consider and act on an application for a zoning change and replat made by Tom Spencer for the property legally known as B. Eaves Survey, Abstract 388 , Block 12, Lots 1-14.**

BACKGROUND/INFORMATION:

The Historical district zoning is only available in those portions of the Town of Shady Shores designated on the Comprehensive Plan for that Zoning, which are areas of the Town developed prior to the incorporation of the Town, or since, in small lots in the subdivision averaging 1,500 square feet or less; on right of ways or prescriptive easements of less than 20 feet in width. No other vacant or developed areas of Shady Shores are to be rezoned as H-1200-4300. Areas rezoned to H-1200-4300 will be required to replat the existing lot or lots to comply with the new zoning. Lots located on rights-of-way of less than 20 feet in width will be required to dedicate up to five feet of the lot to the city for additional right-of-way as a part of the zoning and replat required of the property.

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

Tom Spencer is requesting that the zoning for this property be changed to H-1200-4300. He has submitted the proper documentation and a request for a replat which is a requirement of the Historic Zoning designation.

Town Engineer Richard Arvizu has reviewed the request and his approval letter is attached.

ATTACHMENTS/SUPPORTING DOCUMENTATION:

1. Application Packet Re-Plat Request_Redacted
2. ARTICLE_2_7_“H-1200-4300”_HISTORICAL_DISTRICT_REGULATIONS (1)
3. Town Engineer Letter - Lots 1R-3R Blk 12 Shady Shores Sub 7-23-20
4. 205128-PLAT
5. 205128-CLOSURE SHEET
6. ZONING BOUNDARY CHANGE APPLICATION FORM Final Draft July 20 2020_Redacted

REVIEWED BY:

PLAT APPLICATION

APPLICANT

Name JERALD YENSAN
Company LANDMARK SURVEYORS LLC
Address 4238 I-35 N.
Town DENTON State TX
Zip 76207 Fax (940) 387-9782
Phone (940) 382-4016
E-mail LANDMARK SV @AOL.COM

OWNER (if different from applicant)

Name TOM SPENCER
Company _____
Address PO Box 2954
Town DENTON State TX
Zip 76202 Fax _____
Phone 1 7 .
E-mail _____

Action Requested (check one – please complete a new application for each action):

- ☐ Minor Plat (new subdivision of 3 or fewer lots with no new infrastructure)
- ☐ Minor Replat (existing subdivision to create 3 or fewer lots with no new infrastructure)
- ☐ Amending Plat (existing subdivision minor amendments and no new lots or infrastructure)
- ☐ Preliminary Plat or Replat (new subdivision of 4 or more lots or new infrastructure)
- ☐ Final Plat (following approval of preliminary plat and installation of new infrastructure)

Property Information:

Street address or location of property: TBD SHADY LANE

Legal description: Survey B. EAVES Abstract 388

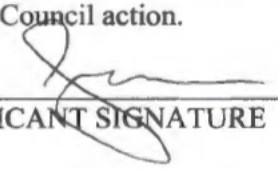
Lot 1R, 2R, 3R Block 12 Total Acreage 0.402
SHADY SHORES SUBD.

Attach a metes and bounds description.

By signing this form, the applicant is acknowledging that:

No hearing will be scheduled nor will any reviews commence until required application fees are received by the town. Fees are non-refundable regardless of outcome of request.

I JERALD YENSAN (printed applicant name) hereby waive by rights to approval through lack of Town action on the above referenced plat application within the time frames set forth in Texas Government Code Section 212.009, and I agree the plat submitted will be approved only by affirmative Town Council action.


APPLICANT SIGNATURE

7/12/2020

DATE

OWNER SIGNATURE

DATE

OFFICE USE ONLY BELOW

PRELIMINARY and MINOR PLATS/REPLATS

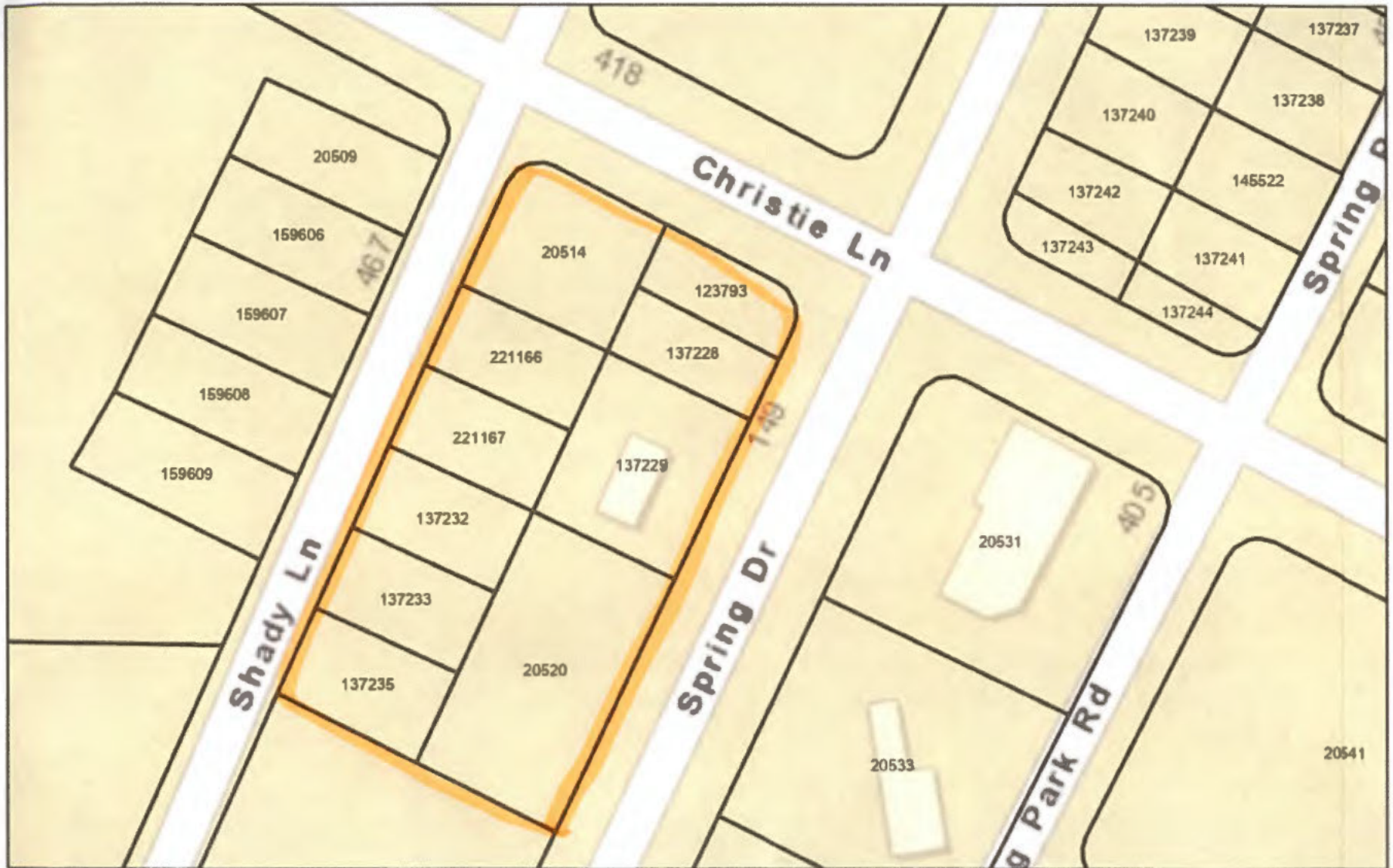
- ☐ Letters sent to property owners within 200-foot of subject property 10-days prior to meeting but no

Date Received: _____

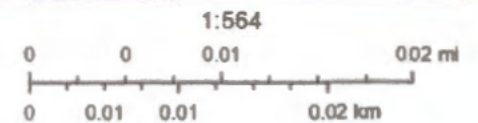
Receipt #: _____

Check #:

Denton CAD Webmap

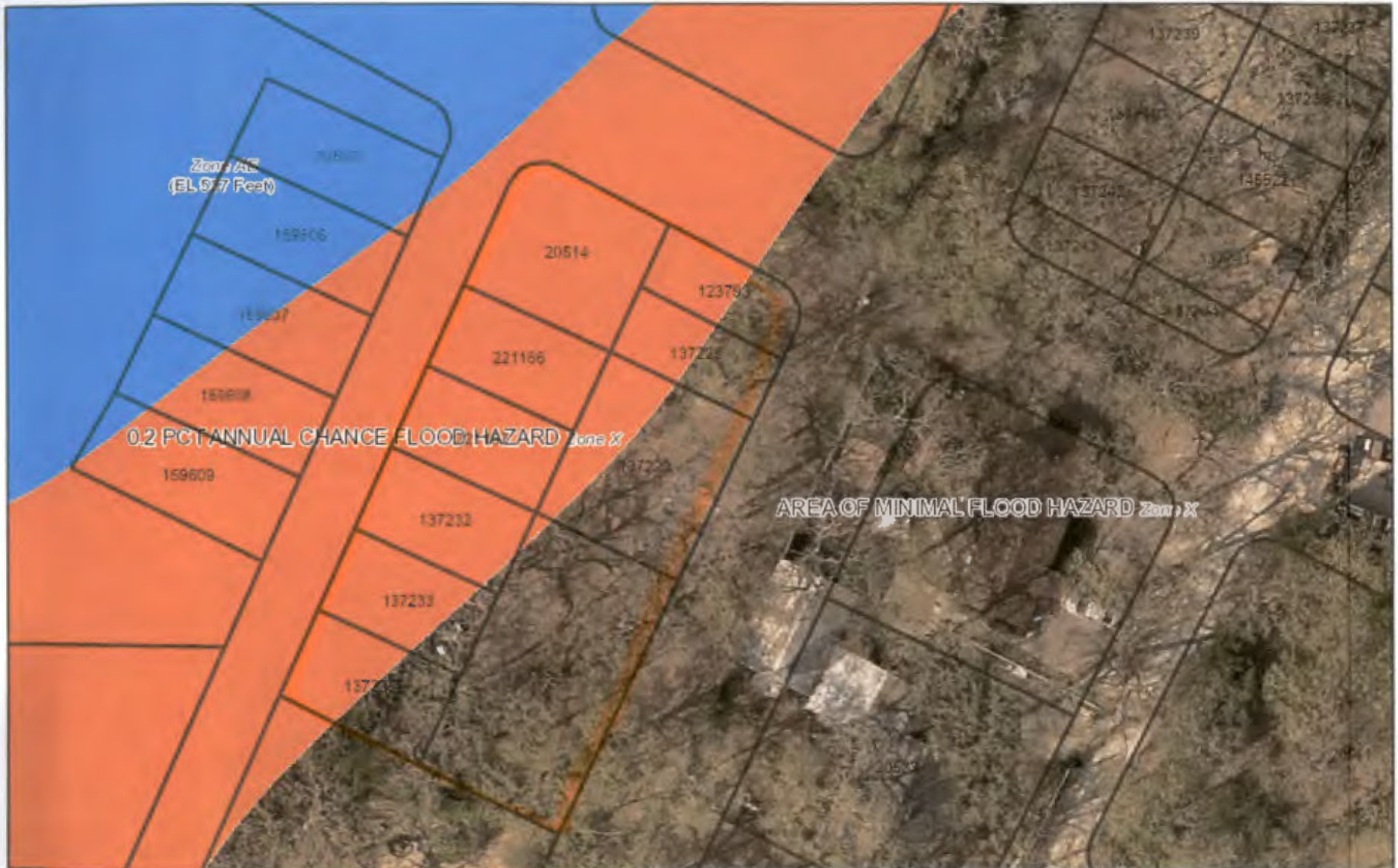


July 15, 2020

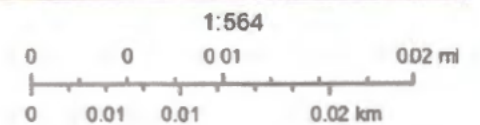


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan,

Denton CAD Webmap



July 16, 2020

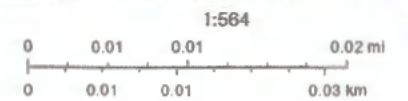


Sources: Esri HERE, Garmin USGS, Intermap, INCREMENT P, NRCan

Denton CAD Webmap



July 15, 2020



Sources Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

ARTICLE 2.7 “H-1200-4300” HISTORICAL DISTRICT REGULATIONS

(a) Use Regulations: In a H-1200-4300 HISTORICAL DISTRICT, no land shall be used and no building erected or converted to any other use than permitted in [ARTICLE 3.2](#). The Historical district zoning is only available in those portions of the Town of Shady Shores designated on the Comprehensive Plan for that Zoning, which are areas of the Town developed prior to the incorporation of the Town, or since, in small lots in the subdivision averaging 1,500 square feet or less; on right of ways or prescriptive easements of less than 20 feet in width. No other vacant or developed areas of Shady Shores are to be rezoned as H-1200-4300. Areas rezoned to H-1200-4300 will be required to replat the existing lot or lots to comply with the new zoning. Lots located on rights-of-way of less than 20 feet in width will be required to dedicate up to five feet of the lot to the city for additional right-of-way as a part of the zoning and replat required of the property.

(b) Building Regulations:

Minimum Size: The minimum floor area of the main building shall be one thousand two hundred (1,200) square feet living area, which excludes porches, breezeways, attached garages and caretaker's quarters.

(c) Area Regulations:

(1) Front Yards: There shall be a front yard for every building having a depth of not less than ten (10) feet from the front property line to the face of the building.

(2) Rear Yard: There shall be a rear yard for every building which shall have a depth of not less than ten (10) feet measured from the back of the building to the rear property line.

(3) Side Yard: There shall be two (2) side yards for each building, one on each side of the building. No side yard shall be less than five (5) feet, measured from the side property line to the side of the building.

(4) Corner Lots: The Town's standard corner lot regulations are set forth in the Zoning Ordinance and Subdivision Ordinances shall apply. The owners of existing developed areas designated in the Comprehensive Plan as available for rezoning to the H-1200-4300 zoning may, upon rezoning, have the front and side yard on the corner of not less than 10 feet each. Or, they may request alternative regulations for corner lots based on the limitations of the proposed development on the corner lot, and the available and acquired right-of-way. The City Engineer may review alternative plans, and refer the applicant to the Zoning Board of Adjustment with his recommendation.

(5) Lot Area: The minimum lot area in the H-1200-4300 district shall be 4300 square feet, excluding Public Rights-of-Way, alleys, and Private streets.

(6) Lot Width: The minimum lot width shall be fifty (50) feet.

(7) Lot Depth: The minimum lot depth shall be thirty (30) feet.

(8) Lot Coverage: The combined area of the main building and accessory buildings shall not cover more than forty (40) percent of the total area of any lot.

(9) Parking: A minimum of two (2) off-street all-weather surfaced parking spaces shall be provided for each residential lot. A carport must be set back not less than ten (10) feet from the front property line. A garage must be set back not less than twenty (20) feet from the front property line.

(Ordinance 302-06-2017, sec. 2.3.III, adopted 7/10/17)



July 23, 2020

Mayor Cindy Aughinbaugh
Town of Shady Shores
101 S. Shady Shores Rd.
Shady Shores, Texas 76208

Re: Plat Approval Request for Lots 1-R, 2-R and 3-R, Block 12, Shady Shores Subdivision

Honorable Mayor Aughinbaugh:

The Amending Final Plat with the date of May 8, 2020 was received today from Landmark Surveyors, LLC on behalf of property owner Tom Spencer. I reviewed a previous version and requested minor revisions on June 19, 2020. All those comments have been addressed. The applicant is requesting approval of platting 14 lots into three residential lots. It is understood the applicant is working to re-zone the properties from R-2000 zoning to Historical District zoning.

A two-foot wide right-of-way dedication has been included at the west side of the subdivision along Shady Lane, which is currently an existing 16-foot wide road right-of-way in the area. In accordance with the thoroughfare requirements for the Historical District, the right-of-way should be 20-foot wide. The two-foot dedication is the first step in achieving this and is all that is required at this time. Right-of-way dedication is not required and not being provided along the northern or eastern sides of the subdivision because those are unimproved roads and do not show up on the thoroughfare plan.

Each lot has a 5-foot wide private drainage easement along the east-west property lines to be able to address drainage across the subdivision when developed.

Based on my review of the submitted information by Landmark Surveyors, LLC I recommend the Planning and Zoning Commission and Town consider approving the plat.

Sincerely,

Binkley & Barfield, Inc.
Consulting Engineers

A handwritten signature in black ink, appearing to read 'Richard A. Arvizu', written over a light blue grid background.

Richard A. Arvizu, P.E., CFM
Managing Director – Municipal Infrastructure

Attachment:

- Amending Final Plat

GRAPHIC SCALE 1"=20'

A horizontal graphic scale bar with a total length of 100 feet. The bar is divided into five equal segments, each representing 20 feet. The segments are labeled with the numbers 0, 10, 20, 40, 60, 80, and 100 at the top. The bar is filled with a series of horizontal lines.


LANDMARK
SURVEYORS, LLC.
 TX FIRM REGISTRATION NO. 10098600

4238 I-35 NORTH
 DENTON, TEXAS 76207
 (940) 382-4016
 FAX (940) 387-9784

DRAWN BY: BTH SCALE: 1"=20' DATE: 28 MAY, 2020 JOB NO: 205128

SURVEYOR
LANDMARK SURVEYORS
4238 I-35 N
DENTON, TEXAS 76207
(940) 382-4016

NOTES:

1. The purpose of this Plat is to reduce 14 lots into three residential lots.
2. Cross-lot drainage is not permitted.
3. Private plumbing will not be allowed to cross property lines.
4. All private drainage easements are to be maintained by the property owner.
5. Only portion shown of subject property lies within a special flood hazard area according to the FLOOD INSURANCE RATE MAP for Denton County and Incorporated Area, Map Number 48121C0391H, dated June 19, 2020. (Subject property lies in Zone X (shaded) and Zone X.)
6. Basis of Bearing is the State Plane Coordinate System, Texas North Central Zone (4202), North American Datum of 1983, as determined from GPS observations.
7. Minimum finished floor (FF) elevations for Lots 1R, 2R and 3R shall be 539' (NAVD 88)
8. Property lines for Lots 1-14, Block 12 to be abandoned per this plat.

Lot Closure Report - Lot : 1R, 2R, 3R

=====

file- C:\Users\Public\MICROSURVEY JOBS\JOBS2020\205128\205128.msx\lc_1R, 2R, 3R.txt
Thursday, July 23, 2020, 3:35:27p.m.

Starting location (North, East) = (7109763.201, 2417626.813)

(In the table below, the Length of Curves refers to the chord length.
and the Bearing of Curves refers to the chord bearing.)

Leg	Segment	Bearing	Length	Front	End_Northing	End_Easting
---	-----	-----	-----	-----	-----	-----
1	Line	N25°53'17"E	175.000	No	7109920.640	2417703.221
2	Line	S64°06'43"E	100.000	No	7109876.978	2417793.186
3	Line	S25°53'17"W	175.000	No	7109719.540	2417716.778
4	Line	N64°06'43"W	100.000	No	7109763.201	2417626.813

Ending location (North, East) = (7109763.201, 2417626.813)

Total Distance : 550.000
Total Traverse Stations : 5
Misclosure Distance : < 0.001000
Error of Closure : 1:INFINITY
Frontage : 0.000
Frontage/Perimeter : 0.0 percent
AREA : 17500.000 sq. ft.
= 0.401745 Acres

ZONING BOUNDARY CHANGE APPLICATION FORM

ANNEXATION REQUEST FORM

1. Requesting: Re-Zoning

The zoning change is being requested to change the zoning from the current R-2000 ½ zoning category defined in Article 2.5 in of the current zoning ordinance NO. 256-5-2013, to H-1200-4300 District the residential district established under Article 2.7.

The original lots were platted in the 1932 plat of the Shady Shores Subdivision as here described:

Being Lots 1-14 in block 12 of SHADY SHORES SUBDIVISION, an Addition to the Town of Shady Shores, Denton County, Texas, according to the Plat thereof recorded in Volume 1, Page 32, Plat Records, Denton County, Texas.(Commonly known as Shady Lane)

The new Survey for Replat describes the lots as:

AMENDING FINAL PLAT

LOTS 1-R, 2-R, AND 3-R, BLOCK 12

AMENDING LOTS 1-14, BLOCK 12

OF SHADY SHORES SUBDIVISION

BEING 0.42 ACRE IN THE B. EAVES SURVEY A-388

TOWN OF SHADY SHORES

DENTON COUNTY, TEXAS

Applicant/Company Name: Tom Spencer HSH Enterprises

Company Address: P.O. Box 2954 Denton, TX 76202

Company Phone Number: Mobile Home

Company email:

2. Description and Location of Property:

Survey and Abstract : The original lots were platted in the 1932 plat of the Shady Shores Subdivision as here described:

Being Lots 1-14 in block 12 of SHADY SHORES SUBDIVISION, an Addition to the Town of Shady Shores, Denton County, Texas, according to the Plat thereof recorded in

Volume 1, Page 32, Plat Records, Denton C County, Texas.(Commonly known as Shady Lane) A copy of the August 2, 2013 survey of Block 12 Lots 1-14 is enclosed.

A photo is included with the Replat Request.

Block 12 Lots 1-14 were formally known as 406 Shady Lane

The total number of acres is .42 acre.

The property is all within the Town Limits

8 copies of the survey have been submitted with the Replat request and contain all items i through m of the Zoning Boundary Change Application Form

Fees for the Application are Non-Refundable and will be paid as directed when the Town Secretary indicates the application form is acceptable and complete.

Town Secretary has indicated that she will compile the list of properties with 200 feet to be notified of the Zoning Change Request.

Applicant _____ Date _____

Accepted _____ Date _____

REQUEST FOR ZONING BOUNDARY CHANGE

Names and addresses of all property owners within 200 feet of subject property, in all directions:

1. Fred Reiser 410 Shady Lane - PO BOX 59821 Dallas , TX
2. John B. McDonald 402 Shady Lane 76208 - 5027
3. Jeffery & Rhonda Casey 401 Spring Park Rd. 76208 - 5010
4. Lilian J. Thompson 405 Spring Park Rd. 76208 - 5010
5. Kent & Cindy Taylor 403 Spring Park Rd. 76208 - 5010
6. Jane Graham 407 Spring Park Rd. 76208 - 5010
7. Donna Cody 411 Lakeshore Rd. 76208 - 5017
8. Confidential 406 Spring Park Rd. 76208 - 5052
9. Jose A. Delomo 408 Spring Park Rd. 76208 - 5052
10. Brittani N. Gonzales 413 Lakeshore Rd. 76208 - 5017
11. Rita Rembetsy 109 W. First St. 76208 - 5001
12. Alice Eugenia Bowers 409 Lakeshore Rd. 76208 - 5001
13. Donna Bragg 201 W. 1st St. - P.O. Box 656 Lake Dallas TX
14. Donna Pace 501 Lakeshore Rd. 76208 - 7041
15. Carl Thele 101 W. 1st St. 76208 - 5001



AGENDA MEMORANDUM

DATE: August 6, 2020

TO: Planning and Zoning Commission

FROM: Wendy Withers, Town Administrator

SUBJECT: **Public Hearing- Conduct a public hearing relative to apporval of a final plat for Hidden Valley Airpark Phase VI.**
A) Open Public Hearing
B) Applicant
C) Those in favor
D) Those Opposed
E) Rebuttal, if desired
F) Close Public Hearing

BACKGROUND/INFORMATION:

Conduct a public hearing relative to a request made by Hidden Valley Airpark for approval of Preliminary Plat of the property to be known as Hidden Valley Airpark Phase VI. The property is more legally described as; A0330A W. Durham, TR 123A, 18.65 ACRES. The preliminary plat proposes 15-1 acre lots.

FINANCIAL IMPLICATIONS:

RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

None

REVIEWED BY:



AGENDA MEMORANDUM

DATE: August 6, 2020
TO: Planning and Zoning Commission
FROM: Wendy Withers, Town Administrator
SUBJECT: Hidden Valley Phase VI- Consider and act on approval of a final plat for Hidden Valley Airpark Phase VI

BACKGROUND/INFORMATION:

Consider a request made by Hidden Valley Airpark for approval of Preliminary Plat of the property to be known as Hidden Valley Airpark Phase VI. The property is more legally described as; A0330A W. Durham, TR 123A, 18.65 ACRES. The preliminary plat proposes 15-1 acre lots.

The requestor is also requesting the following variances to the Subdivision Ordinance:

Regarding the variances, we are requesting the drainage ditch slopes of the west side of lot #84 be accepted as presently designed. Since HVAA will be responsible for any maintenance on this property (and not the city), we don't see it as an issue. To summarize the 'variances' on private HVAA maintained property:

1. ROW road clearing widths (HVAA wing and PDEs and UEs)-previously accepted
2. Pavement widths (match HVAA standards)-previously accepted
3. Lot 84 west side grass slopes to inlet
4. 36" pipe bend- manhole unnecessary
5. lot 34 permanent easement width for storm pipe at 10' wide (lot owner restriction).

FINANCIAL IMPLICATIONS:

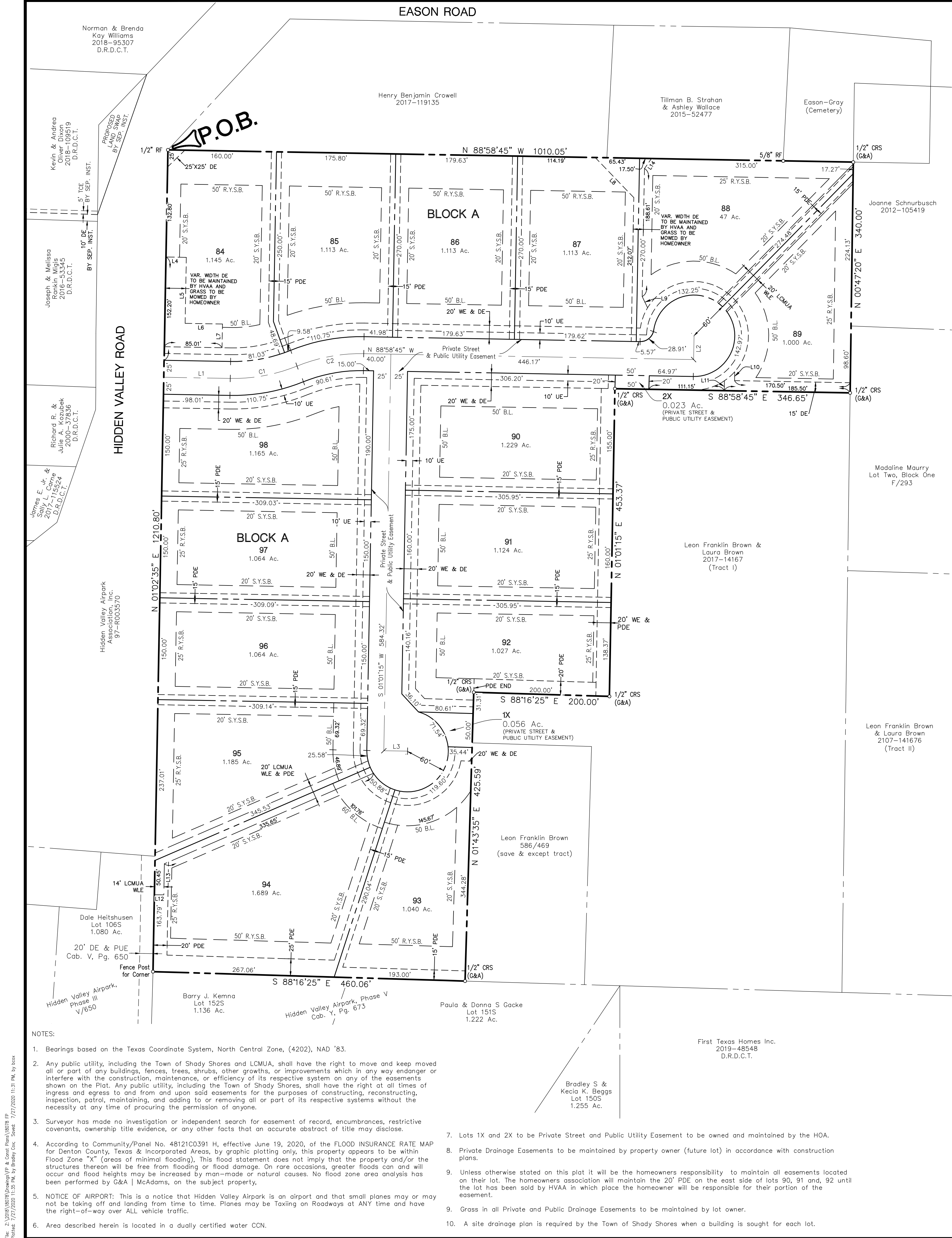
RECOMMENDATION/ACTION DESIRED:

ATTACHMENTS/SUPPORTING DOCUMENTATION:

1. 2020.07.27 HVAA FP

2. HVAACOEWetlands letter
3. 4300174_Shady_Shores_DelineationReport_11_8_2018

REVIEWED BY:



CURVE TABLE				
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	LONG CHORD
C1	250.00'	23°04'26"	100.68'	N 79°29'02" E, 100.00'
C2	250.00'	23°04'26"	100.68'	S 79°29'02" W, 100.00'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 88°58'45" E	98.00'
L2	S 01°01'15" W	35.00'
L3	S 88°58'45" E	35.00'
L4	S 88°58'45" E	30.00'
L5	S 01°02'43" W	97.20'
L6	S 88°58'45" E	55.00'
L7	S 01°02'43" W	35.00'
L8	S 43°58'45" E	81.93'
L9	S 26°01'45" E	18.19'
L10	N 00°47'20" E	13.03'
L11	N 00°47'20" E	14.46'
L12	S 89°04'15" E	13.91'
L13	N 01°01'15" E	45.76'

LEGEND

RF = REBAR FOUND
CRS = CAPPED REBAR SET
BL = BUILDING LINE
RYSB = REAR YARD SETBACK
SYSB = SIDE YARD SETBACK
UE = UTILITY EASEMENT
PUE = PUBLIC UTILITY EASEMENT
CRF = CAPPED REBAR FOUND
P.O.B. = POINT OF BEGINNING
WE = WING EASEMENT
WLE = WATER LINE EASEMENT
DE = DRAINAGE EASEMENT
PDE = PRIVATE DRAINAGE EASEMENT
TOE = TEMPORARY CONSTRUCTION EASEMENT
LCMUA = LAKE CITIES MUNICIPAL UTILITY AUTHORITY

DEDICATION
STATE OF TEXAS
COUNTY OF DENTON

WHEREAS, HIDDEN VALLEY AIRPARK ASSOCIATION, INC. is the owner of all that certain lot, tract, or parcel of land situated in the W. D. Durham Survey, Abstract No. 330, Town of Shady Shores, Denton County, Texas, being a portion of that certain tract of land described in deed to Leon Franklin Brown recorded in Volume 566, Page 469, Deed Records, Denton County, Texas and being a portion of that certain tract of land described in deed to Leon Franklin Brown and Laura Brown, recorded in Document No. 2017-141676, Official Records, Denton County, Texas and being more particularly described as follows;

BEGINNING at a 1/2 inch rebar found in the northwest corner of said Brown tract, same being the southwest corner of that certain tract of land described in deed to Benjamin Henry Crowell, recorded in Document No. 2017-119135, Official Records, Denton County, Texas, and being in the east line of a private road commonly known as Hidden Valley Road;

THENCE S 88°58'45" E, with the south line of said Crowell tract passing the southeast corner thereof and continuing along said course with the south line of that certain tract of land described in deed to Tillman B. Strohan and Ashley E. Wallace, husband and wife, recorded in Document No. 2015-52477, Official Records, Denton County, Texas, passing the southeast corner thereof and continuing along said course with the south line of Eason-Gray Cemetery, a distance of 1010.05 feet to a 1/2 inch rebar set with cap stamped "G&A CONSULTANTS", and being in the west line of that certain tract of land described in deed to Joanne Schnurbusch, a married person, recorded in Document No. 2012-105419 Official Records, Denton County, Texas;

THENCE S 00°47'20" W, with the west line of said Schnurbusch tract passing the southwest corner thereof being the northwest corner of Lot Two, Block One, Madeline Murray Addition, an addition to the Town of Shady Shores, Denton County, Texas according to the plat thereof recorded in Cabinet F, Page 293, Plat Records, Denton County, Texas, and continuing along said course a distance of 340.00 feet 1/2 inch rebar set with cap stamped "G&A CONSULTANTS";

THENCE N 88°58'45" W, to a 1/2 inch rebar set with cap stamped "G&A CONSULTANTS", a distance of 346.65 feet;

THENCE S 01°01'15" W, to a 1/2 inch rebar set with cap stamped "G&A CONSULTANTS", a distance of 453.37 feet;

THENCE N 88°16'25" W, to a 1/2 inch rebar set with cap stamped "G&A CONSULTANTS", a distance of 200.00 feet;

THENCE S 01°43'35" W, to a 1/2 inch rebar set with cap stamped "G&A CONSULTANTS", in the north line of Hidden Valley Airpark, Phase V, an addition to the Town of Shady Shores, according to the plat thereof, recorded in Cabinet Y, Page 673, Plat Records, Denton County, Texas; a distance of 425.59 feet;

THENCE N 88°16'25" W, with the north line of said Hidden Valley Airpark Phase V to a metal fence corner past at the northwest corner thereof, being in the east line of Hidden Valley Airpark, Phase III, an addition to the Town of Shady Shores, Denton County, Texas, according to the plat thereof recorded in Cabinet R, Page 673, Plat Records, Denton County, Texas a distance of 460.06 feet;

THENCE N 01°02'35" E, with the east line of said Hidden Valley Airpark, Phase III, and passing the northeast corner thereof and continuing along said course with the east line of that certain tract of land described in deed as Tract I to Hidden Valley Airpark Association, Inc. recorded in Volume 551, Page 415, Deed Records, Denton County, Texas, a distance of 1210.80 feet, to the POINT OF BEGINNING, and containing approximately 19.268 acres of land.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT, HIDDEN VALLEY AIRPARK ASSOCIATION, INC., does hereby adopt this plat designating the herein described property as HIDDEN VALLEY AIRPARK, PHASE VI in the Town of Shady Shores, Denton County, Texas and does hereby dedicate to the public use forever the street rights-of-way and public easement shown hereon.

MARY MCDOWELL, PRESIDENT
FOR HIDDEN VALLEY AIRPARK ASSOCIATION, INC.

STATE OF TEXAS

COUNTY OF DENTON

BEFORE ME, the undersigned notary Public in and for the State of Texas on this day personally appeared MARY MCDOWELL, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledges to me that she executed the same for the purpose and consideration thereon expressed, and in the capacity therein stated;

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____

Notary Public in the State of Texas
My Commission Expires: _____

Recommended for Approval by Planning and Zoning Commission:

Chairman: _____

Approved by Town Council: _____

Mayor: _____

Attested by: _____

Town Secretary: _____

Date of Town Council Approval: _____

LAKE CITIES MUNICIPAL UTILITY AUTHORITY

On the _____ day of _____, all permanent Lake Cities Municipal Utility Authority (LCMUA) easements dedicated per this plat were approved and accepted by LCMUA.

Signed: Mike Fairfield
General Manager
LCMUA

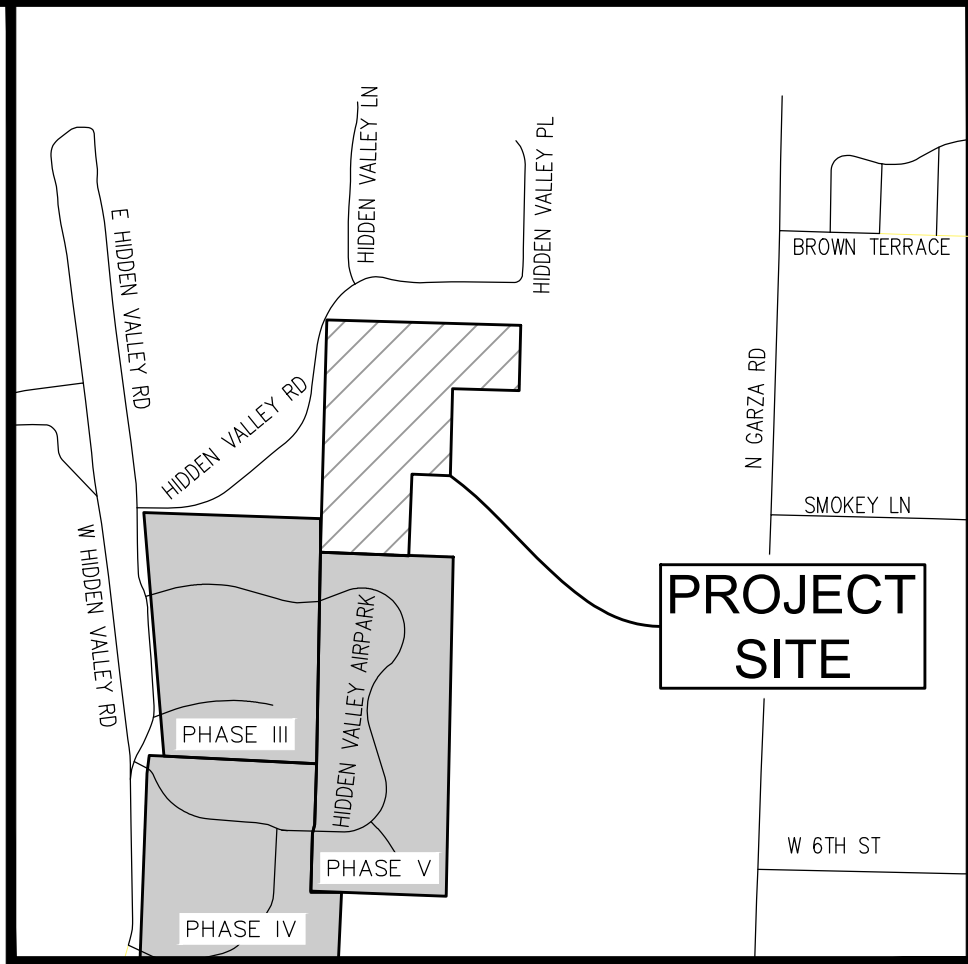
CULVERT TABLE						
LOT NUMBER	BLOCK	NUMBER OF PIPES	MIN. CULVERT SIZE (IN)	MIN. SLOPE (%)	DRAINAGE AREA (AC)	Q100 (CFS)
84*	BLOCK A	3	24	0.5	10.60	47.2
85*	BLOCK A	3	24	0.5	9.93	44.2
86*	BLOCK A	3	24	0.5	9.13	40.6
87	BLOCK A	1	18	0.5	0.47	2.1
88	BLOCK A	1	18	0.5	1.22	5.4
89	BLOCK A	1	18	0.5	0.69	3.1
90*	BLOCK A	2	18	0.5	3.27	14.6
91*	BLOCK A	1	18	0.5	2.04	9.1
92*	BLOCK A	1	18	0.5	0.54	2.4
93	BLOCK A	1	18	0.5	0.27	1.2
94	BLOCK A	1	18	0.5	0.23	1.0
95	BLOCK A	1	18	0.5	0.78	3.5
96	BLOCK A	1	18	0.5	1.72	7.7
97*	BLOCK A	1	24	0.5	2.87	12.8
98*	BLOCK A	2	18	0.5	4.91	21.8
ANY CULVERTS WITH VELOCITY 6.0 FPS AND OVER SHALL REQUIRE EROSION CONTROL MEASURES (NOTED WITH A *)						

PRELIMINARY PLANS

THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. G&A | McADAMS, TBPE: 19762 JOSHUA M. BARTON, P.E. #129227 DATE 7/27/2020

1. Culverts in culvert table to be installed by private lot owners, not by site development contractor.

*** This seal applies only to culvert table. All other items in this document fall under the seal of W. Thad Murley III, RPLS.



Vicinity Map 1"=1000'



80 0 80 160 240 Feet
SCALE: 1"=80'

BM- BOX CUT ON THE WESTERN EDGE OF THE ACCESS ROAD FOR THE HANGAR STORAGE LOCATED 95' ± WEST OF THE WESTERN SUBJECT PROPERTY LINE AND 60' ± SOUTHWEST OF THE SOUTHWEST CORNER OF A HANGER ELEVATION: 596.64. NAVD 88. NAVD 88.

BM- PK NAIL SET APPROX. ± 207' SOUTH OF NORTH PROPERTY LINE. APPROX. ± 3' WEST OF THE EASTERN EDGE OF EXISTING PAVEMENT. ELEV. = 568.25. NAVD 88. NAVD 88.

SURVEYOR'S STATEMENT

I, W. Thad Murley III, a Registered Professional Land Surveyor in the State of Texas, have prepared this plat of the above property from an actual survey on the ground, and this plat represents that survey made by me or under my supervision.

PRELIMINARY DOCUMENT:
THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT.
W. THAD MURLEY III, RPLS 6802 7/27/20

W. Thad Murley III, RPLS
Texas Registration No. 5802

FINAL PLAT
Lots 84-98, 1X, & 2X, Block A
HIDDEN VALLEY AIRPARK, PHASE VI
19.268 Acres
in the
W.D DURHAM SURVEY, ABSTRACT NO. 330
TOWN OF SHADY SHORES
DENTON COUNTY, TEXAS



The John R. McAdams Company, Inc.
111 Hillside Drive
Lewisville, Texas 75057
972.436.9712
201 Country View Drive
Roanoke, Texas 76262
940.240.1012
TBPE: 19762 TBPLS: 10194440
www.gacon.com
www.mcadamsco.com

DRAWN BY: MM DATE: Submit Date SCALE: 1"=80' JOB. No. 18078

OWNER/DEVELOPER
HIDDEN VALLEY ASSOCIATION
99 HIDDEN VALLEY AIRPARK
SHADY SHORES, TEXAS 76208
Ph. 972-768-0594
Contact: KYLE HARDMAN



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

May 22, 2019

Regulatory Division

SUBJECT: Project Number SWF-2018-00496, Hidden Valley Airpark Phase VI

Ms. Mary McDowell
Hidden Valley Airpark Association
99 Hidden Valley Airpark
Shady Shores, Texas 76208

Dear Ms. McDowell:

This letter is in regard to information received December 19, 2018 and subsequent submittal received on April 4, 2019, concerning the proposal by Hidden Valley Airpark Association to construct a residential development with associated infrastructure located in Shady Shores, Denton County, Texas. This project has been assigned Project Number SWF-2018-00496. Please include this number in all future correspondence concerning this project.

Under Section 404 of the Clean Water Act the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. USACE responsibility under Section 10 of the Rivers and Harbors Act of 1899 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined this project will not involve activities subject to the requirements of Section 404 or Section 10. Therefore, it will not require Department of the Army authorization pursuant to Section 404 and/or Section 10.

The USACE based this decision on an approved jurisdictional determination (JD) that there are no waters of the United States on the project site. The basis of this approved JD is enclosed. This approved JD is valid for a period of no more than five years from the date of this letter unless new information warrants revision of the delineation before the expiration date.

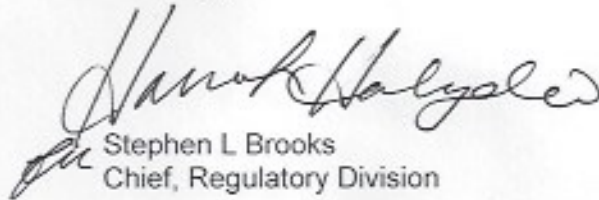
The Applicant may accept or appeal this approved JD or provide new information in accordance with the enclosed Notification of Administration Appeal Options and Process and Request for Appeal (NAAOP-RFA). If the Applicant elects to appeal this approved JD, the Applicant must complete Section II (Request for Appeal or Objections to an Initial Proffered Permit) of the enclosure and return it to the Division Engineer, ATTN: CESWD-PD-O Appeals Review Officer, U.S. Army Corps of Engineers, 1100 Commerce Street Suite 831, Dallas, Texas 75242-0216 within 60 days of the date of this notice. Failure to notify the USACE within 60 days of the date of this notice means you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please refer to our website at

<http://www.swf.usace.army.mil/Missions/Regulatory> or contact Ms. Hannah Halydier at the address above or telephone (817) 886-1745 and refer to your assigned project number.

Please help the regulatory program improve its service by completing the survey on the following website: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Sincerely,



Stephen L. Brooks
Chief, Regulatory Division

Copy Furnished (w/ enclosures):

Mr. Joseph Schwartz
GES, Inc.
101 E. Southwest Parkway, Suite 114
Lewisville, Texas 75067

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Hidden Valley Airpark Association		File Number: SWF-2018-00496	Date:
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

If you only have questions regarding the appeal process you may also contact:

Mr. Elliott Carman
Administrative Appeals Review Officer (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
469-487-7061

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 24 April 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: SWF-2018-00496, Hidden Valley Airpark Phase VI

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Texas County/parish/borough: Denton City: Shady Shores

Center coordinates of site (lat/long in degree decimal format): Lat. 33.172495° N, Long. -97.046682° E

Universal Transverse Mercator: 682129.202497, 3672109.114901

Name of nearest waterbody: Unnamed tributary to Lewisville Lake.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Elm Fork of the Trinity River

Name of watershed or Hydrologic Unit Code (HUC): HUC 12 - 120301030902

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: 22 March 2019

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- ☐ TNWs, including territorial seas
- ☐ Wetlands adjacent to TNWs
- ☐ Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- ☐ Non-RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- ☐ Impoundments of jurisdictional waters
- ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or acres.
Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: The potential waters of the U.S. on site consist of one open water pond and 4 emergent wetlands.

The pond was constructed in uplands, and has an associated wetland along its northeastern and southern edges (Wetland 1) and a separate wetland (Wetland 2) located west of the pond. The pond and two wetlands drain into a drainage swale feature that lacked an observable OHWM or any contiguous connection to downstream water, into a culvert under the

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

roadway, and into a man made drainage channel that was constructed for aesthetics. Because no OIWM exists and there is no connection to downstream waters of the U.S., the pond, Wetland 1, and Wetland 2 are not waters of the U.S. Wetlands 3 and 4 are located within the southern portion of the site, and were created from quarry mining activities within an upland area that has been abandoned. They are both surrounded by uplands and occur due to ponding and sheet flow into a depression, low area of the landscape. Neither Wetland 3 or Wetland 4 have any observable direct downgradient surface water connection to a jurisdictional aquatic feature, therefore they are not waters of the U.S.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: Pick List

Drainage area: Pick List

Average annual rainfall: _____ inches

Average annual snowfall: _____ inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☐ Tributary flows through Pick List tributaries before entering TNW.

Project waters are Pick List river miles from TNW.

Project waters are Pick List river miles from RPW.

Project waters are Pick List aerial (straight) miles from TNW.

Project waters are Pick List aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

Tributary stream order, if known:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: Pick List

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Pick List

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime:

Other information on duration and volume:

Surface flow is: Pick List. Characteristics:

Subsurface flow: Pick List. Explain findings:

☐ Dye (or other) test performed:

Tributary has (check all that apply):

☐ Bed and banks	
☐ OHWM ⁶ (check all indicators that apply):	
☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	
☐ Discontinuous OHWM. ⁷ Explain:	

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings:
 - ☐ Fish/spawn areas. Explain findings:
 - ☐ Other environmentally-sensitive species. Explain findings:
 - ☐ Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain:

Surface flow is: Pick List

Characteristics:

Subsurface flow: Pick List. Explain findings:

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
 - ☐ Discrete wetland hydrologic connection. Explain:
 - ☐ Ecological connection. Explain:
 - ☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width):
- ☐ Vegetation type/percent cover. Explain:
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings:
 - ☐ Fish/spawn areas. Explain findings:
 - ☐ Other environmentally-sensitive species. Explain findings:
 - ☐ Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
☐ TNWs: linear feet width (ft), Or, acres.
☐ Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain: .

☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following *Rapanos*.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☒ Lakes/ponds: 0.5 acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 0.163 acres.

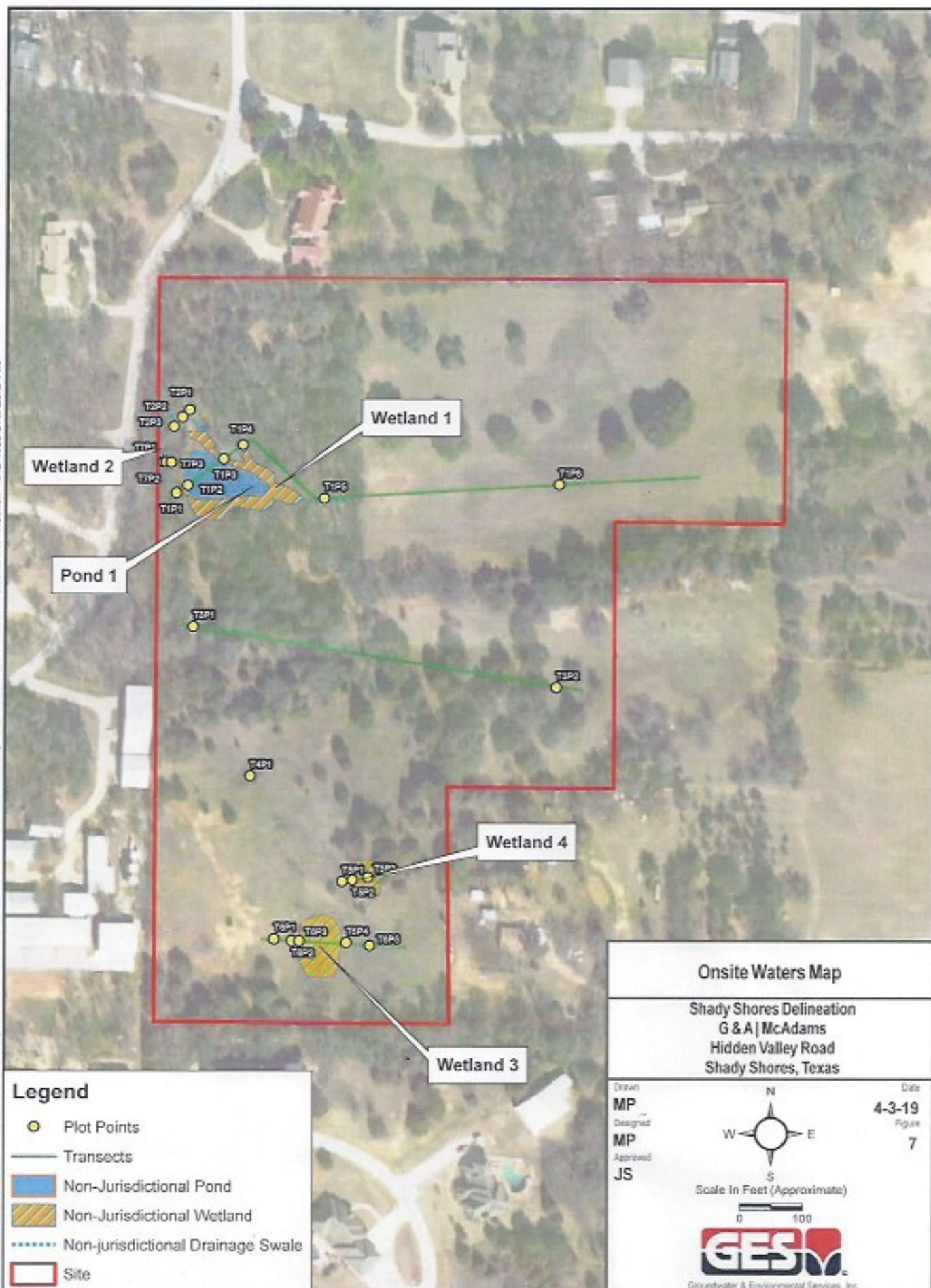
SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Jurisdictional Waters Map.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: 1991 Edition, Denton County, 500 foot scale.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: USDA Soils Map.
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: FEMA Flood Hazard Zones Map.
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): 1996 Aerial Photograph, 2006 Aerial Photograph, 2016 Aerial Photograph.
or ☒ Other (Name & Date): Site Photographs (Submitted with application).
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD:

L:\Projects\GES\Projects\Q and A - G&A\McAdams\ShadyShores\TX\HiddenVal 4300176\GIS\MXD\On-site Waters Map.mxd - Scale 1:2,400 - 4/3/2019 2:36:48 PM - R Cohen - NAD 1983 UTM Zone 14N



G&A | McAdams

Delineation of Waters of the United States

Proposed Development in Shady Shores, Texas
East and South of Hidden Valley Road
Shady Shores, Denton County, Texas

November 8, 2018





Shady Shores Site Delineation

Delineation of Waters of the United States
Proposed Development
East and South of Hidden Valley Road
Shady Shores, Denton County, Texas

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4300174.92260.26002

Date:
November 8, 2018

A blue ink signature of Jared Cobb, written in a cursive style.

Jared Cobb
Project Environmental Scientist

A blue ink signature of Joseph Schwartz, written in a cursive style.

Joseph Schwartz
Principal Environmental Scientist

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Table 2: Summary of Field Data for Community Type C and E

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Figure 1 – Site Location Map

Figure 2 – Federal Emergency Management Agency (FEMA) Flood Hazard Boundaries (GIS Web Services)

Figures 3a-3e – United States Geological Survey Topographic Map (Denton County Mosaic, Texas), (NRCS 2018)



Figure 4 – U. S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Map

Figure 5 – USDA Soils Map (Denton County, Texas, NRCS 2018)

Figures 6a-6c – Historic Aerial Photographs

Figures 7a-7c – Jurisdictional Waters Map

Appendices

Appendix A – Data Forms

Appendix B – Site Photographs

1 Introduction

Groundwater and Environmental Services, Inc. (GES.) performed a delineation of wetlands and other potential "waters of the United States" (as defined by the Clean Water Act) for an approximately 19.3-acre tract located east and south of Hidden Valley Road in Shady Shores, Texas, hereafter referred to as the study area. "Waters of the U.S." are referred to herein as "jurisdictional" waters, as they are potentially subject to federal regulation pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899 under the jurisdiction of the U.S. Army Corps of Engineers (USACE). The field assessment was performed by Madison Peters and Ryan Cohen on September 12, 2018.

1.2 Study Area

The study area is an approximately 19.3-acre tract located east and south of Hidden Valley Road in Shady Shores, Texas (**Figure 1**). The majority of the site consists of pasture with occasional sparsely forested areas and an open pit quarry. The site presently is used for livestock grazing. The site is adjoined by rural residential development.

2 Desktop Data Gathering and Analysis

Prior to the field assessment, background data was gathered and reviewed to preliminarily identify surface aquatic features within the study area. The data gathered and reviewed are described below.

2.1 Federal Emergency Management Agency - Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) Web Mapping Service (WMS) Web Server Data 2018 depicts the study area located outside the limits of the FEMA mapped 100-year floodplain and 500-year floodplains and is located in Zone X, unshaded. A mapped floodplain is depicted approximately 200 feet northwest of the study area. The FEMA Flood Hazard Zones Map is provided as **Figure 2**.

2.2 United States Geologic Survey - Topographic Map

The 1960 (1962 edition), 1960 (1969 edition), 1960 (1974 edition), 1960 (1985 edition), and 1960 (1991 edition) United States Geologic Survey (USGS) 7.5-Minute Topographic Maps (Denton East, Texas Quadrangle) of the study area were reviewed to identify drainages or potential surface aquatic features within the study area. The topographic maps depict the study area elevation to be between 570-590 feet above mean sea level (msl). The topographic maps depict the majority of the study area as vegetated forest cover (green shading). The south portion of the study area is depicted as unimproved land (no shading). The topographic maps depict a quarry or open pit mine surrounded by approximate or indefinite contour lines in the south portion of the study area. Sometime between the 1962 and 1969 map editions a dry lake/pond appears in the northwest portion of the study area. This feature is depicted as purple indicating a feature change on the subsequent map editions. The 1962 map edition did not depict other historic waterbodies prior to the dry lake/pond forming. The USGS Topographic Map is provided as **Figures 3a-3e**.

2.3 United States Fish and Wildlife Service - National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper depicts surface waters regardless of their federal or state jurisdiction. The USFWS National Wetlands Inventory Map is provided as **Figure 4**. NWI features mapped within the study area are summarized in the following.

Feature Type	Description	Location(s)
PUBHh	Palustrine, unconsolidated bottom, diked/impounded area that is permanently flooded	Northwest portion of the study area
PUSCh	Palustrine, unconsolidated shore, diked/impounded area that is seasonally flooded	South central portion of the study area

2.4 United States Department of Agriculture – Web Soil Survey

Soils on the project site are described in the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) was reviewed to characterize the study area's soils. The USDA Soils Map is provided as **Figure 5**. Soil units mapped within the study area are summarized in the following.

Map Unit Symbol	Map Unit Name	Landform	Natural Drainage Class	Frequency of Ponding	Frequency of Flooding	Depth to Water Table	Hydric Soil Rating
13	Birome-Rayex-Aubrey complex, 2 to 15 percent slopes	Ridges	Well Drained	None	None	More than 80 inches	No
35	Gasil fine sandy loam, 1 to 3 percent slopes	Ridges	Well Drained	None	None	More than 80 inches	No
72	Silstid loamy fine sand, 1 to 5 percent slopes	Ridges	Well Drained	None	None	More than 80 inches	No

2.5 Historic Aerial Photographs

The Texas Natural Resources Information System (TNRIS) 1996, 2006, and 2016 Digital Orthophoto Quarter Quads (DOQQ) Denton East Imagery were reviewed to identify depression areas and surface aquatic features. The aerial photographs depict the study area as herbaceous coverage with some tree and sapling/shrub communities in the northwest and southeast portions of the study area. The 1996 aerial photograph depicts two inundated areas, one in the northwest portion of the study area and the other in the south central portion of the study area. Land scarring is depicted in the southwest. The 2006 aerial photograph depicts the inundated area in the northwest. The south central inundated area appears as a depression area with no surface water. Both inundated areas are depicted on the 2016 aerial photograph. Additional land scarring is evident in the southwest and south portions. The aerial photographs are provided as **Figures 6a-6c**.

2.6 Agriculture Applied Climate Information System - Climatic Hydrology Index

NRCS Agriculture Applied Climate Information System (AgACIS) data was downloaded and reviewed using the Direct Antecedent Rainfall Evaluation Method (DAREM). The DAREM provided a wetland hydrology index of climatic conditions. Rainfall data were obtained from the Denton 2 SE weather station; which is the nearest weather station to the study area with the range of historic data available to calculate the DAREM. The DAREM indicated the study area experienced a wetter than normal hydrologic condition. The DAREM index data during the field assessment is summarized in the following.

Month Ranking	Month	WETS Percentile		Measured Rainfall ¹	Condition ²	Weight ³	Month Score
		30 th	70 th				
1st	September	1.33	3.83	9.50	3	3	9
2nd	August	1.05	2.79	6.68	3	2	6
3rd	July	0.87	2.72	0.07	1	1	1
Total:							16

¹ Measured rainfall recorded at the weather station.

² Condition: 1 = monthly rainfall totals less than the 30-year Extreme Rainfall Distribution 30th percentile, 2 = monthly rainfall totals between the 30th and 70th percentile for the 30-year Extreme Rainfall Distribution, 3 = monthly rainfall totals greater than the 70th percentile for the 30-year Extreme Rainfall Distribution.

³ Monthly weights equal 3 for the prior month, 2 for the second prior month, and 1 for the third prior month.

DAREM Score (Observed Score)	6	7	8	9	10	11	12	13	14	15	<u>16</u>	17	18
DAREM Wetland Hydrologic Condition	Drier than normal				Normal						<u>Wetter than normal</u>		

3 Field Methodology

3.1 General

After review of background data, the field delineation was performed in accordance with the USACE Wetland Delineation Manual (USACE 1987), as later amended by USACE memoranda, and the Regional Supplement for the Great Plains Region (USACE 2010).

The study area was traversed in the form of seven transects. Transects were selected to run perpendicular to the hydrological gradients and intercept suspected wetland areas and other jurisdictional features, based on the aforementioned review of available documents. On each transect, a minimum of one plot was evaluated for each community type that was evidenced by a change in dominant vegetation type or hydrology. Visual observations of hydrology and vegetation were used to further characterize the size and extent of onsite jurisdictional features. Changes in community types denoting boundaries of jurisdictional features were mapped with the collection of GPS coordinates. This allows for jurisdictional features to be delineated in areas between delineation transects.

Field observations were recorded on a Corps of Engineers Wetland Determination Data Form – Great Plains Region (forms taken from USACE, 2010) (**Appendix B**). Photographs were taken from various positions at the site (**Appendix C**). Jurisdictional waters and delineation transects are shown on **Figures 7a-7c**.

3.2 Streams

Streams are identified as channels that have regular flow at a frequency and duration resulting in the formation of ordinary high water marks (OHWM). The OHWM is defined as “the line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

3.3 Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include but are not limited to swamps, marshes, bogs, and similar areas. Wetlands have the following three diagnostic environmental characteristics: hydrophytic (or wetland) vegetation, wetland hydrology, and hydric soils. Evidence of all three parameters must be found in order to make a positive wetland determination.

3.4 Vegetation

The plant species in each vegetation stratum in the immediate vicinity of the plot were identified and recorded. The plot radius for each stratum is indicated on the Wetland Determination Data Form. For rapid delineations in relatively simple plant communities, dominant species were selected visually using the 50/20 Rule as a general guide. Dominant species were chosen independently from each stratum of the community. In general, dominant species were the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total. Absolute percent cover is the recommended abundance measure for plants in all vegetation strata.

Hydrophytic vegetation decisions were based on the wetland indicator status (Lichvar, et al 2016) of species that make up the plant community. The indicator status for vegetation in USDA Land Resource Great Plains subregion was recorded for each of the species listed. The following abbreviations were used on the data forms:

OBL:	Obligate wetland plants
FACW:	Facultative wetland plants
FAC:	Facultative plants
FACU:	Facultative upland plants
UPL:	Upland plants

The dominance test is the basic hydrophytic vegetation indicator, and is used in most situations. This test indicates that hydrophytic vegetation is present at the observation point when more than 50 percent of the dominant species have an indicator status of OBL, FACW, and/or FAC. If indicators of hydric soil and wetland hydrology are present on the site, but the vegetation initially fails the dominance test, then the prevalence index is used. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code and weighting is by absolute percent cover.

For species listed as NI (reviewed but given no regional indicator) or NO (no known occurrence in the region at the time the list was compiled), the indicator status assigned to the species in the nearest adjacent region is applied. If the species is listed but no adjacent regional indicator is assigned, the species is not used to calculate hydrophytic vegetation indicators. Species that are not listed on the wetland plant list are considered to be UPL species.

3.5 Soils

Information regarding soils was recorded for each community at the site. A soil sample of at least the upper 16 inches was examined. The color of the matrix and any redox features in the sample were determined for each apparent layer in the sample using a soil color chart (Munsell, 1994). Indicators of iron and manganese reduction, translocation, or accumulation, sulfate reduction, or organic matter accumulation were recorded. Soil characteristics were reported on the data form and checked against the mapped soil type to determine if the mapped soil type appeared to be

accurate for the plot. A hydric soil indicator was chosen for the plot if the observed characteristics matched the conditions of the listed indicators for the Great Plains Region.

3.6 Hydrology

At each plot, visual indications of wetland hydrology were recorded. Wetland hydrology indicators fall into four groups:

1. Group A – Observation of surface water or saturated soils
2. Group B – Evidence of recent inundation
3. Group C – Evidence of current or recent soil saturation
4. Group D – Evidence from other site conditions or data

Additionally, the result of the FAC-neutral test was recorded. The FAC-neutral test is determined by first eliminating all FAC species from consideration. The FAC-Neutral test is positive if the number of remaining dominant species wetter than FAC (OBL, FACW) are greater than the number of dominant species drier than FAC (UPL, FACU). The FAC-neutral test is a Group D indicator.

3.7 Other Observations

Other observations pertinent to the outcome of the wetland delineation were recorded. Primarily, these observations were directed to land alterations that would impact hydrology, such as dams or other blockages, man-made drainage channels, or changes to on site or offsite topography that modify drainage patterns.

4 Results

During the field delineation, GES observed two wetlands, three open water features, and three drainage swales within the study area. A summary of onsite delineated areas is provided below. A map of waters of the U.S. and delineation transects for the site is provided as **Figures 7a-7c**. Routine Wetland Determination Data Forms for each observation location are included in **Appendix B** and photographs of plot locations are provided in **Appendix C**. Communities and site features are further described below.

Five community types were identified within the study area:

- Community Type A: Wetland. This community refers to the wetlands on site. Hydrophytic vegetation was dominant, wetland hydrology was observed, and hydric soils were present.
- Community Type B: Excavated Wetland. This community refers to areas observed within the quarry/mining area with surface water.
- Community Type C: Drainage swale. This community refers drainage conveyance from the wetlands. These areas are not considered to be wetlands because they do not exhibit all three wetland characteristics and are not considered streams because they did not exhibit an OHWM.
- Community Type D: Upland open water feature. This community type refers to an area constructed with a berm/dike in an upland setting.
- Community Type E: Upland. This community refers to the majority of the site that is comprised of upland forest and pasture. These areas are not considered to be wetlands because they do not exhibit all three wetland characteristics.

Community Type A (**Table 1**) represents Wetland 1 and Wetland 2 located in the northwest portion of the study area. Wetland 1 and Wetland 2 appeared to be sustained by surrounding sheet flow. Wetland 1 and Wetland 2 appear to drain into Community C, down-gradient. Surface water conveyance with minor turbidity was observed during the time of the site reconnaissance. Wetland 1 was delineated to be approximately 0.160 ac in size and Wetland 2 was delineated to be approximately 0.003 ac in size.

Community Type B (**Table 1**) represents Wetland 3 and Wetland 4, located within a previous quarry/mining area. Land-scaring and topographic gradient modifications indicated the area was excavated out of uplands. Wetland 3 and Wetland 4 appear to be sustained by surrounding sheet flow and do not drain.

Community Type C (**Table 2**) represents two drainage swales located in the northwest portion of the study area. The drainage swale community was classified as an upland area because the three wetland criteria were not all met. Surface water flow was observed during the field reconnaissance. Both drainage swales appeared to be connect to Wetland 1, one up-gradient and the other down-gradient.



Community Type D represents Pond 1 located in the northwest portion of the study area. Pond 1 appeared to be constructed out of an upland area. A berm/diked area was observed along the western edge. Pond 1 is sustained by surrounding sheet flow from the south and east and appears to not drain.

Community Type E (**Table 2**) represents the majority of the site and was classified as an upland because all three wetland criteria were not met.

5 Summary and Conclusions

Wetland 1 and Wetland 2, via the drainage swales, convey surface water to an unnamed tributary lake of Lewisville Lake, northwest approximately 200 feet. Lewisville Lake is an impoundment of the Trinity River. The USACE considers the Trinity River to be a traditionally navigable water. This connection demonstrates an effect on a traditionally navigable water's (Trinity River's) integrity. Therefore, it is GES's opinion Wetland 1 and Wetland 2 would be considered WOUS and subject to USACE jurisdiction under Section 404.

Pond 1 appears to have been constructed and excavated in an upland area (see USGS Topographic Map section above). The drainage swales do not meet wetland criteria and do not maintain an OHWM. Wetland 3 and Wetland 4 appeared to have occurred due to quarry mining activities in an upland area (see USGS Topographic Map and Historic Aerial Photographs sections above). Therefore, it is GES's opinion Pond 1, the drainage swales, and Wetland 3, and Wetland 4 would not be considered WOUS and therefore would not be subject to USACE jurisdiction under Section 404.

A map of waters of the U.S. and delineation transects for the project site are provided as **Figures 7a-7c**. The area measurements provided herein are estimates based on GIS and Garmin eTrex 30x handheld GPS measurements. Jurisdictional waters of the U.S. located within the study area are summarized in the following.

WOUS Name	Length (feet)	Average Width at OHWM (feet)	Area (acres)
Wetlands			
Wetland 1	-	-	0.160
Wetland 2	-	-	0.003
WETLANDS TOTAL	-	-	0.163
TOTAL WATERS	-	-	0.163

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Tables

Table 1 - Summary of Field Data for Community Type A and B

Observation	T1P3	T5P2	T6P2	T6P4	T7P2
Dominant Vegetation - Status					
<i>Salix nigra</i> (black willow) - FACW	.				
<i>Ludwigia peploides</i> (floating primrose-willow) - OBL	.				.
<i>Carex cherokeensis</i> (Cherokee sedge) - FACW	.				
<i>Persicaria hydropiperoides</i> (swamp smartweed) - OBL		.	.	.	
Hydric Soils					
Redox depressions (F8)	.	.			.
Other - inundated and obligate vegetation - assumed hydric			.	.	
Depleted Matrix (F3)					.
Hydrology					
Surface Water (A1)	.	.	.	.	
Saturation (A3)	.	.	.	.	.
Water-Stained Leaves (B9)	.				.
Geomorphic Position (D2)	.	.	.	.	.
FAC-neutral Test (D5)	.	.			.
Summary					
Hydrophytic vegetation?	Y	Y	Y	Y	Y
Hydric soils?	Y	Y	Y	Y	Y
Wetland hydrology?	Y	Y	Y	Y	Y

Table 2: Summary of Field Data for Community Type C and E

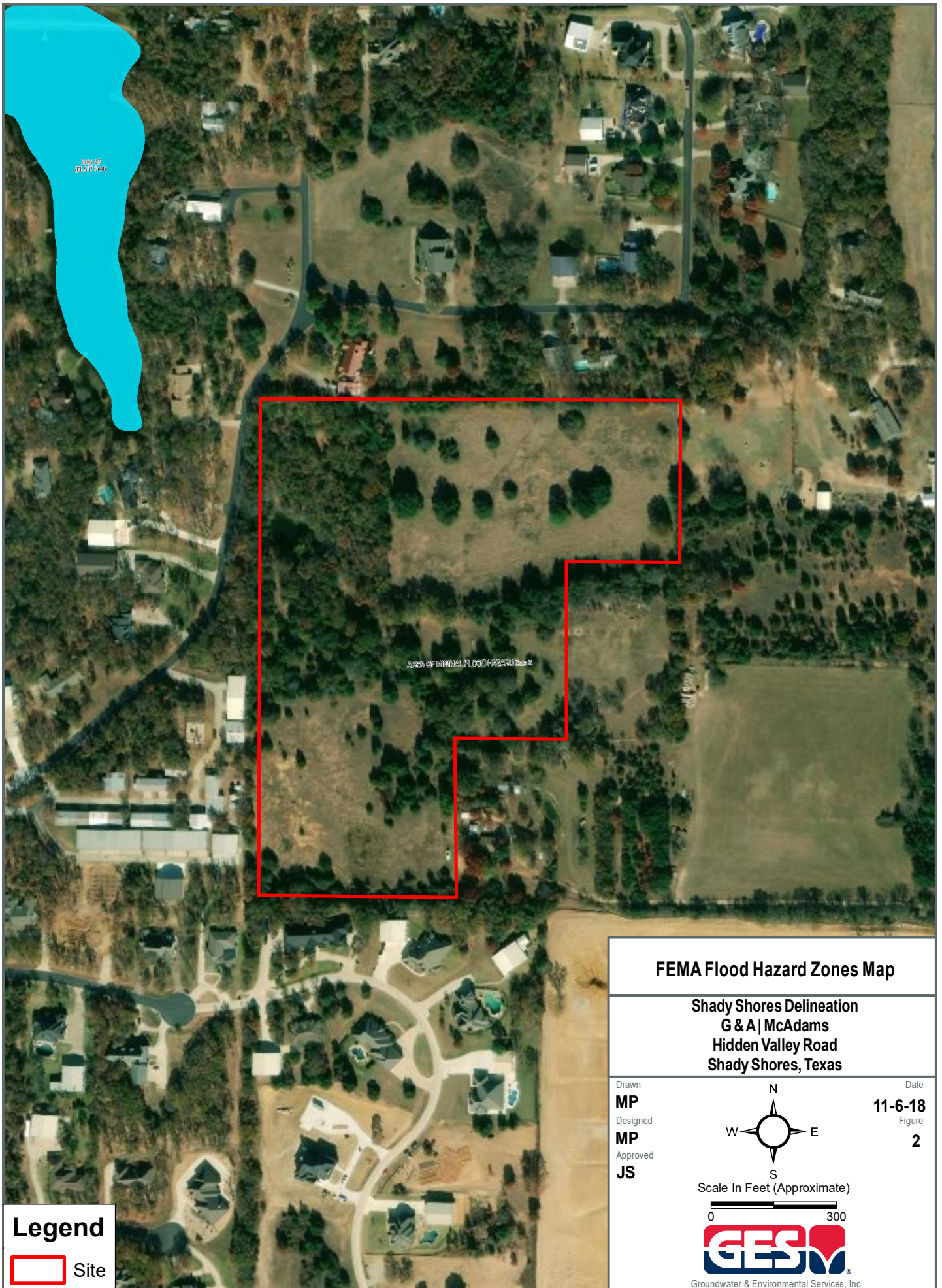
Observation ¹	T1 P1	T1 P4	T1 P5	T1 P6	T2 P1	T2 P3	T3 P1	T3 P2	T4 P1	T5 P1	T5 P3	T6 P1	T6 P5	T7 P1	T7 P3
Dominant Vegetation - Status															
<i>Ulmus crassifolia</i> (cedar elm) – FAC	•	•													
<i>Quercus stellata</i> (post oak) – FACU		•	•											•	•
<i>Ilex vomitoria</i> (yaupon holly) – FAC		•	•												
<i>Juniperus virginiana</i> (eastern red cedar) – UPL	•	•			•	•	•	•			•			•	•
<i>Ulmus alata</i> (winged elm) – FACU					•	•								•	•
<i>Ligustrum sinense</i> (Chinese privet) – UPL			•		•	•		•						•	•
<i>Paspalum notatum</i> (bahiagrass) – FAC				•			•								
<i>Bothriochloa ischaemum</i> (yellow bluestem) – UPL				•					•	•	•	•	•		
<i>Galium triflorum</i> (fragrant bedstraw) – FACU							•								
<i>Symphoricarpos orbiculatus</i> (coralberry) – FACU							•								
<i>Rivina humilis</i> (bloodberry) – FAC							•								
<i>Echinochloa colona</i> (jungle rice) – FACW									•						
<i>Rubus trivialis</i> (southern dewberry) – UPL											•				
<i>Ambrosia artemisiifolia</i> (annual ragweed) – FACU												•	•		
Hydrology															
Drainage Patterns (B10)	•														
Geomorphic Position (D2)	•								•						

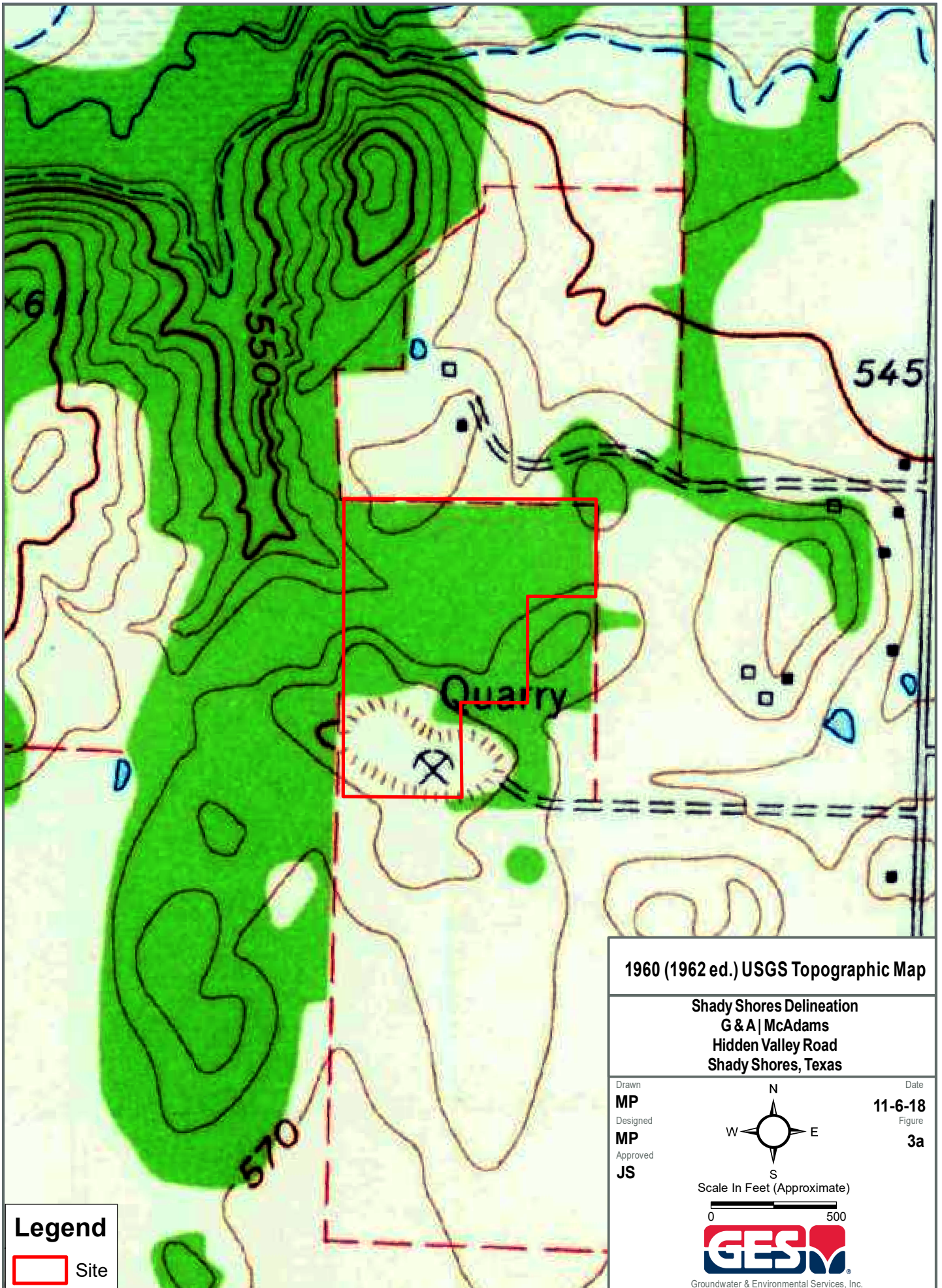
Observation ¹	T1 P1	T1 P4	T1 P5	T1 P6	T2 P1	T2 P3	T3 P1	T3 P2	T4 P1	T5 P1	T5 P3	T6 P1	T6 P5	T7 P1	T7 P3
Saturation (A3)									•						
Summary															
Hydrophytic vegetation?	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Hydric soils?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Wetland hydrology?	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N

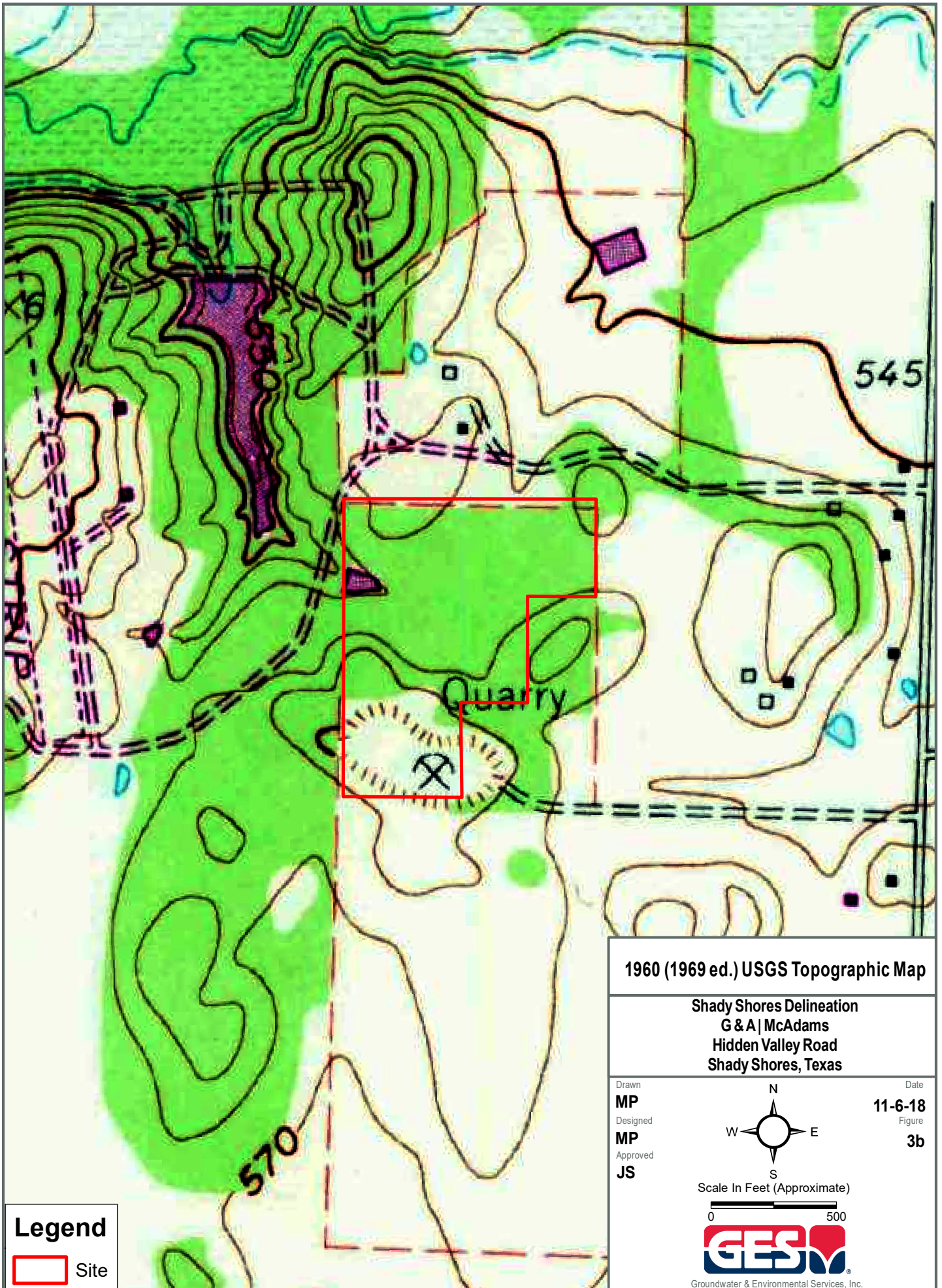
¹Hydric soil indicators not observed.

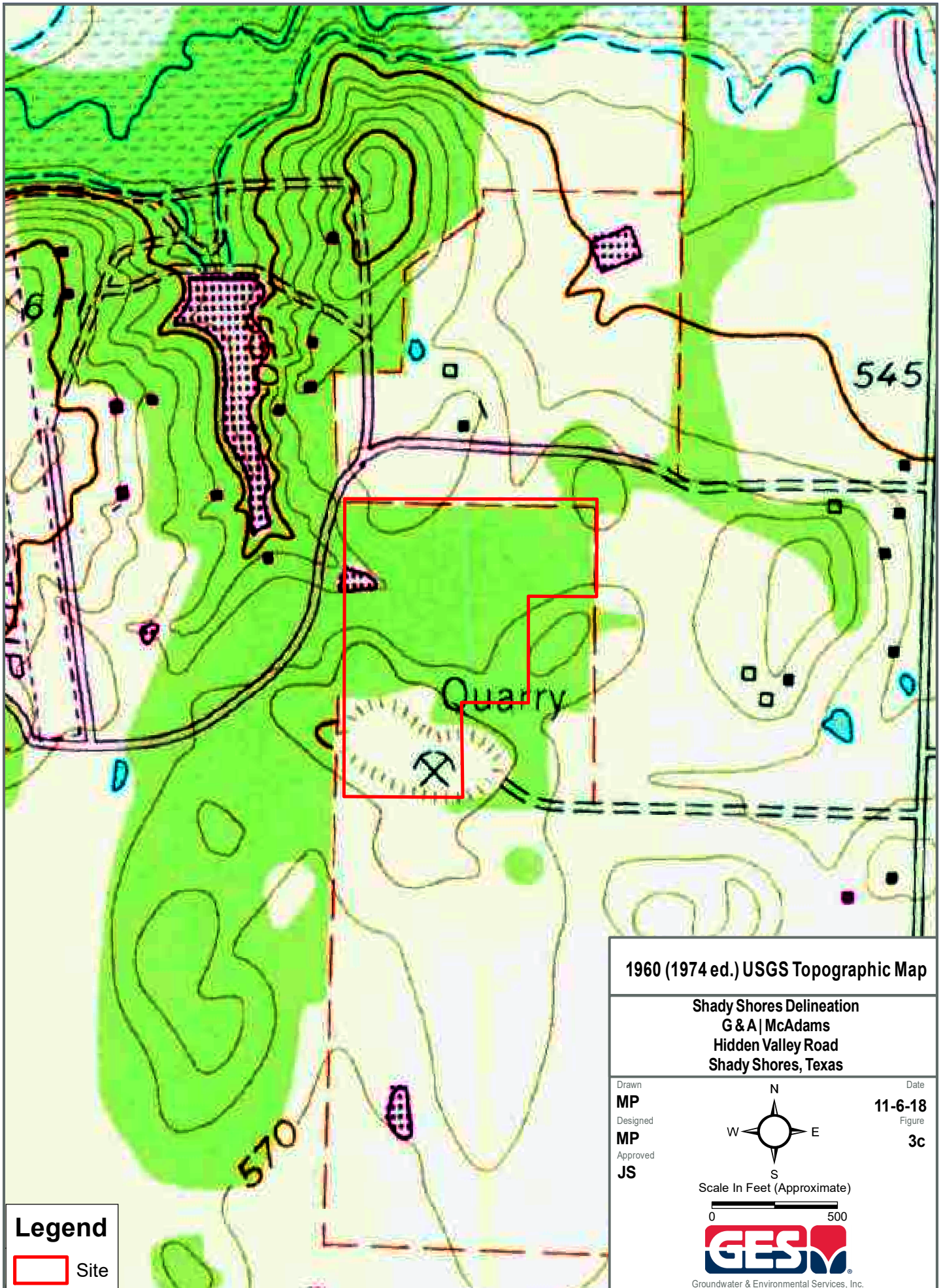
Figures

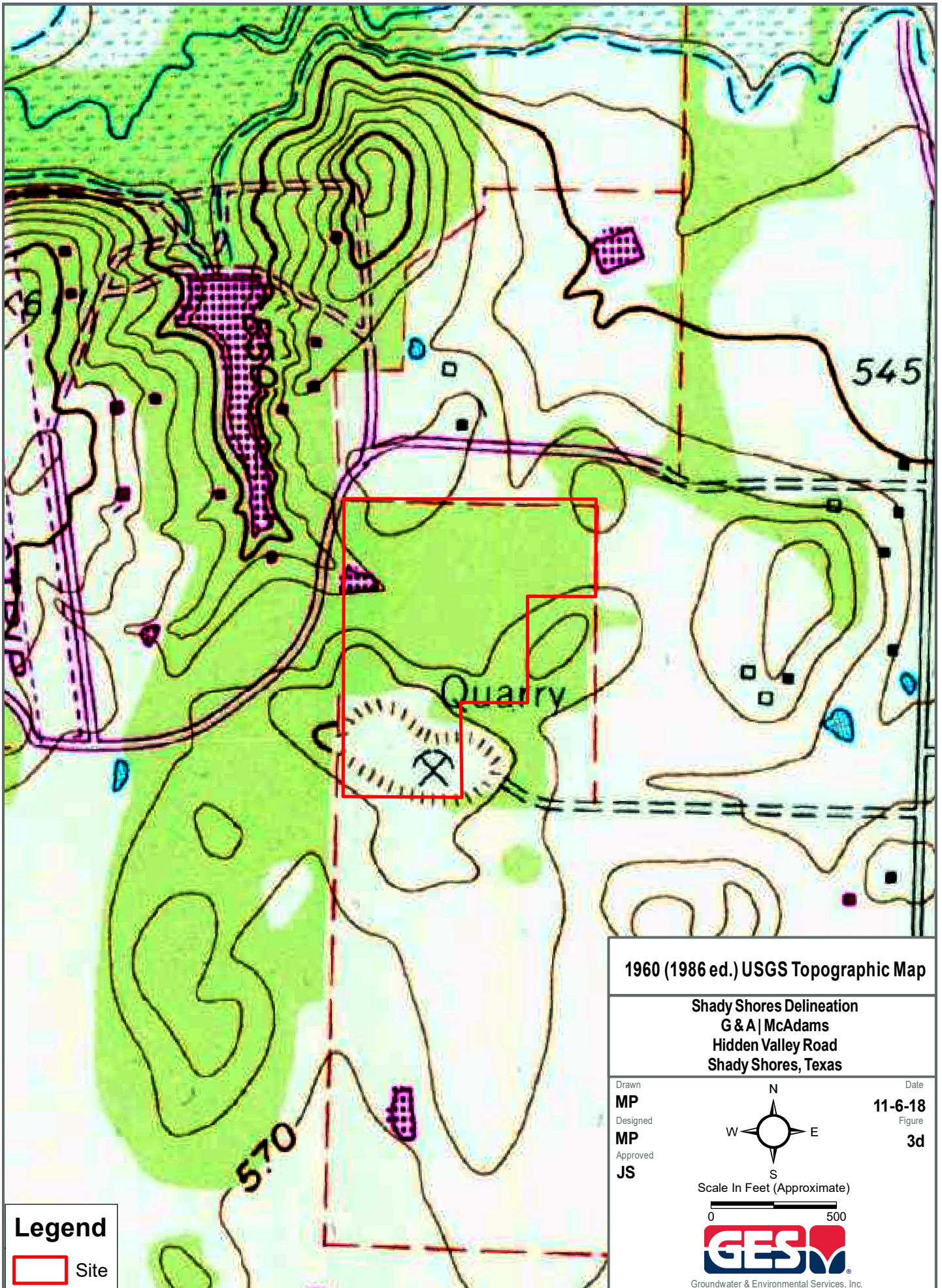


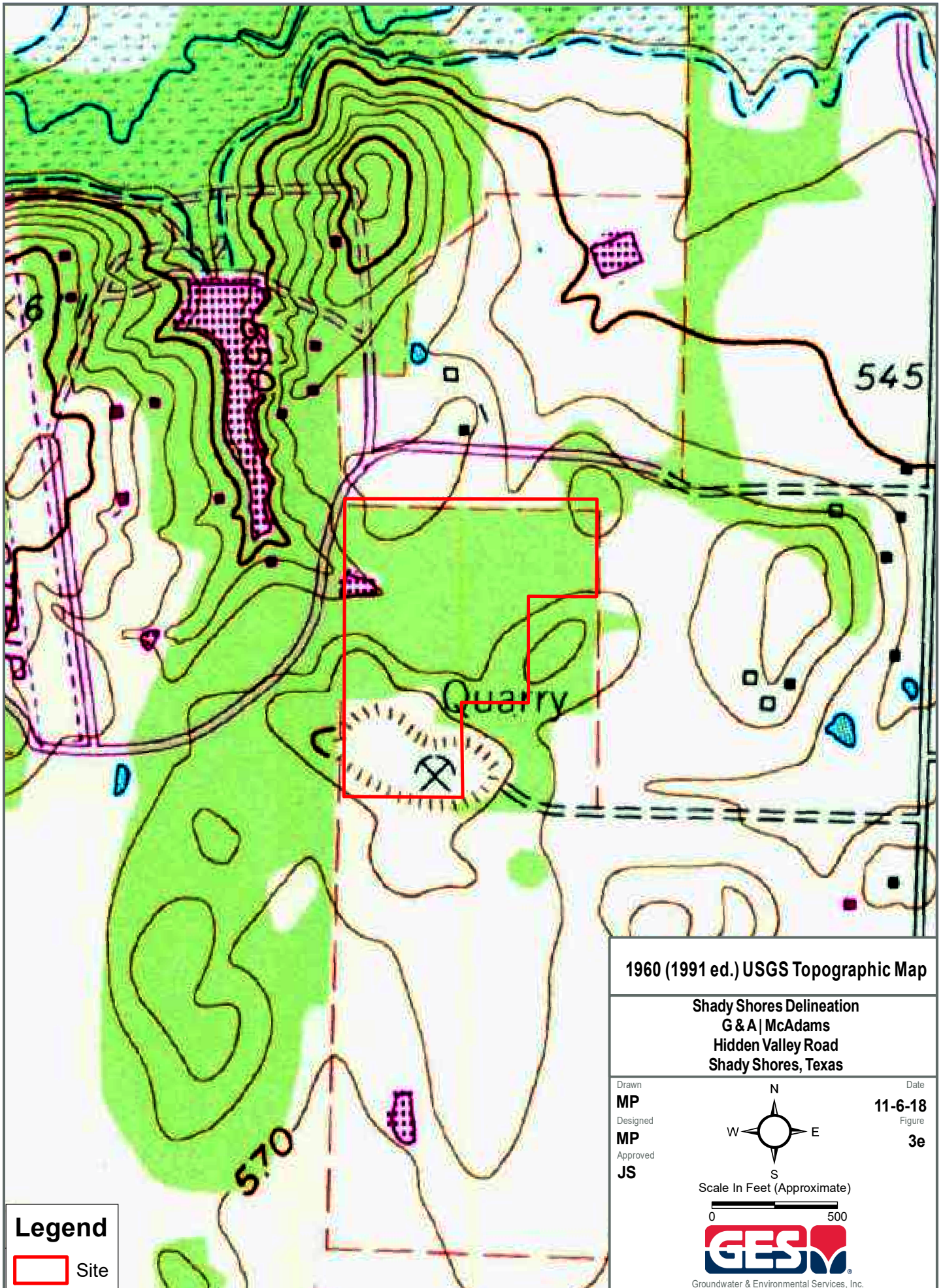


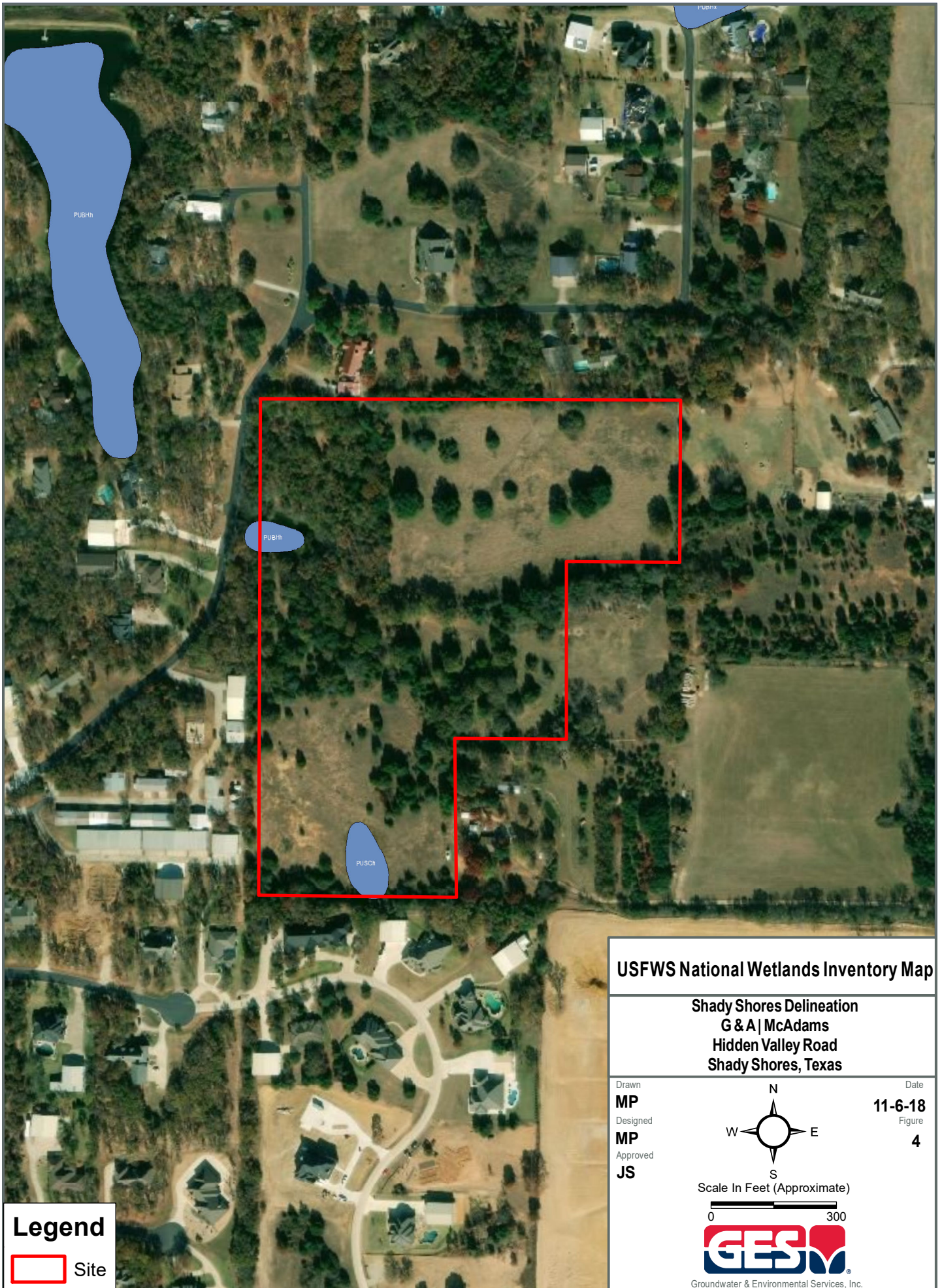












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Legend

- Site
- Soils

USDA Soils Map

Shady Shores Delineation
G & A | McAdams
Hidden Valley Road
Shady Shores, Texas

Drawn
MP

Designed
MP

Approved
JS

Date
11-6-18

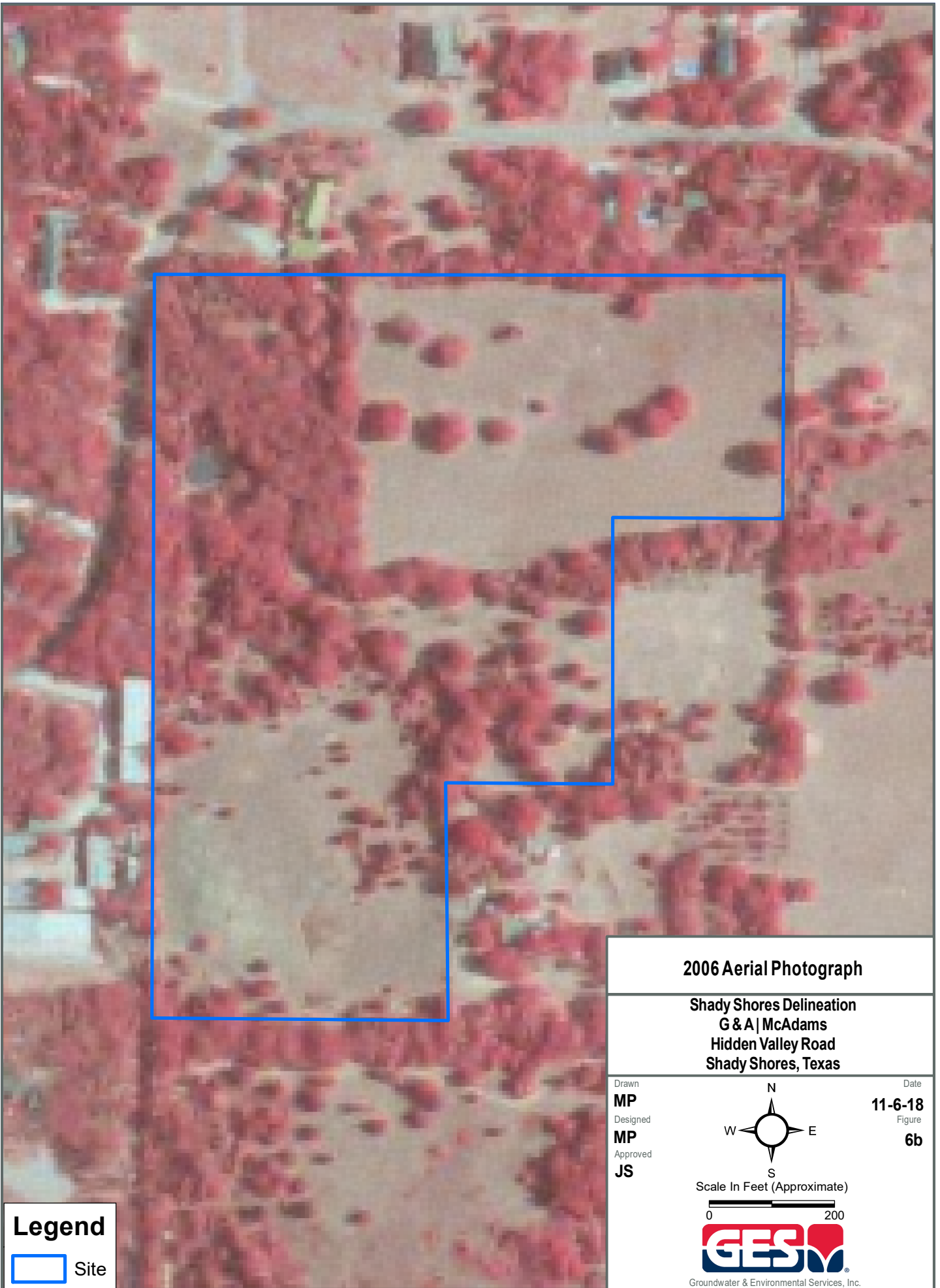
Figure
5

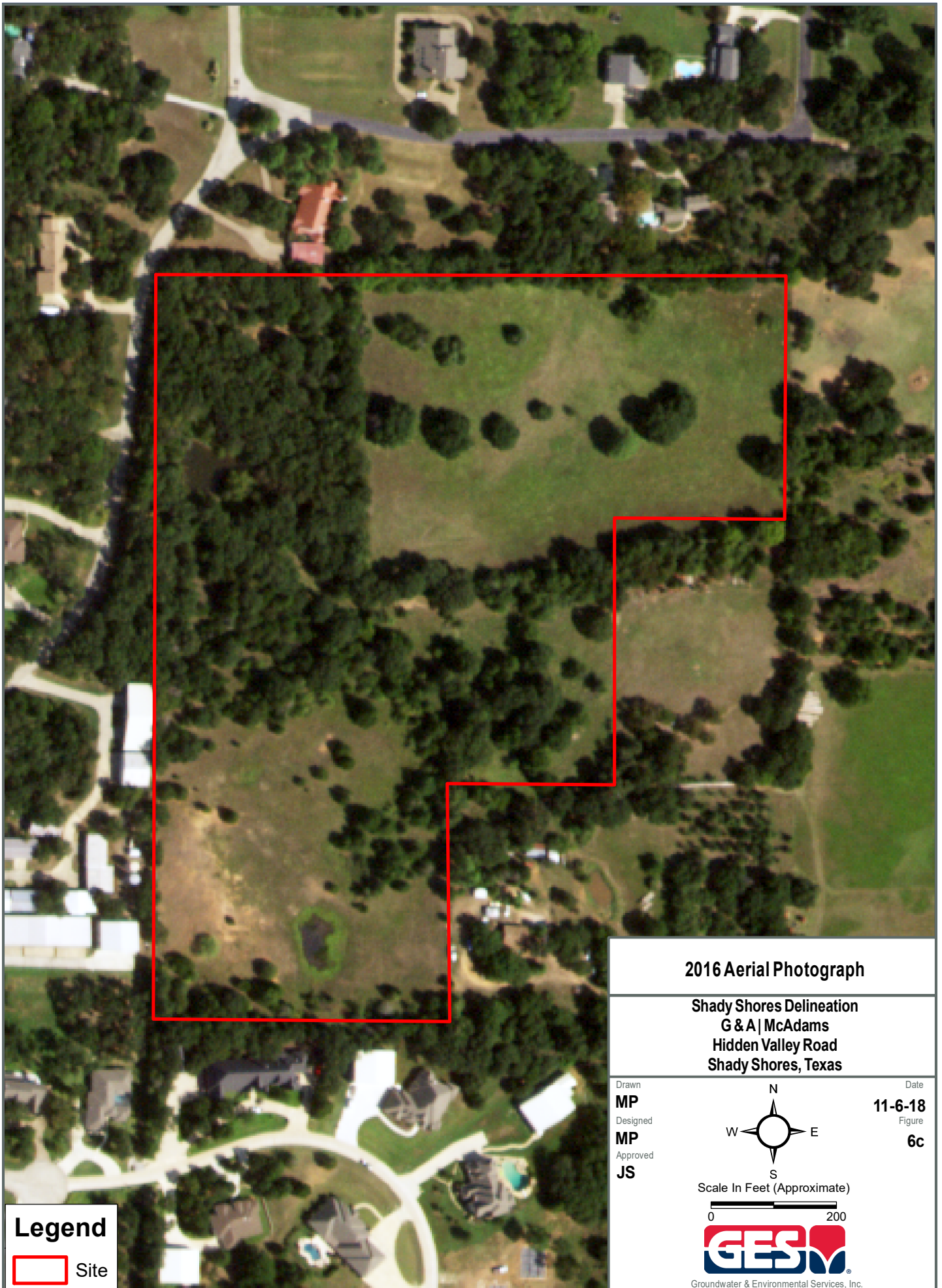
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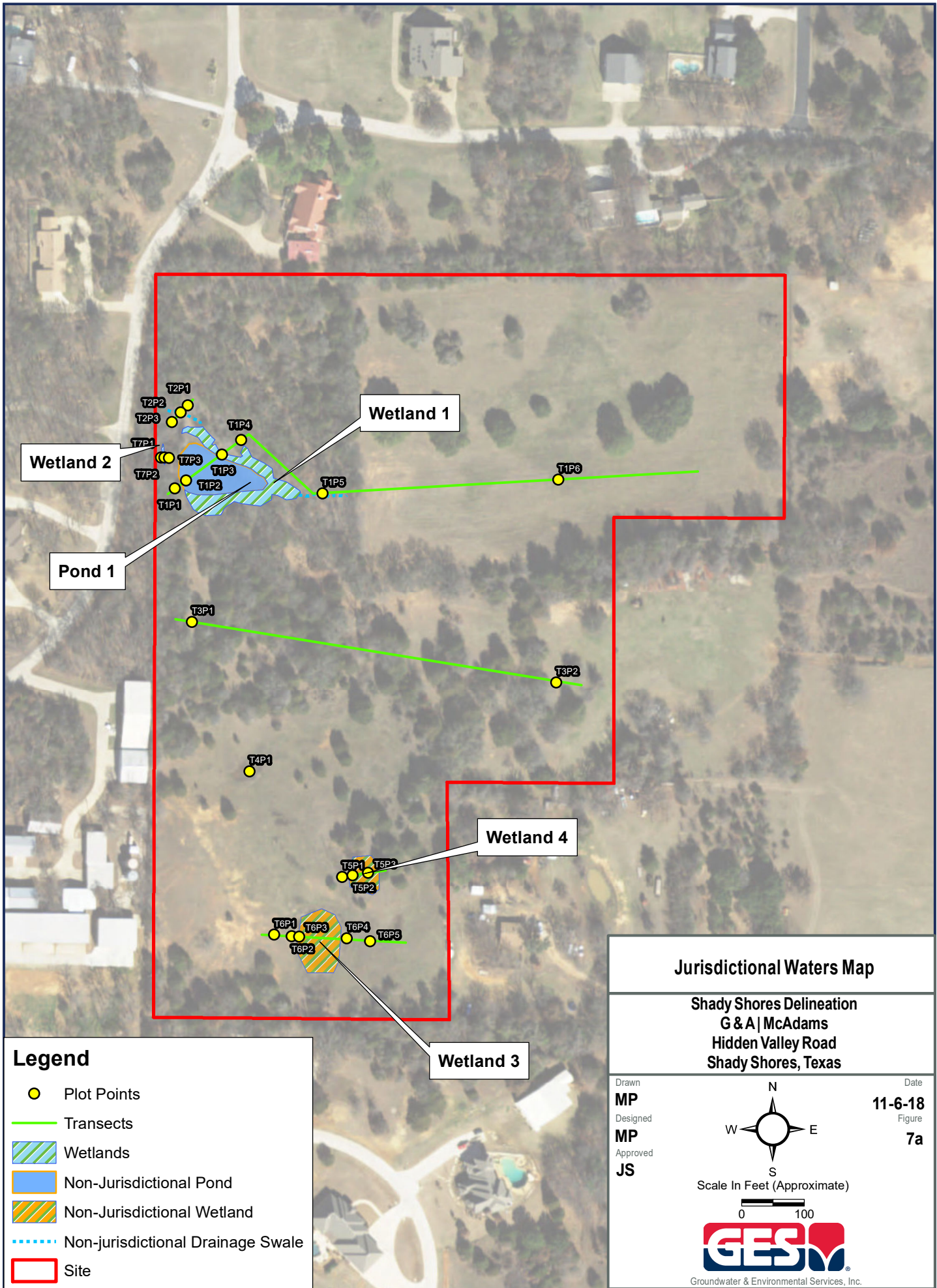
GES
Groundwater & Environmental Services, Inc.



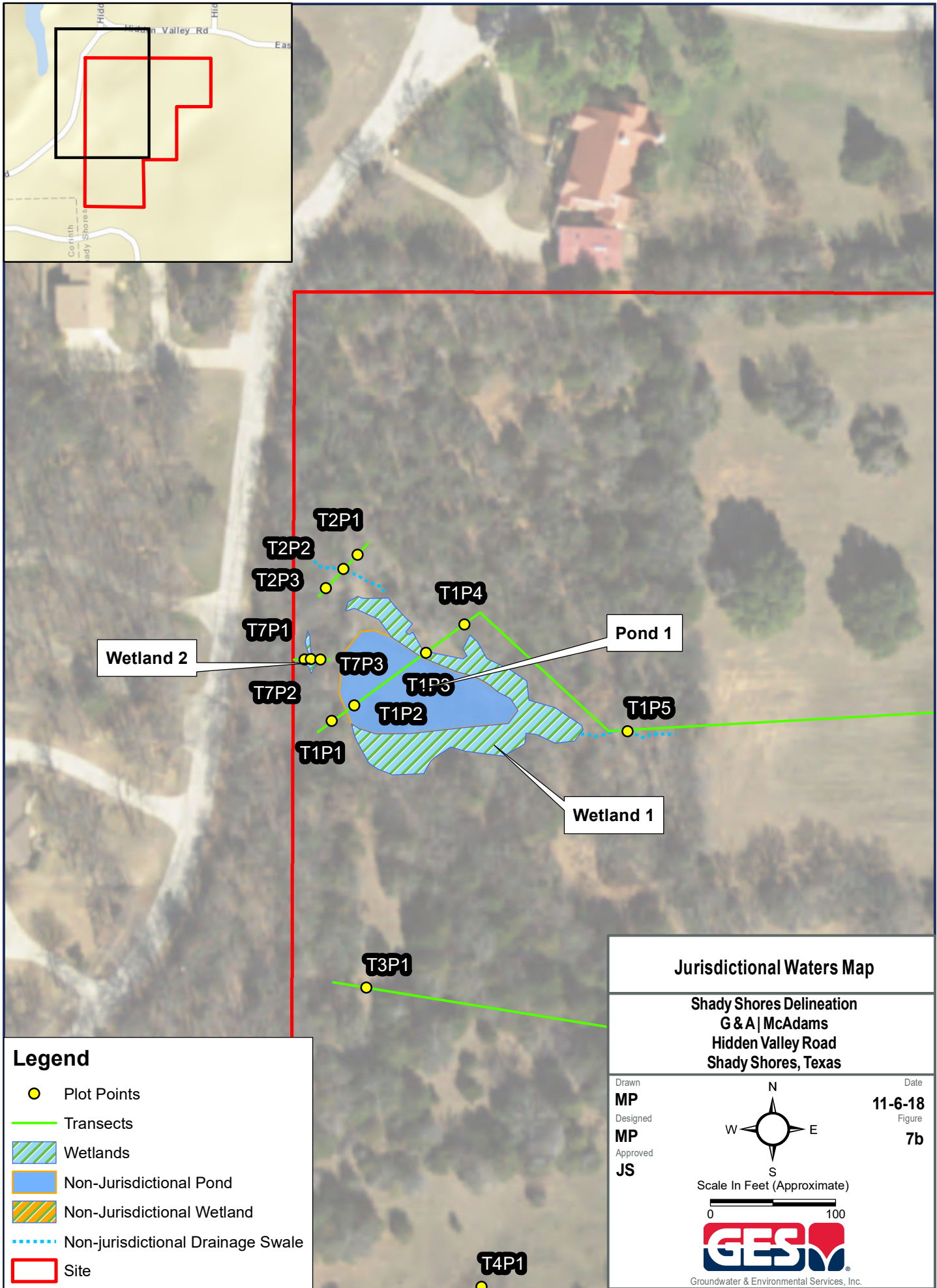




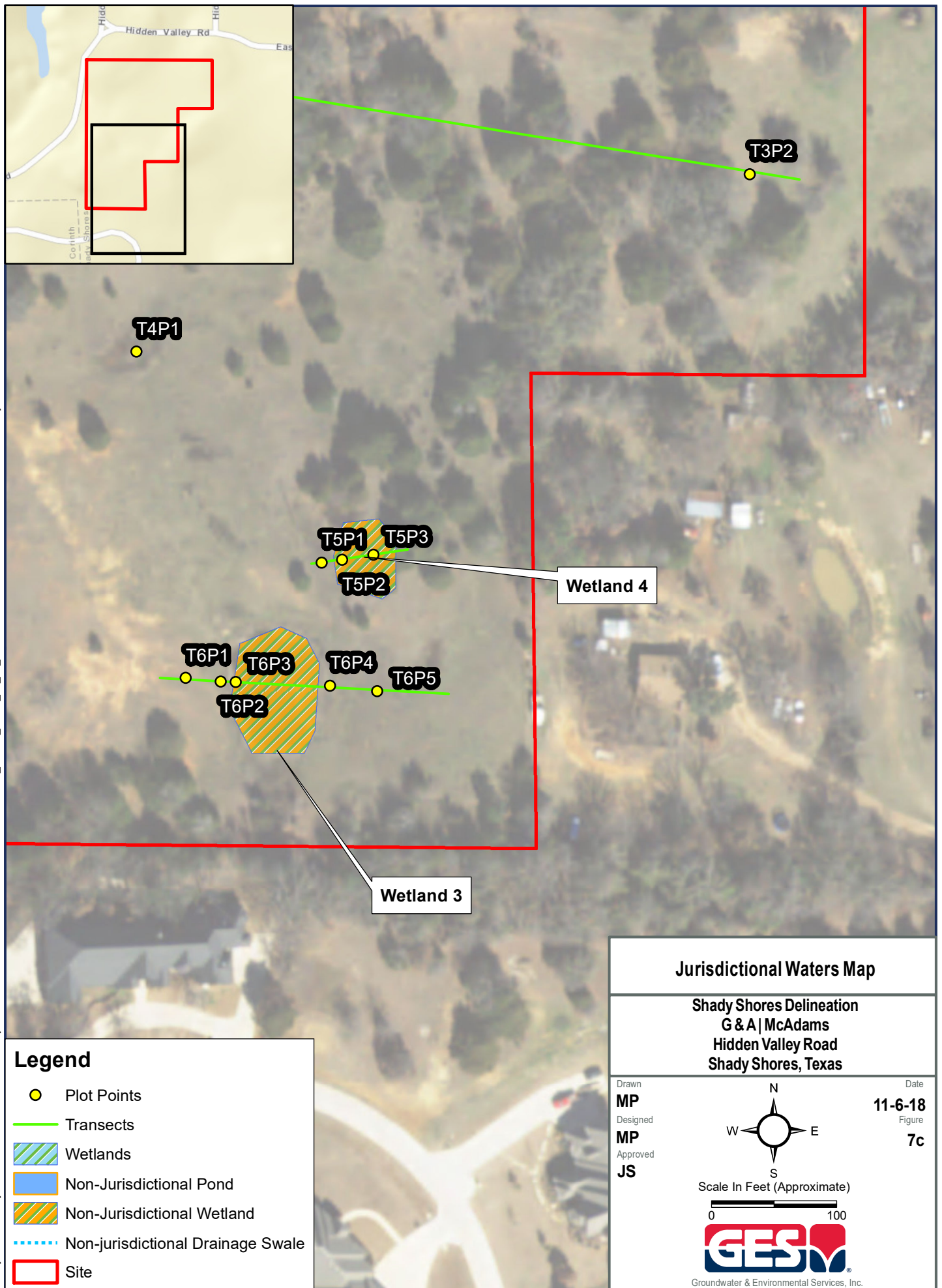
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Appendix A – Data Forms

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T1P1

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): convex Slope: / 1.0 °

Subregion (LRR): LRR J Lat.: 33.172485 Long.: -97.047119 Datum: NAD83

Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Ulmus crassifolia	20	☒ 50.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
2. Juniperus virginiana	20	☒ 50.0%	UPL	Total Number of Dominant Species Across All Strata: 5 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)
4.	0	☐ 0.0%		
	40	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. Ulmus crassifolia	20	☒ 100.0%	FAC	Total % Cover of: Multiply by:
2.	0	☐ 0.0%		OBL species 0 x 1 = 0
3.	0	☐ 0.0%		FACW species 0 x 2 = 0
4.	0	☐ 0.0%		FAC species 45 x 3 = 135
5.	0	☐ 0.0%		FACU species 20 x 4 = 80
	20	= Total Cover		UPL species 20 x 5 = 100
Herb Stratum (Plot size: 5 ft)				Column Totals: 85 (A) 315 (B)
1. Paspalum dilatatum	5	☒ 20.0%	FAC	Prevalence Index = B/A = 3.706
2.	0	☐ 0.0%		
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	25	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				Hydrophytic Vegetation Indicators:
1. Smilax bona-nox	20	☒ 100.0%	FACU	☐ 1 - Rapid Test for Hydrophytic Vegetation
2.	0	☐ 0.0%		☒ 2 - Dominance Test is > 50%
	20	= Total Cover		☐ 3 - Prevalence Index is ≤ 3.0 ¹
% Bare Ground in Herb Stratum 90				☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks:				☐ Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes ☒ No ☐

Soil

Sampling Point: T1P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	4/4	100					Sandy Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
---	--

Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
--	---

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
---	---

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T1P3

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope: / 3.0 °

Subregion (LRR): LRR J Lat.: 33.172640 Long.: -97.046884 Datum: NAD83

Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Quercus stellata	25	☒ 100.0%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
2.	0	☐ 0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)
4.	0	☐ 0.0%		
	25	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. Salix nigra	15	☒ 100.0%	FACW	Total % Cover of: Multiply by:
2.	0	☐ 0.0%		OBL species 10 x 1 = 10
3.	0	☐ 0.0%		FACW species 25 x 2 = 50
4.	0	☐ 0.0%		FAC species 0 x 3 = 0
5.	0	☐ 0.0%		FACU species 25 x 4 = 100
	15	= Total Cover		UPL species 0 x 5 = 0
Herb Stratum (Plot size: 5 ft)				Column Totals: 60 (A) 160 (B)
1. Ludwigia peploides	10	☒ 50.0%	OBL	Prevalence Index = B/A = 2.667
2. Carex cherokeensis	10	☒ 50.0%	FACW	
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	20	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 80				
Remarks:				Hydrophytic Vegetation Present? Yes ☒ No ☐

Soil

Sampling Point: T1P3

[illegible]

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (minimum of two required)					
☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)			☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)			☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☒ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)		
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>1</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)			Wetland Hydrology Present? Yes ☒ No ☐					
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: _____								
Remarks:								

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T1P4

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 3.0 °

Subregion (LRR): LRR J Lat.: 33.172759 Long.: -97.046867 Datum: NAD83

Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Juniperus virginiana	40	☒ 66.7%	UPL	Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
2. Quercus stellata	20	☒ 33.3%	FACU	Total Number of Dominant Species Across All Strata: 8 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)
4.	0	☐ 0.0%		
	60	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. Ulmus crassifolia	10	☒ 28.6%	FAC	Total % Cover of: Multiply by:
2. Ilex vomitoria	10	☒ 28.6%	FAC	OBL species 0 x 1 = 0
3. Juniperus virginiana	15	☒ 42.9%	UPL	FACW species 5 x 2 = 10
4.	0	☐ 0.0%		FAC species 25 x 3 = 75
5.	0	☐ 0.0%		FACU species 30 x 4 = 120
	35	= Total Cover		UPL species 55 x 5 = 275
Herb Stratum (Plot size: 5 ft)				Column Totals: 115 (A) 480 (B)
1. Carex cherokeensis	5	☒ 25.0%	FACW	Prevalence Index = B/A = 4.174
2. Panicum virgatum	5	☒ 25.0%	FAC	
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	20	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				
1. Smilax bona-nox	10	☒ 100.0%	FACU	
2.	0	☐ 0.0%		
	10	= Total Cover		
% Bare Ground in Herb Stratum 90				
Remarks:				

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is > 50%

☐ 3 - Prevalence Index is ≤ 3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Soil

Sampling Point: T1P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	3/4	100					Sandy Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18
 Applicant/Owner: G and A State: Texas Sampling Point: T1P5
 Investigator(s): MP and RC Section, Township, Range: S T R
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope: / 5.0 °
 Subregion (LRR): LRR J Lat.: 33.172461 Long.: -97.046453 Datum: NAD83
 Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Quercus stellata</u>	40	☒ 100.0%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	☐ 0.0%		Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
4. _____	0	☐ 0.0%		
	40	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. <u>Ligustrum sinense</u>	10	☒ 40.0%	UPL	Total % Cover of: Multiply by:
2. <u>Juniperus virginiana</u>	10	☒ 40.0%	UPL	OBL species <u>0</u> x 1 = <u>0</u>
3. <u>Fraxinus pennsylvanica</u>	5	☒ 20.0%	FAC	FACW species <u>5</u> x 2 = <u>10</u>
4. _____	0	☐ 0.0%		FAC species <u>5</u> x 3 = <u>15</u>
5. _____	0	☐ 0.0%		FACU species <u>40</u> x 4 = <u>160</u>
	25	= Total Cover		UPL species <u>25</u> x 5 = <u>125</u>
Herb Stratum (Plot size: 5 ft)				Column Totals: <u>75</u> (A) <u>310</u> (B)
1. <u>Ligustrum sinense</u>	5	☒ 50.0%	UPL	Prevalence Index = B/A = <u>4.133</u>
2. <u>Carex cherokeensis</u>	5	☒ 50.0%	FACW	
3. _____	0	☐ 0.0%		
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
9. _____	0	☐ 0.0%		
10. _____	0	☐ 0.0%		
	10	= Total Cover		
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		
2. _____	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				Hydrophytic Vegetation Present? Yes ☐ No ☒

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is > 50%

☐ 3 - Prevalence Index is ≤ 3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present.

Soil

Sampling Point: T1P5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	3/2	100					Sandy Clay Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)
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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18
 Applicant/Owner: G and A State: Texas Sampling Point: T1P6
 Investigator(s): MP and RC Section, Township, Range: S T R
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): rolling Slope: / 5.0 °
 Subregion (LRR): LRR J Lat.: 33.172546 Long.: -97.045269 Datum: NAD83
 Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: _____)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	0	☐	_____	
3. _____	0	☐	_____	
4. _____	0	☐	_____	
		0 = Total Cover		
				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>30</u> x 5 = <u>150</u> Column Totals: <u>100</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>3.7</u>
				Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes ☐ No ☒
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

Soil

Sampling Point: T1P6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	4/2	100					Sandy Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)
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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T2P1 and P3

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 5.0 °

Subregion (LRR): LRR J Lat.: 33.172871 Long.: -97.047122 Datum: NAD83

Soil Map Unit Name: Birome-Rayex-Aubrey complex, 2 to 15 percent slopes (13) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions T2P3: 33.172799, -97.047206	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Juniperus virginiana	30	☒ 50.0%	UPL	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
2. Ulmus alata	30	☒ 50.0%	FACU	Total Number of Dominant Species Across All Strata: 5 (B)
3. _____	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)
4. _____	0	☐ 0.0%		
	60	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. Juniperus virginiana	15	☒ 33.3%	UPL	Total % Cover of: Multiply by:
2. Ulmus alata	15	☒ 33.3%	FACU	OBL species 0 x 1 = 0
3. Ligustrum sinense	15	☒ 33.3%	UPL	FACW species 0 x 2 = 0
4. _____	0	☐ 0.0%		FAC species 0 x 3 = 0
5. _____	0	☐ 0.0%		FACU species 45 x 4 = 180
	45	= Total Cover		UPL species 60 x 5 = 300
Herb Stratum (Plot size:)				Column Totals: 105 (A) 480 (B)
1. _____	0	☐		Prevalence Index = B/A = 4.571
2. _____	0	☐		
3. _____	0	☐		
4. _____	0	☐		
5. _____	0	☐		
6. _____	0	☐		
7. _____	0	☐		
8. _____	0	☐		
9. _____	0	☐		
10. _____	0	☐		
	0	= Total Cover		
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		
2. _____	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 0				
Remarks:				Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes ☐ No ☒

Soil

Sampling Point: T2P1 and P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR	3/4	100					Sandy Loam
1-16	10YR	3/6	100					Sandy Loam

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	Indicators for Problematic Hydric Soils³: ☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H) ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T3P1

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 5.0 °

Subregion (LRR): LRR J Lat.: 33.171994 Long.: -97.047038 Datum: NAD83

Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Juniperus virginiana	40	☒ 100.0%	UPL	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2.	0	☐ 0.0%		Total Number of Dominant Species Across All Strata: 3 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)
4.	0	☐ 0.0%		
	40	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1.	0	☐		Total % Cover of: Multiply by:
2.	0	☐		OBL species 0 x 1 = 0
3.	0	☐		FACW species 0 x 2 = 0
4.	0	☐		FAC species 10 x 3 = 30
5.	0	☐		FACU species 10 x 4 = 40
	0	= Total Cover		UPL species 50 x 5 = 250
	0			Column Totals: 70 (A) 320 (B)
Herb Stratum (Plot size: 5 ft)				Prevalence Index = B/A = 4.571
1. Opuntia fragilis	5	☐ 16.7%	UPL	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. Paspalum notatum	10	☒ 33.3%	FAC	
3. Galium triflorum	10	☒ 33.3%	FACU	
4. Bothriochloa ischaemum	5	☐ 16.7%	UPL	
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	30	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 60				Hydrophytic Vegetation Present? Yes ☐ No ☒
Remarks:				

Soil

Sampling Point: T3P1

[illegible]

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ High Water Table (A2) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)			Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3)		
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u>0</u> (includes capillary fringe)			Wetland Hydrology Present? Yes ☐ No ☒		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: _____					
Remarks:					

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T3P2

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 5.0 °

Subregion (LRR): LRR J Lat.: 33.171473 Long.: -97.045215 Datum: NAD83

Soil Map Unit Name: Gasil fine sandy loam, 1 to 3 percent slopes (35) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Juniperus virginiana	30	☒ 100.0%	UPL	Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2.	0	☐ 0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)
4.	0	☐ 0.0%		
	30	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worksheet:
1. Ligustrum sinense	20	☒ 50.0%	UPL	Total % Cover of: Multiply by:
2. Symphoricarpos orbiculatus	20	☒ 50.0%	FACU	OBL species 0 x 1 = 0
3.	0	☐ 0.0%		FACW species 10 x 2 = 20
4.	0	☐ 0.0%		FAC species 50 x 3 = 150
5.	0	☐ 0.0%		FACU species 40 x 4 = 160
	40	= Total Cover		UPL species 50 x 5 = 250
Herb Stratum (Plot size: 5 ft)				Column Totals: 150 (A) 580 (B)
1. Carex cherokeensis	10	☐ 12.5%	FACW	Prevalence Index = B/A = 3.867
2. Rivina humilis	50	☒ 62.5%	FAC	
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	80	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				Hydrophytic Vegetation Indicators:
1. Smilax bona-nox	20	☒ 100.0%	FACU	☐ 1 - Rapid Test for Hydrophytic Vegetation
2.	0	☐ 0.0%		☐ 2 - Dominance Test is > 50%
	20	= Total Cover		☐ 3 - Prevalence Index is ≤ 3.0 ¹
% Bare Ground in Herb Stratum 40				☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks:				☐ Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes ☐ No ☒

Soil

Sampling Point: T3P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	3/3	100					Sandy Clay	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)
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WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T4P1

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope: / 5.0 °

Subregion (LRR): LRR J Lat.: 33.171259 Long.: -97.046834 Datum: NAD83

Soil Map Unit Name: Silstid loamy fine sand, 1 to 5 percent slopes (72) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size:)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐		Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
2. _____	0	☐		Total Number of Dominant Species Across All Strata: 2 (B)
3. _____	0	☐		Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)
4. _____	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1. _____	0	☐		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 20 x 2 = 40 FAC species 20 x 3 = 60 FACU species 0 x 4 = 0 UPL species 25 x 5 = 125 Column Totals: 65 (A) 225 (B) Prevalence Index = B/A = 3.462
2. _____	0	☐		
3. _____	0	☐		
4. _____	0	☐		
5. _____	0	☐		
	0	= Total Cover		
Herb Stratum (Plot size: 5 ft)				
1. Paspalum dilatatum	10	☐ 15.4%	FAC	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. Paspalum notatum	10	☐ 15.4%	FAC	
3. Bothriochloa ischaemum	25	☒ 38.5%	UPL	
4. Echinochloa colona	20	☒ 30.8%	FACW	
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
9. _____	0	☐ 0.0%		
10. _____	0	☐ 0.0%		
	65	= Total Cover		
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		Hydrophytic Vegetation Present? Yes ☐ No ☒
2. _____	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 0				
Remarks:				

Soil

Sampling Point: T4P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Texture	Remarks	
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	3/3	100				Loam	gravely	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): 0 Water Table Present? Yes ☐ No ☒ Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0	Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18
 Applicant/Owner: G and A State: Texas Sampling Point: TSP1
 Investigator(s): MP and RC Section, Township, Range: S T R
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 3.0 °
 Subregion (LRR): LRR J Lat.: 33.170794 Long.: -97.046365 Datum: NAD83
 Soil Map Unit Name: Siltstid loamy fine sand, 1 to 5 percent slopes (72) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: _____)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	☐	_____	
3. _____	0	☐	_____	
4. _____	0	☐	_____	
			= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	☐	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>780</u> x 5 = <u>3900</u> Column Totals: <u>800</u> (A) <u>3960</u> (B) Prevalence Index = B/A = <u>4.95</u>
2. _____	0	☐	_____	
3. _____	0	☐	_____	
4. _____	0	☐	_____	
5. _____	0	☐	_____	
			= Total Cover	
Herb Stratum (Plot size: <u>5 ft</u>)				
1. <u>Bothriochloa ischaemum</u>	780	☒ 97.5%	UPL	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. <u>Paspalum notatum</u>	20	☐ 2.5%	FAC	
3. _____	0	☐ 0.0%	_____	
4. _____	0	☐ 0.0%	_____	
5. _____	0	☐ 0.0%	_____	
6. _____	0	☐ 0.0%	_____	
7. _____	0	☐ 0.0%	_____	
8. _____	0	☐ 0.0%	_____	
9. _____	0	☐ 0.0%	_____	
10. _____	0	☐ 0.0%	_____	
			= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	0	☐	_____	Hydrophytic Vegetation Present? Yes ☐ No ☒
2. _____	0	☐	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

Soil

Sampling Point: T5P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	7.5YR	5/6	100					Clay Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18
 Applicant/Owner: G and A State: Texas Sampling Point: TSP2
 Investigator(s): MP and RC Section, Township, Range: S T R
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope: / 1.0 °
 Subregion (LRR): LRR J Lat.: 33.170794 Long.: -97.046325 Datum: NAD83
 Soil Map Unit Name: Siltid loamy fine sand, 1 to 5 percent slopes (72) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size: _____)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	☐	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
2. _____	0	☐	_____		
3. _____	0	☐	_____		
4. _____	0	☐	_____		
		0 = Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>50</u> x 1 = <u>50</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>70</u> (A) <u>130</u> (B) Prevalence Index = B/A = <u>1.857</u>	
Sapling/Shrub Stratum (Plot size: _____)					
1. _____	0	☐	_____		
2. _____	0	☐	_____		
3. _____	0	☐	_____		
4. _____	0	☐	_____		
5. _____	0	☐	_____	Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is > 50% ☒ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.	
Herb Stratum (Plot size: 5 ft _____)					
1. <u>Persicaria hydropiperoides</u>	50	☒ 71.4%	OBL		
2. <u>Panicum virgatum</u>	10	☐ 14.3%	FAC		
3. <u>Croton capitatus</u>	10	☐ 14.3%	UPL		
4. _____	0	☐ 0.0%	_____		
5. _____	0	☐ 0.0%	_____		
6. _____	0	☐ 0.0%	_____		
7. _____	0	☐ 0.0%	_____		
8. _____	0	☐ 0.0%	_____		
9. _____	0	☐ 0.0%	_____		
10. _____	0	☐ 0.0%	_____		
		70 = Total Cover		Hydrophytic Vegetation Present? Yes ☒ No ☐	
Woody Vine Stratum (Plot size: _____)					
1. _____	0	☐	_____		
2. _____	0	☐	_____		
		0 = Total Cover			
% Bare Ground in Herb Stratum <u>30</u>					
Remarks:					

Soil

Sampling Point: T5P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix		%	Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)			Color (moist)		%				
0-16	10YR	3/3	70	5YR	4/6	30	C	M	Sandy Clay Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☒ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)	☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)
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<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☒ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)	Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>3</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>
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Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T5P3

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 3.0 °

Subregion (LRR): LRR J Lat.: 33.170804 Long.: -97.046247 Datum: NAD83

Soil Map Unit Name: Silstid loamy fine sand, 1 to 5 percent slopes (72) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Juniperus virginiana	10	☒ 100.0%	UPL	Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
2.	0	☐ 0.0%		Total Number of Dominant Species Across All Strata: 4 (B)
3.	0	☐ 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)
4.	0	☐ 0.0%		
	10	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				
1. Rubus trivialis	5	☒ 100.0%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 0 x 3 = 0 FACU species 30 x 4 = 120 UPL species 70 x 5 = 350 Column Totals: 100 (A) 470 (B) Prevalence Index = B/A = 4.7
2.	0	☐ 0.0%		
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
	5	= Total Cover		
Herb Stratum (Plot size: 5 ft)				
1. Bothriochloa ischaemum	60	☒ 70.6%	UPL	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. Rubus trivialis	25	☒ 29.4%	FACU	
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	85	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		Hydrophytic Vegetation Present? Yes ☐ No ☒
2.	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 0				
Remarks:				

Soil

Sampling Point: T5P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Texture	Remarks	
	Color (moist)			Color (moist)	%	Type ¹			
0-16	7.5YR	5/6	80				Clay Loam		
+mottle	2.5Y	6/1	20				Clay Loam		

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley **City/County:** Shady Shores/Denton **Sampling Date:** 12-Oct-18
Applicant/Owner: G and A **State:** Texas **Sampling Point:** T6P1 and P5
Investigator(s): MP and RC **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** convex **Slope:** / 3.0 °
Subregion (LRR): LRR J **Lat.:** 33.170548 **Long.:** -97.04673 **Datum:** NAD83
Soil Map Unit Name: Silstid loamy fine sand, 1 to 5 percent slopes (72) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions T6P5: 33.170461, -97.046227	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size:)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐		Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
2. _____	0	☐		Total Number of Dominant Species Across All Strata: 2 (B)
3. _____	0	☐		Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)
4. _____	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1. _____	0	☐		Total % Cover of: Multiply by:
2. _____	0	☐		OBL species 0 x 1 = 0
3. _____	0	☐		FACW species 0 x 2 = 0
4. _____	0	☐		FAC species 10 x 3 = 30
5. _____	0	☐		FACU species 25 x 4 = 100
	0	= Total Cover		UPL species 45 x 5 = 225
	0			Column Totals: 80 (A) 355 (B)
Herb Stratum (Plot size: 5 ft)				Prevalence Index = B/A = 4.438
1. Bothriochloa ischaemum	35	☒	43.8% UPL	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is > 50% ☐ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. Senecio bigelovii	10	☐	12.5% UPL	
3. Ambrosia artemisiifolia	25	☒	31.3% FACU	
4. Paspalum dilatatum	10	☐	12.5% FAC	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
	80	= Total Cover		
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		
2. _____	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 0				
Remarks:				Hydrophytic Vegetation Present? Yes ☐ No ☒

Soil

Sampling Point: T6P1and P5

[illegible]

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ High Water Table (A2) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)			Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)		
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u>0</u> (includes capillary fringe)			Wetland Hydrology Present? Yes ☐ No ☒		
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: _____					
Remarks:					

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T6P2 and P4

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope: / 1.0 °

Subregion (LRR): LRR J Lat.: 33.170531 Long.: -97.04663 Datum: NAD83

Soil Map Unit Name: Silstid loamy fine sand, 1 to 5 percent slopes (72) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions T6P4: 33.170482, -97.046328	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size:)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐		Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. _____	0	☐		Total Number of Dominant Species Across All Strata: 3 (B)
3. _____	0	☐		Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)
4. _____	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1. _____	0	☐		
2. _____	0	☐		Total % Cover of: Multiply by:
3. _____	0	☐		OBL species 30 x 1 = 30
4. _____	0	☐		FACW species 0 x 2 = 0
5. _____	0	☐		FAC species 10 x 3 = 30
	0	= Total Cover		FACU species 10 x 4 = 40
	0			UPL species 0 x 5 = 0
	0			Column Totals: 50 (A) 100 (B)
Herb Stratum (Plot size: 5 ft)				Prevalence Index = B/A = 2
1. Persicaria hydropiperoides	30	☒ 60.0%	OBL	Hydrophytic Vegetation Indicators:
2. Panicum virgatum	10	☒ 20.0%	FAC	
3. Ambrosia artemisiifolia	10	☒ 20.0%	FACU	
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
9. _____	0	☐ 0.0%		
10. _____	0	☐ 0.0%		
	50	= Total Cover		
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		
2. _____	0	☐		
	0	= Total Cover		
% Bare Ground in Herb Stratum 50				Hydrophytic Vegetation Present? Yes ☒ No ☐
Remarks:				

Soil

Sampling Point: T6P2 and P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Restrictive Layer (if present): Type: <u>inundated and obligate veg assumed hydric</u> Depth (inches): _____	Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☒ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>1</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>0</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: _____

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T7P1 and P3

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope: / 5.0 °

Subregion (LRR): LRR J Lat.: 33.172643 Long.: -97.047261 Datum: NAD83

Soil Map Unit Name: Birome-Rayex-Aubrey complex, 2 to 15 percent slopes (13) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions T7P3: 33.172642, -97.047229	

VEGETATION - Use scientific names of plants

FWS Region: GP

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Ulmus alata	30	☒ 46.2%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. Quercus stellata	20	☒ 30.8%	FACU	Total Number of Dominant Species Across All Strata: 8 (B)
3. Juniperus virginiana	15	☒ 23.1%	UPL	Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)
4.	0	☐ 0.0%		
	65	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)				Prevalence Index worksheet:
1. Ulmus alata	15	☒ 42.9%	FACU	Total % Cover of: Multiply by:
2. Ligustrum sinense	20	☒ 57.1%	UPL	OBL species 0 x 1 = 0
3.	0	☐ 0.0%		FACW species 5 x 2 = 10
4.	0	☐ 0.0%		FAC species 5 x 3 = 15
5.	0	☐ 0.0%		FACU species 80 x 4 = 320
	35	= Total Cover		UPL species 35 x 5 = 175
Herb Stratum (Plot size: 5 ft)				Column Totals: 125 (A) 520 (B)
1. Fraxinus pennsylvanica	5	☒ 20.0%	FAC	Prevalence Index = B/A = 4.16
2. Carex cherokeensis	5	☒ 20.0%	FACW	
3.	0	☐ 0.0%		
4.	0	☐ 0.0%		
5.	0	☐ 0.0%		
6.	0	☐ 0.0%		
7.	0	☐ 0.0%		
8.	0	☐ 0.0%		
9.	0	☐ 0.0%		
10.	0	☐ 0.0%		
	25	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)				
1. Smilax bona-nox	15	☒ 100.0%	FACU	
2.	0	☐ 0.0%		
	15	= Total Cover		
% Bare Ground in Herb Stratum 0				
Remarks:				

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is > 50%

☐ 3 - Prevalence Index is ≤ 3.0 ¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Soil

Sampling Point: T7P1 and P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		%	Redox Features			Loc ²	Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹			
0-16	10YR	4/4	100					Clay Loam	

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	☐ Sandy Gleyed Matrix S4 ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox depressions (F8) ☐ High Plains Depressions (F16) (MLRA 72 and 73 of LRR H)
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Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)	³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Salt Crust (B11) ☐ Aquatic Invertebrates (B13) ☐ Hydrogen Sulfide Odor (C1) ☐ Dry Season Water Table (C2) ☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled) ☐ Presence of Reduced Iron (C4) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Shady Shores Hidden Valley City/County: Shady Shores/Denton Sampling Date: 12-Oct-18

Applicant/Owner: G and A State: Texas Sampling Point: T7P2

Investigator(s): MP and RC Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope: / 1.0 °

Subregion (LRR): LRR J Lat.: 33.172651 Long.: -97.047249 Datum: NAD83

Soil Map Unit Name: Birome-Rayex-Aubrey complex, 2 to 15 percent slopes (13) NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: DAREM = 16; wetter than normal climatic/hydrologic conditions	

VEGETATION - Use scientific names of plants

Dominant Species? FWS Region: GP

Tree Stratum (Plot size:)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	☐		Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
2. _____	0	☐		Total Number of Dominant Species Across All Strata: 2 (B)
3. _____	0	☐		Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
4. _____	0	☐		
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: 15 ft)				
1. Fraxinus pennsylvanica	5	☒	100.0% FAC	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 50 x 1 = 50 FACW species 0 x 2 = 0 FAC species 5 x 3 = 15 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 55 (A) 65 (B) Prevalence Index = B/A = 1.182
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
5 = Total Cover				
Herb Stratum (Plot size: 5 ft)				
1. Ludwigia peploides	50	☒	100.0% OBL	Hydrophytic Vegetation Indicators: ☐ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is > 50% ☒ 3 - Prevalence Index is ≤ 3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
50 = Total Cover				
Woody Vine Stratum (Plot size:)				
1. _____	0	☐		Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	0	☐		
0 = Total Cover				
% Bare Ground in Herb Stratum 50				
Remarks:				

Soil

Sampling Point: T7P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	5/1	50	5YR	3/4	10	C	M	Clay Loam
+mottle	7.5YR	5/8	40						Clay Loam

1Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains 2Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) (LRR F) ☐ 1 cm Muck (A9) (LRR F,G,H) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Sandy Muck Mineral (S1) ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)	Indicators for Problematic Hydric Soils³: ☐ 1 cm Muck (A9) (LRR I, J) ☐ Coastal Prairie Redox (A16) (LRR F, G, H) ☐ Dark Surface (S7) (LRR G) ☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 and 73) ☐ Reduced Vertic (F18) ☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
Remarks:	

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☒ FAC-neutral Test (D5) ☐ Frost Heave Hummocks (D7) (LRR F)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): _____	Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

Stream Data Sheet

Stream #: T1P2

Date: 10/12/18

Project Name: Shady Shores

Project #: 4300174

Location (County/State): McLennan / Texas

Field Crew: MPeters, RCohen

Stream Name: Pond 1

Stream Characteristics

a) Avg. Bank Width 150 In. (Ft.)

b) Average Width of Water 140 In. (Ft.)

c) Avg. Water Depth unk In./Ft.

Min./Max Depth unk In./Ft.

d) Depth of Streambed below top of bank unk In./Ft.

Stream flow: ☒ Perennial ☐ Intermittent ☐ Ephemeral

OHWM Width 140 In. (Ft.)

Height of OHWM above streambed In./Ft.

Top of Bank

Depth of Stream Bed (d)



Average Bank Width (a)



← Water Width (b) →

↓ Average Water Depth (c)

Substrate

☐ Bedrock

☐ Boulder

☐ Cobble

☐ Gravel

☒ Sand

☒ Silt/Clay

☒ Organic

☐ Concrete

☐ Other (Describe)

Instream Cover

☐ Undercut Banks

☒ Logs/Brush

☒ Emergent

☐ Oxbows

☒ Boulders

☒ Overhanging Vegetation

☐ Deep Pools

☐ Shallows (in slow water)

Riparian Zone (check all that are appropriate)

☒ Forest

☐ Scrub/Shrub

☐ Old-Field/ROW

☐ Pasture

☐ Row-Crop

☒ Wetland

☐ Paved

☐ Residential/Park

☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 100 In. (Ft.)

Right 100 In. (Ft.)

Notes/Comments:

Stream Data Sheet

Stream #: T6P3

Date: 10/12/18

Project Name: Shady Shores

Project #: 4300174

Location (County/State): McLennan / Texas

Field Crew: MPeters, RCohen

Stream Name: Pond 2

Stream Characteristics

a) Avg. Bank Width 40 In. (Ft.)

b) Average Width of Water 30 In. (Ft.)

c) Avg. Water Depth 1 In. (Ft.)

Min./Max Depth 0 - 1.25 In. (Ft.)

d) Depth of Streambed below top of bank 2.5 In. (Ft.)

Stream flow: ☒ Perennial ☐ Intermittent ☐ Ephemeral

OHWM Width 35 In. (Ft.)

Height of OHWM above streambed 1.25 In. (Ft.)

Top of Bank

Depth of Stream Bed (d)

Average Bank Width (a)

Water Width (b)

Average Water Depth (c)

Substrate

☐ Bedrock

☐ Boulder

☐ Cobble

☐ Gravel

☐ Sand

☒ Silt/Clay

☒ Organic

☐ Concrete

☐ Other (Describe)

Instream Cover

☐ Undercut Banks

☐ Logs/Brush

☒ Emergent

☐ Oxbows

☒ Boulders

☐ Overhanging Vegetation

☐ Deep Pools

☐ Shallows (in slow water)

Riparian Zone (check all that are appropriate)

☐ Forest

☐ Scrub/Shrub

☐ Old-Field/ROW

☒ Pasture

☐ Row-Crop

☒ Wetland

☐ Paved

☐ Residential/Park

☐ Other

(Describe other or differences between banks):

Width of Riparian Zone (Left or right bank looking downstream)

Left 100 In. (Ft.)

Right 100 In. (Ft.)

Notes/Comments: banks poorly defined

Appendix B – Site Photographs



Photo 1: View, facing north, of Wetland 1 and Pond 1 located at T1P2.



Photo 2: View, facing east, of the culvert and drainage swale located at T2P2.



Photo 3: View, facing west, of the culvert that runs under Hidden Valley Road.



Photo 4: View, facing west, of the man-made drainage channel located on the western side of Hidden Valley Road.



Photo 5: View, facing north, of the upland area located at T3P1.



Photo 6: View, facing south, of a vegetated swale located at T4P1.



Photo 7: View, facing east, of Wetland 4 located at T5P1.



Photo 8: View, facing north, of Wetland 3 located at T6P3.



Photo 9: View, facing north, of Wetland 2 located at T7P2.