Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: April 29, 2026
Facility Name: Waste Management Skyline Landfill
Permit or Registration No.: 42E

Nature of Correspondence:
☐ Initial/New
☒ Response/Revision to TCEQ Tracking No.: 32806496 (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☐ Groundwater Alternate Source Demonstration
☒ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

April 29, 2026

Guanhua Gai
License & Permit Specialist
Business & Program Services Section
Waste Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Administrative Notice of Deficiency Letter
Waste Management of Texas, Inc. - Waste Management Skyline Landfill
Ferris, Ellis and Dallas Counties, Texas
Municipal Solid Waste Permit Number 42E
Tracking No. 32806496; RN100542232/CN600127856
Permit Major Amendment

Dear Guanhua:

This response to your request for additional information addressed to Mr. James Smith, dated April 17, 2026, is submitted on behalf of Waste Management of Texas, Inc. for the Waste Management Skyline Landfill major permit amendment submitted April 13, 2026. Our responses to the Texas Commission on Environmental Quality (TCEQ) comments are presented below in the order listed in your email.

1. A1: Please submit one hard copy of the Waste Management Texas, Inc – Waste Management Skyline Landfill Permit Major Amendment Application in its entirety.

RESPONSE: A hard copy has been provided with this NOD.

2. A2: Please provide electronic copy of checklist in Excel format with application. The template can be found at the following link:

   https://www.tceq.texas.gov/permitting/waste_permits/msw_permits/perm_reg_mod.html

RESPONSE: The Excel format checklist has been included in the TCEQ Send submittal of this NOD.

3. A3: City Mayor Information: Please verify and revise the email address for FredPontley@ferristexas.gov.

RESPONSE: As requested, city mayor information has been revised.

4. A4: County Judge Information: Due to the landfill being located at two counties, please verify and update the Ellis and Dallas County Judge information as follows:

Ellis County Judge:

The Honorable John Wray
101 W Main St, Ste 104
Waxahachie, TX 75165
countyjudge@elliscountytx.gov

Dallas County Judge:

The Honorable Clay Lewis Jenkins
500 Elm St, Ste 7000
Dallas, County: Dallas, TX 75202
214-653-7949
dcjudge@dallascounty.org

RESPONSE: As requested, county judge information has been revised.

5. A5: County Health Authority: Please verify and revise as follows:

Dallas County Health and Human Services
Dr. Philip Huang, MD, MPH
Director
2377 N. Stemmons Freeway
Dallas, County: Dallas, TX 75207
214-819-2000
Philip.Huang@dallascounty.org

RESPONSE: As requested, county health authority information has been revised.

6. A6: State Representative Information: Please revise County name to Ellis.

RESPONSE: As requested, the State Representative county location has been revised.

7. A7: Council of Governments (COG): Please verify and revise as follows:

North Central Texas Council of Governments
Todd Little
Executive Director
616 Six Flags Drive
Arlington, County: Tarrant, TX 76011
817-695-9101
tlittle@nctcog.org

RESPONSE: As requested, NCTCOG information has been revised.

8. A8: Local Drainage or Flood Management Authority: Please verify and revise as follows:

Ellis County Engineering
Zach Gerich
302 N Monroe St, Ste 213
Waxahachie, County: Ellis, TX 75165

972-825-5112
zach.gerich@elliscountytx.gov

RESPONSE: As requested, local drainage authority has been revised.

9. A9: Please submit an electronic word version of the mailing labels for the adjacent landowners list. Names and addresses must be typed in the format required by the U.S. Postal Service for machine readability. The list is to be 30 names, addresses, etc. (10 per column) per page (MS WORD Avery Standard 5160).

RESPONSE: The Word formatted mailing labels have been included in the TCEQ Send submittal of this NOD.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL



Gregory W. Adams, P. E.
Principal

Attachments: WMTX Skyline Landfill Administrative Notice of Deficiency Response

cc: Mr. James Smith, Area Director, Waste Management of Texas, Inc.

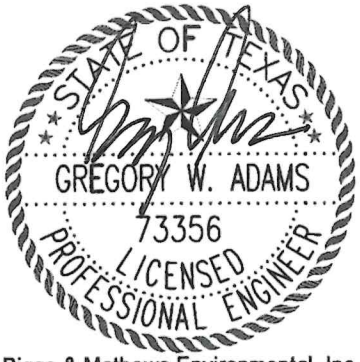
WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

VOLUME 1 OF 4

Prepared for

WASTE MANAGEMENT OF TEXAS, INC.

March 2026



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

Prepared by

BIGGS & MATHEWS ENVIRONMENTAL
1700 Robert Road, Suite 100 • Mansfield, Texas 76063 • 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS
FIRM REGISTRATION NO. F-256 AND NO. 10194895

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS
FIRM REGISTRATION NO. 50222

WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

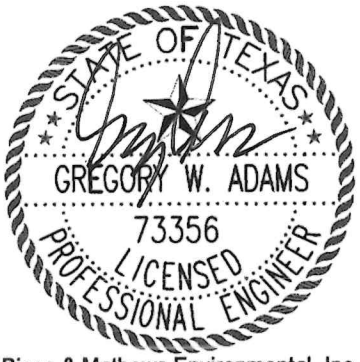
VOLUME 1 OF 4 CONTENTS

MASTER TABLE OF CONTENTS

TCEQ FORMS

PART I SITE AND APPLICANT INFORMATION

PART II EXISTING CONDITIONS AND CHARACTER OF FACILITY AND SURROUNDING AREA



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256

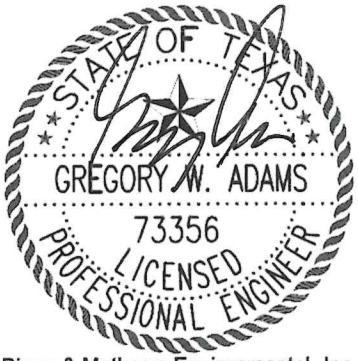
3/3/2026

WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

Prepared for

WASTE MANAGEMENT OF TEXAS, INC.

March 2026



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

Prepared by

BIGGS & MATHEWS ENVIRONMENTAL
1700 Robert Road, Suite 100 • Mansfield, Texas 76063 • 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS
FIRM REGISTRATION NO. F-256 AND NO. 10194895

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS
FIRM REGISTRATION NO. 50222

WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

MASTER TABLE OF CONTENTS

VOLUME 1

TCEQ Core Data Form

Public Involvement Plan Form for Permit and Registration Applications

Plain Language Summary of Municipal Solid Waste Permit or Permit Amendment Application

Administrative and Technical Review Checklist for Municipal Solid Waste (MSW) Permits, Registrations and Amendments

Part I Application Form for New Permit, Permit Amendment, or Registration for a Municipal Solid Waste Facility

Part II Application Form for New Permit or Permit Amendment for a Municipal Solid Waste Facility

Part I – Site Applicant Information Supplementary Technical Report

Part II – Existing Conditions and Character of the Facility and Surrounding Area

VOLUME 2

Part III – Facility Investigation and Design

Attachment A – Site Development Plan

Attachment B – General Facility Design

Attachment C – Facility Surface Water Drainage Report

Attachment D – Waste Management Unit Design

VOLUME 3

Part III – Facility Investigation and Design

Attachment E – Geology Report

VOLUME 4

Part III – Facility Investigation and Design

Attachment F – Groundwater Monitoring Plan

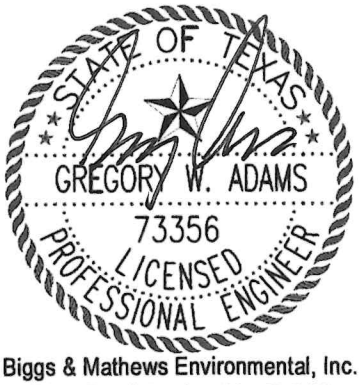
Attachment G – Landfill Gas Management Plan

Attachment H – Closure Plan

Attachment I – Postclosure Plan

Attachment J – Cost Estimates for Closure and Postclosure Care

Part IV – Site Operating Plan



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☒ Other **Permit Amendment Application**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600127856		**RN 100542232**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☐ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

City		**State**		**ZIP**		**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*

( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

23. Street Address of the Regulated Entity: *(No PO Boxes)*								
	City		**State**		**ZIP**		**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:			
26. Nearest City		**State**	**Nearest ZIP Code**

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

34. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	
35. E-Mail Address:								

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
( ) -		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Gregory W. Adams, P.E.	**41. Title:**	Principal
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(817) 563-1144		( ) -	gadams@biggsandmathews.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Waste Management of Texas, Inc.	**Job Title:**	Area Director, Disposal Operations
Name *(In Print):*	James Smith	**Phone:**	(713) 512- 6200
Signature:		**Date:**	3/31/2026

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☐ New Permit or Registration Application

☒ New Activity - modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☒ Considered to have significant public interest, **and**

☒ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☒ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

A proposed permit amendment application to increase the size and waste disposal capacity of the existing Skyline Landfill to extend the site life and provide for the ongoing waste disposal needs of individuals, businesses, and communities in Dallas and Ellis Counties and the surrounding areas.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Ferris

(City)

Ellis

(County)

601.04

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☒ City ☐ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

29.7

(b) Per capita income for population near the specified location

$78,528

(c) Percent of minority population and percent of population by race within the specified location

20.2

(d) Percent of Linguistically Isolated Households by language within the specified location

4.2

(e) Languages commonly spoken in area by percentage

English: 61%
Spanish: 38%

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☒ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☒ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☑ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☒ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☑ Public Place (specify) Ferris Public Library

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

Texas Commission on Environmental Quality

Plain Language Summary of Municipal Solid Waste Permit or Permit Amendment Application

Applicants are required by public notice rules in Title 30 Texas Administrative Code, Chapter 39, Section 39.405(k)[1] to provide this summary of an application.

A. Purpose of the Proposed Facility

A proposed permit amendment application to increase the size and waste disposal capacity of the existing Waste Management Skyline Landfill to extend the site life and provide for the ongoing waste disposal needs of individuals, businesses, and communities in Dallas and Ellis Counties and the surrounding areas.

B. Information About the Applicant

Name: Waste Management of Texas, Inc.

Applicant Type: Corporation

Facility Name: Waste Management Skyline Landfill

Permit Application Number: 42E

Customer Number (CN): 600127856

Regulated Entity Reference Number (RN): 100542232

C. Location of the Proposed Facility

Facility Address (or description of site location if no address):

1201 N Central St
Ferris, TX 75125-2101

Link to Map of Facility Location (TCEQ Location Mapper[2]): https://arcg.is/1OW41L0

D. Information about Facility Operation

What types of waste would be received?

Type I municipal solid waste

What geographical area would the wastes come from?

Dallas and Ellis Counties and surrounding areas.

[1] www.tceq.texas.gov/goto/view-30tac
[2] www.tceq.texas.gov/gis/hb-610-viewer

What days and hours would the facility operate?

Waste Acceptance: 24 Hours Mon. - Fri. and until 5:00 p.m. Sat.
Operating: 24 Hours per Day, 7 Days a Week

At what rate would wastes be accepted?

Maximum daily waste acceptance rate: 6,090 tons/day

How would wastes be managed?

Wastes would be managed with the ongoing landfilling operations.

E. Pollution Control Methods

What methods would the facility use for containing wastes and odors, and monitoring for releases?

The facility employs daily, weekly and intermediate cover as required to containing wastes and odors. Additional odor controls include the management of landfill gas via the existing LFGTE facility, the removal of ponded water, contaminated water and leachate as required, and mixing of wastes with other absorptive waste. Refer to Part IV for more detailed information.

What methods would the facility use or require for preventing litter or spills, and for cleanup of litter and spills?

The facility will conduct daily windblown waste and litter or spill pickups around the site. Waste transportation vehicles will be required to use adequate covers or other means of containment to secure the loads. Refer to Part IV for more detailed information.

Comisión de Calidad Ambiental de Texas

Resumen en lenguaje sencillo de la solicitud de permiso municipal de residuos sólidos o de modificación del permiso

Los solicitantes están obligados por las normas de notificación pública del Título 30 del Código Administrativo de Texas, Capítulo 39, Sección 39.405(k)[1] a proporcionar este resumen de una solicitud.

A. Objetivo de la instalación propuesta

Una solicitud de enmienda de permiso propuesta para aumentar el tamaño y la capacidad de eliminación de desechos del Skyline Landfill existente para extender la vida útil del sitio y satisfacer las necesidades actuales de eliminación de desechos de individuos, empresas y comunidades en los condados de Dallas y Ellis y sus alred

B. Información sobre el solicitante

Nombre: Gestión de Residuos de Texas, Inc.

Tipo de solicitante: Corporación

Nombre de la instalación: Vertedero Skyline de Gestión de Residuos

Número de solicitud de permiso: 42E

Número de cliente (CN): 600127856

Número de referencia de la entidad regulada (RN): 100542232

C. Ubicación de la instalación propuesta

Dirección del establecimiento (o descripción de la ubicación del sitio si no hay dirección):

1201 N Central St
Ferris, TX 75125-2101

Enlace al mapa de ubicación de las instalaciones en TCEQ Location Mapper[2]:

https://arcg.is/1OW41L0

D. Información sobre el funcionamiento de las instalaciones

¿Qué tipos de residuos se recibirían?

Residuos sólidos urbanos tipo I

¿De qué zona geográfica procederían los residuos?

Condados de Dallas y Ellis y áreas circundantes.

[1] www.tceq.texas.gov/goto/view-30tac
[2] www.tceq.texas.gov/gis/hb-610-viewer

¿Qué días y horas funcionará la instalación?

Recepción de Residuos: 24 horas de lunes a viernes y hasta las 17:00 h los sábados.
Horario: 24 horas al día, 7 días a la semana.

¿A qué ritmo se aceptarían los residuos?

Tasa máxima diaria de aceptación de residuos: 6,090 toneladas/día

¿Cómo se gestionarían los residuos?

Los desechos se gestionarían con las operaciones de vertedero en curso.

E. Métodos de control de la contaminación

¿Qué métodos utilizará la instalación para contener los residuos y los olores, y para controlar las emisiones?

La instalación emplea cobertura diaria, semanal e intermedia según sea necesario para contener desechos y olores. Los controles de olores adicionales incluyen la gestión del gas de vertedero a través de la instalación de LFGTE existente, la eliminación de agua estancada, agua contaminada y lixiviados según sea necesario, y la mezcla de desechos con otros desechos absorbentes. Consulte la Parte IV para obtener información más detallada.

¿Qué métodos utilizaría o exigiría la instalación para evitar la basura o los derrames, y para la limpieza de la basura y los derrames?

La instalación recogerá diariamente desechos arrastrados por el viento y basura o derrames en todo el sitio. Los vehículos de transporte de residuos deberán utilizar cubiertas adecuadas u otros medios de contención para asegurar las cargas. Consulte la Parte IV para obtener información más detallada.

Administrative and Technical Review Checklist for Municipal Solid Waste (MSW) Permits, Registrations and Amendments

This checklist is designed to provide guidance for the Municipal Solid Waste (MSW) rules found in Title 30 Texas Administrative Code (30 TAC) Chapter 330, for Type I, IV and V registration, permit, and permit amendment applications. Areas of the checklist that are shaded in gray are for information purposes only.

Please fill out application information before selecting and filling out a checklist.

Applicant Information

Company:	Waste Management of Texas, Inc.				
First name:	James	Last name:	Smith		
Applicant Title:	Area Director, Disposal Operations			Prefix:	
Street Address:	9708 Giles Lane				
City:	Austin	State:	TX	Zip code:	78754
Applicant E-Mail:	JSmith18@wm.com				

Consultant Information

First name:	Gregory	Last name:	Adams		
Consultant Title:	Principal			Prefix:	
Consultant Firm:	Biggs and Mathews Environmental, Inc.				
Consultant Address:	1700 Robert Road, Suite 100				
City:	Mansfield	State:	TX	Zip code:	76063
Consultant E-Mail:	gadams@biggsandmathews.com				

Application Information

Facility Name:	Waste Management Skyline Landfill		
Application Date	3/31/2026		
CN:	600127856	MSW ID:	42E
RN:	100542232	Authorization Type:	Permit
County:	Dallas and Ellis	Application Type:	Permit Amendment

ID	App. Part	Checklist Item	Item Type	Citation	Compl...?	Location	Applicant Comments	Application Area
1	General	Submit all four parts of the permit, permit amendment or registration application	Required	330.57(a) & (b)	Yes	-		Format-Application
2	General	Submit TCEQ Part I Form (Form No. 0650)	Required	330.57(c)(1)	Yes	Volume 1 Binder		Forms
3	General	Submit TCEQ Transportation Data and Report (Form No. 20719)	Required	305.45(a)	Yes	Part II, Appendix IIC		Forms
4	General	Submit TCEQ Closure Plan (Form No. 20720	Required	305.45(a)	Yes	Part III, Attachment H		Forms
5	General	Submit TCEQ Closure Cost Estimate (Form No. 20721	Required	305.45(a)	Yes	Part III, Attachment J		Forms
6	General	Submit TCEQ Post Closure Care Plan (Form No. 20722)	Required	305.45(a)	Yes	Part III, Attachment I		Forms
7	General	Submit TCEQ Post Closure Cost Estimate (Form No. 20723)	Required	305.45(a)	Yes	Part III, Attachment J		Forms
8	General	Part II of the application contains location and coordination information.	Informational	330.57(c)(2)		-		Format-Application
9	General	Part III of the application contains design information	Informational	330.57(c)(3)		-		Format-Application
10	General	Part IV of the application contains the site operating plan	Informational	330.57(c)(4)		-		Format-Application
11	General	The application should address all aspects of application and design requirements, even to show why not applicable (N/A)	Informational	330.57(d)		-		Format-Application
12	General	Submit data of sufficient completeness, accuracy and clarity	Required	330.57(d)	Yes	Complete submittal		Format-Application
13	General	Failure to provide complete information may be cause for ED to return application.	Informational	330.57(d)		-		Format-Application
14	General	Provide 4 Copies for Initial Submittal (1 original and 3 copies)	Required	330.57(e)	Yes	-		Format-Application
15	General	Provide 4 copies for NOD Responses including 1 copy with marked revisions (redline/strikeout)	Required	330.57(g)(6)	Yes	-		Format-Application
16	General	Application must be prepared in accordance with Texas Occupations Code, Texas Engineering Practice Act, Chapter 1001 and Texas Geoscience Practice Act, Chapter 1002	Informational	330.57(f)		-		Format-Application
17	General	Provide a PE signature, seal and date on the title page of each bound engineering report or individual engineering plan, and on each engineering drawing	Required	330.57(f)(1)	Yes	Throughout submittal as applicable		Format-Application
18	General	Provide PG sign, seal, & date for applicable items	Required	330.57(f)(2)	Yes	Throughout submittal as applicable		Format-Application
19	General	Applications that are not sealed are incomplete and shall be returned	Informational	330.57(f)(3)		-		Format-Application
20	General	Submit the application in three ring-binders	Required	330.57(g)(1)	Yes	-		Format-Application
21	General	Submit Title Page with Name, Application No., Site Operator Name, Operator Name (if applicable), Location, Date Prepared and Revision Date(s)	Required	330.57(g)(2)	Yes	-		Format-Application
22	General	Provide Table of Contents with PE seal	Required	330.57(g)(3)	Yes	Volume 1 Binder		Format-Application
23	General	Use 8.5x11 inch or 11x17 paper (folded to 8.5x11 inch)	Required	330.57(g)(4)	Yes	-		Format-Application
24	General	Provide pages with date (original and revised) and sequential page numbers	Required	330.57(g)(5)	Yes	-		Format-Application
25	General	Provide legible drawings/maps	Required	330.57(h)(1)	Yes	-		Format-Maps/Drawings
26	General	Provide color coding on all figures and drawings that is legible and distinct after copying in black & white	Required	330.57(h)(2)	Yes	-		Format-Maps/Drawings
27	General	Provide a standard engineering scale on each figure or drawing	Required	330.57(h)(3)	Yes	-		Format-Maps/Drawings
28	General	Provide a dated title block on each figure or drawing	Required	330.57(h)(4)(A)	Yes	-		Format-Maps/Drawings
29	General	Provide a bar scale at least 1 inch on all figures and drawings	Required	330.57(h)(4)(B)	Yes	-		Format-Maps/Drawings
30	General	Provide a revision block on all figures and drawings	Required	330.57(h)(4)(C)	Yes	-		Format-Maps/Drawings
31	General	Provide a PE or PG seal ,if required, on all figures and drawings	Required	330.57(h)(4)(D)	Yes	-		Format-Maps/Drawings
32	General	Include drawing number and a page number on each drawing and figure	Required	330.57(h)(4)(E)	Yes	-		Format-Maps/Drawings

33	General	Include a north arrow on each map or plan drawing	Required	330.57(h)(5)(A)	Yes	-		Format-Maps/Drawings
34	General	ude a reference to base map & date of most rent base map used, if the map is based upon another map	Required	330.57(h)(5)(B)	Y	-		Format-Maps/Drawings
35	General	Include a legend on each map or plan drawing	Required	330.57(h)(5)(C)	Yes	-		Format-Maps/Drawings
36	General	Provide match lines and section lines that reference the drawing where the match or section is shown.	Required	330.57(h)(6)	Yes	-		Format-Maps/Drawings
45	General	Acknowledge that the construction and operation of the waste management facility shall comply with Subchapter U of 30 TAC Chapter 330 (relating to Standard Air Permits for Municipal Solid Waste Landfill Facilities and Transfer Stations) or other approved air authorizations. Owners or operators of these types of facilities should consult with the Air Permits Division on or before the date that the municipal solid waste application is filed with the executive director	Acknowledgement	330.55(a)	Yes	-		Other Authorizations
46	General	Acknowledge that all liquids resulting from the operation of solid waste facilities shall be disposed of in a manner that will not cause surface water or groundwater pollution. Facilities shall provide for the treatment of wastewaters resulting from waste management activities and from cleaning and washing. Owners or operators shall ensure that storm water and wastewater management is in compliance with the regulations of the commission.	Acknowledgement	330.55(a)	Yes	-		Other Authorizations
47	General	A person may not cause, suffer, allow, or permit the disposal of municipal solid waste prior to recording, in the county deed records of the county or counties in which the disposal takes place, a metes and bounds description of the portion or portions of the tract of land on which disposal of solid waste will take place	Informational	330.19(a)				General Information
48	General	A certified copy of proof of deed recordation shall be provided to the executive director prior to instituting disposal operations.	Informational	330.19(b)				General Information
49	General	It is the responsibility of an owner or operator to possess or acquire a sufficient interest in or right to the use of the surface estate of the property for which a permit is issued, including the access route. The granting of a permit does neither convey any property rights or interest in either real or personal property; nor does it authorize any injury to private property, invasion of personal rights, or impairment of previous contract rights; nor any infringement of federal, state, or local laws or regulations outside the scope of the authority under which a permit is issued	Informational	330.67(a)				General Information
50	General	The facility owner or operator shall retain the right of entry to the facility until the end of the post-closure care period for inspection and maintenance of the facility	Informational	330.67(b)				General Information
51	General	Executive director approval or a permit will be required if any on-site operations subsequent to closure of a landfill facility involve disturbing the cover or liner of the landfill.	Informational	330.67(c)				General Information
52	General	It is the responsibility of an owner or operator to obtain any permits or approvals that may be required by local agencies such as for building construction, discharge of uncontaminated waters into ditches under control of a drainage district, discharge of effluent into a local sanitary sewer system, etc.	Informational	330.67(d)				General Information

58	General	If at any time during the life of the facility the owner or operator becomes aware of any condition in the permit or registration that necessitates a change to accommodate new technology or improved methods or that makes it impractical to keep the facility in compliance, the owner or operator shall submit to the executive director requested changes to the permit or registration in accordance with 30 TAC §305.62 or §305.70 and must be approved prior to their implementation	Informational	330.73(a)				General Information
59	General	A preconstruction conference shall be held prior to commencement of physical construction for a municipal solid waste (MSW) landfill facility, a vertical landfill expansion, or a lateral landfill expansion. The preconstruction conference shall be held no more than 90 days prior to the date that construction is scheduled to begin. All aspects of the permit, construction activities, and inspections shall be discussed. Additional preconstruction conferences may be held prior to the opening of a new MSW landfill unit. The executive director and owner's representatives, including the engineer, the geotechnical consultant, the contractor, and the facility manager, shall attend the preconstruction conference	Informational	330.73(c)				General Information
60	General	The owner or operator shall obtain and submit certification by a Texas-licensed professional engineer that the facility has been constructed as designed in accordance with the issued registration or permit and in general compliance with the regulations prior to initial operation. The owner or operator shall maintain that certification on site for inspection	Informational	330.73(d)				General Information
61	General	After all initial construction activity has been completed and prior to accepting any solid waste, the owner or operator shall contact the executive director and region office in writing and request a pre-opening inspection. A pre-opening inspection shall be conducted by the executive director within 14 days of notification by the owner or operator that all construction activities have been completed, accompanied by representatives of the owner or operator and the engineer	Informational	330.73(e)				General Information
62	General	The MSW facility shall not accept solid waste until the executive director has confirmed in writing that all applicable submissions required by the permit or registration and this chapter have been received and found to be acceptable, and that construction is in compliance with the permit or registration and the approved site development plan. If the executive director has not provided a written or verbal response within 14 days of completion of the pre-opening inspection, the facility shall be considered approved for acceptance of waste	Informational	330.73(f)				General Information
63	General	Identify if the Regulated Entity or Customer has any delinquent fees	Required	330.59(h), 330.671, 330.675	Yes	Part I Form		Delinquent Fees
64	Part I	Provide a copy of the application, including all revisions and supplements on a publicly accessible Web site	Required in Part I Form	330.57(i)(1)				Part I Form
65	Part I	Provide the commission with the Web address link for the application materials	Required in Part I Form	330.57(i)(1)				Part I Form
66	Part I	Signature Page must have signature and notarization	Required in Part I Form	330.59(a)(1)				Part I Form
67	Part I	Applicant's name, mailing address & phone no.	Required in Part I Form	330.59(a)(1)				Part I Form
68	Part I	Description of the nature of the business	Required in Part I Form	330.59(a)(1)				Part I Form
69	Part I	Activities that require a permit (conducted at the facility)	Required in Part I Form	330.59(a)(1)				Part I Form
70	Part I	Location description, facility name & mailing address	Required in Part I Form	330.59(b)(1); 305.45(a)(1)				Part I Form
71	Part I	Access routes	Required in Part I Form	330.59(b)(2)				Part I Form
72	Part I	Lat. & Long. of the facility	Required in Part I Form	330.59(b)(3)				Part I Form
73	Part I	Lat. & Long. depicted	Required in Part I Form	330.59(c)(1)(A)				Part I Form

74	Part I	All maps should show the facility location	Required in Part I Form	305.45(a)(6)				Part I Form
75	Part I	ll maps should display intake and discharge ictures	Required in Part I Form	305.45(a)(6)				Part I Form
76	Part I	. maps should show other structures or locations regarding the regulated facility and associated activities	Required in Part I Form	305.45(a)(6)				Part I Form
77	Part I	At least one map with a scale not less than 1 inch = 1 mile	Required in Part I Form	305.45(a)(6)				Part I Form
78	Part I	Permit/Registration boundary and 1 mile beyond to show the following:	Required in Part I Form	330.59(c)(1)(B)				Part I Form
79	Part I	Wells, springs, surface water bodies	Required in Part I Form	305.45(a)(6)(A)				Part I Form
80	Part I	Character of adjacent land including public roads, towns, development as residential, commercial, agricultural, etc.	Required in Part I Form	305.45(a)(6)(B)				Part I Form
81	Part I	Location of any waste disposal activities conducted on the tract but not included in the application	Required in Part I Form	305.45(a)(6)(C)				Part I Form
82	Part I	General location map, TXDOT, scale of ½ inch = 1 mile and most current map used	Required in Part I Form	330.59(c)(2)				Part I Form
83	Part I	Land Ownership Map, within ¼ mile & mineral interest ownership	Required in Part I Form	330.59(c)(3)(A)				Part I Form
84	Part I	Land Ownership List both in hardcopy and electronic form (alternatively pre-printed mailing labels)	Required in Part I Form	330.59(c)(3)(B)				Part I Form
85	Part I	Legal description of property or other documentation of ownership	Required in Part I Form	330.59(d)(1)(A)				Part I Form
86	Part I	If Platted; plat record with county, book, page number and acreage information	Required in Part I Form	330.59(d)(1)(B)				Part I Form
87	Part I	Signed, sealed and dated surveyed metes and bounds description of the facility	Required in Part I Form	330.59(d)(1)(C)				Part I Form
88	Part I	Signed & sealed metes & bounds drawing	Required in Part I Form	330.59(d)(1)(D)				Part I Form
89	Part I	Signed property owner affidavit	Required in Part I Form	330.59(d)(2)				Part I Form
90	Part I	Acknowledge that State may hold owner responsible	Required in Part I Form	330.59(d)(2)(A)				Part I Form
91	Part I	Acknowledge that owner is responsible for deed record before & after operation	Required in Part I Form	330.59(d)(2)(B)				Part I Form
92	Part I	Acknowledge that the owner & State shall have access during life of the facility and during closure	Required in Part I Form	330.59(d)(2)(C)				Part I Form
93	Part I	Acknowledge that the owner & State shall have access during the post-closure care period	Required in Part I Form	330.59(d)(2)(C)				Part I Form
94	Part I	Verified legal status of applicant and list of persons with 20% or more ownership in the facility	Required in Part I Form	330.59(e)				Part I Form
95	Part I	Ownership status as federal, state, private, public, or other	Required in Part I Form	305.45(a)(2)				Part I Form
96	Part I	List of all Texas solid waste sites that the owner or operator has owned or operated within the last ten years. The site name, site type, permit or registration number, county, and dates of operation shall also be submitted.	Required in Part I Form	330.59(f)(1)				Part I Form
97	Part I	List of all solid waste sites in all states, territories, or countries in which the owner or operator has a direct financial interest. The type of site shall be identified by location, operating dates, name, and address of the regulatory agency, and the name under which the site was operated.	Required in Part I Form	330.59(f)(2)				Part I Form
98	Part I	Shall employ a licensed solid waste facility supervisor before operating	Required in Part I Form	330.59(f)(3)				Part I Form
99	Part I	Names of principals & supervisors owner or operators organization together with previous affiliations with other organizations involved with solid waste activities	Required in Part I Form	330.59(f)(4)				Part I Form
100	Part I	Landfilling, earthmoving exp. or license under Chapter 30. Include number and size of equipment	Required in Part I Form	330.59(f)(5)				Part I Form
101	Part I	Signatory meets 305.44, documentation of delegated signatory authority	Required in Part I Form	330.59(g)				Part I Form
102	Part I	Corporations - signed by a corporate officer	Required in Part I Form					Part I Form
103	Part I	Partnership or proprietorship -signed by a general partner or proprietor	Required in Part I Form					Part I Form
104	Part I	Municipality, public agency -signed by an executive officer or elected official	Required in Part I Form					Part I Form
105	Part I	Signatory certification statement	Required in Part I Form					Part I Form
106	Part I	Hazardous Waste Management	Required in Part I Form	305.45(a)(7)(A)				Part I Form

107	Part I	Underground Injection Control	Required in Part I Form	305.45(a)(7)(B)				Part I Form
108	Part I	PDES	Required in Part I Form	305.45(a)(7)(C)				Part I Form
109	Part I	Prevention of Significant Deterioration	Required in Part I Form	305.45(a)(7)(D)				Part I Form
110	Part I	Nonattainment Program	Required in Part I Form	305.45(a)(7)(E)				Part I Form
111	Part I	NESHAPS	Required in Part I Form	305.45(a)(7)(F)				Part I Form
112	Part I	Ocean dumping permit	Required in Part I Form	305.45(a)(7)(G)				Part I Form
113	Part I	Dredge & fill permit	Required in Part I Form	305.45(a)(7)(H)				Part I Form
114	Part I	Licenses under the TRCA	Required in Part I Form	305.45(a)(7)(I)				Part I Form
115	Part I	Other environmental permits	Required in Part I Form	305.45(a)(7)(K)				Part I Form
116	Part I	Permit Application Fee is $2050.00	Required in Part I Form	THSC 361.0675				Part I Form
117	Part I	A copy of the payment receipt to the MSW Permits Section, if paid by check.	Required in Part I Form	330.59(h)(1)				Part I Form
118	Part I	Prepared by PE, PG, or qualified person	Required in Part I Form	330.57(f)				Part I Form
119	Part I	Description of facility & systems	Required in Part I Form	305.45(a)(8)(A)				Part I Form
120	Part I	Volume, average & max rate of disposal for each place of disposal	Required in Part I Form	305.45(a)(8)(B)(i)				Part I Form
121	Part I	Physical, chemical, thermal, organic, bacteriological, radiological properties of waste	Required in Part I Form	305.45(a)(8)(B)(ii)				Part I Form
122	Part I	Other reasonable information	Required in Part I Form	305.45(a)(8)(C)				Part I Form
123	Part II	Provide the sources and characteristics of all waste to be accepted.	Required	330.61(b)(1)	Yes	Section 2.1		Waste Acceptance Plan
124	Part II	Specify parametric limitations of each type of waste to be managed by the facility	Required	330.61(b)(1)	Yes	Section 2.1		Waste Acceptance Plan
125	Part II	Provide a brief description of the general sources and generation areas contributing wastes to the facility. This description shall include an estimate of the population or population equivalent served by the facility	Required	330.61(b)(1)(A)	Yes	Section 2.2		Waste Acceptance Plan
126	Part II	Provide a descriptive narrative that describes the percentage of incoming waste that must be recovered and its intended use	Required if Requested	330.61(b)(1)(A)	Yes	-		Waste Acceptance Plan
128	Part II	Provide an estimate of the maximum annual waste acceptance rate projected for 5 years	Required	330.61(b)(1)(C)	Yes	Section 2.2		Waste Acceptance Plan
130	Part II	Provide any site specific conditions that require special design considerations & possible mitigation of conditions identified under sections (h) - (o)	Required	330.61(a)	Yes	Section 1		Facility Impact
131	Part II	Provide information regarding the likely impacts of the facility on cities, communities, groups of property owners, or individuals.	Required	330.61(h)	Yes	Section 8.1		Facility Impact
132	Part II	Provide information on the compatibility of the facility with surrounding land use, zoning in the vicinity, community growth patterns, and other factors associated with the public interest.	Required	330.61(h)	Yes	Section 8.1		Facility Impact
133	Part II	Provide information on the character of surrounding land use within one mile	Required	330.61(h)(2)	Yes	Section 8.1		Existing Conditions
134	Part II	Provide information about the growth trends within five miles & directions of development	Required	330.61(h)(3)	Yes	Section 8.1		Existing Conditions
135	Part II	Indicate the proximity to residences & items listed in 330.61(c)(4) & (12), ~ no. of residences & commercial establishments including direct & distance to nearest, population density, all within one mile.	Required	330.61(h)(4)	Yes	Section 8.1		Existing Conditions
136	Part II	Indicate all wells and the well density within 500 ft.	Required	330.61(h)(5)	Yes	Section 8.2		Existing Conditions
137	Part II	Provide any other information requested by the ED	Required	330.61(h)(6)	Yes	Section 8.2		Existing Conditions
138	Part II	Provide data on availability & adequacy of access roads	Required	330.61(i)(1)	Yes	Section 9.1		Transportation
139	Part II	Provide the existing & expected traffic volumes on access roads within one mile of the facility during the expected life of the facility	Required	330.61(i)(2)	Yes	Section 9.1		Transportation
140	Part II	Provide an estimate of traffic volume generated by the facility on access roads within one mile of the facility	Required	330.61(i)(3)	Yes	Section 9.1		Transportation

141	Part II	Provide documentation of coordination for roadway improvements and documentation of ordination with TXDOT for traffic and tion restrictions	Required	330.61(i)(4)	Yes	Section 9.1		Transportation
142	Part II	ovide information about the facility's impact on airports per §330.545, documentation of coordination with FAA	Required	330.61(i)(5)	Yes	Section 9.2		Transportation
143	Part II	Provide documentation of coordination with FAA	Required	330.61(i)(5)	Yes	Section 9.2		Transportation
144	Part II	Provide a demonstration of no bird hazards for landfill units within 10,000 ft. of turbojet runway	Required	330.545(a)	Yes	Section 9.2		Transportation
145	Part II	Provide a demonstration of no bird hazards for landfill units within 5,000 ft. of piston-type runway	Required	330.545(a)	Yes	Section 9.2		Transportation
146	Part II	Provide notice to the airport & the FAA for MSW units within 6 miles of a small airport or within 5 miles of a large commercial airport.	Required	330.545(b)	Yes	Section 9.2		Transportation
147	Part II	Putrescible waste disposal must not cause bird hazard, All units within the distances indicated in 330.545(b) must be evaluated	Informational	330.545(d)		-		Transportation
148	Part II	Discuss in general terms the geology and soils of the proposed site	Required	330.61(j)(1)	Yes	Section 10		Geology
149	Part II	Identify and provide data on fault area locations. If faults exist, see location restrictions in Part III, and include a fault study in the Geology Report	Required	330.61(j)(2)	Yes	Section 10.3		Geology
150	Part II	Identify and provide data on seismic impact zones. If located in impact zone see location restrictions in Part III	Required	330.61(j)(3)	Yes	Section 10.4		Geology
151	Part II	Identify and provide data on unstable areas. If unstable areas exist see location restrictions in Part III, and describe factors for determining unstable areas in the Geology Report	Required	330.61(j)(4)	Yes	Section 10.5		Geology
152	Part II	Provide data on site specific groundwater conditions	Required	330.61(k)(1)	Yes	Section 11		Groundwater and Surface Water
153	Part II	Provide data on surface water at or near the site	Required	330.61(k)(2)	Yes	Section 11.3		Groundwater and Surface Water
154	Part II	Provide information on how facility will comply with applicable Texas Pollutant Discharge Elimination System (TPDES) storm water permitting requirements and the Clean Water Act, §402, as amended.. This may include the information requires by 30 TAC 330.61(k)(3)(A) & (B)	Required	330.61(k)(3)	Yes	Section 11.4		Groundwater and Surface Water
155	Part II	As applicable, provide a certification statement indicating the owner/operator will obtain the appropriate TPDES permit coverage when required	Required	330.61(k)(3)(A)	Yes	Section 11.4		Groundwater and Surface Water
156	Part II	As applicable, provide a copy of permit number under an individual wastewater permit	Required	330.61(k)(3)(B)	Yes	Section 11.4		Groundwater and Surface Water
157	Part II	Provide the location of any water wells.	Required	330.61(l)(1)	Yes	Section 12.1		Abandoned Oil and Water Wells
158	Part II	All water supply wells must be outside monitoring system or approved in the permit	Informational	330.61(l)(1)		-		Abandoned Oil and Water Wells
159	Part II	30 days prior to construction provide certification of plugging and abandonment of all water, oil and gas wells not approved in the permit	Informational	330.61(l)(1)		-		Abandoned Oil and Water Wells
160	Part II	Provide the location of oil & gas wells production wells may remain if identified & don't disrupt operations	Required	330.61(l)(2)	Yes	Section 12.2		Abandoned Oil and Water Wells
161	Part II	Production wells may remain if identified & they do not disrupt facility operations	Informational	330.61(l)(2)		-		Abandoned Oil and Water Wells
162	Part II	Indicate if the facility is within the 100yr floodplain. If facility within a floodplain see location restrictions in 30 TAC Chapter 330 Subchapter M	Required	330.61(m)(1)	Yes	Section 13		Floodplains and Wetlands
163	Part II	Indicate if wetlands are located within the facility boundary. If wetlands exist, see location restrictions in 30 TAC Chapter 330 Subchapter M	Required	330.61(m)(2)	Yes	Section 13.2		Floodplains and Wetlands
165	Part II	Acknowledge that the construction and operation of the facility shall not result in the destruction or adverse modification of the critical habitat or cause or contribute to the taking of endangered or threatened species.	Acknowledgement	330.61(n)(1)	Yes	Section 14		Endangered Species

165	Part II	Acknowledge that the construction and operation of the facility shall not result in the ·struction or adverse modification of the ·ical habitat or cause or contribute to the ·king of endangered or threatened species. If the WWTP permit contains a coordination and a review letter from the United States Fish and Wildlife Service and the Texas Parks and Wildlife Department, the owner or operator shall submit these documents as an attachment/appendix to the registration application and by referencing where this information is addressed in the WWTP Permit and/or permit application.	Acknowledgement	330.61(n)(1)	Yes	Section 14		Endangered Species
166	Part II	Provide a demonstration of whether facility is located within species range and provide a biological assessment.	Required	330.61(n)(2)	Yes	Section 14		Endangered Species
166	Part II	Provide a demonstration of whether facility is located within species range and provide a biological assessment. If the WWTP permit contains a coordination and a review letter from the United States Fish and Wildlife Service and the Texas Parks and Wildlife Department, the owner or operator shall submit these documents as an attachment/appendix to the registration application and by referencing where this information is addressed in the WWTP Permit and/or permit application.	Required	330.61(n)(2)	Yes	Section 14		Endangered Species
167	Part II	Provide documentation of compliance with Natural Resource Code, Chapter 191 (Texas Antiquities Code)	Required	330.61(o)	Yes	Section 15		Historical Commission
167	Part II	Provide documentation of compliance with Natural Resource Code, Chapter 191 (Texas Antiquities Code). If the WWTP permit contains coordination and a review letter from the Texas Historical Commission, the owner or operator shall submit these documents as an attachment/appendix to the registration application and by referencing where this information is addressed in the WWTP Permit and/or permit application.	Required	330.61(o)	Yes	Section 15		Historical Commission
168	Part II	Provide documentation that Parts I and II of the application were submitted for review to the applicable council of governments for compliance with regional solid waste plans.	Required	330.61(p)	Yes	Section 16		COG Review
169	Part II	Acknowledgement that the owner or operator requested a review letter from any local government, as appropriate for compliance with local solid waste plans. A review letter is not a prerequisite to a final determination on a permit or registration application.	Acknowledgement	330.61(p)	Yes	Section 16		COG Review
170	Part II	Provide a constructed map showing boundary, zoning, & land use within one mile including info from 330.61(c)(4), (5), & (10) (schools, hospitals, etc.)	Required	330.61(g)	Yes	Appendix IIA		Maps/Drawings
171	Part II	Provide the prevailing wind direction with a wind rose.	Required	330.61(c)(1)	Yes	Appendix IIA		Maps/Drawings
172	Part II	Provide the location of all known water wells within 500 feet of the proposed permit boundary with the state well numbering system designation for Water Development Board "located wells".	Required	330.61(c)(2)	Yes	Appendix IIA		Maps/Drawings
173	Part II	Provide the location of all structures and inhabitable buildings within 500 feet of the facility	Required	330.61(c)(3)	Yes	Appendix IIA		Maps/Drawings
174	Part II	Provide the location of all schools, licensed day-cares, churches, hospitals, cemeteries, ponds, lakes, residential, commercial, & recreational areas within one mile of the facility	Required	330.61(c)(4)	Yes	Appendix IIA		Maps/Drawings
175	Part II	Provide the location and surface type of roads used for access within one mile of the facility	Required	330.61(c)(5)	Yes	Appendix IIA		Maps/Drawings
176	Part II	Provide the latitude & longitude of the facility	Required	330.61(c)(6)	Yes	Appendix IIA		Maps/Drawings
177	Part II	Provide the location of all area streams	Required	330.61(c)(7)	Yes	Appendix IIA		Maps/Drawings
178	Part II	Provide the location of all airports within six miles	Required	330.61(c)(8)	Yes	Appendix IIA		Maps/Drawings
179	Part II	Indicate the property boundary of facility	Required	330.61(c)(9)	Yes	Appendix IIA		Maps/Drawings
180	Part II	Indicate all drainage, pipeline, and utility easements within & adjacent to the facility	Required	330.61(c)(10)	Yes	Appendix IIA		Maps/Drawings

181	Part II	Provide the location of all access control features	Required	330.61(c)(11)	Yes	Appendix IIA		Maps/Drawings
182	Part II	Provide the location of all archaeological sites, historical sites, and sites with an aesthetic quality adjacent to the facility	Required	330.61(c)(12)	Y	Appendix IIA		Maps/Drawings
183	Part II	Provide a facility layout map	Required	330.61(d)	Yes	Appendix IIA		Maps/Drawings
184	Part II	A set of maps may be provided	Informational	330.61(d)		-		Maps/Drawings
185	Part II	Provide an outline of solid waste management units	Required	330.61(d)(1)	Yes	Appendix IIA		Maps/Drawings
186	Part II	Provide the location of interior roads	Required	330.61(d)(2)	Yes	Appendix IIA		Maps/Drawings
187	Part II	Indicate the location of monitor wells	Required	330.61(d)(3)	Yes	Appendix IIA		Maps/Drawings
188	Part II	Provide the location of all facility buildings	Required	330.61(d)(4)	Yes	Appendix IIA		Maps/Drawings
189	Part II	Provide notes on sequence of development	Required	330.61(d)(5)	Yes	Appendix IIA		Maps/Drawings
190	Part II	Indicate the location of all facility fencing	Required	330.61(d)(6)	Yes	Appendix IIA		Maps/Drawings
191	Part II	Provide the location of facility windbreaks, greenbelts, visual screening	Required	330.61(d)(7)	Yes	Appendix IIA		Maps/Drawings
192	Part II	Indicate the location of site entrance roads	Required	330.61(d)(8)	Yes	Appendix IIA		Maps/Drawings
193	Part II	Indicate the type of waste in each sector	Required	330.61(d)(9)(A)	Yes	Appendix IIA		Maps/Drawings
194	Part II	Provide the general sequence of filling operation	Required	330.61(d)(9)(B)	Yes	Appendix IIA		Maps/Drawings
195	Part II	Provide the sequence of excavation & filling	Required	330.61(d)(9)(C)	Yes	Appendix IIA		Maps/Drawings
196	Part II	Indicate the dimensions of cells	Required	330.61(d)(9)(D)	Yes	Appendix IIA		Maps/Drawings
197	Part II	Indicate the maximum waste elevation & final cover	Required	330.61(d)(9)(E)	Yes	Appendix IIA		Maps/Drawings
198	Part II	Provide a general topographic maps: USGS 7.5 minute or equivalent one map at scale 1 in. = 2,000 ft.	Required	330.61(e)	Yes	Appendix IIA		Maps/Drawings
199	Part II	Provide Aerial Photograph(s) that are at least 9 in. by 9 in. at scale range of one inch = 1,667-3,334 ft. that covers an area at least one mile in radius of the site. Facility boundary and fill areas (as applicable) must be shown.	Required	330.61(f)	Yes	Appendix IIA		Maps/Drawings
200	Part II	A series of photos showing growth trends may be used	Informational	330.61(f)(2)		-		Maps/Drawings
201	Part II	All submitted prints & photocopies must be legible	Informational	330.61(f)(3)		-		Maps/Drawings
202	Part II	Provide zoning map within two miles and a copy of any nonconforming use or special permit required for the facility	Required	330.61(h)(1)	Yes	Appendix IIA		Maps/Drawings
203	Part II	Acknowledge whether the facility is located over the Edwards Aquifer recharge zone. If it is, the facility is subject to Chapter 213.	Acknowledgement	330.549(a)	Yes	Section 17.4		Groundwater and Surface Water
204	Part II	Type I & IAE Landfills are prohibited over the recharge zone	Informational	330.549(a)		-		Groundwater and Surface Water
205	Part II	Acknowledge if Class 1 cells or expansions are proposed; Class 1 cells are subject to location restrictions §335.584(b)(1)&(2) unless demonstration approved by ED.	Acknowledgement	330.549(b)	Yes	-		Groundwater and Surface Water
206	Part II	Class 1 industrial solid waste may not be located in areas where underlying soil unit(s) have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM; or a hydraulic conductivity greater than 1 x 10-5 cm/sec	Informational	335.584(b)(1)(A)&(B)		-		Groundwater and Surface Water
207	Part II	Class 1 industrial solid waste may not be located in areas overlying a regional aquifer	Informational	335.584(b)(2)		-		Groundwater and Surface Water
208	Part II	A new landfill cell or an expansion of an existing landfill managing Class 1 waste may not be located in areas described in §335.584(b)(3) and (4)	Informational	330.561		-		Groundwater and Surface Water
209	Part II	Demonstrate that a facility with a Class 1 cell unit subject to active coastal shoreline erosion will be designed to prevent adverse effects resulting from storm surge and erosion or scouring by water.	Required if Requested	335.584(b)(4)	Yes	Section 17.10		Groundwater and Surface Water
212	Part II	Demonstrate that storage and processing facilities are located outside of the 100 year floodplain.	Required	330.547(c)	Yes	Section 17.3		Floodplains and Wetlands

213	Part II	For storage and processing facilities located within the 100 year floodplain, please provide a demonstration that the facility is designed to prevent washout during a 100 year storm event, or a conditional letter of map amendment from the Federal Emergency Management Administration administrator	Required	330.547(c)		Section 17.3		Floodplains and Wetlands
214	Part II	Acknowledge if the facility will be located in wetlands.	Acknowledgement	330.553(a) & (b)	Yes	Secion 17.6		Floodplains and Wetlands
215	Part II	Demonstrate, if located within wetlands, that there is no practicable alternative location	Required	330.553(b)(1)	Yes	Section 17.6		Floodplains and Wetlands
216	Part II	Acknowledge that the facility's construction & operations shall not cause or contribute to violations of state water quality standards, violation of any applicable toxic effluent standard or prohibition under the Clean Water Act §307; jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973, or violate any requirement under the Marine protection, Research, & Sanctuaries Act	Acknowledgement	330.553(b)(2)(A) - (D)	Yes	Section 17.6		Floodplains and Wetlands
217	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing erosion, stability, & migration potential of native wetland soils, muds, and deposits used to support the landfill unit	Required	330.553(b)(3)(A)	Yes	Section 17.6		Floodplains and Wetlands
218	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing erosion, stability, & migration potential of dredged and fill materials used to support the landfill	Required	330.553(b)(3)(B)	Yes	Section 17.6		Floodplains and Wetlands
219	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing the volume and chemical nature of the waste managed in the landfill unit	Required	330.553(b)(3)(C)	Yes	Section 17.6		Floodplains and Wetlands
220	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing the impacts on fish, wildlife, and other aquatic resources and their habitat for the release of solid waste	Required	330.553(b)(3)(D)	Yes	Section 17.6		Floodplains and Wetlands
221	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing the potential effects of catastrophic release of waste to the wetlands and the resulting impacts on the environment	Required	330.553(b)(3)(E)	Yes	Section 17.6		Floodplains and Wetlands
222	Part II	If wetlands are located within the facility, submit a demonstration for the integrity of landfill unit by addressing any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected	Required	330.553(b)(3)(F)	Yes	Section 17.6		Floodplains and Wetlands
223	Part II	Sufficient information shall be provided to the ED to allow a reasonable determination to be made with respect to the demonstrations cited in 30 TAC §330.553(b)	Informational	330.553(b)(5)		-		Floodplains and Wetlands
224	Part II	Provide the steps taken to achieve no net loss of wetlands	Required	330.553(b)(4)	Yes	Section 17.6		Floodplains and Wetlands
225	Part II	Acknowledge that the operation of this facility shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species	Acknowledgement	330.551(a)	Yes	Section 17.5		Endangered Species
226	Part II	The term "Harassing" means; An intentional or negligent act or omission that creates the likelihood of injury to wildlife	Informational	330.551(b)(1)		-		Endangered Species
227	Part II	The term "Harming" means; An act of omission that actually injures or kills wildlife, including acts that annoy it to such an extent as to significantly disrupt essential behavioral patterns	Informational	330.551(b)(2)		-		Endangered Species
228	Part II	The term "Taking" means; collecting an endangered or threatened species or attempting to engage in such conduct	Informational	330.551(b)(3)		-		Endangered Species
230	Part II	Acknowledge that no solid waste disposal will occur within 25 ft. of the center line of any utility or pipeline easements but no closer than the easement, unless otherwise authorized by the executive director	Acknowledgement	330.543(a)	Yes	Section 17.1		Easements and Buffer Zone

231	Part II	Demonstrate that a 50 ft. buffer zone will be provided and maintained between feedstock or final product storage areas; solid waste storage, processing, Type IAE landfill units, Type IV landfill units, and Type IVAE landfill units within and adjacent to the facility boundary on property owned or controlled by the owner or operator	Required	330.543(b)(1)	Y	Section 17.1		Easements and Buffer Zone
232	Part II	Demonstrate that a 125 ft. buffer zone will be provided and maintained around all Type I landfill units, and vertical and lateral expansions	Required	330.543(b)(2)(A)	Yes	Section 17.1		Easements and Buffer Zone
233	Part II	125 ft. buffer is required to be measured from outermost edge of new airspace for vertical expansions	Informational	330.543(b)(2)(B)		-		Easements and Buffer Zone
234	Part II	125 ft. buffer is required to be measured from edge of a horizontally expanded portion	Informational	330.543(b)(2)(C)		-		Easements and Buffer Zone
235	Part II	125 ft. buffer is required only for newly permitted airspace for vertical or lateral expansions	Informational	330.543(b)(2)(D)		-		Easements and Buffer Zone
236	Part II	The Executive Director may consider an alternative buffer zone if certain criteria are demonstrated.	Informational	330.543(b)(3)		-		Easements and Buffer Zone
237	Part II	Submit a demonstration that prescribed buffer zone standard is not feasible	Required if Requested	330.543(b)(3)(A)	Yes	-		Easements and Buffer Zone
238	Part II	Provide a design alternative that demonstrates consistency with providing visual screening of solid waste activities	Required if Requested	330.543(b)(3)(B)(i)	Yes	-		Easements and Buffer Zone
239	Part II	Provide a design alternative that demonstrates ready access for emergency response, maintenance, & monitoring	Required if Requested	330.543(b)(3)(B)(ii)	Yes	-		Easements and Buffer Zone
243	Part II	the proposed site is located in a county with a population of more than 225,000 that is located adjacent to the Gulf of Mexico; and	Informational	330.563(a)		-		Type I/Type IV Location Prohibitions
244	Part II	prior to final consideration of the application by the commission, the commissioners of the county in which the facility is located have adopted a resolution recommending denial of the application.	Informational	330.563(a)		-		Type I/Type IV Location Prohibitions
245	Part II	The commission may not issue a permit for a Type I or Type IV landfill, conversion of a Type I to a Type IV landfill, and conversion of a Type IV to a Type I landfill, if the landfill is located or proposed to be located adjacent to a county with a population of more than 3.3 million and inside the boundaries of a national forest, as designated by the United States Forest Service.	Informational	330.563(b)		-		Type I/Type IV Location Prohibitions
246	Part II	The limitations listed under Texas Health & Safety Code 361.123(a) - (c) does not apply to a permit or permit amendment requesting an areal expansion of an existing Type I municipal solid waste landfill.	Informational	330.563(b)		-		Type I/Type IV Location Prohibitions
247	Part II	Acknowledge if the landfill unit is located within 200 feet of a fault	Acknowledgement	330.555(a)	Yes	Section 17.7		Geology
248	Part II	Submit a demonstration, if the facility is less than 200 feet from a fault, to show that the structural integrity of the facility will not be damaged and be protective of human health and the environment	Required	330.555(a)	Yes	-		Geology
249	Part II	Submit detailed fault studies for operations located within areas that may be subject to differential subsidence or active geological faulting	Required	330.555(b)	Yes	-		Geology
250	Part II	Submit information for structural damage to constructed facilities such as roads, buildings, etc.	Required	330.555(b)(1)	Yes	-		Geology
251	Part II	Submit information about scarps in natural ground surface	Required	330.555(b)(2)	Yes	-		Geology
252	Part II	Submit information about the presence of surface depressions	Required	330.555(b)(3)	Yes	-		Geology
253	Part II	Submit information about lineations noted on aerial photographs and topographic maps	Required	330.555(b)(4)	Yes	-		Geology
254	Part II	Provide structural control of streams	Required	330.555(b)(5)	Yes	-		Geology
255	Part II	Submit information regarding vegetation changes	Required	330.555(b)(6)	Yes	-		Geology
256	Part II	Submit information for crude oil and natural gas accumulations;	Required	330.555(b)(7)	Yes	-		Geology
257	Part II	Submit information for electrical spontaneous potential & resistivity logs	Required	330.555(b)(8)	Yes	-		Geology
258	Part II	Submit information for earth electrical resistivity surveys	Required	330.555(b)(9)	Yes	-		Geology
259	Part II	Submit information for open cell excavations	Required	330.555(b)(10)	Yes	-		Geology

260	Part II	Submit information for any change in elevation of established benchmarks	Required	330.555(b)(11)	Yes	-		Geology
261	Part II	Submit references to published geological literature of area	Required	330.555(b)(12)	Yes	-		Geology
262	Part II	Provide location information to identify if the facility is located in a seismic impact zones	Required	330.557	Yes	Section 17.8		Geology
263	Part II	Submit a demonstration, if the facility is located in a seismic impact zones, that the facility is designed to resist the maximum horizontal acceleration in lithified earth material	Required	330.557	Yes	-		Geology
264	Part II	Provide location information to identify if the facility is located in unstable areas susceptible to natural or human-induced events or forces capable of impairing the integrity of the landfill components	Required	330.559	Yes	Section 17.9		Geology
265	Part II	Submit a demonstration, if the facility is in an unstable area, that the design of the facility will not be disrupted	Required	330.559	Yes	-		Geology
266	Part II	Provide factors for determining unstable areas. Landfill units located in an unstable area shall demonstrate that engineering measures have been incorporated into the landfill unit's design	Required	330.559	Yes	-		Geology
267	Part II	Submit information for local soil conditions that may result in significant differential settling	Required	330.559(1)	Yes	-		Geology
268	Part II	Submit information for on-site local geologic or geomorphologic features	Required	330.559(2)	Yes	-		Geology
269	Part II	Identify local human-made features or events	Required	330.559(3)	Yes	-		Geology
270	Part III	Describe facility access control features	Required	330.63(b)(1)	Yes	Att. B, Section 1		General Facility Design
271	Part III	Submit a process design for the facility [that includes items 330.63(b)(2)(A) through 330.63(b)(2)(I)]	Required	330.63(b)(2)	Yes	Att. B, Section 2		General Facility Design
272	Part III	Submit a flow diagram(s) to describe the storage, processing, and disposal sequences for each type of waste and/or feedstock/recyclable	Required	330.63(b)(2)(A)	Yes	Att. B, Section 2		General Facility Design
273	Part III	Submit a schematic view drawing(s) showing phases for collection, separation and processing/disposal of each type of waste and/or feedstock/recyclable material	Required	330.63(b)(2)(B)	Yes	Att. B, Section 2		General Facility Design
274	Part III	Provide ventilation & odor control measures for each unit	Required	330.63(b)(2)(C)	Yes	Att. B, Section 2		General Facility Design
275	Part III	Provide construction details of storage, processing units & components, dimensions, capacity, materials used, etc.	Required	330.63(b)(2)(D)	Yes	Att. B, Section 2		General Facility Design
276	Part III	Provide performance data for all storage and processing units and ancillary equipment	Required	330.63(b)(2)(D)	Yes	Att. B, Section 2		General Facility Design
285	Part III	Provide adequate floor drains and/or sumps	Required	330.63(b)(3)(D)	Yes	Att. B, Section 3		General Facility Design
286	Part III	Describe proper disposal of liquids resulting from waste processing, cleaning, and washing and provide for the treatment of waste water	Required	330.63(b)(4)	Yes	Att. B, Section 4		General Facility Design
287	Part III	Describe how facility will be designed to protect endangered species	Required	330.63(b)(5)	Yes	Att. B, Section 5		General Facility Design
288	Part III	Acknowledge that the facility design complies with the requirements of 30 TAC 330.303(a) - (b)	Acknowledgement	330.63(c)	Yes	Att. B, Section 5		Surface Water Drainage Report
289	Part III	Submit a surface water and drainage report that is in accordance with 30 TAC, Chapter 330, Subchapter G	Required	330.63(c)	Yes	Att. C		Surface Water Drainage Report
290	Part III	Demonstrate that existing or permitted drainage patterns will not be adversely altered	Required	330.305(a)	Yes	Att. C, Section 1		Surface Water Drainage Report
291	Part III	Provide a design of the run-on control system to prevent 25 yr. storm run-on to active face	Required	330.305(b)	Yes	Att. C1		Surface Water Drainage Report
292	Part III	Provide a design for run-off management system to, at a minimum, collect & control run-off at the active face from a 24 hr. 25 yr. storm event	Required	330.305(c)	Yes	Att. C1		Surface Water Drainage Report
293	Part III	Provide erosion control of top dome & external embankment side slope surfaces during life and post-closure care of facility	Required	330.305(d)	Yes	Att. C1-E		Surface Water Drainage Report
294	Part III	Demonstrate estimated peak velocities for top surfaces and external embankment slopes to be less than the permissible non-erodible velocities under similar conditions	Required	330.305(d)(1)	Yes	Att. C1-E		Surface Water Drainage Report
295	Part III	Provide a design for top surfaces and external embankment slopes to minimize erosion and not exceed the permissible soil loss	Required	330.305(d)(2)	Yes	Att. C1-E		Surface Water Drainage Report

296	Part III	Provide a design for drainage features, sizing and grading to prevent erosion, long term, low maintenance geotechnical stability to the final cover	Required	330.305(e)	Yes	Att. C1-E		Surface Water Drainage Report
297	Part III	Describe maintenance and repair procedures of the collection, drainage, and/or storage units	Required	330.305(e)(1)	Yes	Att. C1-E		Surface Water Drainage Report
298	Part III	Provide interim erosion controls for phased development	Required	330.305(e)(2)	Yes	Att. C1-E		Surface Water Drainage Report
299	Part III	Provide drainage calculations using Rational Method for areas 200 acres or less	Required	330.305(f)(1)	Yes	Att. C1-E		Surface Water Drainage Report
300	Part III	Provide drainage calculations using w/ HEC Modeling Systems or equivalent for areas > 200 acres	Required	330.305(f)(2)	Yes	Att. C1-B and C1-C		Surface Water Drainage Report
301	Part III	Acknowledge that handling, storage, treatment, & disposal of contaminated surface or groundwater should be per 330.207	Acknowledgement	330.305(g)	Yes	Att. D6		Surface Water Drainage Report
302	Part III	Provide designs for contaminated water storage units	Required	330.305(g)	Yes	Att D6		Surface Water Drainage Report
303	Part III	Provide drainage area drawing(s) & calculations	Required	330.63(c)(1)(A)	Yes	Att. C1-B and C1-C		Surface Water Drainage Report
304	Part III	Submit drainage area designs to include cross-sections for drainage facilities within the facility area	Required	330.63(c)(1)(B)	Yes	Att. C3		Surface Water Drainage Report
305	Part III	Submit drainage area designs to include ditch grades	Required	330.63(c)(1)(B)	Yes	Att. C1D and C3		Surface Water Drainage Report
306	Part III	Submit drainage area designs to include water flow rates, elevations, velocities, and flow line elevations	Required	330.63(c)(1)(B)	Yes	Att. C3		Surface Water Drainage Report
307	Part III	Submit calculations verifying drainage patterns will not be adversely altered	Required	330.63(c)(1)(C)	Yes	Att. C1-A		Surface Water Drainage Report
308	Part III	Submit and identify hydrologic method & calculations used to estimate peak flow rates and run-off volumes	Required	330.63(c)(1)(D)	Yes	Att. C1-B and C1-C		Surface Water Drainage Report
309	Part III	Submit and identify the 25-year rainfall intensity used for facility design including the source of the data	Required	330.63(c)(1)(D)(i)	Yes	Att. C1-B		Surface Water Drainage Report
310	Part III	Submit and identify the 25-year rainfall intensity used for facility design including all other data used in conjunction with the selected hydrologic method. Their sources should be documented and described	Required	330.63(c)(1)(D)(i)	Yes	Att. C1-B		Surface Water Drainage Report
311	Part III	Submit and identify hydraulic calculations and designs for sizing the necessary collection, drainage, and/or detention facilities	Required	330.63(c)(1)(D)(ii)	Yes	Att. C1-B, C and C3		Surface Water Drainage Report
312	Part III	Submit a discussion and analyses to demonstrate that existing drainage patterns will not be adversely altered as a result of the proposed landfill development	Required	330.63(c)(1)(D)(iii)	Yes	Att. C1		Surface Water Drainage Report
313	Part III	Submit structural designs of the collection, drainage, and/or storage facilities	Required	330.63(c)(1)(D)(iv)	Yes	Att. C3		Surface Water Drainage Report
314	Part III	Provide the location for the facility to identify whether the site is located within a 100-year floodplain. Indicate the 100-year floodplain on the drawing listed in paragraph 330.63(c)(1)(A) of this subsection	Required	330.63(c)(2)(A)	Yes	Att. C2		Surface Water Drainage Report
315	Part III	Provide the source of all data for flood plain determination. The boundaries of the proposed landfill facility should be shown on the floodplain map	Required	330.63(c)(2)(B)	Yes	Att. C2		Surface Water Drainage Report
316	Part III	Provide (if the site is located within the 100-year floodplain) information detailing the specific flooding levels. If the Preliminary Plan approval is not required under Chapter 301 of this title and Section 16.236 of Texas Water Code you may indicate that the checklist items relevant to Chapter 301 are not applicable.	Required	330.63(c)(2)(C)	Yes	-		Surface Water Drainage Report

317	Part III	The facility shall be protected from flooding by suitable levees constructed to provide tection from a 100-year frequency flood and ccordance with the rules of the commission elating to levee improvement districts and approval of plans for reclamation projects or the rules of the county or city having jurisdiction under Texas Water Code, §16.236, as implemented by Chapter 301, Subchapter C of this title (relating to Approval of Levees and Other Improvements)	Informational	330.307(a)		-		Surface Water Drainage Report
318	Part III	Provide maps, plats, drawings, computations and narratives of landfill levees; the applicant should submit a detailed map	Required if Requested	301.33(a)(1)	Yes	-		Surface Water Drainage Report
319	Part III	Provide the name and course of the river, stream, or other watercourse, which is associated with or would be affected by the proposed project	Required if Requested	301.33(a)(2)	Yes	-		Surface Water Drainage Report
320	Part III	Provide the location & ownership of existing levees, channels, dams, etc. that may be affected	Required if Requested	301.33(a)(3)	Yes	-		Surface Water Drainage Report
321	Part III	Provide the location and ownership, including current mailing address of owners, and location, shown by map, of all properties lying within any proposed protected area	Required if Requested	301.33(a)(4)(A)	Yes	-		Surface Water Drainage Report
322	Part III	Provide a list of potentially affected property owners for notice adjacent to the proposed works or which may be affected by the project's alteration of the flood flows of the stream	Required if Requested	301.33(a)(4)(B)	Yes	-		Surface Water Drainage Report
323	Part III	Provide a project design based on a statistical 100-year flood as a minimum. Flood level data available from state or federal agencies or other sources shall be provided for consideration in the selection of design flood frequency and elevation	Required if Requested	301.33(b)(1)	Yes	-		Surface Water Drainage Report
324	Part III	Provide plans to demonstrate the effects the proposed project will impose on existing flood conditions. This shall be illustrated by floodwater surface-elevation profiles and design flood delineations of the floodplain with and without the project in place	Required if Requested	301.33(b)(2)	Yes	-		Surface Water Drainage Report
325	Part III	Provide additional flood water surface-elevation profiles and design-flood delineations of the floodplain with the project in place and with a comparable levee or landfill on the opposite site of the stream if such do not exist	Required if Requested	301.33(b)(3)	Yes	-		Surface Water Drainage Report
326	Part III	Submit plans for levees that include structural integrity	Required if Requested	301.34(1)	Yes	-		Surface Water Drainage Report
327	Part III	Submit plans that show compatibility with existing hydraulic conditions.	Required if Requested	301.34(2)	Yes	-		Surface Water Drainage Report
328	Part III	Submit a design that any proposed levee or other improvement will not increase flooding or divert waters in such a way that any person's life or property will be endangered or subjected to significantly increased flooding	Required if Requested	301.34(3)	Yes	-		Surface Water Drainage Report
329	Part III	The rights of third parties affected by a proposed levee or other improvement must be considered	Informational	301.34(4)		-		Surface Water Drainage Report
330	Part III	The commission and the executive director shall assure that, as far as possible, levees or other improvements shall be designed with primary consideration to the topographic and hydrographic conditions, and in such a manner that each division of a project shall be a complete, united project forming a coordinate part of an ultimately finished series of projects, so constituted that the successful operation of each united project shall coordinate with the successful operation of other projects within the same hydraulic influence	Informational	301.34(5)		-		Surface Water Drainage Report
331	Part III	Provide a minimum freeboard of three feet above the 100-year design flood hydraulic gradient where levees furnish protection for urbanized or developing areas	Required if Requested	301.34(6)	Yes	-		Surface Water Drainage Report
332	Part III	levees must not significantly restrict the flow of a 100-year frequency flood nor significantly reduce the temporary water storage capacity of the 100-year floodplain	Informational	330.307(b)(2)		-		Surface Water Drainage Report

333	Part III	The executive director may request any additional pertinent information from the applicant	Required if Requested	301.35	Yes	-		Surface Water Drainage Report
334	Part III	Submit plans with PE design, signed & sealed	Required if Requested	301.36	Yes	-		Surface Water Drainage Report
335	Part III	Submit, if constructed in a floodplain, the Preliminary Plan approval (along with the submitted application) from the governmental entity with jurisdiction under Texas Water Code, §16.236, as implemented by Chapter 301	Required if Requested	330.63(c)(2)(D)(i)	Yes	-		Surface Water Drainage Report
341	Part III	Provide a design to control and contain spills and contaminated water from leaving the facility. Unenclosed containment areas shall also account for precipitation from a 25-year, 24-hour rainfall event	Required	330.63(d)(1)(B)	Yes	Att. D		Waste Management Unit Design
342	Part III	Provide the maximum amount of time processed and unprocessed waste are to remain on site	Required	330.63(d)(1)(C)	Yes	Att. D		Waste Management Unit Design
343	Part III	Submit an estimate of the amount and planned method for testing and final disposal of incinerator ash, and an estimate of the volume and method of treatment for process water	Required	330.63(d)(2)	Yes	Att. D		Waste Management Unit Design
344	Part III	Provide design specifications; including a plan view and a cross-section for surface impoundments	Required	330.63(d)(3)(A)	Yes	Att. D		Waste Management Unit Design
345	Part III	Provide a design that maintains the minimum freeboard and the basis of the design to prevent overtopping from a 25-year, 24-hour rainfall event	Required	330.63(d)(3)(B)	Yes	Att. D		Waste Management Unit Design
346	Part III	Provide a liner quality control plan for surface impoundments per 30 TAC 330.339	Required	330.63(d)(3)(C)	Yes	Att. D		Waste Management Unit Design
347	Part III	Provide all-weather operation during wet weather. Include interior access road locations and the type of surfacing on a facility plan. Provide control to minimize the tracking of mud onto the public road	Required	330.63(d)(4)(A)	Yes	Att. D		Waste Management Unit Design
348	Part III	Provide the landfill method proposed (e.g., moving-face cell trench, area fill, etc.)	Required	330.63(d)(4)(B)	Yes	Att. D		Waste Management Unit Design
349	Part III	Provide the elevation of deepest excavation, maximum elevation of waste, and maximum elevation of final cover	Required	330.63(d)(4)(C)	Yes	Att. D1		Waste Management Unit Design
350	Part III	Provide a calculation for the estimated rate of solid waste deposition and operating life of the landfill unit	Required	330.63(d)(4)(D)	Yes	Att. D4		Waste Management Unit Design
351	Part III	Provide cross-sections showing the top of the levee, top of the proposed fill, and top of the wastes	Required	330.63(d)(4)(E)	Yes	Att. D2		Waste Management Unit Design
352	Part III	Provide sufficient number of cross-section w/ inset key map showing maximum elevation of proposed fill, existing ground, bottom of the excavations, and side slopes of trenches and fill areas	Required	330.63(d)(4)(E)	Yes	Att. D2		Waste Management Unit Design
353	Part III	Provide sufficient number of cross-section w/ inset key map gas vents or wells, groundwater monitoring wells, initial and static levels of any groundwater encountered	Required	330.63(d)(4)(E)	Yes	Att. D2		Waste Management Unit Design
354	Part III	Provide sufficient number of cross-section w/ inset key map showing the top of the levee, top of the proposed fill, top of the wastes, maximum elevation of proposed fill, existing ground, bottom of the excavations, side slopes of trenches and fill areas, gas vents or wells, groundwater monitoring wells, initial and static levels of any groundwater encountered	Required	330.63(d)(4)(E)	Yes	Att. D2		Waste Management Unit Design
355	Part III	Provide cross-sections so as to accurately depict the existing and proposed depths of all fill areas within the site. The fill cross-sections shall go through or very near the soil borings in order to show boring logs on the profile.	Required	330.63(d)(4)(E)	Yes	Att. D2		Waste Management Unit Design
356	Part III	Provide cross-sections to depict construction and design details of proposed compacted perimeter or toe berms and aerial-fill waste disposal areas	Required	330.63(d)(4)(F)	Yes	Att. D2		Waste Management Unit Design
357	Part III	Submit a Liner Quality Control Plan, prepared by a PE to include construction methods, engineering practices & the installation & testing of geomembrane (if used)	Required	330.63(d)(4)(G)	Yes	Att. D7		Waste Management Unit Design

358	Part III	Submit a liner design for Type I units constructed that ensures that the concentration ues listed in Table 1 (Figure: 30 C§330.331(a)(1)) will not be exceeded in the uppermost aquifer at the point of compliance	Required	330.331(a)(1)	Y	Att. D7		Waste Management Unit Design
359	Part III	Submit a liner design constructed with a composite liner, and a leachate collection system that is designed and constructed to maintain less than a 30-centimeter depth of leachate over the liner	Required	330.331(a)(2)	Yes	Att. D7		Waste Management Unit Design
360	Part III	Submit a liner design that considers the hydrogeologic characteristics of the facility and surrounding land	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
361	Part III	Submit a liner design that considers the climatic factors of the area	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
362	Part III	Submit for a liner design that considers the volume and physical and chemical characteristics of the leachate	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
363	Part III	Submit for a liner design that considers the quantity, quality, and direction of flow of groundwater	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
367	Part III	Submit for a liner design that considers the public health, safety, and welfare effects; and	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
368	Part III	Submit for a liner design that considers the practicable capability of the owner or operator.	Required	330.331(c)	Yes	Att. D7		Waste Management Unit Design
369	Part III	Submit a design for a liner system that includes at least four feet of in-situ soil between the deposited waste and groundwater. This in-situ soil liner must meet all the physical properties for a constructed liner as detailed in §330.339(c)(5) of this title (relating to Liner Quality Control Plan)	Required	330.331(d)(1)	Yes	Att. D7		Waste Management Unit Design
370	Part III	Submit a design for a liner system that includes at least a three-foot thick re-compacted clay liner between the deposited waste and groundwater. The constructed liner must meet all the criteria detailed in §330.339	Required	330.331(d)(2)	Yes	Att. D7		Waste Management Unit Design
371	Part III	Submit a design for a liner system that includes an alternative liner system, in accordance with §330.335 of this title (relating to Alternative Liner Design).	Required if Requested	330.331(d)(3)	Yes	-		Waste Management Unit Design
372	Part III	Landfill units that accept Class 1 industrial solid wastes, other than asbestos-containing material, must provide dedicated cells that meet the requirements prescribed under 30 TAC 330.331(e) through (e)(2)(C)	Informational	330.331(e)		-		Waste Management Unit Design
373	Part III	Demonstrate location compliance for a new landfill cell or an aerial expansion of an existing landfill cell as prescribed under 335.584(b)(1) and (2) relating to Location Restrictions.	Required if Requested	330.331(e)(3)	Yes	-		Waste Management Unit Design
374	Part III	Provide a design for a leachate-collection and associated leachate-removal systems to be constructed of materials that are chemically resistant to the leachate expected to be generated	Required	330.333	Yes	Att. D6		Waste Management Unit Design
375	Part III	Provide a design for a leachate-collection and associated leachate-removal systems to be constructed of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill	Required	330.333	Yes	Att. D6		Waste Management Unit Design
376	Part III	Provide a design for a leachate-collection and associated leachate-removal systems to be designed and operated to function through the scheduled closure and post-closure care period of the landfill considering the factors prescribed under 30 TAC 330.333(A) through (G)	Required	330.333(A)-(G)	Yes	Att. D6		Waste Management Unit Design

377	Part III	Submit an alternative liner designs that include a leachate management system, a demonstration by computerized design modeling that the maximum contaminant levels detailed in 30 TAC §330.331 of this title (relating to Design Criteria), Table 1 will not be exceeded at the point of compliance	Required if Requested	330.335		-		Waste Management Unit Design
378	Part III	Type IV landfills may be required to meet one or more provisions under 330.337 at ED's discretion	Informational	330.337(a)		-		Waste Management Unit Design
379	Part III	Submit calculations to demonstrate that the weight of liner & any ballast will offset uplift by a factor of 1.2	Required	330.337(b)(1)	Yes	Att. D7		Waste Management Unit Design
380	Part III	Submit calculations to demonstrate that an active or passive dewatering system will reduce hydrostatic forces by a factor of 1.2	Required	330.337(b)(2)	Yes	Att. D7, App. D7B		Waste Management Unit Design
381	Part III	Provide evidence to demonstrate that the soil surrounding the facility is so poorly permeable that GW cannot exert force on liner	Required if Requested	330.337(b)(3)	Yes	-		Waste Management Unit Design
382	Part III	Submit evidence that the seasonal high GW is below planned excavation	Required if Requested	330.337(b)(4)	Yes	-		Waste Management Unit Design
383	Part III	Provide for liner stability during filling through dewatering &/or ballasting approved by ED	Required	330.337(c)	Yes	Att. D7, App. D7B		Waste Management Unit Design
384	Part III	Provide a leachate collection system capable of handling leachate and groundwater inflow. Submit the calculations for maximum GW inflow	Required	330.337(d)	Yes	Att. D6		Waste Management Unit Design
385	Part III	Provide a foundation evaluation that considers the stability, settlement, and constructability prior to excavating below the seasonal high water table	Required	330.337(e)	Yes	Att. D7		Waste Management Unit Design
386	Part III	Provide a liner quality control plan to include methods & tests to verify liner will not uplift during construction & ballast placement	Required	330.337(f)(1)	Yes	Att. D7		Waste Management Unit Design
387	Part III	Provide measurements & test results verifying that the ballast meets criteria including inspections, compaction, weight, density, thickness, & top elevation	Required	330.337(f)(2)	Yes	Att. D7, App. D7C		Waste Management Unit Design
388	Part III	Provide designs for any dewatering systems used for liner construction and filling, and indicate that the system will be operated until the ED determines it is no longer required	Required if Requested	330.337(g)	Yes	-		Waste Management Unit Design
389	Part III	Submit (if waste is to be used as ballast) an operating plan that provides for no brush or large items in first 5 ft. of thickness	Required if Requested	330.337(h)(1)	Yes	-		Waste Management Unit Design
390	Part III	Provide (if waste is to be used as ballast) for the use of a 40,000 lb. compactor or equivalent to achieve a 1,200 lbs. per cubic yard density	Required if Requested	330.337(h)(2)	Yes	-		Waste Management Unit Design
391	Part III	Submit (if waste is to be used as ballast) methods for verifying waste as ballast compaction density not less than 1200 lbs. per cubic yard, No method is required if a 40,000 lb. compactor is used	Required if Requested	330.337(h)(3)	Yes	-		Waste Management Unit Design
392	Part III	Submit a ballast evaluation report that verifies the use of a 40,000 lb. compactor or that 1,200 lbs. per cubic yard density was achieved and must be sufficient to offset hydrostatic forces by a factor of 1.5	Required if Requested	330.337(h)(4)	Yes	-		Waste Management Unit Design
393	Part III	Provide for the adjustment of seasonal high water table, if necessary, as new data is collected	Required	330.337(i)	Yes	Att. D7		Waste Management Unit Design
394	Part III	Acknowledge that a ballast evaluation report will be submitted upon completion of placement. If ED does not respond within 14 days, discontinue dewatering or ballasting	Acknowledgement	330.337(j)	Yes	Att. D7		Waste Management Unit Design
395	Part III	Acknowledge that a ballast evaluation report will be submitted to verify that the liner did not undergo uplift	Acknowledgement	330.337(j)(1)	Yes	Att. D7		Waste Management Unit Design
396	Part III	Acknowledge that a certification that ballasting met the criteria will be submitted and signed and sealed by a P.E, and signature of permittee	Acknowledgement	330.337(j)(2)-(3)	Yes	Att. D7		Waste Management Unit Design
397	Part III	Provide a liner quality control plan prepared under the direction of a licensed professional engineer.	Informational	330.339(a)		-		Waste Management Unit Design
398	Part III	Provide in the liner quality control plan procedures that address the installation and testing of a geomembrane liner, if used	Required	330.339(a)	Yes	Att. D7		Waste Management Unit Design

399	Part III	Submit constructed liner details, depicted on cross-sections of a typical cell showing the slope, widths, and thicknesses for compaction lifts	Required	330.339(a)(1)	Yes	Att. D7		Waste Management Unit Design
400	Part III	Provide soil and liner quality-control testing procedures, to include sampling frequency, all field sampling and testing, both during construction and after completion	Required	330.339(a)(2)	Yes	Att. D7		Waste Management Unit Design
401	Part III	Acknowledge that the professional of record who signs the soil liner evaluation report or his representative should be on site during all liner construction.	Acknowledgement	330.339(a)(2)	Yes	Att. D7		Waste Management Unit Design
402	Part III	Acknowledge that quality control of construction and quality assurance of sampling and testing procedures shall follow the latest technical guidelines of the executive director.	Acknowledgement	330.339(a)(2)	Yes	Att. D7		Waste Management Unit Design
403	Part III	Provide testing and reporting evaluation procedures to prepare the soil liner evaluation reports for the facility	Required	330.339(b)(1)	Yes	Att. D7		Waste Management Unit Design
404	Part III	Submit information to specify materials, equipment, and construction methods for the compaction of clay soils and depict on a drawing	Required	330.339(b)(2)	Yes	Att. D7		Waste Management Unit Design
405	Part III	Submit details and drawings for the over excavation and recompaction of the in-situ soils, or the compaction of soils from a borrow source, and cross-sections of a typical cell showing the slope, widths, and thicknesses for compaction lifts	Required	330.339(b)(2)(A)	Yes	Att. D7		Waste Management Unit Design
406	Part III	Submit procedures to be followed when excavations, cells, or disposal areas extend into or have the potential to extend into the groundwater; in accordance with 30 TAC 330.337	Required	330.339(b)(2)(B)	Yes	Att. D7		Waste Management Unit Design
407	Part III	Provide a description of installation methods, quality control testing, reporting, following the placement of geomembrane liners	Required	330.339(b)(3)	Yes	Att. D7		Waste Management Unit Design
408	Part III	Provide quality control testing frequencies and procedures that are in accordance with the executive director's most recent guidelines	Required	330.339(c)	Yes	Att. D7		Waste Management Unit Design
409	Part III	Provide a description of field sampling and testing procedures, both during construction and after completion of the lining, to be performed by a qualified professional	Required	330.339(c)(1)	Yes	Att. D7		Waste Management Unit Design
410	Part III	Provide for continuous on-site inspection during construction of the liner by the professional of record or his designated representative	Required	330.339(c)(2)	Yes	Att. D7		Waste Management Unit Design
411	Part III	Provide information to indicate the amount of compaction of clay liners expressed as a percentage of a maximum dry density based on a compaction test. Compaction shall have a coefficient of permeability of 1 x 10-7 centimeters per second (cm/sec) or less	Required	330.339(c)(3)	Yes	Att. D7		Waste Management Unit Design
412	Part III	Submit and define the frequency of testing These frequencies shall be expressed in numbers of tests per specific area of liner per lift or specific thickness of liner	Required	330.339(c)(4)	Yes	Att. D7		Waste Management Unit Design
413	Part III	Provide for laboratory permeability tests. Tests shall be either constant head with back pressure or falling head tests	Required	330.339(c)(4)(A)	Yes	Att. D7		Waste Management Unit Design
414	Part III	Provide for permeability tests to include; sieve analysis, Atterberg limits, moisture-density relationships, moisture content, and thickness verification	Required	330.339(c)(4)(B) - (F)	Yes	Att. D7		Waste Management Unit Design
415	Part III	Provide for soils used as constructed liners to have a plasticity index--equal to or greater than 15; a liquid limit--equal to or greater than 30; percent passing 200 mesh sieve (-200) equal to or greater than 30%; percent passing one-inch screen--100%; and coefficient of permeability less than or equal to 1 x 10-7 cm/sec.	Required	330.339(c)(5)(A)-(E)	Yes	Att. D7		Waste Management Unit Design
416	Part III	Acknowledge that permeability tests for proving the suitability of soils to be used in constructing clay liners shall be performed in the laboratory	Acknowledgement	330.339(c)(6)	Yes	Att. D7		Waste Management Unit Design
417	Part III	Provide field quality control with field density tests based on moisture-density compaction curves, Atterberg limits, and lab permeabilities of undisturbed field samples	Required	330.339(c)(6)	Yes	Att. D7		Waste Management Unit Design

418	Part III	Provide field permeability testing of in-situ soils or constructed soil liners for the floor of excavation, in accordance with ASTM D5093	Required	330.339(c)(7)	Yes	Att. D7		Waste Management Unit Design
419	Part III	Provide field permeability testing of in-situ soils or constructed soil liners for sidewalls, in accordance with a variation of the Boutwell STEI field permeability test	Required	330.339(c)(7)	Yes	Att. D7		Waste Management Unit Design
420	Part III	Provide for quality control testing of soil liners to be performed during the construction of the liner	Required	330.339(c)(8)	Yes	Att. D7		Waste Management Unit Design
421	Part III	Provide for all soil testing and evaluation of in-situ soil or constructed soil liners to be completed prior to installing the leachate collection system	Required	330.339(c)(9)	Yes	Att. D7		Waste Management Unit Design
422	Part III	Calculate soil and liner density as a percentage of the maximum dry density and at the corresponding optimum moisture content. Soils tests must demonstrate a coefficient of permeability no greater than 1 x 10-7 cm/sec.	Required	330.339(d)	Yes	Att. D7		Waste Management Unit Design
469	Part III	Provide a description of the liner system used for excavated waste storage, processing, and screening areas to control seepage and runoff	Required	330.63(d)(7)(C)	Yes	Att. D7		Waste Management Unit Design
470	Part III	a description of how waste excavation activities will comply with the minimum design and operation requirements of §330.149, §330.151, §330.165, §330.167	Required	330.63(d)(7)(D)	Yes	Att. D7		Waste Management Unit Design
471	Part III	The facility size shall be limited to a liquid waste processing rate no greater than 10,000 gallons per day	Informational	330.63(d)(9)(A)		-		Waste Management Unit Design
472	Part III	Provide documentation that the facility design and operation will be coordinated with a consultant connected with an accredited college or university or with a consultant that has demonstrated the ability to carry out scientific experiments for demonstrating new and unproven waste handling methods and submitted to the executive director.	Required	330.63(d)(9)(B)	Yes	-		Waste Management Unit Design
473	Part III	Indicate that the owner or operator shall submit to the executive director an annual and final status report to document the viability of the method being demonstrated. The report, at a minimum, must document the effluent standards and solid waste standards achieved.	Required	330.63(d)(9)(B)	Yes	-		Waste Management Unit Design
474	Part III	Submit a Geology Report, prepared and signed by a qualified groundwater scientist and includes a geologic map of the region with text describing the stratigraphy and lithology of the map units.	Required	330.63(e)&(1)(A)	Yes	Att. E		Geology Report
475	Part III	Provide a description of the generalized stratigraphic column in the facility area. Regional stratigraphic cross-sections should be provided and must include elements listed in 330.63(e)(1)(B).	Required	330.63(e)(1)(B)	Yes	Att. E, Sec 1.2		Geology Report
476	Part III	Provide a description of geologic active processes, faulting, subsidence	Required	330.63(e)(2)	Yes	Att. E, Sec 2		Geology Report
477	Part III	Provide a description of the regional aquifers in the vicinity of the facility based upon published and open-file sources	Required	330.63(e)(3)(A)	Yes	Att. E, Sec 3		Geology Report
478	Part III	Provide a description for the composition of the aquifer(s)	Required	330.63(e)(3)(B)	Yes	Att. E, Sec 3		Geology Report
479	Part III	Provide the hydraulic properties of the aquifer(s)	Required	330.63(e)(3)(C)	Yes	Att. E, Sec 3		Geology Report
480	Part III	Submit information on whether the aquifers are under water table or artesian conditions.	Required	330.63(e)(3)(D)	Yes	Att. E, Sec 3		Geology Report
481	Part III	Submit information for the hydraulic connectivity of aquifers	Required	330.63(e)(3)(E)	Yes	Att. E, Sec 3		Geology Report
482	Part III	Provide a regional water-table contour map or potentiometric surface map for each aquifer, if available;	Required	330.63(e)(3)(F)	Yes	Att. E, Sec 3		Geology Report
483	Part III	Provide an estimate of the rate of groundwater flow	Required	330.63(e)(3)(G)	Yes	Att. E, Sec 3		Geology Report
484	Part III	Provide the typical values or a range of values for total dissolved solids content of groundwater from the aquifers	Required	330.63(e)(3)(H)	Yes	Att. E, Sec 3		Geology Report
485	Part III	Identify recharge areas to the aquifers within five miles of the site	Required	330.63(e)(3)(I)	Yes	Att. E, Sec 3		Geology Report
486	Part III	Identify what groundwater, withdrawn from vicinity aquifers is used for and provide the ID, location, & aquifer of each well within one mile of the facility	Required	330.63(e)(3)(J)	Yes	Att. E, Sec 3, Fig. E1.6		Geology Report

487	Part III	Provide the results of investigations of subsurface conditions. This report must describe all borings drilled on site to test soils and characterize groundwater and must include a site map drawn to scale showing the surveyed locations and elevations of the borings.	Required	330.63(e)(4)		Att. E, Sec 4		Geology Report
488	Part III	Provided a sufficient no. of borings to characterize subsurface geology.	Required	330.63(e)(4)(A)	Yes	Att. E, Sec 4.1		Geology Report
489	Part III	Provide for borings to be sufficiently deep to identify uppermost aquifer, hydraulically connected aquifers, and underlying aquiclude; See Figure: 30 TAC §330.63(e)(4)(B)	Required	330.63(e)(4)(B)	Yes	Att. E, Sec 4.1		Geology Report
490	Part III	Provide all borings to be conducted in accordance with established field exploration methods.	Required	330.63(e)(4)(C)	Yes	Att. E, Sec 4.1		Geology Report
491	Part III	Provide GW well installation, abandonment, and plugging	Required	330.63(e)(4)(D)	Yes	Att. E, Sec 4.1		Geology Report
492	Part III	Number of borings & depth may be modified with ED approval	Informational	330.63(e)(4)(E)		-		Geology Report
493	Part III	Electrical resistivity information may be used to reduce the number of borings with ED approval	Informational	330.63(e)(4)(F)		-		Geology Report
494	Part III	Submit cross-sections prepared from the borings; depicting the generalized strata at the facility. For small waste management units, two perpendicular cross-sections will normally suffice	Required	330.63(e)(4)(G)	Yes	Att. E, App. E3		Geology Report
495	Part III	Provide a narrative that describes the investigator's interpretations of the subsurface stratigraphy based upon the field investigation	Required	330.63(e)(4)(H)	Yes	Att. E, Sec 4.4		Geology Report
496	Part III	Provide geotechnical data that describes the geotechnical properties of the subsurface soil materials and a discussion with conclusions about the suitability of the soils and strata	Required	330.63(e)(5)	Yes	Att. E, App. E5		Geology Report
497	Part III	Provide a laboratory report of soil characteristics determined from at least one sample from each soil layer or stratum that will form the bottom and side of the proposed excavation and from those that are less than 30 feet below the lowest elevation of the proposed excavation.	Required	330.63(e)(5)(A)	Yes	Att. E, App. E5		Geology Report
498	Part III	Provide permeability tests to be performed according to one of the standards on undisturbed soil samples. All test results shall indicate the type of tests used and the orientation of each tested sample.	Required	330.63(e)(5)(B)	Yes	Att. E, App. E5		Geology Report
499	Part III	Submit test results for constant head w/ back pressure	Required	330.63(e)(5)(B)(i)	Yes	Att. E, App. E5		Geology Report
500	Part III	Submit test results for falling head	Required	330.63(e)(5)(B)(ii)	Yes	Att. E, App. E5		Geology Report
501	Part III	Submit test results for sieve analysis	Required	330.63(e)(5)(B)(iii)	Yes	Att. E, App. E5		Geology Report
502	Part III	Submit test results for Atterberg limits	Required	330.63(e)(5)(B)(iv)	Yes	Att. E, App. E5		Geology Report
503	Part III	Submit test results for moisture content	Required	330.63(e)(5)(B)(v)	Yes	Att. E, App. E5		Geology Report
504	Part III	Submit information for the depth at which groundwater was encountered and records of after-equilibrium measurements in all borings. The cross-sections prepared in response to 330.63(e)(4)(G) must be annotated to note the level at which groundwater was first encountered	Required	330.63(e)(5)(C)	Yes	Att. E, Sec 5, App. E5		Geology Report
505	Part III	Submit water levels in monitoring wells, historical water levels in table format for each monitoring well	Required	330.63(e)(5)(D)	Yes	Att. E, Sec 5, App. E5		Geology Report
506	Part III	Submit a tabulation of GW monitoring data on-site or on adjacent units	Required	330.63(e)(5)(E)	Yes	Att. E, Sec 5, App. E5		Geology Report
507	Part III	Identify the uppermost aquifer and any lower aquifers that are hydraulically connected to it beneath the facility	Required	330.63(e)(5)(F)	Yes	Att. E, Sec 5		Geology Report
508	Part III	Provide a Groundwater Sampling and Analysis Plan. Compost Permits submit per Chapter 332	Required	330.63(f)	Yes	App F2		Groundwater Sampling & Analysis Plan
509	Part III	Provide a topographic map delineating waste area, property boundary, point of compliance, & GW monitoring wells	Required	330.63(f)(1)	Yes	Fig F1 2,3		Groundwater Sampling & Analysis Plan
510	Part III	Provide a description of any contamination plume from the unit	Required	330.63(f)(2)	Yes	-		Groundwater Sampling & Analysis Plan
511	Part III	Provide a delineation of contaminate plume on the topographic map	Required	330.63(f)(2)(A)	Yes	-		Groundwater Sampling & Analysis Plan

512	Part III	Provide the concentration of each assessment constituent in the plume	Required	330.63(f)(2)(B)	Yes	-		Groundwater Sampling & Analysis Plan
513	Part III	Provide an analysis of most likely pollutant pathway, include any GW modeling data & results per 330.403(e)(2), consideration of GW flow changes from construction	Required	330.63(f)(3)	Yes	Att. F, Section 1, 2, 3.3		Groundwater Sampling & Analysis Plan
514	Part III	Provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of §330.403	Required	330.63(f)(4)	Yes	Att. F, Section 3, Fig. 2, 3		Groundwater Sampling & Analysis Plan
515	Part III	Submit information; supporting data, analyses to establish detection monitoring program per 330.407; If hazardous constituents in 40 CFR 258 & 330.419 have not been detected	Required	330.63(f)(5)	Yes	App F2, Section 4		Groundwater Sampling & Analysis Plan
516	Part III	Submit the proposed GW monitoring system	Required	330.63(f)(5)(A)	Yes	Fig F1 2,3		Groundwater Sampling & Analysis Plan
517	Part III	Submit background values for each monitoring parameter or constituent listed in §330.419 of this title, or procedures to calculate such values;	Required	330.63(f)(5)(B)	Yes	App F2, Sec 4		Groundwater Sampling & Analysis Plan
518	Part III	Provide for a semiannual monitoring frequency	Required	330.407(a)	Yes	App F2, Sec 5.2		Groundwater Sampling & Analysis Plan
519	Part III	Provide for a minimum of four statistically independent background GW samples collected quarterly unless approved, background may be updated every 2 yrs. with representative of background demonstration	Required	330.407(a)(1)	Yes	App F2, Sec 4		Groundwater Sampling & Analysis Plan
520	Part III	ED may approve alternative sampling frequency but not less than annual	Informational	330.407(a)(2)		-		Groundwater Sampling & Analysis Plan
521	Part III	For establishing background, ED may consider previous data	Informational	330.407(a)(3)		-		Groundwater Sampling & Analysis Plan
522	Part III	Provide Notification of SSI to ED within 14 days of the 60-day SSI determination	Required	330.407(b)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
523	Part III	Provide (if SSI is determined) a notice to the operating record immediately & establish an assessment monitoring program within 90 days, or provide for resampling within 60 days of SSI determination	Required	330.407(b)(1)-(2)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
524	Part III	Submit alternative source demonstration including Notification to ED & any local agency, within 14 days of the SSI determination, of the intent to submit ASD	Required	330.407(b)(3)-(A)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
525	Part III	Submit ASD report to ED & any local agency, within 90 days of the SSI determination, certified by a qualified GW scientist	Required	330.407(b)(3)(B)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
526	Part III	Provide for No filtering of samples for ASD, ED may require leachate analyses to support ASD	Required	330.407(b)(3)(C)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
527	Part III	Owner/Operator may continue detection monitoring program	Informational	330.407(b)(3)(D)		-		Groundwater Sampling & Analysis Plan
528	Part III	Provide for assessment monitoring if no ASD satisfactory to the ED within 90 days of notice. ED may require additional point of compliance wells	Required	330.407(b)(4)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
529	Part III	Submit annual detection monitoring report within 90 days of last sampling even that includes the following	Required	330.407(c)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
530	Part III	Submit a statement regarding occurrences of SSIs	Required	330.407(c)(1)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
531	Part III	Submit GW monitoring results, background GW quality, statistical calculations, graphs, & drawings	Required	330.407(c)(2)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
532	Part III	Submit GW flow rate & direction based on detection sampling water elevations, any supporting documentation	Required	330.407(c)(3)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
533	Part III	Provide for piezometric water level contour map and supporting documentation	Required	330.407(c)(4)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
534	Part III	Submit recommendations for any changes	Required	330.407(c)(5)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
535	Part III	Submit any other information required by ED	Required	330.407(c)(6)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan
536	Part III	Submit a permit amendment or modification, If detection monitoring program no longer	Required	330.407(d)	Yes	App F2, Sec 5.3		Groundwater Sampling & Analysis Plan

537	Part III	Provide a description of proposed sampling, analysis, and statistical comparison procedures be utilized in evaluating groundwater nitoring data	Required	330.63(f)(5)(C)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
538	Part III	ovide a statement that information, supporting data, and analyses to establish assessment monitoring program per 330.409 will be provided If hazardous constituents are present	Required	330.63(f)(6)	Yes	App F2, Sec 4.3		Groundwater Sampling & Analysis Plan
539	Part III	Provide a statement indicating that assessment monitoring information and a description of any special waste previously handled at the facility will be provided	Required	330.63(f)(6)(A)	Yes	App F2, Sec 4.3		Groundwater Sampling & Analysis Plan
540	Part III	Indicate that a characterization of the contaminated groundwater, including concentration of assessment constituents as defined in §330.409 of this title, will be provided	Required	330.63(f)(6)(B)	Yes	App F2, Sec 4.3		Groundwater Sampling & Analysis Plan
541	Part III	Indicate that a list of assessment constituents as defined in §330.409 of this title for which assessment monitoring will be undertaken, will be provided	Required	330.63(f)(6)(C)	Yes	App F2, Sec 4.3		Groundwater Sampling & Analysis Plan
542	Part III	Provide plans & engineering report describing GW monitoring system	Required	330.63(f)(6)(D)	Yes	App F2, Sec 4.3		Groundwater Sampling & Analysis Plan
543	Part III	Provide a description of proposed sampling, analysis, and statistical comparison procedures to be utilized in evaluating groundwater monitoring data	Required	330.63(f)(6)(E)	Yes	App F2, Sec 4.11, 4.1.2		Groundwater Sampling & Analysis Plan
544	Part III	Provide, if hazardous constituents have exceeded the concentration limits, supporting data, and analyses to establish a corrective action program that meets the requirements of §330.411 and §330.413	Required	330.63(f)(7)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
545	Part III	Indicate that a characterization of the contaminated groundwater, including concentrations of assessment constituents as defined in §330.409	Required	330.63(f)(7)(A)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
546	Part III	Indicate that concentration limits for each constituent will be submitted	Required	330.63(f)(7)(B)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
547	Part III	Indicate that plans & an engineering report describing corrective action will be submitted	Required	330.63(f)(7)(C)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
548	Part III	Submit a description of how the monitoring program will demonstrate adequacy of corrective action	Required	330.63(f)(7)(D)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
549	Part III	Submit a schedule for submitting information required by 330.63(f)(7)(C) & (D)	Required	330.63(f)(7)(E)	Yes	Att F2 Sec 4.4		Groundwater Sampling & Analysis Plan
550	Part III	Criteria to determine if the facility is exempt from groundwater monitoring	Informational	330.401(a)-(c)		-		Groundwater Sampling & Analysis Plan
551	Part III	Submit criteria for suspension of groundwater monitoring; the demonstration for suspension shall be certified by a qualified groundwater scientist and approved by the executive director	Required if Requested	330.401(d)	Yes	-		Groundwater Sampling & Analysis Plan
552	Part III	Submit for suspension demonstration site specific data affecting contaminant fate & transport	Required	330.401(d)(1)	Yes	-		Groundwater Sampling & Analysis Plan
553	Part III	Submit for suspension demonstration, contaminant fate & transport predictions	Required	330.401(d)(2)	Yes	-		Groundwater Sampling & Analysis Plan
554	Part III	Provide for new solid waste management units a documented certification signed by a qualified groundwater scientist that the facility is in compliance with the groundwater monitoring requirements	Required	330.401(e)	Yes	-		Groundwater Sampling & Analysis Plan
555	Part III	Acknowledge that groundwater monitoring must be conducted throughout the active life and any required post-closure care period	Acknowledgement	330.401(f)	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
556	Part III	Submit a GW monitoring system with sufficient no. of wells, location, depth to yield representative GW samples	Required	330.403(a)	Yes	Att F, Fig F1.2, 1.3		Groundwater Sampling & Analysis Plan
557	Part III	Provide information on background wells used to determine background GW quality	Required	330.403(a)(1)	Yes	Att F		Groundwater Sampling & Analysis Plan
558	Part III	Provide/identify the point of compliance wells not >600 ft. unless modeling demonstration approved	Required	330.403(a)(2)	Yes	Att F, Fig F1.2, 1.3		Groundwater Sampling & Analysis Plan

559	Part III	Provide, if a multi-unit GW monitoring system is proposed; the number, spacing, and [illegible]entation of the solid waste management [illegible]ts within an overall waste management area; hydrogeologic setting; site history; engineering design of the units; and type of waste accepted at the units.	Required	330.403(b)(1)-(5)		-		Groundwater Sampling & Analysis Plan
560	Part III	The executive director may approve an alternative design for a groundwater monitoring system that uses other means in conjunction with monitoring wells	Informational	330.403(c)		-		Groundwater Sampling & Analysis Plan
561	Part III	Acknowledge that all parts of a groundwater monitoring system shall be operated and maintained so that they perform at least to design specifications	Acknowledgement	330.403(d)	Yes	Att F, Sec 3.2		Groundwater Sampling & Analysis Plan
562	Part III	Provide a design certified by a qualified groundwater scientist.	Required	330.403(e)	Yes	Att F Pg iii		Groundwater Sampling & Analysis Plan
563	Part III	Provide the design of the monitoring system to be based on site-specific technical information	Required	330.403(e)(1)	Yes	Att F, Sec 3.2		Groundwater Sampling & Analysis Plan
564	Part III	Multi-dimensional fate & transport model may be used to support sampling point locations	Informational	330.403(e)(2)		-		Groundwater Sampling & Analysis Plan
565	Part III	Provide if a multi-dimensional model is proposed, documentation of the model's ability to represent GW flow & contaminant transport	Required	330.403(e)(2)(A)	Yes	-		Groundwater Sampling & Analysis Plan
566	Part III	Provide if a multi-dimensional model is proposed, a sound set of equations based on accepted theory	Required	330.403(e)(2)(B)	Yes	-		Groundwater Sampling & Analysis Plan
567	Part III	Provide if a multi-dimensional model is proposed, a numerical solution methods based on mathematical principals with verification & checking techniques	Required	330.403(e)(2)(C)	Yes	-		Groundwater Sampling & Analysis Plan
568	Part III	Provide if a multi-dimensional model is proposed, a model calibrated against site-specific field data	Required	330.403(e)(2)(D)	Yes	-		Groundwater Sampling & Analysis Plan
569	Part III	Provide if a multi-dimensional model is proposed, a sensitivity analysis for major parameters	Required	330.403(e)(2)(E)	Yes	-		Groundwater Sampling & Analysis Plan
570	Part III	Provide if a multi-dimensional model is proposed, mass-balance calculations	Required	330.403(e)(2)(F)	Yes	-		Groundwater Sampling & Analysis Plan
571	Part III	Provide if a multi-dimensional model is proposed, a model based on field or lab measurements that document validity of parameter values	Required	330.403(e)(2)(G)	Yes	-		Groundwater Sampling & Analysis Plan
572	Part III	Acknowledge that the owner or operator shall promptly notify the executive director, and any local pollution agency with jurisdiction that has requested to be notified, in writing of changes in facility construction or operation or changes in adjacent property that affect or are likely to affect the direction and rate of groundwater flow and the potential for detecting groundwater contamination from a solid waste management unit and that may require the installation of additional monitoring wells or sampling points and that such additional wells or sampling points require a modification of the site development plan.	Acknowledgement	330.403(e)(3)	Yes	Att F, Sec3.5		Groundwater Sampling & Analysis Plan
573	Part III	Provide sampling & analysis procedures that ensure accurate results of GW quality	Required	330.405(a)	Yes	App F2, Sec 1		Groundwater Sampling & Analysis Plan
574	Part III	Submit GW sampling & analysis plan prior to sampling, place a copy of the approved plan in the operating record	Required	330.405(b)	Yes	Ap F2, Sec 1		Groundwater Sampling & Analysis Plan
575	Part III	Provide procedures for sample collection, preservation & shipping, analytical procedures, COC control, & QA/QC	Required	330.405(b)(1)	Yes	App F2, Sec 2, 3		Groundwater Sampling & Analysis Plan
576	Part III	Provide for GW elevations measured at each point, sample from high to low elevations unless contaminated, sample un-contaminated points prior to contaminated points	Required	330.405(b)(2)	Yes	App F2, Sec 2.2.2		Groundwater Sampling & Analysis Plan
577	Part III	Provide sampling & analysis methods appropriate for groundwater sampling	Required	330.405(b)(3)	Yes	App F2, Sec 3		Groundwater Sampling & Analysis Plan
578	Part III	Provide for Type I landfills – collection of samples necessary to establish GW quality data consistent with statistical procedures for detection, assessment, corrective measures	Required	330.405(b)(3)(A)	Yes	App F2, Sec 4		Groundwater Sampling & Analysis Plan

579	Part III	Provide for no field filtered GW samples prior to analysis	Required	330.405(c)	Yes	App F2, Sec 2.3		Groundwater Sampling & Analysis Plan
580	Part III	ovide and establish background GW quality or detection parameters	Required	330.405(d)	Y	App F2, Sec 4		Groundwater Sampling & Analysis Plan
581	Part III	Provide 1 or more statistical methods to evaluate detection/assessment parameters	Required	330.405(e)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
582	Part III	Provide parametric analysis of variance followed by multiple comparison procedures, contrast between well's mean & background mean	Required	330.405(e)(1)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
583	Part III	Provide analysis of variance based on ranks followed by multiple comparison procedures, contrast between well's median & background median	Required	330.405(e)(2)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
584	Part III	Provide tolerance or prediction interval procedures	Required	330.405(e)(3)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
585	Part III	Provide a control chart approach	Required	330.405(e)(4)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
586	Part III	Provide for any statistical method to meet the standards listed under 330.405(f)	Required	330.405(e)(5)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
587	Part III	Provide the statistical method chosen under 330.405(e) appropriate for the distribution	Required	330.405(f)-(1)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
588	Part III	Provide, if individual sampling point comparison to background or GW protection standard is used, for the test to be done at Type I error level not <0.01.	Required	330.405(f)(2)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
589	Part III	Provide, If control chart is used, the specific type of chart & its parameters must be protective, consider no. of samples, distribution, & concentration range	Required	330.405(f)(3)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
590	Part III	Provide the tolerance or prediction intervals used	Required	330.405(f)(4)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
591	Part III	Provide that the statistical method used accounts for data below detection	Required	330.405(f)(5)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
592	Part III	Provide for the statistical method to control or correct for seasonal, spatial variability & temporal correlation in data	Required	330.405(f)(6)	Yes	App F2, Sec 4.1		Groundwater Sampling & Analysis Plan
593	Part III	Indicate that assessment monitoring is required whenever the owner or operator determines there has been a statistically significant increase over background for one or more of the constituents listed in §330.419 of this title	Required	330.409(a)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
594	Part III	Indicate that within 90 days of determining that a statistically significant increase has occurred in accordance with §330.407(b) and not less than annually thereafter, the owner or operator shall sample and analyze the groundwater monitoring system for the full set of constituents listed in Appendix II to 40 Code of Federal Regulations (CFR) Part 258	Required	330.409(b)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
595	Part III	Indicate that a minimum of one sample shall be collected from each point of compliance well and analyzed for the 40 CFR Part 258, Appendix II constituents during each sampling event.	Required	330.409(b)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
596	Part III	Indicate that for any new constituent(s) detected in the point of compliance wells as a result of the complete Appendix II analysis, a minimum of four statistically independent samples from each background well shall be collected and analyzed to establish background levels for the additional constituent(s).	Required	330.409(b)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
597	Part III	Indicate that after sampling all point of compliance wells for Appendix II constituents, the executive director may specify an appropriate subset of wells to be sampled and analyzed for the Appendix II constituents during assessment monitoring and may delete any of the Appendix II constituents for a municipal solid waste management unit if the owner or operator can document that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit	Required	330.409(b)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan

598	Part III	Provide, if the ED specifies, an alternative frequency for sampling Appendix II constituents	Required	330.409(c)(1)-(5)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
599	Part III	Indicate that Appendix II constituents results will be submitted within 60 days after each sampling event	Required	330.409(d)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
600	Part III	Indicate that within 90 days of reporting Appendix II results & semiannually thereafter, all wells will be resampled for Appendix I & any new constituent detected from Appendix II, and that the results of resampling will be submitted within 60 days after each sampling event	Required	330.409(d)(1)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
601	Part III	Provide background concentrations for additional Appendix II constituents detected	Required	330.409(d)(2)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
602	Part III	Provide groundwater protection standards for all constituents detected in point of compliance wells	Required	330.409(d)(3)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
603	Part III	Provide notification to ED, If concentrations are at or below background for 2 consecutive sampling events, and return to detection monitoring	Required	330.409(e)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
604	Part III	Continue assessment monitoring If concentrations are above background but below GW protection standards	Required	330.409(f)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
605	Part III	Indicate that no later than 60 days after each sampling event a determination whether any 40 CFR Part 258, Appendix II constituents were detected at statistically significant levels above the groundwater protection standards. If exceeded the ED & local government will be notified within 7 days of determination	Required	330.409(g)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
606	Part III	Provide the characterization and extent of release by installing additional wells as necessary	Required	330.409(g)(1)-(A)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
607	Part III	Provide for the installation of wells adjacent to the well with exceedance before next sampling event & sample new well for Appendix I & additional constituents from Appendix II	Required	330.409(g)(1)(B)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
608	Part III	Provide Notification to all persons that own or occupy the land that overlies any part of the contamination plume	Required	330.409(g)(1)(C)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
609	Part III	Provide an assessment of corrective measures within 90 days of notice to ED	Required	330.409(g)(1)(D)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
610	Part III	Notify ED within 14 days of exceedance determination and intent to submit an Alternate Source Demonstration (ASD)	Required	330.409(g)(2)-(A)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
611	Part III	Submit certified ASD report within 90 days of exceedance determination	Required	330.409(g)(2)(B)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
612	Part III	Provide for no filtering of samples for ASD, ED may require leachate analyses to support ASD and continue assessment monitoring program	Required	330.409(g)(2)(C)-(D)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
613	Part III	Provide for assessment monitoring If ASD is accepted by ED, otherwise implement assessment of corrective measures	Required	330.409(g)(3)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
614	Part III	Provide for a permit amendment or modification if assessment monitoring program is no longer compliant with 330.409,	Required	330.409(g)(4)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
615	Part III	Provide for/establish GW protection standards for Appendix II constituents in the point of compliance monitoring wells	Required	330.409(h)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
616	Part III	Provide for GW protection standard for constituents for which a maximum (MCL) has been promulgated under 40 CFR Part 141, Safe Drinking Water Act Maximum contaminant level (MCL)	Required	330.409(h)(1)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
617	Part III	Provide GW protection standard for constituents for which no MCL promulgated	Required	330.409(h)(2)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
618	Part III	Provide GW protection standard for background constituents higher than MCL or health-based level	Required	330.409(h)(3)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
619	Part III	Acknowledge that the ED may establish alternative GW protection standards in accordance with 30 TAC §330.409(i)	Acknowledgement	330.409(i)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
620	Part III	Submit annual assessment monitoring report within 60 days of 2nd semiannual sampling event	Required	330.409(k)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
621	Part III	Submit a statement of any statistically significant exceedances of GW protection	Required	330.409(k)(1)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan

622	Part III	Submit GW monitoring results, summary of background, statistical calculations, graphs & drawings	Required	330.409(k)(2)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
623	Part III	Submit GW flow rate & direction based on data from sampling events, supporting documentation	Required	330.409(k)(3)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
624	Part III	Submit a Piezometric water level contour map and supporting documentation	Required	330.409(k)(4)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
625	Part III	Provide recommendations for any changes	Required	330.409(k)(5)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
626	Part III	Submit Any other information required by ED	Required if Requested	330.409(k)(6)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
627	Part III	Provide detection monitoring for constituents listed in Appendix I, 40 CFR Part 258	Required	330.419(a)	Yes	App F2, Sec 5.3.1		Groundwater Sampling & Analysis Plan
628	Part III	ED may delete constituents from Appendix I if constituent not likely to be derived from waste disposed of in the landfill	Informational	330.419(b)		-		Groundwater Sampling & Analysis Plan
629	Part III	ED may establish alternative inorganic list, add organic or inorganic constituents based on consideration of the following	Informational	330.419(c)		-		Groundwater Sampling & Analysis Plan
630	Part III	Types, concentrations, quantities, persistence of waste constituents	Informational	330.419(c)(1)		-		Groundwater Sampling & Analysis Plan
631	Part III	Mobility, stability, persistence of constituents & their reaction products	Informational	330.419(c)(2)		-		Groundwater Sampling & Analysis Plan
632	Part III	Detectability of indicator & waste constituents & reaction products in groundwater	Informational	330.419(c)(3)		-		Groundwater Sampling & Analysis Plan
633	Part III	Concentrations & coefficients of variability of parameters or constituents in the groundwater background	Informational	330.419(c)(4)		-		Groundwater Sampling & Analysis Plan
634	Part III	Provide for the construction of monitoring wells to provide integrity, representative samples, prevent migration of water in bore hole, well construction must follow prescribed specifications	Required	330.421(a)	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
635	Part III	Provide that wells to be drilled by a qualified TX licensed drill & supervised by PG or PE	Required	330.421(a)(1)(A)	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
636	Part III	Provide a drilling method that shall not introduce contaminants. If fluid used in drilling, then use clean city water unless approved by ED. If water used provide analysis	Required	330.421(a)(1)(B)	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
637	Part III	Provide borings to be at least 4 in. larger than casing. If boring in rock, a smaller annulus may be approved by the executive director	Required	330.421(a)(1)©	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
638	Part III	Provide a log of boring, signed, sealed & dated by PG or PE	Required	330.421(a)(1)(D)	Yes	Att F Sec 3.5		Groundwater Sampling & Analysis Plan
639	Part III	Provide designs for casing, screen, filter pack, & seal	Required	330.421(a)(2)	Yes	Att F, Fig F1.3		Groundwater Sampling & Analysis Plan
640	Part III	Provide casing specifications; the casing should be 2 to 4 inch schedule 40 or 80 PVC, and must meet other requirements of 30 TAC §330.421(a)(2)(A)	Required	330.421(a)(2)(A)	Yes	Att F, Fig F1.3		Groundwater Sampling & Analysis Plan
641	Part III	Provide screen specifications that are compatible with the casing and does not include glue, solvents, field-cut slots or filter cloths	Required	330.421(a)(2)(B)	Yes	Att F, Fig F1.3		Groundwater Sampling & Analysis Plan
642	Part III	Provide filter pack specifications - clean silica sand or glass, 1 to 4 ft. above screen, etc.	Required	330.421(a)(2)(C)	Yes	Att F, Fig F1.3		Groundwater Sampling & Analysis Plan
643	Part III	Provide annular seal specifications - 2 ft. thick, placed in zone of saturation, etc.	Required	330.421(a)(2)(D)	Yes	App F2, Fig F1.3		Groundwater Sampling & Analysis Plan
644	Part III	Provide casing seal specifications - placed on top of annular seal, bentonite grout or cement-bentonite mix, etc.	Required	330.421(a)(2)(E)	Yes	App F2, Fig F1.3		Groundwater Sampling & Analysis Plan
645	Part III	Provide specifications for the concrete pad to be placed on top of the casing seal, including the type of structural concrete used from casing seal to surface	Required	330.421(a)(3)	Yes	App F2, Fig F1.3		Groundwater Sampling & Analysis Plan
646	Part III	Provide protective collar specifications - steel collar around casing, set 1 ft. into surface pad, etc.	Required	330.421(a)(4)	Yes	App F2, Fig F1.3		Groundwater Sampling & Analysis Plan
647	Part III	Provide protective barrier specifications - 3 to 4 6-12 in. diameter pipes set in concrete, other types of barriers may be approved by ED	Required	330.421(a)(5)	Yes	App F2, Fig F1.3		Groundwater Sampling & Analysis Plan

648	Part III	Acknowledge that when wells are installed in unusual conditions, all aspects must be approved in writing by the ED	Acknowledgement	330.421(b)	Yes	-		Groundwater Sampling & Analysis Plan
649	Part III	Provide the removal of artifacts once monitoring well is installed and open water-bearing zones for max flow into well	Required	330.421(c)	Yes	Att F, Sec 3.5		Groundwater Sampling & Analysis Plan
650	Part III	Identify well location & elevation surveyed, permanently marked	Required	330.421(d)	Yes	Att F, Sec 3.5		Groundwater Sampling & Analysis Plan
651	Part III	Provide a well installation report to be submitted within 60 days of completion including boring log, description of development procedures, any sample data & sit map showing location	Required	330.421(e)	Yes	Att F, Sec 3.5		Groundwater Sampling & Analysis Plan
652	Part III	Provide a Landfill Gas Management Plan to comply with Subchapter I	Required	330.63(g)	Yes	Att G		Landfill Gas Management Plan
653	Part III	Submit information to specify that methane concentration cannot exceed 1.25% by volume in facility structures	Required	330.371(a)(1)	Yes	Sec 1.2		Landfill Gas Management Plan
654	Part III	Submit information to specify that methane concentrations cannot exceed 5% by volume at permitted boundary wells, probes, subsurface soils, or other matrices	Required	330.371(a)(2)	Yes	Sec 1.2		Landfill Gas Management Plan
655	Part III	Provide a plan to implement routine methane monitoring where the type and frequency of monitoring is based on soil, hydrogeologic, and hydraulic conditions	Required	330.371(b)(1)(A)-(C)	Yes	Sec 1.2		Landfill Gas Management Plan
656	Part III	Provide a plan to implement routine methane monitoring where the type and frequency of monitoring is based on locations of facility structures, property boundaries and utility or pipelines that cross the facility boundary	Required	330.371(b)(1)(D)&(E)	Yes	Sec 1.2		Landfill Gas Management Plan
657	Part III	Indicate that methane monitoring will be conducted, at a minimum, quarterly.	Required	330.371(b)(2)	Yes	Sec 3		Landfill Gas Management Plan
658	Part III	Provide in the plan the necessary steps to take if methane concentrations exceed 1.25% in structures and/or 5% in boundary matrices; including notification to the ED, local officials, emergency officials, & the public	Required	330.371(c)-(1)	Yes	Sec 4		Landfill Gas Management Plan
660	Part III	Indicate that a remediation plan will implemented within 60 days of detection that describes the nature, extent of the problem, and the proposed remedy, The ED may require additional remedial measures	Required	330.371(c)(3)	Yes	Sec 5		Landfill Gas Management Plan
661	Part III	Indicate that the ED may establish alternative schedule for monitoring & exceedance actions	Required	330.371(d)	Yes	Sec 5		Landfill Gas Management Plan
662	Part III	Provide for continuing methane monitoring and control for 30 yrs. after certification of final closure for Type I & IAE facilities. & 5 yrs. for Type IV & IVAE. Gas monitoring may be reduce with an approved no gas migration demonstration	Required	330.371(e)	Yes	Sec 3.5		Landfill Gas Management Plan
663	Part III	Provide for continuing methane monitoring and control for 30 yrs. after certification of final closure for Type I & IAE facilities.	Required	330.371(e)	Yes	Sec 3.5		Landfill Gas Management Plan
664	Part III	Provide for continuing methane monitoring and control for 5 yrs. after certification of final closure for Type IV & IVAE facilities.	Required	330.371(e)	Yes	-		Landfill Gas Management Plan
665	Part III	Indicate that information may be submitted to the ED, to reduce gas monitoring and control. The information must demonstrate no potential for gas migration beyond the property boundary or into on-site structures.	Required	330.371(e)	Yes	Sec 3.5		Landfill Gas Management Plan
666	Part III	Provide for gas monitoring & control to be revised & maintained as needed; post-closure land use shall not interfere with the gas monitoring system and all utility trenches crossing the facility shall be vented & monitored	Required	330.371(f)	Yes	Sec 3.5		Landfill Gas Management Plan
667	Part III	Provide a description of how gases be managed & controlled	Required	330.371(g)-(1)	Yes	Sec 6		Landfill Gas Management Plan
668	Part III	Provide a description of the proposed system, installation procedures, installation timeline, monitoring & maintenance procedures	Required	330.371(g)(2)	Yes	Sec 6		Landfill Gas Management Plan
669	Part III	Provide a backup plan for breakdowns	Required	330.371(g)(3)	Yes	Sec 6		Landfill Gas Management Plan

670	Part III	Installation of an initial perimeter monitoring network at Type IAE and Type IVAE ands larger ndfills may consist of portable equipment l probes provided there are no habitable ructures within 3000 feet of the waste placement boundary.	Informational	330.371(h)(1)		-		Landfill Gas Management Plan
671	Part III	Indicate that a permanent gas monitoring system will be installed if test results show the presence of methane gas above a concentration of .5% by volume	Required	330.371(h)(1)	Yes	-		Landfill Gas Management Plan
672	Part III	Provide a permanent gas monitoring system at Type I and Type IV facilities	Required	330.371(h)(2)	Yes	Sec 3		Landfill Gas Management Plan
673	Part III	Provide a monitoring network design to monitor on-site structures, and any other areas that have potential gas buildup	Required	330.371(i)	Yes	Sec 3		Landfill Gas Management Plan
674	Part III	Provide for all monitoring probes and on-site structures to be sampled for methane during the monitoring period	Required	330.371(j)	Yes	Sec 3		Landfill Gas Management Plan
680	Part III	Provide a demonstration that above ground disposal area final cover slopes shall not exceed 25%. Topmost portion of final cover shall be between 2% & 6%.	Required	330.453(c)	Yes	Att H, Sec III B		Closure Plan
681	Part III	Provide a demonstration that a design with an excess of 25% final cover slopes may be submitted. The design must demonstrate the management of drainage, such as control flumes, diversion terraces, spillways or other acceptable methods	Required if Requested	330.453(c)	Yes	-		Closure Plan
682	Part III	An alternative final cover design may be submitted to demonstrate an equivalent reduction in infiltration as the clayey soil cover infiltration layer specified under 330.453(a).	Required if Requested	330.453(d)(1)	Yes	-		Closure Plan
683	Part III	An alternative final cover design may be submitted to demonstrate approved alternative final cover that achieves equivalent protection from wind & water erosion	Required if Requested	330.453(d)(2)	Yes	-		Closure Plan
684	Part III	Submit information to comply with post-closure care once closure of a Type IV facility is complete	Required	330.453(f)	Yes	-		Closure Plan
685	Part III	Provide designs for a final cover system consisting of not less than two feet of soil cover.	Required	330.457(a)	Yes	Att H, Sec III A		Closure Plan
686	Part III	For landfills with a synthetic bottom liner, provide a final cover system design that includes a synthetic membrane with a permeability less than or equal to the bottom	Required	330.457(a)(1)	Yes	-		Closure Plan
687	Part III	Provide designs for a synthetic liner with minimum thickness of 20 mils, or 60 mils in the case of high-density polyethylene, to ensure proper seaming	Required	330.457(a)(1)	Yes	-		Closure Plan
688	Part III	For landfills with no synthetic bottom liner, provide a final cover system design that includes a minimum 18-inch thick clay-rich soil cover layer with a coefficient of permeability less than or equal to any constructed bottom liner or natural subsoil present. The coefficient of permeability shall not exceed 1 x 10-5 cm/sec	Required	330.457(a)(2)	Yes	-		Closure Plan
689	Part III	Provide designs for an erosion layer that consist of at least six inches of soil capable of sustaining native plant growth and that will be seeded or sodded immediately following the application of the final cover	Required	330.457(a)(3)	Yes	Att H, Sec III A		Closure Plan
690	Part III	Provide designs for cover of a Class 1 cell that consist of 4ft. clay with permeability not > 1x10-7 overlain by 18in. Topsoil. If waste is to be placed above Class 1 cell, it must first be covered with a four-foot layer of compacted clay-rich soil and must meet the requirements of 330.457 and include a flexible membrane component.	Required if Requested	330.457(b)	Yes	-		Closure Plan
691	Part III	Provide for permeability quality control testing of the 18-inch cover at no less than 1 test/acre and submit data to ED	Required	330.457(c)	Yes	Att H, Sec IV D		Closure Plan
692	Part III	Demonstrate that the alternative final cover will achieve equivalent reduction in infiltration as the clay-rich soil cover layer specified under 330.457(a)(1) or (2)	Required if Requested	330.457(d)(1)	Yes	-		Closure Plan
693	Part III	Demonstrate that the alternative final cover will provide equivalent wind & water erosion protection as the erosion layer specified in 330.457(a)(3)	Required if Requested	330.457(d)(2)	Yes	-		Closure Plan

694	Part III	Submit a written closure plan describing the steps necessary to close units at any time and a scription of the final cover design, methods, d procedures to install the final cover	Required	330.457(e)(1)	Y	Att H, Sec V		Closure Plan
695	Part III	Provide an estimate of the largest area needing final cover	Required	330.457(e)(2)	#REF!	Att H Sec V13		Closure Plan
696	Part III	Provide an estimate of max volume of waste ever on-site	Required	330.457(e)(3)	#REF!	Att H Sec V 13		Closure Plan
697	Part III	Provide a schedule for completing closure activities	Required	330.457(e)(4)	Yes	Att H Sec V 13		Closure Plan
698	Part III	Provide a final contour map - depicting proposed final contours, top & side slopes, surface drainage features, and 100yr flood protection	Required	330.457(e)(5)	Yes	Att H Sec II E		Closure Plan
699	Part III	Provide the specifics for the implementation of closure plan and place a copy of the plan in the operating record by the initial receipt of waste	Required	330.457(f)(1)	Yes	Att H Sec III		Closure Plan
700	Part III	Notify the ED in writing of the intent to close the facility, 45 days prior to initiation of closure activities	Required	330.457(f)(2)	Yes	Att H Sec V		Closure Plan
701	Part III	Specify in the closure plan that the operator will begin closure no later than 30 days after final receipt of waste or no later than one year if the unit has remaining capacity and additional waste may be received	Required	330.457(f)(3)	Yes	Att H Sec V		Closure Plan
702	Part III	Provide for closure activities to be completed within 180 days of initiation	Required	330.457(f)(4)	Yes	Att H Sec V		Closure Plan
703	Part III	Provide for post-closure care requirements following completion of closure. Submit PE certification of closure by registered mail with supporting documentation.	Required	330.457(f)(5)	Yes	Att H Sec V		Closure Plan
704	Part III	Acknowledge that following receipt of closure documents and the inspection report by the TCEQ region, the ED may acknowledge termination of operation & closure & deem the facility properly closed	Acknowledgement	330.457(f)(6)	Yes	Att H Sec V		Closure Plan
705	Part III	Submit a certified copy within 10 days after landfill unit closure, of the "Affidavit to the Public". The Owner and Operator shall record a certified notation to the deed that the land has been used as a landfill facility	Required	330.457(g)	Yes	Att H Sec V		Closure Plan
706	Part III	Indicate that notice of closure will be published in the newspaper of largest circulation 90 days prior to the initiation of a final facility closure. The notice shall provide the name, address, and physical location of the facility; the TCEQ authorization number; and the last date of intended receipt of waste.	Required	330.461(a)	Yes	Att H Sec V		Closure Plan
708	Part III	Acknowledge that least one closure sign will be posted at every point of access and notify all persons who utilize the facility of the date of closure and the prohibition against further receipt of waste materials.	Acknowledgement	330.461(b)	Yes	Att H Sec V		Closure Plan
714	Part III	Submit a closure plan for Storage and Processing units to remove all waste, waste residues, and any recovered materials. Units shall be dismantled and removed off-site or decontaminated.	Required	330.459(a)	Yes	Att H Sec V		Closure Plan For Processing Facilities
715	Part III	Provide plans for the evacuation of all material on-site to an authorized facility and the disinfecting of all contaminated water handling units, tipping areas, processing and post-processing areas (as applicable)	Required	330.459(b)	Yes	Att H Sec V		Closure Plan For Processing Facilities
716	Part III	Acknowledge that if there is evidence of a release, the ED may require an investigation, assessment, and or corrective action.	Acknowledgement	330.459(c)	Yes	Att H Sec V		Closure Plan For Processing Facilities
717	Part III	Submit a plan (if combustible material is stored outdoors) for closure of a recycling facility that includes collecting processed and unprocessed materials, and transporting the materials to an authorized facility for disposition	Required	330.459(d)(1)	Yes	Att H Sec V		Closure Plan For Processing Facilities
718	Part III	Provide for the closure plan to be implemented (if combustible material is stored outdoors) and completed within 180 days following the most recent acceptance of processed or unprocessed materials	Required	330.459(d)(2)	Yes	Att H Sec V		Closure Plan For Processing Facilities
719	Part III	Submit a Post-Closure Plan that includes a PE certification of closure, and specify that the owner or operator shall retain the right of entry to and maintain all rights-of-way in order to conduct periodic inspections for a minimum 5	Required	330.63(i)	Yes	Att I		Post-Closure Plan

720	Part III	Provide for maintenance and control of cover material, erosion control, vegetative growth, leachate or methane migration, and subsidence ponding of water on the unit. If any of these problems persist for longer than the first five years of post-closure care, the owner or operator shall be responsible for their correction	Required	330.463(a)(1)		Att I, Sec IV B		Post-Closure Plan
721	Part III	Acknowledge that the ED may reduce the post-closure period for the unit if all wastes and waste residues have been removed during closure	Acknowledgement	330.463(a)(1)	Yes	Att I, Sec IV 12		Post-Closure Plan
722	Part III	Provide for continued monitoring programs, i.e., groundwater monitoring, resistivity surveys, methane monitoring, etc.; during the post-closure care period.	Required	330.463(a)(2)	Yes	Att I, Sec IV 10B		Post-Closure Plan
723	Part III	Acknowledge that the ED may require an investigation into the nature and extent of any release from the facility and an assessment to correct an impact to groundwater	Acknowledgement	330.463(a)(3)	Yes	Att I, Sec IV 11		Post-Closure Plan
724	Part III	Provide for 30-year post-closure care after PE certification of closure	Required	330.463(b)(1)	Yes	Att I, Sec IV C 2		Post-Closure Plan
725	Part III	Provide for right of entry and the maintenance of all rights-of-way, conduct site maintenance and/or remediation, maintain final cover, vegetation, drainage & correct as needed	Required	330.463(b)(1)(A)	Yes	Att I, Sec IV C 3		Post-Closure Plan
726	Part III	Provide maintenance and operation of the leachate collection system	Required	330.463(b)(1)(B)	Yes	Att I, Sec IV 9		Post-Closure Plan
727	Part III	Provide for maintenance and monitoring of the groundwater monitoring system per requirements of Subchapter J	Required	330.463(b)(1)(C)	Yes	Att I, Sec IV 10B		Post-Closure Plan
728	Part III	Provide for maintenance and monitoring of gas system per requirements of Subchapter I	Required	330.463(b)(1)(D)	Yes	Att I, Sec IV 10B		Post-Closure Plan
729	Part III	Provide for continued earth electrical resistivity surveys per site development plan	Required	330.463(b)(1)(E)	Yes	Att I, Sec IV 10B		Post-Closure Plan
730	Part III	Place a copy of the post-closure plan in the operating record by initial receipt of waste.	Required	330.463(b)(3)	Yes	Att I, Sec IV C 5		Post-Closure Plan
731	Part III	Submit a description of the monitoring and maintenance activities required and the frequency at which these activities will be performed	Required	330.463(b)(3)(A)	Yes	Att I Sec C		Post-Closure Plan
732	Part III	Provide the name, address, & phone number of responsible person	Required	330.463(b)(3)(B)	Yes	Att I Sec II		Post-Closure Plan
733	Part III	Provide a description of the planned use of closed unit during the post closure period	Required	330.463(b)(3)(C)	Yes	Att I, Sec VI		Post-Closure Plan
734	Part III	Provide a detailed written estimate of the cost of post-closure care maintenance and any corrective action as described in the post-closure care plan or required by the ED per Subchapter L	Required	330.463(b)(3)(D)	Yes	Att I, Sec VII		Post-Closure Plan
735	Part III	Indicate that a certification of completion of post-closure care signed by a PE will be submitted at the end of the post-closure care period	Required	330.465(a)	Yes	Att I, Sec VIII		Post-Closure Plan
738	Part III	Submit a dollar estimate of hiring a 3rd party to close the largest waste fill area that could potentially be open in the year to follow and those areas that have not received final cover. For landfills this means the completion of the final closure requirements for active and inactive fill areas.	Required	330.503(a)	Yes	Att J		Closure Cost Estimates
739	Part III	Provide for annual review of cost estimates	Required	330.503(a)(1)	Yes	Att J, Sec II		Closure Cost Estimates
740	Part III	Submit an increase to the cost estimate if changes to final closure plan or landfill conditions increase the maximum cost of closure at any time during the remaining active life of the unit.	Required	330.503(a)(2)	Yes	Att J, Sec II		Closure Cost Estimates
741	Part III	Reduction in cost estimate may be approved	Required if Requested	330.503(a)(3)	Yes	-		Closure Cost Estimates
749	Part III	Submit a Post-Closure Care Cost Estimates for the cost of hiring a third party to conduct post-closure care activities. The cost estimate shall account for the total costs of conducting post closure care for the largest area that could possibly require post-closure care in the year to follow over the entire post closure care period.	Required	330.507(a)	Yes	Att J, Sec IV		Post-Closure Care Cost Estimates for Landfills
750	Part III	Submit an increase in the post-closure care cost estimate and the amount of financial assurance if changes in the post-closure care plan or the unit conditions increase the maximum costs of post-closure care	Required if Requested	330.507(a)(1)	Yes	-		Post-Closure Care Cost Estimates for Landfills

751	Part III	Submit a reduction in the post-closure care cost estimate and the amount of financial assurance if the cost estimate exceeds the maximum costs remaining post-closure care remaining and a notice is provided to the ED of the detailed justification for the reduction of the cost estimate and the amount of financial assurance as a permit modification.	Required	330.507(a)(2)		Att J, Sec III		Post-Closure Care Cost Estimates for Landfills
752	Part III	Implement a corrective action program and a detailed written cost estimate of the cost of hiring a third party to perform the corrective action program. The corrective action cost estimate shall account for the total costs of corrective action activities	Required if Requested	330.509(a)	Yes	-		Corrective Action Cost Estimate
753	Part III	The corrective action cost estimate and the amount of financial assurance shall be increased if changes in the corrective action program or unit conditions increase the maximum costs of corrective action	Required if Requested	330.509(a)(1)	Yes	-		Corrective Action Cost Estimate
754	Part III	A reduction in the cost estimate and the amount of financial assurance for corrective action may be approved if the cost estimate exceeds the maximum remaining costs of corrective action at any time during the remaining corrective action period	Required if Requested	330.509(a)(2)	Yes	-		Corrective Action Cost Estimate
755	Part III	Provide financial assurance for the costs of the most recent corrective action program. Continuous financial assurance coverage for each corrective action program shall be provided until the facility is officially released in writing by the ED	Required if Requested	330.509(b)	Yes	-		Corrective Action Cost Estimate
756	Part III	Provide financial assurance per Chapter 37, Subchapter R	Required	330.503(b)	Yes	Att J		Financial Assurance
757	Part III	Provide for financial assurance for post-closure cost. Continuous financial assurance coverage for post-closure care shall be provided	Required	330.507(b)	Yes	Att J,		Financial Assurance
758	Part IV	A site operating plan shall cover all on-site units in accordance with Subchapters D & E of Chapter 330.	Informational	330.65(a)		-		Site Operating Plan
759	Part IV	A facility that has an environmental management system that meets both the minimum standards described in 30 TAC §90.32 of this title and the United States Environmental Protection Agency's National Environmental Performance Track is not subject to site operating plan requirements	Informational	330.65(b)		-		Site Operating Plan
760	Part IV	In the event the executive director terminates authorization to operate under an environmental management system, the facility will comply with the site operating plan requirements within 90 days.	Informational	330.65(b)		-		Site Operating Plan
761	Part IV	Provide procedures for recirculating leachate or gas condensate	Required if Requested	330.65(c)	Yes	-		Site Operating Plan
762	Part IV	Acknowledge that the site development plan, site operating plan, final closure plan, post-closure maintenance plan, landfill gas management plan, & all other documents are operating requirements & part of the operating record.	Acknowledgement	330.121(a)	Yes	Part IV		Site Operating Plan
763	Part IV	Acknowledge that any deviation from the permit and incorporated plans or other related documents associated with the permit is a violation of this chapter	Acknowledgement	330.121(a)	Yes	Sec 2		Site Operating Plan
764	Part IV	Acknowledgment that the SLER will be submitted to the ED 14 days prior to waste disposal operations for each new disposal area	Acknowledgement	330.123	Yes	Sec 2		Site Operating Plan
765	Part IV	Acknowledge that all information required to be in the site operating record to be placed in the operating record within seven (7) days of completion or receipt	Acknowledgement	330.125(b)	Yes	Sec 2		Site Operating Plan
766	Part IV	Acknowledge that all location restriction demonstrations will be maintained in the site operating record	Acknowledgement	330.125(b)(1)	Yes	Sec 2		Site Operating Plan
768	Part IV	Acknowledge that all results of gas monitoring & any remediation plans relating to explosive and other gases will be maintained in the site operating record	Acknowledgement	330.125(b)(3)	Yes	Sec 2		Site Operating Plan
769	Part IV	Acknowledge that all unit design documentation regarding placement of leachate or gas condensate will be maintained in the site operating record	Acknowledgement	330.125(b)(4)	Yes	Sec 2		Site Operating Plan

770	Part IV	Acknowledge that all demonstration, certification, findings, monitoring, testing, and analytical data relating to groundwater monitoring and corrective action will be maintained in the site operating record	Acknowledgement	330.125(b)(5)	Y	Sec 2		Site Operating Plan
771	Part IV	Acknowledge that all closure and post-closure care plans and any monitoring, testing, or analytical data relating to post-closure requirements will be maintained in the site operating record	Acknowledgement	330.125(b)(6)	Yes	Sec 2		Site Operating Plan
772	Part IV	Acknowledge that all cost estimates and financial assurance documentation relating to financial assurance for closure and post-closure will be maintained in the site operating record	Acknowledgement	330.125(b)(7)	Yes	Sec 2		Site Operating Plan
773	Part IV	Acknowledge that all documentation of compliance with small community exemption criteria will be maintained in the site operating record	Acknowledgement	330.125(b)(8)	Yes	Sec 2		Site Operating Plan
774	Part IV	Acknowledge that copies of all correspondence and responses relating to the operation of the facility, modifications to the permit, approvals, and other matters pertaining to technical assistance will be maintained in the site operating record	Acknowledgement	330.125(b)(9)	Yes	Sec 2		Site Operating Plan
775	Part IV	Acknowledge that all documents, manifests, shipping documents, trip tickets, etc., involving special waste will be maintained in the site operating record	Acknowledgement	330.125(b)(10)	Yes	Sec 2		Site Operating Plan
776	Part IV	Acknowledge that records of the application rate and total amount of any spray-applied alternative daily cove applied to the working face will be maintained in the site operating record.	Acknowledgement	330.125(b)(11)	Yes	Sec 2		Site Operating Plan
777	Part IV	Acknowledge that any other documents specified by the permit or Executive Director will be maintained in the site operating record	Acknowledgement	330.125(b)(12)	Yes	Sec 2		Site Operating Plan
778	Part IV	Acknowledge that the site operating record will maintain all required documents in an organized format and in accordance with the time frames specified in 330.125(b), and will be furnished upon request to the executive director and must be made available for inspection by the executive director	Acknowledgement	330.125(c)	Yes	Sec 2		Site Operating Plan
779	Part IV	Indicate that the operating record will be maintained for life & post-closure period of the facility	Required	330.125(d)	Yes	Sec 2.4		Site Operating Plan
780	Part IV	Indicate that all training records will be maintained in accordance with 30 TAC §335.586(d) & (e)	Required	330.125(e)	Yes	Sec 2.5		Site Operating Plan
781	Part IV	Indicate that personnel operating licenses issued under 30 TAC Chapter 30, Subchapter F will be maintained in the site operating record	Required	330.125(f)	Yes	Sec. 2.5		Site Operating Plan
782	Part IV	Indicate that the executive director may set alternative schedule for recordkeeping & notification	Required	330.125(g)	Yes	Sec. 2.6		Site Operating Plan
783	Part IV	Indicate that records documenting the annual waste acceptance rate will be maintained in the site operating record	Required	330.125(h)	Yes	Sec. 2.7		Site Operating Plan
784	Part IV	Indicate that documentation of waste acceptance rate will include maintaining annual & quarterly waste summary reports required by 30 TAC §330.675	Required	330.125(h)	Yes	Sec. 2.7		Site Operating Plan
785	Part IV	Indicate that the facility will provide the reports required by 30 TAC §330.675 to the Executive Director	Required	330.675	Yes	Sec. 2.7		Site Operating Plan
786	Part IV	Indicate that if the annual waste acceptance rate exceeds the rate estimated in the landfill permit application and the waste increase is not due to a temporary occurrence, the owner or operator shall file an application to modify the permit application, including the revised estimated waste acceptance rate, in accordance with 30 TAC §305.70(k) of this title (relating to Municipal Solid Waste Permit and Registration Modifications), within 90 days of the exceedance as established by the sum of the previous four quarterly summary reports.	Required	330.125(h)	Yes	Sec. 2.7		Site Operating Plan
787	Part IV	Provide a description of the function & minimum qualifications of key personnel	Required	330.127(1)	Yes	Sec. 3		Site Operating Plan
788	Part IV	Provide a description of the minimum number, size, type and function of the equipment to be utilized at the facility	Required	330.127(2)	Yes	Sec. 4		Site Operating Plan

789	Part IV	Provide a description of the provisions for back-up equipment during periods of breakdown or maintenance of this listed equipment	Required	330.127(2)	Yes	Sec. 4		Site Operating Plan
790	Part IV	Provide general instructions for personnel concerning operational requirements	Required	330.127(3)	Yes	Sec. 3		Site Operating Plan
791	Part IV	Identify all applicable training requirements under 30 TAC §335.586(a) & (c) that must be followed	Required	330.127(4)	Yes	Sec. 3		Site Operating Plan
792	Part IV	Provide procedures for the detection and prevention of the disposal of prohibited wastes, including hazardous waste & PCB wastes	Required	330.127(5)	Yes	Sec. 5		Site Operating Plan
793	Part IV	Provide procedures for random inspections of incoming loads including the inspection of compactor vehicles.	Required	330.127(5)(A)	Yes	Sec. 5.2		Site Operating Plan
794	Part IV	Indicate that trained staff shall observe each load that is disposed at the landfill	Required	330.127(5)(A)	Yes	Sec. 5.2		Site Operating Plan
795	Part IV	Indicate that records will be kept of all waste load inspections	Required	330.127(5)(B)	Yes	Sec. 5.3		Site Operating Plan
796	Part IV	Indicate that facility personnel inspecting or observing loads must have training to recognize prohibited waste	Required	330.127(5)(C)	Yes	Sec. 5.4		Site Operating Plan
797	Part IV	Indicate that notification will be provide to executive director and to any local pollution agency with jurisdiction that has requested to be notified, of the receipt or disposal of hazardous or PCB waste	Required	330.127(5)(D)	Yes	Sec. 5.5		Site Operating Plan
798	Part IV	Provide provisions for remediation of hazardous or PCB waste that has been received for disposal at the facility	Required	330.127(5)(E)	Yes	Sec. 5.6		Site Operating Plan
799	Part IV	Indicate that the facility will maintain a source of earthen material available to extinguish fires, sized to cover waste not covered with six inches of earthen material within one hour of detecting a fire.	Required	330.129	Yes	Sec. 7.1		Site Operating Plan
800	Part IV	Provide a demonstration, including calculations, showing that sufficient on-site equipment and earthen material stockpile is available to cover any waste not already covered with six inches of earthen material within one hour of detecting a fire.	Required	330.129	Yes	Sec. 7.2		Site Operating Plan
801	Part IV	Indicate that sufficient on-site equipment must be provided to place a six-inch layer of earthen material to cover any waste not already covered with six inches of earthen material within one hour of detecting a fire	Required	330.129	Yes	Sec. 7.2		Site Operating Plan
802	Part IV	Provide fire protection standards & training procedures	Required	330.129	Yes	Sec. 7.4		Site Operating Plan
803	Part IV	Identify other activities requiring fire protection and provide protection measures specific to each individual activity	Required	330.129	Yes	Sec. 7.3		Site Operating Plan
804	Part IV	Indicate that if a fire occurs that is not extinguished within ten minutes of detection, the commission's regional office must be contacted immediately after detection, but no later than four hours by telephone, and in writing within 14 days with a description of the fire and the resulting response.	Required	330.129	Yes	Sec. 7.3		Site Operating Plan
805	Part IV	Provide provisions for access control to the facility	Required	330.131	Yes	Sec. 8.1		Site Operating Plan
806	Part IV	Provide an inspection and maintenance schedule for access control features	Required	330.131	Yes	Sec. 8.1.3		Site Operating Plan
807	Part IV	Indicate that the commission's regional office, and any local pollution agency with jurisdiction that has requested to be notified, must be notified of the breach within 24 hours of detection. Indicate that the breach must be temporarily repaired within 24 hours of detection and must be permanently repaired by the time specified to the commission's regional office when it was reported in the initial breach report. Indicate that if a permanent repair can be made within eight hours of detection, no notice to the commission's regional office is required.	Required	330.131	Yes	Sec. 8.1.3		Site Operating Plan
808	Part IV	Identify all unloading areas and specify maximum size of each unloading area.	Required	330.133(a)	Yes	Sec. 8.2		Site Operating Plan
809	Part IV	Indicate that trained staff will monitor incoming loads at each unloading area	Required	330.133(a)	Yes	Sec. 8.2		Site Operating Plan
810	Part IV	Indicate that the unloading of waste in unauthorized areas is prohibited.	Required	330.133(b)	Yes	Sec. 8.2		Site Operating Plan
817	Part IV	At Type IV landfills, only brush, C&D, & rubbish free of putrescible and household waste are allowed	Informational	330.133(e)		-		Site Operating Plan

818	Part IV	Submit a written procedure that will ensure that containers with any putrescible wastes are not accepted at the landfill	Required	330.133(f)(1)	Yes	-		Site Operating Plan
819	Part IV	Submit a written procedure for the immediate removal of any putrescible wastes and other prohibited waste disposed of at the landfill	Required	330.133(f)(2)	Yes	-		Site Operating Plan
820	Part IV	Provide a procedure for transporter certifications that will be retained at the landfill and available for inspection by the executive director	Required	330.133(f)(3)	Yes	-		Site Operating Plan
821	Part IV	Acknowledge that Type IV landfills may only accept waste in enclosed containers or enclosed vehicles in accordance with 30 TAC §330.169	Acknowledgement	330.133(g)	Yes	-		Site Operating Plan
822	Part IV	Provide a description of wastes that are not allowed and state the landfill's requirements for transporters	Required	330.133(h)	Yes	-		Site Operating Plan
823	Part IV	Specify waste acceptance and operating hours	Required	330.135(a)	Yes	Sec. 8.3		Site Operating Plan
824	Part IV	The waste acceptance hours of a municipal solid waste facility may be any time between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, unless otherwise approved in the authorization for the facility. Waste acceptance hours within the 7:00 a.m. to 7:00 p.m. weekday span do not require other specific approval. Transportation of materials and heavy equipment operation must not be conducted between the hours of 9:00 p.m. to 5:00 a.m., unless otherwise approved in the authorization for the facility. Operating hours for other activities do not require specific approval.	Informational	330.135(a)		-		Site Operating Plan
825	Part IV	Specify alternative operating hours of up to five days in a calendar year to accommodate special occasions, special purpose events, holidays, or other special occurrences	Required If Requested	330.135(b)	Yes	-		Site Operating Plan
826	Part IV	Indicate that the facility will record in the site operating record the dates, times, and duration when any alternative operating hours are utilized	Required	330.135(d)	Yes	Sec. 8.3		Site Operating Plan
827	Part IV	Indicate that a sign measuring at least 4' X 4' with letters at least three inches in height must be displayed at all entrances.	Required	330.137	Yes	Sec. 8.4		Site Operating Plan
828	Part IV	Indicate that information on the sign must include the facility type, hours and days of operation, an emergency 24hr. Contact number, local fire department number & permit number	Required	330.137	Yes	Sec. 8.4		Site Operating Plan
829	Part IV	Indicate that windblown waste and litter at the working face must be controlled by using engineering methods or measures, including portable panels, temporary fencing, and perimeter fencing or comparable engineering controls.	Required	330.139(1)	Yes	Sec. 8.5		Site Operating Plan
830	Part IV	Provide a plan for daily management of litter scattered throughout the site, along fences and access roads, and at the gate	Required	330.139(2)	Yes	Sec. 8.5		Site Operating Plan
831	Part IV	Indicate that no unloading, storage, disposal, or processing operations will occur within easements, buffer zones, or rights-of-way that crosses the site, and that no disposal shall occur within 25 feet of the center line of any utility line or pipeline easement, unless otherwise authorized by the executive director	Required	330.141(a)	Yes	Sec. 8.6		Site Operating Plan
832	Part IV	Indicate that all pipeline and utility easements must be clearly marked with posts that extend at least six feet above ground level, spaced at intervals no greater than 300 feet	Required	330.141(a)	Yes	Sec. 8.6		Site Operating Plan
833	Part IV	Indicate that a minimum separating distance shall be maintained between solid waste processing and disposal activities within and adjacent to the facility boundary on property owned or controlled by the owner or operator as determined by the requirements of 30 TAC §330.543. The buffer zone must provide for safe passage for fire-fighting and other emergency vehicles.	Required	330.141(b)	Yes	Sec. 8.6		Site Operating Plan
834	Part IV	Indicate that the visibility of all required landfill markers and the benchmark must be maintained	Required	330.143(a)	Yes	Sec. 8.7		Site Operating Plan

835	Part IV	Indicate that landfill markers must be inspected on a monthly basis and records of all inspections placed in the site operating record	Required	330.143(a)	Yes	Sec. 8.7		Site Operating Plan
836	Part IV	Indicate that all markers must be replaced within 15 days of removal, destruction, or a determination that the markers do not meet regulatory requirements.	Required	330.143(a)	Yes	Sec. 8.7		Site Operating Plan
837	Part IV	Landfill markers must be installed to clearly mark significant features and that the executive director may modify specific marker requirements to accommodate unique site-specific conditions.	Required	330.143(b)	Yes	Sec. 8.7		Site Operating Plan
838	Part IV	Indicate that markers must be posts extending 6ft. above ground and not obscured	Required	330.143(b)(1)	Yes	Sec. 8.7		Site Operating Plan
839	Part IV	Provide the color coding for on-site markers that is in compliance with 330.143(b)(1)(A) - (F)	Required	330.143(b)(1)(A) - (F)	Yes	Sec. 8.7		Site Operating Plan
840	Part IV	Indicate that boundary markers must be placed at each corner of the facility and along boundary line at intervals not greater than 300 ft.	Required	330.143(b)(2)	Yes	Sec. 8.7		Site Operating Plan
841	Part IV	Indicate that markers identifying the buffer zone will placed along each buffer zone boundary at intervals of no greater than 300 ft.	Required	330.143(b)(3)	Yes	Sec. 8.7		Site Operating Plan
842	Part IV	Indicate that easement and right-of-way markers must be placed along the centerline of an easement and along the boundary of a right-of-way at each corner within the facility and at the intersection of the facility boundary	Required	330.143(b)(4)	Yes	Sec. 8.7		Site Operating Plan
843	Part IV	Indicate that a landfill grid system must be installed unless written approval from the executive director has been received.	Required	330.143(b)(5)	Yes	Sec. 8.7		Site Operating Plan
844	Part IV	Indicate that grid system will encompass at least the area expected to be filled within the next three-year period and that marks must be spaced no greater than 100 feet apart measured along perpendicular lines and that where markers cannot be seen from opposite boundaries, intermediate markers must be installed, where feasible.	Required	330.143(b)(5)	Yes	Sec. 8.7		Site Operating Plan
845	Part IV	Indicate that soil liner or geomembrane markers will be placed so that areas under evaluation can be determined & maintained through construction & operation period.	Required	330.143(b)(6)	Yes	Sec. 8.7		Site Operating Plan
846	Part IV	Indicate that the location of the liner markers must be tied into the landfill grid system and must be reported on each soil liner evaluation report or geomembrane liner evaluation report submitted	Required	330.143(b)(6)	Yes	Sec. 8.7		Site Operating Plan
847	Part IV	Indicate that liner area markers must not be placed inside constructed areas.	Required	330.143(b)(6)	Yes	Sec. 8.7		Site Operating Plan
848	Part IV	Indicate that flood protection markers must be installed for any area within a solid waste disposal facility that is within the 100-year floodplain and that areas subject to flooding must be clearly marked by means of permanent posts not more than 300 feet apart or closer if necessary to retain visual continuity.	Required	330.143(b)(7)	Yes	Sec. 8.7		Site Operating Plan
849	Part IV	Indicate that a permanent benchmark must be established and accessible and must be a bronze survey marker in concrete stamped with elevation and date stamped on it and that the benchmark must be surveyed from a known United States Coast and Geodetic Survey benchmark or other reliable benchmark	Required	330.143(b)(8)	Yes	Sec. 8.7		Site Operating Plan
850	Part IV	Indicate that the facility owner or operator shall take steps to encourage that vehicles hauling waste to the facility are enclosed or provided with a tarpaulin, net, or other means to effectively secure the load in order to prevent the escape of any part of the load by blowing or spilling.	Required	330.145	Yes	Sec. 8.8		Site Operating Plan
851	Part IV	Indicate that the owner or operator shall take actions such as posting signs, reporting offenders to proper law enforcement officers, adding surcharges, or similar measures.	Required	330.145	Yes	Sec. 8.8		Site Operating Plan

852	Part IV	Indicate that on days when the facility is in operation, the owner or operator shall be responsible for at least once per day cleanup of waste materials spilled along and within the right-of-way of public access roads serving the facility for a distance of two miles in either direction from any entrances used for the delivery of waste to the facility.	Required	330.145		Sec. 8.8		Site Operating Plan
853	Part IV	Indicate that the facility operator will consult with the Texas Department of Transportation, county, and/or local governments with maintenance authority over the roads concerning cleanup of public access roads and rights-of-way	Required	330.145	Yes	Sec. 8.8		Site Operating Plan
854	Part IV	Indicate that large, heavy, bulky items that cannot be incorporated in the regular spreading, compaction, and covering operations at landfill should be recycled and that a large item salvage area should be established & items removed often enough to prevent nuisance or discharge	Required	330.147(a)	Yes	Sec. 8.9		Site Operating Plan
855	Part IV	Indicate the items that can be classified as large, heavy, or bulky. This can include, but is not limited to, white goods (household appliances), air conditioner units, metal tanks, large metal pieces, and automobiles.	Required	330.147(b)	Yes	Sec. 8,9		Site Operating Plan
856	Part IV	Indicate that refrigerators, freezer, air conditioners, and any other items containing CFCs must be handled in accordance with 40 CFR 82.156(f)	Required	330.147(c)	Yes	Sec. 8,9		Site Operating Plan
857	Part IV	Provide an odor management plan that addresses the sources of odors and includes general instructions to control odors or the sources of odors. The plans for odor management must include the identification of wastes that require special attention such as septage, grease trap waste, dead animals, and leachate	Required	330.149	Yes	Sec. 8.10		Site Operating Plan
858	Part IV	Provide procedures for the control of on-site populations of disease vectors including the use of proper compaction and daily cover procedures, and the use of other approved methods when needed. The general methods and performance-based frequencies for disease vector control must be specified	Required	330.151	Yes	Sec. 8.10		Site Operating Plan
859	Part IV	Provide a description for all weather access roads from the facility to public roads and within the facility. Indicate that tracked mud & debris on public roadway removed once a day on days when mud and associated debris are being tracked onto the public roadway. Provide a description of the specific method for controlling mud & debris	Required	330.153(a)	Yes	Sec. 8.12		Site Operating Plan
860	Part IV	Indicate that tracked mud & associated debris on public roadway removed once a day on days when mud and associated debris are being tracked onto the public roadway.	Required	330.153(a)	Yes	Sec. 8.12		Site Operating Plan
861	Part IV	Provide a description of the specific method for controlling mud & debris	Required	330.153(a)	Yes	Sec. 8.12		Site Operating Plan
862	Part IV	Specify method of dust control or suppression	Required	330.153(b)	Yes	Sec. 8.12		Site Operating Plan
863	Part IV	Provide a description, including frequency, of how all on site roadways will be maintained to minimize depressions, ruts, and potholes	Required	330.153(c)	Yes	Sec. 8.12		Site Operating Plan
864	Part IV	Indicate that litter and any other debris must be picked up at least daily and taken to the working face for disposal	Required	330.153(c)	Yes	Sec. 8.12		Site Operating Plan
865	Part IV	Indicate that salvaging operations must not interfere with prompt sanitary disposal of solid waste or to create public health nuisances.	Required	330.155	Yes	Sec. 8.13		Site Operating Plan
866	Part IV	Indicate that salvaged items will be removed often enough to prevent becoming a nuisance, preclude the discharge of any pollutants, or to prevent an excessive accumulation of material.	Required	330.155	Yes	Sec. 8.13		Site Operating Plan
867	Part IV	Indicate that Class 1 industrial and other special wastes received at the disposal facility must not be salvaged.	Required	330.155	Yes	Sec. 8.13		Site Operating Plan
868	Part IV	Indicate that pesticide, fungicide, rodenticide, and herbicide containers must not be salvaged unless being salvaged through a state-supported recycling program.	Required	330.155	Yes	Sec. 8.13		Site Operating Plan
869	Part IV	Indicate that scavenging is prohibited.	Required	330.155	Yes	Sec. 8.13		Site Operating Plan

870	Part IV	Specify criteria for the protection of identified endangered species	Required	330.157	Yes	Sec. 8.14		Site Operating Plan
871	Part IV	Indicate that landfill gas report and submittals must be maintained in operating record	Required	330.159		Sec. 8.15		Site Operating Plan
872	Part IV	Indicate that within 30 days of discovery, notice will be provide to the executive director of the location of any and all existing or abandoned water wells, oil wells, natural gas wells or other wells situated within the facility.	Required	330.161(a)-(b)	Yes	Sec. 8.16		Site Operating Plan
873	Part IV	Indicate that within 30 days of discovery, the facility will provide the executive director with notification and written certification that the water well has been capped, plugged, and closed in accordance with all applicable rules and regulations of the commission or other state agency	Required	330.161(a)	Yes	Sec. 8.16		Site Operating Plan
875	Part IV	Indicate that the executive director may approve any well used to supply water at the facility that is located within the permit boundary if it is determined that the well is outside the waste footprint, it is not impacted by landfill operations, it can be demonstrated that well design and installation will prevent any cross-contamination from the waste management unit to the water well production zone and between any water bearing zones, and an approved sampling plan to include frequency and parameters is in place.	Required	330.161(a)	Yes	Sec. 8.16		Site Operating Plan
876	Part IV	Indicate that any water or other type of wells under the jurisdiction of the commission must be plugged in accordance with all applicable state requirements or additional requirements imposed by the executive director and that a copy of the well plugging report required to be submitted to the appropriate state agency and must also be submitted to the executive director within 30 days after the well has been plugged.	Required	330.161(c)	Yes	Sec. 8.16		Site Operating Plan
877	Part IV	Indicate that any proposed changes to the liner installation plan as a result of any well abandonment will be submit for executive director approval as permit modification	Required	330.161(d)	Yes	Sec. 8.16		Site Operating Plan
878	Part IV	Specify the methods of compaction of waste	Required	330.163	Yes	Sec. 8.17		Site Operating Plan
879	Part IV	Indicate that the landfill must apply six inches of well-compacted earthen material not previously mixed with garbage, rubbish, or other solid waste at the end of each operating day to control disease vectors, fires, odors, windblown litter or waste, and scavenging, unless the executive director requires a more frequent interval.	Required	330.165(a)	Yes	Sec. 8.18.2		Site Operating Plan
880	Part IV	Indicate that the landfill must apply six inches of well-compacted earthen material not previously mixed with garbage, rubbish, or other solid waste at least weekly to control disease vectors, fires, odors, windblown litter or waste, and scavenging, unless the executive director requires a more frequent interval.	Required	330.165(b)	Yes			Site Operating Plan
881	Part IV	Landfills that operate on a 24-hour basis must cover the working face or active disposal area at least once every 24 hours. The executive director may require a chemical analysis of any landfill cover material. Runoff from areas that have intact daily cover is not considered as having come into contact with the working face or leachate.	Informational	330.165(a)				Site Operating Plan

882	Part IV	Indicate that all areas that have received waste but will be inactive for longer than 180 days must provide intermediate or final cover.	Required	330.165(c)	Yes	Sec. 8.18.3		Site Operating Plan
883	Part IV	Indicate that all intermediate cover will be six inches of suitable earthen material that is capable of sustaining native plant growth and must be seeded or sodded following its application in order to control erosion, or must be a material approved by the executive director that will otherwise control erosion. This intermediate cover must not be less than 12 inches of suitable earthen material. The intermediate cover must be graded to prevent ponding of water. Plant growth or other erosion control features must be maintained. Runoff from areas that have intact intermediate cover is not considered as having come into contact with the working face or leachate.	Required	330.165(c)	Yes	Sec. 8.18.3		Site Operating Plan
884	Part IV	Indicate that alternative daily cover may only be allowed by a temporary authorization under §305.62(k)(1)(A) of this title (relating to Municipal Solid Waste Permit and Registration Modifications) followed by a major amendment or a modification in accordance with §305.70(k)(1) of this title. Use of alternative daily cover is limited to a 24-hour period after which either waste or daily cover as defined in subsection (a) of this section must be placed.	Required If Requested	330.165(d)	Yes	-		Site Operating Plan
885	Part IV	Provide a alternative daily cover operating plan that includes the information required by 30 TAC §330.165(d)(1)(A) - (E)	Required If Requested	330.165(d)(1)(A)-(E)	Yes	-		Site Operating Plan
886	Part IV	Indicate that status reports on the alternative daily cover must be submitted on a two-month basis to the executive director during the temporary authorization period describing the effectiveness of the alternative material, any problems that may have occurred, and corrective actions required as a result of such problems.	Required If Requested	330.165(d)(2)	Yes	-		Site Operating Plan
887	Part IV	Indicate that alternative daily cover must not be allowed when the landfill is closed for a period greater than 24 hours, unless the executive director approves an alternative length of time	Required If Requested	330.165(d)(3)	Yes	-		Site Operating Plan
888	Part IV	Indicate that the constituents of concern in contaminated soils used as shall not exceed the concentrations listed in Table 1, Constituents of Concern and Their Maximum Leachable Concentrations, located in 30 TAC §335.521(a)(1)	Required If Requested	330.165(d)(4)	Yes	-		Site Operating Plan
889	Part IV	Indicate that contaminated soils used as ADC will not contain PCB waste subject to 40 CFR Part 761	Required If Requested	330.165(d)(4)(A)	Yes	-		Site Operating Plan
890	Part IV	Indicate that contaminated soils used as ADC will not contain TPH concentrations greater that 1,500 ppm unless ED approves a suitability demonstration	Required If Requested	330.165(d)(4)(B)	Yes	-		Site Operating Plan
891	Part IV	ADC must not exceed constituent limits imposed on waste disposed at the facility	Required If Requested	330.165(d)(5)	Yes	-		Site Operating Plan
892	Part IV	Indicate that the executive director may require the facility to test runoff from areas that have alternative daily cover for compliance with Texas Pollutant Discharge Elimination System storm water discharge limits or manage the runoff as contaminated water.	Required If Requested	330.165(d)(6)	Yes	-		Site Operating Plan
893	Part IV	Provide a demonstration if there are any extreme seasonal climatic conditions that make meeting requirements of 30 TAC §330.165(a) - (d) impractical. Based on this demonstration the executive director may grant a temporary waiver from the requirements of subsections 30 TAC §330.165(a) - (d)	Required If Requested	330.165(e)	Yes	-		Site Operating Plan
894	Part IV	Indicate that final cover for the landfill must be in accordance with the site closure plan and Subchapter K of Chapter 330.	Required	330.165(f)	Yes	Sec. 8.18.6		Site Operating Plan
904	Part IV	indicate that enclosed containers or enclosed vehicles must only be accepted at their designated time and on the specified day in accordance with this section, commission permits, or other orders of the commission.	Required If Requested	330.169(1)(C)	Yes	-		Site Operating Plan

905	Part IV	Indicate that a commission inspector shall be on site and shall witness the unloading process ensure that no putrescible waste or sehold waste is present and that any waste considered non-allowable by the inspector must be removed from the working face and subsequently from the facility in accordance with 30 TAC §330.133	Required If Requested	330.169(1)(D)	Y	-		Site Operating Plan
906	Part IV	Indicate that each transporter delivering waste in enclosed containers or enclosed vehicles must, prior to discharging the load, provide to the landfill operator a transporter trip ticket for the route being delivered. Trip tickets must be maintained as part of the operating record.	Required If Requested	330.169(1)(E)	Yes	-		Site Operating Plan
907	Part IV	Stationary compactors permitted in accordance with 30 TAC §330.7 of this title (relating to Permit Required) and municipalities having transporter routes permitted in accordance with 30 TAC §330.7 of this title are exempt from the requirements of 30 TAC §330.169(1)-(3)	Informational	330.169(4)		-		Site Operating Plan
908	Part IV	Indicate that the landfill operator must obtain from the transporter a hauler trip ticket for a municipal transporter route or stationary compactors, as appropriate, prior to allowing discharge of the material at the landfill. These trip tickets must be maintained as a part of the operating record.	Required	330.169(4)	Yes	Sec. 8.20		Site Operating Plan
909	Part IV	Indicate that the landfill may accept special wastes consistent with the limitations established in 30 TAC §330.5(a)(2) of this title (relating to Classification of Municipal Solid Waste Facilities) and the waste acceptance plan required by 30 TAC §330.61(b) of this title (relating to Contents of Part II of the Application).	Required	330.171(a)	Yes	Sec. 8.20, App. IVB		Site Operating Plan
910	Part IV	Indicate that special waste not identified in 30 TAC §330.171(c)-(d) require prior written approval from the executive director.	Required	330.171(b)	Yes	Sec. 8.20		Site Operating Plan
911	Part IV	Approvals will be waste-specific and/or site-specific and will be granted only to appropriate facilities operating in compliance with this chapter.	Required	330.171(b)(1)	Yes	Sec. 8.20		Site Operating Plan
912	Part IV	Indicate that requests for approval to accept special wastes must be submitted by the generator to the executive director or to a facility with an approved plan	Required	330.171(b)(2)	Yes	Sec. 8.20		Site Operating Plan
913	Part IV	Indicate that requests for approval to accept special wastes must include a description of chemical & physical characteristics of waste and a statement as to whether or not each waste is a Class 1 industrial waste as defined in §330.3 of this title, and the quantity and rate at which each waste is produced and/or the expected frequency of disposal	Required	330.171(b)(2)(A)	Yes	Sec. 8.20		Site Operating Plan
914	Part IV	Indicate that a hazardous waste determination as required by 30 TAC §335.6 will be included for all Class 1 industrial waste	Required	330.171(b)(2)(B)	Yes	App IVB Sec. 2.3		Site Operating Plan
915	Part IV	Indicate that all requests for approval to accept special wastes must that include an operational plan containing the proposed procedures for handling each waste and listing required protective equipment for operating personnel and on-site emergency equipment	Required	330.171(b)(2)(C)	Yes	App IVB Sec 2.5		Site Operating Plan
916	Part IV	Indicate that all requests for approval to accept special wastes must that include a contingency plan outlining responsibility for containment and cleanup of any accidental spills occurring during the delivery and/or disposal operation	Required	330.171(b)(2)(D)	Yes	App IVB Sec 2.5		Site Operating Plan
918	Part IV	Indicate that soils contaminated by petroleum products, crude oils, or chemicals in concentrations of greater than 1,500 milligram per kilogram (mg/kg) total petroleum hydrocarbons; or contaminated by constituents of concern that exceed the concentrations listed in Table 1, Constituents of Concern and Their Maximum Leachable Concentrations in 30 TAC §335.521(a)(1) of this title (relating to Appendices) must be disposed in dedicated cells that meet the requirements of 30 TAC §330.331(e) of this title (relating to Design	Required	330.171(b)(4)	Yes	App. IVB Sec 1.4		Site Operating Plan

919	Part IV	Indicate that the executive director may authorize the receipt of special waste with a written concurrence from the facility, however, the facility operator is not required to accept the waste.	Required	330.171(b)(5)	[illegible]	App. IVB Sec 1.4		Site Operating Plan
920	Part IV	Indicate that the executive director may revoke an authorization to accept special waste if the owner or operator does not maintain compliance with these rules or conditions imposed in the authorization to accept special waste.	Required	330.171(b)(6)	Yes	App. IVB Sec 1.4		Site Operating Plan
921	Part IV	Indicate that special waste listed under 330.171(c) may be accepted if managed per the handling procedures for each waste identified in 330.171(c)(1) - (7)	Required	330.171(c)	Yes	App. IVB Sec 1.4		Site Operating Plan
922	Part IV	Indicate that used oil filters from internal combustion engines must not be intentionally and knowingly accepted for disposal at landfills permitted under this chapter except as provided in 330.171(d)(1) & (2)	Required	330.171(d)	Yes	App. IVB Sec 1.4		Site Operating Plan
923	Part IV	Indicate that Class 1 industrial solid waste shall not be disposed in the landfill	Required	330.173(a)	Yes	App IVB Sec. 2.3		Site Operating Plan
924	Part IV	Indicate that wastes that are Class 1 only because of asbestos content may be accepted at any Type I or Type IAE landfill that is authorized to accept regulated asbestos-containing material (RACM). Authorization to accept this waste is implied in the authorization to accept RACM unless the acceptance of industrial wastes is prohibited by the permit. All Class 1 industrial asbestos wastes will be manifested and the owner or operator of the landfill facility shall comply with the requirements of 30 TAC §330.173(g) & (h)	Required	330.173(c)	Yes	App IVB Sec 1.3		Site Operating Plan
925	Part IV	Indicate that the operator may not accept Class 1 without written approval and a manifest per 30 TAC §335.10	Required	330.173(b)	Yes	App IVB Sec 1.3		Site Operating Plan
926	Part IV	Indicate that requests for authorization to accept Class 1 solid wastes must be submitted in writing to the executive director	Required	330.173(d)	Yes	App IVB Sec 1.3		Site Operating Plan
927	Part IV	Indicate that a request to accept Class 1 waste must include a description of chemical & physical characteristics of the waste per 30 TAC §335.587, a hazardous waste statement, and the quantity, rate, and frequency of disposal	Required	330.173(d)(1)	Yes	App IVB Sec 1.3		Site Operating Plan
928	Part IV	Indicate that a request to accept Class 1 waste must include operating plan containing handling procedures, personnel protective & on-site emergency equipment	Required	330.173(d)(2)	Yes	App IVB Sec 1.3		Site Operating Plan
929	Part IV	Indicate that a request to accept Class 1 waste must include a written contingency plan meeting the requirements of 30 TAC §335.589	Required	330.173(d)(3)	Yes	App IVB Sec 1.3		Site Operating Plan
930	Part IV	Unless specifically authorized by the facility permit, a Type I or Type IAE landfill facility permitted after October 9, 1993, may not accept Class 1 industrial solid wastes in excess of 20% of the total amount of waste (not including Class 1 wastes) accepted during the current or previous year. The amount of waste may be determined by volume or by weight, but the same unit of measure must be used for each year, unless a variance is authorized by the executive director.	Informational	330.173(e)		-		Site Operating Plan
931	Part IV	Indicate that any authorization to accept Class 1 waste is subject to the site operating in compliance with 30 TAC §330.173 and any specific conditions required under any letter(s) of authorization. Failure to operate the site in compliance with 30 TAC §330.173 or any special conditions imposed by the executive director may result in revocation of the authorization to accept a Class 1 waste.	Required If Requested	330.173(f)	Yes	-		Site Operating Plan
932	Part IV	Indicate that Class 1 waste must be accompanied by a manifest that must be signed by the operator and copies retained for 3 yrs.	Required If Requested	330.173(g)	Yes	-		Site Operating Plan
933	Part IV	Indicate that a Class 1 waste acceptance report must be submitted by 25th of the month	Required If Requested	330.173(h)	Yes	-		Site Operating Plan

934	Part IV	Indicate that the facility will accepted Class 2 waste provided the acceptance of this waste [illegible]s not interfere with facility operation and its [illegible]eptance is in accordance with any applicable limitations in §330.5(a)(2) and the waste acceptance plan required by §330.61(b)	Required	330.173(i)		App IVB Sec 1.3		Site Operating Plan
935	Part IV	Indicate that the facility will accepted Class 3 waste provided the acceptance of this waste does not interfere with facility operation	Required	330.173(j)	Yes	App IVB Sec 1.3		Site Operating Plan
936	Part IV	Indicate that the executive director may require visual screening	Required	330.175	Yes	App IVB Sec 1.3		Site Operating Plan
937	Part IV	Provide procedures for leachate or gas condensate recirculation	Required If Requested	330.177	Yes	-		Site Operating Plan
938	Part IV	If facility manages Class 1, then it shall comply with 30 TAC §330.179(a)(1)-(6)	Informational	330.179(a)		-		Site Operating Plan
939	Part IV	Provide a schedule for inspecting monitoring equipment, safety and emergency equipment, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards	Required If Requested	335.585(b)	Yes	-		Site Operating Plan
940	Part IV	Indicate that the inspection schedule will be maintained at facility	Required If Requested	335.585(b)(1)	Yes	-		Site Operating Plan
941	Part IV	Specify the type of problems to be looked for during Class 1 waste inspection	Required If Requested	335.585(b)(2)	Yes	-		Site Operating Plan
942	Part IV	Specify the frequency of inspections that is consistent with 40 CFR 264.303, and indicate that unloading areas will be inspected daily	Required If Requested	335.585(b)(3)	Yes	-		Site Operating Plan
943	Part IV	Indicate that the facility must remedy any deterioration or malfunction of equipment or structures that the inspection reveals on a schedule that ensures that the problem does not lead to an environmental or human health hazard. Indicate that where a hazard is imminent or has already occurred, remedial action must be taken immediately.	Required If Requested	335.585(c)	Yes	-		Site Operating Plan
944	Part IV	Indicate that the facility will maintain inspection logs that include date/time of inspection, inspectors name, observations made, date & nature of repairs	Required If Requested	335.585(d)	Yes	-		Site Operating Plan
945	Part IV	Indicate that facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this 30 TAC §330.586	Required If Requested	335.586(a)	Yes	-		Site Operating Plan
946	Part IV	Indicate that training will provided by a person trained in waste management procedures, and must include instruction that teaches facility personnel waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed	Required If Requested	335.586(a)(1)	Yes	-		Site Operating Plan
947	Part IV	Indicate that the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems	Required If Requested	335.586(a)(2)	Yes	-		Site Operating Plan
948	Part IV	Provide procedures for using, inspecting, repairing, & replacing emergency & monitoring equipment; communications or alarm systems; response to fires or explosions; response to GW contamination; & shutdown of operations	Required If Requested	335.586(a)(2)(A)-(E)	Yes	-		Site Operating Plan
949	Part IV	Indicate that personnel training must be completed within 6 months	Required If Requested	335.586(b)	Yes	-		Site Operating Plan
950	Part IV	Indicate that facility personnel must take part in an annual review of initial training	Required If Requested	335.586(c)	Yes	-		Site Operating Plan
951	Part IV	Indicate that facility will maintain personnel records required in 335.586 in the site operating record	Required If Requested	335.586(d)	Yes	-		Site Operating Plan
952	Part IV	Indicate that facility will record title of each position & employee name in that position, job description, description of type & amount of training for each position, records of training & job experience	Required If Requested	335.586(d)(1) - (4)	Yes	-		Site Operating Plan
953	Part IV	indicate that training records on current personnel must be kept until closure of the facility and training records on former employees must be kept for at least three years from the date the employee last worked at the facility	Required If Requested	335.586(e)	Yes	-		Site Operating Plan
954	Part IV	Indicate that the facility will follow the waste [illegible]	Required If Requested	335.587(a)	Yes	-		Site Operating Plan

955	Part IV	Provide procedures in compliance with 335.587 to obtain chemical & physical analysis of representative samples	Required If Requested	335.587(a)(1)	Yes	-		Site Operating Plan
956	Part IV	Indicate that a waste generator's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with this paragraph. Indicate that the facility may arrange for the generator of the waste to supply the information required by this paragraph. Indicate that if the generator does not supply the information, and the owner or operator chooses to accept a waste, the owner or operator is responsible for obtaining the information required to comply with this section.	Required If Requested	335.587(a)(1)(A)-(B)	Yes	-		Site Operating Plan
957	Part IV	Indicate that the waste analysis may include data developed under Subchapter R of Chapter 335 (relating to Waste Classification), and existing published or documented data on a waste or on such waste generated from similar processes.	Required If Requested	335.587(a)(2)	Yes	-		Site Operating Plan
958	Part IV	Indicate that waste analysis must be repeated as necessary to ensure that it is accurate and up-to-date, when the owner or operator is notified, or has reason to believe, that the process or operation generating the waste has changed and when the results of the inspection required in 335.587 indicate that the waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.	Required If Requested	335.587(a)(3)	Yes	-		Site Operating Plan
959	Part IV	Indicate that the owner or operator shall inspect and, if necessary, analyze each waste received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper	Required If Requested	335.587(a)(4)	Yes	-		Site Operating Plan
960	Part IV	Provide a waste analysis plan that describes the procedures which the owner or operator will carry out to comply with 335.587(b)	Required If Requested	335.587(b)	Yes	-		Site Operating Plan
961	Part IV	Provide procedures to prevent the ignition or reaction of wastes	Required If Requested	335.588(a)	Yes	-		Site Operating Plan
962	Part IV	Indicate that the facility will take precautions to prevent, extreme heat or pressure, fire or explosions, violent reactions, toxic mist, dust, fumes, gases, flammable fumes & gases, damage to devices or facility, or threaten human health or the environment	Required If Requested	335.588(b)(1)-(5)	Yes	-		Site Operating Plan
963	Part IV	Indicate that the facility will maintain documentation of compliance with 335.588(a)-(b)	Required If Requested	335.588(c)	Yes	-		Site Operating Plan
964	Part IV	Provide a contingency plan that is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of waste or constituents of such waste to air, soil, or surface water	Required If Requested	335.589(a)(1) & (2)	Yes	-		Site Operating Plan
965	Part IV	The contingency plan must describe personnel action in response to fires, explosions, or any unplanned sudden or non-sudden release of waste or constituents of such waste to air, soil, or surface water at the facility.	Informational	335.589(b)(1)		-		Site Operating Plan
966	Part IV	Provide revisions sufficient to comply with requirements of Chapter 335 to any current Spill Prevention, Control, and Countermeasures (SPCC) Plan that is in accordance with Title 40 Code of Federal Regulations (CFR) Part 112, 40 CFR Part 1510, or some other approved emergency or contingency plan, if the facility manages waste in tanks	Required If Requested	335.589(b)(2)	Yes	-		Site Operating Plan
967	Part IV	Describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services.	Required If Requested	335.589(b)(3)	Yes	-		Site Operating Plan

968	Part IV	Indicate that the owner or operator will maintain a list of names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subsection (e) of this section), and this list must be kept up-to-date and at the facility. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.	Required If Requested	335.589(b)(4)	Yes	-		Site Operating Plan
969	Part IV	Provide in the contingency plan a list of emergency equipment including location, physical description, & capabilities of equipment	Required If Requested	335.589(b)(5)	Yes	-		Site Operating Plan
970	Part IV	Include in the contingency plan an evacuation plan for personnel including signals for evacuation, route and alternate routes	Required If Requested	335.589(b)(6)	Yes	-		Site Operating Plan
971	Part IV	Indicate that copies of the contingency plan will be maintained on-site, submitted to police, fire, hospitals, State & local emergency response services	Required If Requested	335.589(c)(1) & (2)	Yes	-		Site Operating Plan
972	Part IV	Indicate that the contingency plan must be reviewed, and immediately updated, if necessary, whenever he facility permit is revised, the plan fails in an emergency, the facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of waste or constituents of such waste, or changes the response necessary in an emergency or the list of emergency equipment changes	Required If Requested	335.589(d)(1)-(4)	Yes	-		Site Operating Plan
973	Part IV	Indicate that at all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.	Required If Requested	335.589(e)	Yes	-		Site Operating Plan
974	Part IV	Indicate that whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) shall immediately activate facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate state or local agencies with designated response roles if their help is needed	Required If Requested	335.589(f)(1)(A)-(B)	Yes	-		Site Operating Plan
975	Part IV	Indicate that whenever there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials.	Required If Requested	335.589(f)(2)	Yes	-		Site Operating Plan
976	Part IV	Indicate that the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion.	Required If Requested	335.589(f)(3)	Yes	-		Site Operating Plan
977	Part IV	Indicate that if the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility and if the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities, and must be available to help appropriate officials decide whether local areas should be evacuated.	Required If Requested	335.589(f)(4)	Yes	-		Site Operating Plan

978	Part IV	Indicate that the emergency coordinator must notify either government official or National ponse Center and provide a report that ades the name & phone number of reporter, me and address of facility, time and type of incident, name and quantity of material involved, extent of injuries, and possible hazards	Required If Requested	335.589(f)(5)(A) - (F)	Ye	-		Site Operating Plan
979	Part IV	Indicate that the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other waste at the facility	Required If Requested	335.589(f)(6)	Yes	-		Site Operating Plan
980	Part IV	Indicate that the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate if the facility stops operations in response to a fire, explosion, or release	Required If Requested	335.589(f)(7)	Yes	-		Site Operating Plan
981	Part IV	Indicate that the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility and shall classify all recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility	Required If Requested	335.589(f)(8)	Yes	-		Site Operating Plan
982	Part IV	Indicate that the emergency coordinator shall ensure that, in the affected area(s) of the facility, no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed and all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed	Required If Requested	335.589(f)(9)(A) & (B)	Yes	-		Site Operating Plan
986	Part IV	Indicate that nonhazardous industrial waste may be placed above natural grade provided that the conditions in §335.590(24)(F)(i) - (vi) of this title are met, except as provided in §335.590(24)(F)(vii)	Required If Requested	330.179(b)	Yes	-		Site Operating Plan
987	Part IV	Provide plans and designs for the placement of nonhazardous waste above natural grade in commercial industrial nonhazardous waste landfill units that is in compliance with the requirements of 335.590(24)(F)	Required If Requested	335.590(24)(F)	Yes	-		Site Operating Plan
1007	Part IV	Indicate that all wastes generated by a facility must be processed or disposed at an authorized solid waste management facility	Required	330.205(b)	Yes	sec. 8.2		Site Operating Plan
1008	Part IV	Indicate that all wastewaters generated by a facility shall be managed as contaminated water in accordance with 330.207	Required	330.205(c)	Yes	App IVB Sec. 8.2.2		Site Operating Plan
1009	Part IV	Indicate that the facility shall be designed and operated in a manner that sludges produced pass the Paint Filter Liquids Test.	Required If Requested	330.205(d)	Yes	-		Site Operating Plan
1012	Part IV	The owner or operator shall not discharge contaminated water without specific written authorization.	Informational	330.207(a)		-		Site Operating Plan
1026	Part IV	Provide plans for process area of transfer stations that recover material from putrescible or liquid waste. Such plans shall provide for the storage of processed and unprocessed waste & recycled materials in enclosed buildings, vessels, or containers.	Required If Requested	330.209(c)	Yes	-		Site Operating Plan
1027	Part IV	Provide a plan that describes how all waste containing food wastes shall be stored in covered or closed containers that are leak-proof, durable, and designed for safe handling and easy cleaning	Required	330.211	Yes	Sec. 8.11		Site Operating Plan
1028	Part IV	Indicate that nonreusable containers shall be of suitable strength to minimize vector scavenging or rupturing.	Required	330.211(1)	Yes	Sec. 8.11		Site Operating Plan
1029	Part IV	Indicate that reusable containers must be maintained in a clean condition as not to constitute a nuisance, harbor, feed, and propagate vectors.	Required	330.211(2)	Yes	Sec. 8.11		Site Operating Plan
1032	Part IV	Provide a plan that describes how a citizen's collection stations shall be operated in accordance with 30 TAC §330.213	Required If Requested	330.213(a)	Yes	-		Site Operating Plan

1034	Part IV	A citizen's collection station may accept sharps from single-family or multi-family dwellings, hotels, motels, or other establishments that provide lodging and related services for the public. The sharps will not be considered medical waste, as defined in 30 TAC §330.3	Required If Requested	330.213(b)	Y			Site Operating Plan

Texas Commission on Environmental Quality

Part I Application Form for New Permit, Permit Amendment, or Registration for a Municipal Solid Waste Facility

Instructions for completing this Part I Application Form are provided in TCEQ 00650-instr[1]. Include a Core Data Form (TCEQ 10400)[2] with the application for the facility owner, and Core Data Forms for the operator and property owner if different from the facility owner. If you have questions, contact the Municipal Solid Waste (MSW) Permits Section by email to mswper@tceq.texas.gov, or by phone at 512-239-2335. Rules cited on this form are in Title 30 Texas Administrative Code (30 TAC) and may be viewed online at www.tceq.texas.gov/goto/view-30tac.

Application Tracking Information

Facility Regulated Entity Name[3]:
Waste Management Skyline Landfill

Site Operator (Permittee or Registrant Name)[4]:
Waste Management of Texas, Inc.

MSW Authorization Number: 42E

Initial Submission Date: 3/31/2026

Revision Date: 04/29/2026

Application Data

1. Submission Type	
☐ Initial Submission	☒ Notice of Deficiency (NOD) Response

2. Authorization Type	
☒ Permit	☐ Registration

3. Application Type		
☐ New Permit		
☒ Permit Major Amendment	☐ Permit Limited Scope Major Amendment	
☐ New Registration		

[1] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/00650-instr.pdf
[2] www.tceq.texas.gov/goto/coredata
[3] Facility Regulated Entity Name must match the Regulated Entity Name indicated on the TCEQ Core Data Form.
[4] Site Operator is defined in 30 TAC 330.3(148) as the holder of, or the applicant for, an authorization (or license) for a municipal solid waste facility.

4. Application Fee

Amount

☒ $2,050—New Landfill Permits, and Landfill Permit Major Amendments Described in 30 TAC 305.62(j)(1)

☐ $150—Other Permits, Permit Amendments, Limited Scope Major Amendments, and all Registrations

Payment Method

☒ Online through ePay portal www3.tceq.texas.gov/epay/

Enter ePay Trace Number: 582EA000728766

☐ Check (send to TCEQ Financial Administration Division)

Payor Name: _____ Check Number: _____

5. Electronic Versions of Application

TCEQ will publish electronic versions of applications online. Applicants are required to submit complete clean (unmarked) copies of their applications in electronic format once they are administratively complete and technically complete. Additionally, applicants must provide electronic copies of responses to notices of deficiencies for publishing online. (Refer to instructions for this form for how to submit electronically.)

6. Party Responsible for Publishing Notice

Indicate who will be responsible for publishing notice:

☒ Applicant ☐ Agent in Service ☐ Consultant

Contact Name: James Smith

Title: Area Director, Disposal Operations

Email Address: jsmith18@wm.com

7. Alternative Language Notice

Use the Alternative Language Checklist on Public Notice Verification Form TCEQ-20244-Waste-NORI, TCEQ-20244-Waste-NAPD, or TCEQ-20244-Waste-NAORPM available at www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw_notice.html to determine if an alternative language notice is required.

Is an alternative language notice required for this application?

☒ Yes ☐ No

Indicate the alternative language: Spanish

PAGE REVISION DATE: _____

8. Public Place for Copy of Application

Name of the Public Place: Ferris Public Library

Physical Address: 301 East 10th Street

City: Ferris County: Ellis State: TX Zip Code: 75125

Phone Number: 972-544-3696

9. Consolidated Permit Processing

Is this submittal part of a consolidated permit processing request, in accordance with 30 TAC Chapter 33?

☐ Yes ■ No

If "Yes", indicate the other TCEQ program authorizations requested:

10. Confidential Documents

Does the application contain confidential documents?

☐ Yes ■ No

If "Yes", reference the confidential documents in the application, but submit the confidential documents as an attachment in a separate binder marked "CONFIDENTIAL."

11. Permits and Construction Approvals

Mark the following table to indicate status of other permits or approvals.

Table 1. Permits and Construction Approvals.

Permit or Approval	Received	Pending	Not Applicable
Hazardous Waste Management Program under Texas Solid Waste Disposal Act	x		
Underground Injection Control Program under Texas Injection Well Act			x
National Pollutant Discharge Elimination System Program under Clean Water Act; Waste Discharge Program under Texas Water Code, Chapter 26	x		
Prevention of Significant Deterioration Program under Federal Clean Air Act (FCAA); Nonattainment Program under the FCAA			x
National Emission Standards for Hazardous Air Pollutants Preconstruction Approval under the FCAA			x
Ocean Dumping Permits under Marine Protection Research and Sanctuaries Act			x
Dredge or Fill Permits under Clean Water Act			x
Licenses under the Texas Radiation Control Act			x
Other (describe): USCOE; Section 404 Ind. Permit USCOE; Nationwide Permit City of Ferris; Fill-in 100-Year Floodplain	x x x		
Other (describe):			

PAGE REVISION DATE: _____

12. General Information About the Facility

Facility Regulated Entity Name:
Waste Management Skyline Landfill

Contact Name: James Smith Title: Area Director, Disposal Operations

MSW Authorization Number (if existing): 42E

Regulated Entity Reference Number: **RN** 100542232

Physical or Street Address (if available): 1201 N Central St

City: Ferris County: Ellis State: TX Zip Code: 75125

Phone Number: 972-842-5710

Latitude (decimal degrees, six decimal places): 32° 32' 48.0"

Longitude (decimal degrees, six decimal places): 96° 39' 57.4"

Elevation (above mean sea level): 438.58 feet (benchmark elevation for landfills)

Description of facility location with respect to known or easily identifiable landmarks:

The facility is located approximately 0.3 miles west of IH-45 in Dallas and Ellis Counties; approximately one mile south of the Malloy Bridge Road and IH-45 Business South/N Central Street intersection on the north side of the city of Ferris.

Access routes from the nearest United States or state highway to the facility:

From IH-45: South approximately one mile from the Malloy Bridge Road intersection to the site entrance on the west side of IH-45 Business South/N Central Street. From Ferris: North on S Central Street approximately one mile from the E 5th Street intersection to the site entrance on the west side of N Central Street.

Coastal Management Program

Is the facility within the Coastal Management Program boundary?

☐ Yes ■ No

13. Facility Types

Facility types are described in 30 TAC 330.5(a).

Indicate facility type (select all that apply):

■ Type I ☐ Type IV ☐ Type V

☐ Type IAE ☐ Type IVAE ☐ Type VI

14. Activities Conducted at the Facility

■ Storage ■ Processing ■ Disposal

PAGE REVISION DATE: _____

15. Facility Waste Management Units

Check the box for each type of waste management unit proposed.

- [x] Landfill Unit(s)
- [ ] Incinerator(s)
- [ ] Class 1 Landfill Unit(s)
- [ ] Process Tank(s)
- [x] Storage Tank(s)
- [ ] Tipping Floor
- [x] Storage Area
- [x] Other (specify): Citizen Convenience Center, Mud Grate, Bioremediation Pad, C&D Recycling Area, Large Item Storage Area, Liquid Stabilization Area
- [ ] Container(s)
- [x] Roll-off Boxes
- [ ] Surface Impoundment
- [ ] Autoclave(s)
- [ ] Refrigeration Unit(s)
- [ ] Mobile Processing Unit(s)
- [ ] Compost Pile(s) or Vessel(s)

16. Description of Proposed Facility or Changes to Existing Facility

Provide a brief description of the proposed activities if application is for a new facility, or the proposed changes to an existing facility or permit conditions if the application is for an amendment.

A proposed permit amendment application to increase the size and waste disposal capacity of the existing Waste Management Skyline Landfill to extend the site life and provide for the ongoing waste disposal needs of individuals, businesses, and communities in Dallas and Ellis Counties and the surrounding areas.

17. Facility Contact Information

Site Operator (Permittee or Registrant)

Name: Waste Management of Texas, Inc.

Customer Reference Number: **CN** 600127856

Contact Name: James Smith Title: Area Director, Disposal Operations

Mailing Address: 9708 Giles Road

City: Austin County: Travis State: TX Zip Code: 78754

Phone Number: 512-272-6245

Email Address: jsmith18@wm.com

Operator (if different from *Site Operator*)

Name: _____

Customer Reference Number: **CN** _____

Contact Name: _____ Title: _____

Mailing Address: _____

City: _____ County: _____ State: ____ Zip Code: _____

Phone Number: _____

Email Address: _____

Consultant (if applicable)

Firm Name: Biggs and Mathews Environmental, Inc.

Consultant Name: Gregory W. Adams, P.E.

Texas Board of Professional Engineers Firm Registration Number: F-256

Contact Name: Gregory W. Adams, P.E. Title: Principal

Mailing Address: 1700 Robert Road, Suite 100

City: Mansfield County: Tarrant State: TX Zip Code: 76063

Phone Number: 817-563-1144

Email Address: gadams@biggsandmathews.com

Agent in Service (required for out-of-state applicants)

Name: _____

Mailing Address: _____

City: _____ County: _____ State: TX Zip Code: _____

Phone Number: _____

Email Address: _____

PAGE REVISION DATE: _____

18. Facility Supervisor License

Indicate the level of Municipal Solid Waste Facility Supervisor license, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations, Subchapter F that the individual who supervises or manages the operations will obtain prior to commencing operations.

☒ Class A Supervisor License ☐ Class B Supervisor License

19. Facility Ownership

Facility Owner

Does the Site Operator (Permittee or Registrant) own all the facility units and all the facility property?

☒ Yes ☐ No

If "No", provide the following information for the other owner, and include a Core Data Form for the other owner. Attach supplemental sheet if more than one other owner.

Other Owner Name: _____

What is Owned: ☐ Facility Units ☐ Property

☐ Other (describe): _____

Mailing Address: _____

City: _____ County: _____ State: ____ Zip Code: _____

Phone Number: _____

Email Address: _____

20. Other Government Entities Information

Texas Department of Transportation

District: DAL

District Engineer's Name: Ceason Clemens, P.E.

Mailing Address: 4777 E. Highway 80

City: Mesquite County: Dallas State: TX Zip Code: 75150

Phone Number: 214-320-6200

Email Address: ceason.clemens@txdot.gov

Local Government Authority Responsible for Road Maintenance (if applicable)

Government or Agency Name: TxDOT Dallas District

Contact Person's Name: Ceason Clemens, P.E.

Mailing Address: 4777 E. Highway 80

City: Mesquite County: Dallas State: TX Zip Code: 75150

Phone Number: 214-320-6200

Email Address: ceason.clemens@txdot.gov

City Mayor Information

City Mayor's Name: Fred Pontley
Mailing Address: 100 Town Plaza
City: Ferris County: Ellis State: TX Zip Code: 75125
Phone Number: 972-544-2110
Email Address: fred.pontley@ferristexas.gov

City Health Authority

Authority Name: N/A
Contact Person's Name:
Contact Person's Title:
Mailing Address:
City: County: State: TX Zip Code:
Phone Number:
Email Address:

County Judge Information

County Judge's Name: The Honorable John Wray -- The Honorable Clay Lewis Jenkins
Mailing Address: 101 W Main St, Ste 104 -- 500 Elm St, Ste 7000
City: Waxahachie -- Dallas County: Ellis -- Dallas State: TX Zip Code: 75165
Phone Number: 972-825-5011 -- 214-653-7949 75202
Email Address: countyjudge@elliscountytx.gov -- dcjudge@dallascounty.org

County Health Authority

Agency Name: Dallas County Health & Human Services
Contact Person's Name: Dr. Philip Huang, MD, MPH
Contact Person's Title: Director
Mailing Address: 2377 N. Stemmons Freeway
City: Dallas County: Dallas State: TX Zip Code: 75207
Phone Number: 214-819-2000
Email Address: philip.huang@dallascounty.org

State Representative Information

House District Number: 10
State Representative's Name: Brian Harrison
District Office Mailing Address: 100 N College Street, Suite 306
City: Waxahachie County: Ellis State: TX Zip Code: 75165
Phone Number: 972-923-0264
Email Address: brian.harrison@house.texas.gov

State Senator Information

District Number: 2

State Senator's Name: Bob Hall

District Office Mailing Address: Alliance Building #2 6537 Horizon Road, Suite B-1

City: Rockwall County: Rockwall State: TX Zip Code: 75032

Phone Number: 972-722-3131

Email Address: bob.hall@senate.texas.gov

Council of Governments (COG)

COG Name: North Central Texas Council of Governments

COG Representative's Name: Todd LIttle

COG Representative's Title: Executive Director

Mailing Address: 616 Six Flags Drive

City: Arlington County: Tarrant State: TX Zip Code: 76011

Phone Number: 817-695-9101

Email Address: tlittle@nctocog.org

River Basin Authority

Authority Name: Trinity River Authority of Texas

Contact Person's Name: Matthew Jalbert, P.E.

Watershed Sub-Basin Name: Upper Trinity River Basin

Mailing Address: P.O. Box 60

City: Arlington County: Tarrant State: TX Zip Code: 76004

Phone Number: 817-467-4343

Email Address: jalbertm@trinityra.org

Local Drainage or Flood Management Authority

Authority Name: Ellis County Engineering

Contact Person's Name: Zach Gerich

Mailing Address: 302 N Monroe St, Ste 213

City: Waxahachie County: Ellis State: TX Zip Code: 75165

Phone Number: 972-825-5112

Email Address: zach.gerich@elliscountytx.gov

U.S. Army Corps of Engineers District

Indicate the U.S. Army Corps of Engineers district in which the facility is located:

☐ Albuquerque, NM ☐ Galveston, TX

☒ Fort Worth, TX ☐ Tulsa, OK

PAGE REVISION DATE: _____

Local Government Jurisdiction

Within City Limits of: Ferris

Within Extraterritorial Jurisdiction of: _____

Is the facility located in an area in which the governing body of the municipality or county has prohibited the storage, processing, or disposal of municipal or industrial solid waste?

☐ Yes ■ No

If "Yes", provide a copy of the ordinance as an attachment.

PAGE REVISION DATE: 04/29/2026

Applicant Signature Page

Site Operator (Permittee or Registrant Name) or Authorized Signatory

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: James Smith Title: Area Director, Disposal Operations

Email Address: jsmith18@wm.com

Signature: _____ Date: 4/29/2026

Authorization by Facility Owner for Operator to Submit Application

To be completed by the facility owner if the application is submitted by an operator who is not the facility owner.

I am the owner of the facility that is the subject of this application, and authorize the operator, _____ to submit this application pursuant to 30 TAC 305.43(c).

Name: _____ Title: _____

Email Address: _____

Signature: _____ Date: _____

Notary

SUBSCRIBED AND SWORN to before me by the said JAMES SMITH

On this 29th day of APRIL, 2026

My commission expires on the 19th day of NOVEMBER 2029

Janet E Anderson

Notary Public in and for

TARRANT (notary's jurisdiction, including county and state)

Note: Application Must Bear Signature & Seal of Notary Public

JANET E ANDERSON
Notary Public, State of Texas
Comm. Expires 11-19-2029
Notary ID 133456696

PAGE REVISION DATE: _____

Property Owner Affidavit

Property Owner Affidavit for Landfill Facility

I acknowledge in accordance with 30 TAC 330.59(d)(2) that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the facility. For a facility where waste will remain after closure, I acknowledge that I have a responsibility to file with the county deed records an affidavit to the public advising that the land will be used for a solid waste facility prior to the time that the facility actually begins operating as a municipal solid waste landfill facility, and to file a final recording upon completion of disposal operations and closure of the landfill units according to 30 TAC 330.19 (relating to Deed Recordation). I further acknowledge that the facility owner or operator and the State of Texas shall have access to the property during the active life and post-closure care period for the purpose of inspection and maintenance.

Name: James Smith

Email Address: jsmith18@wm.com

Signature: _____ Date: 3/31/2026

Property Owner Affidavit for Processing Facility

I acknowledge in accordance with 30 TAC 330.59(d)(2) that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure of the facility. I further acknowledge that the facility owner or operator and the State of Texas shall have access to the property during the active life and post-closure care period for the purpose of inspection and maintenance.

Name: _____

Email Address: _____

Signature: _____ Date: _____

Notary

SUBSCRIBED AND SWORN to before me by the said James Smith

On this 31ST day of MARCH, 2026

My commission expires on the 19th day of November, 2029

Janet E Anderson

Notary Public in and for

TARRANT (notary's jurisdiction, including county and state)

Note: Application Must Bear Signature & Seal of Notary Public

JANET E ANDERSON
Notary Public, State of Texas
Comm. Expires 11-19-2029
Notary ID 133456696

Part I Attachments

Refer to instruction document TCEQ 00650-instr[5] for professional engineer seal requirements.

Attachments Table 1. Required attachments.

Required Attachments	Attachment Number
Supplementary Technical Report [30 TAC 305.45(a)(8)]	Part I
Property Legal Description [30 TAC 330.59(d)(1)]	IC
Property Metes and Bounds Description [30 TAC 330.59(d)(1)]	IC
Facility Legal Description [30 TAC 330.59(d)(1)]	IC
Facility Metes and Bounds Description [30 TAC 330.59(d)(1)]	IC
Metes and Bounds Drawings [30 TAC 330.59(d)(1)]	IC
On-Site Easements Drawing [30 TAC 330.61(c)(10)]	IC
Land Ownership Map [30 TAC 330.59(c)(3)]	IB
Landowners List [30 TAC 330.59(c)(3)]	IB
Mailing Labels (in electronic file, in Avery 5160 format; see instructions) [30 TAC 281.5(7)]	IB
General Location Maps [30 TAC 330.59(c)(2)]	IA
Texas Department of Transportation (TxDOT) County Map [30 TAC 330.59(c)(2)]	IA
General Topographic Maps [30 TAC 330.61(e)]	IA
Verification of Legal Status / Legal Authority (certificate of incorporation) [30 TAC 281.5 and 330.59(e)]	ID
Evidence of Competency [30 TAC 330.59(f)]	IE
Signatory Authority Documentation [30 TAC 305.44 and 330.59(g)]	IF
TCEQ Core Data Form(s) TCEQ-10400[6] [30 TAC 281.5(7)]	Volume 1

[5] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/00650-instr.pdf
[6] www.tceq.texas.gov/permitting/central_registry/guidance.html

PAGE REVISION DATE: _____

Attachments Table 2. Additional attachments as applicable.

Additional Attachments (select all that apply and add others as needed)	**Attachment Number**
☒ Plain Language Summary Form TCEQ-20947[7] [30 TAC 39.405(k)]	Volume 1
☒ Public Involvement Plan Form TCEQ-20960[8]	Volume 1
☐ Fee Payment Receipt	
☐ Confidential Documents	
☐ Waste Storage, Processing and Disposal Ordinances [Texas Health and Safety Code, Section 363.112[9]]	
☐ Final Plat Record of Property Description [30 TAC 330.59(d)(1)(B)]	
Other (describe):	
Other (describe):	
Other (describe):	

[7] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20947-instr.pdf
[8] www.tceq.texas.gov/downloads/agency/decisions/hearings/environmental-equity/pip-form-tceq-20960.pdf www.tceq.texas.gov/downloads/agency/decisions/hearings/environmental-equity/instructions-for-pip-form-tceq-20960.pdf
[9] statutes.capitol.texas.gov/Docs/HS/htm/HS.363.htm#363.112

Texas Commission on Environmental Quality
Part II Application Form for New Permit or Permit Amendment for a Municipal Solid Waste Landfill Facility

I. Application Information

1. Facility Name: Waste Management Skyline Landfill
2. Permittee Name: Waste Management of Texas, Inc.
3. MSW Authorization #: 42E
4. Initial Submittal Date: 3/31/2026

II. Existing Conditions Summary - 30 TAC §330.61(a)

Provide information to address any site-specific conditions that require special design considerations and possible mitigation of conditions as follows.

1. Provide a summary describing the existing conditions at the site and within the areas surrounding the site, which may include discussions of any additional land-use, environmental, or special issues related to the facility.

See Part II Section 1.

2. Provide brief descriptions of all site-specific conditions at the facility that require special design considerations.

See Part II Section 1.

3. Indicate that reports of site-specific conditions that require special design considerations and mitigation of such conditions are provided under Sections VIII – XVI below with regard to (a) facility impacts on surrounding areas; (b)transportation; (c) general geology and soils; (d) groundwater and surface water; (e) existing and abandoned oil and water wells; (f) floodplains and wetlands; (g) endangered or threatened species impacts; and (h) compliance with the Texas Natural Resources Code, Chapter 191 (Texas Antiquities Code).

See Part II Sections 8 through 17.

III. Waste Acceptance Plan - 30 TAC §330.61(b)

1. ☑ If this application is for a Type I or Type IAE MSW landfill facility, attach completed Form No. TCEQ-20873. Attachment No.: Appendix IIK
2. ☐ If this application is for a Type IV or Type IVAE MSW landfill facility, attach completed Form No. TCEQ-20890. Attachment No.:

IV. General Location Maps - 30 TAC §330.61(c)

Provide General Location Maps that accurately show the features listed below. Provide all General Location Maps in a single attachment and include the drawing number in the space provided. Include notes on each map, as needed, to describe information pertaining to the map.

1. The prevailing wind direction with a wind rose. Drawing IIA.1
2. All known water wells within 500 feet of the proposed permit boundary with the state well numbering system designation for Water Development Board "located wells."

   See Drawing IIA.2
3. All structures and inhabitable buildings within 500 feet of the proposed facility.

   See Drawing IIA.3
4. (i) Schools, (ii) licensed day-care facilities, (iii) churches, (iv) hospitals, (v) cemeteries, (vi) ponds, (vii) lakes, and (viii) residential, (ix) commercial, and (x) recreational areas within one mile of the facility. See Drawing IIA.3
5. The location and surface type of all roads within one mile of the facility that will normally be used by the owner or operator for entering or leaving the facility. See Drawing IIA.1
6. Latitudes and longitudes. See Drawing IIA.5
7. Area streams. See Drawing IIA.1
8. Airports within six miles of the facility. See Drawing IIA.4
9. The property boundary of the facility. See Drawing IIA.5
10. (i) Drainage, (ii) pipeline, and (iii) utility easements within or adjacent to the facility.

    See Drawing IIA.5
11. (i) Facility access control features. See Drawing IIA.6
12. (i) Archaeological sites, (ii) historical sites, and (iii) sites with exceptional aesthetic qualities adjacent to the facility. See Drawing IIA.3

V. Facility Layout Maps - 30 TAC §330.61(d)

Provide the Facility Layout Map(s) as a single attachment, and include drawing number(s) in the space provided. Include notes on each map, as needed, to describe information on the map.

Provide a map or set of maps of the facility layout showing:

1. The outline of the units; See Drawing IIA.6
2. General locations of main interior facility roadways; See Drawing IIA.7
3. Locations of monitor wells; See Drawing IIA.6
4. Locations of buildings; See Drawing IIA.6

5. Any other graphic representations or marginal explanatory notes necessary to communicate the proposed construction sequence; See Drawing IIA.7
6. Fencing; See Drawing IIA.7
7. Provisions for the maintenance of any natural windbreaks, such as greenbelts, where they will improve the appearance and operation of the facility and, where appropriate, plans for screening the facility from public view; See Drawing IIA.6
8. All site entrance roads from public access roads; See Drawing IIA.6
9. General locations of main interior facility roadways that can be used to provide access to fill areas; See Drawing IIA.6
10. Sectors with appropriate notations to communicate the types of wastes to be disposed of in individual sectors; See Drawing IIA.7
11. The general sequence of filling operations; See Drawing IIA.7
12. Sequence of excavations and filling; See Drawing IIA.7
13. Dimensions of cells or trenches; See Drawing IIA.7 and
14. Maximum waste elevations and final cover. See Drawing IIA.7

VI. General Topographic Maps - 30 TAC §330.61(e)

1. Provide general topographic map(s) consisting of United States Geological Survey 7 ½-minute quadrangle sheets or equivalent for the facility.
   Map No(s). See Drawing IIA.8
2. At least one of the general topographic maps provided is at a scale of one-inch equals 2,000 feet.
   ☑ Yes

VII. Aerial Photograph - 30 TAC §330.61(f)

Provide an aerial photograph approximately 9" x 9" with a scale within a range of one-inch equals 1,667 feet to one-inch equals 3,334 feet and showing the area within at least one-mile radius of the site boundaries. Mark the site boundaries and fill areas on the aerial photograph(s). A series of aerial photographs can be used to show growth trends.
Attachment No.(s): See Drawing IIA.9

VIII. Land-Use Map - 30 TAC §330.61(g)

Provide a constructed map of the facility showing the following land-use features (list the map number(s) in the space provided):

1. The boundary of the facility; See Drawing IIA.10
2. Existing zoning on or surrounding the property ; See Drawing IIA.10
3. Actual uses (e.g., agricultural, industrial, residential, etc.) both within the facility and within one mile of the facility. See Drawing IIA.10
4. Drainage, pipeline, and utility easements within the facility; See Drawing IIA.5
5. Access roads serving the facility; See Drawing IIA.1

6. Check the following facilities if they are within one mile of the facility boundary and indicate on map. See Drawing IIA.3

   (a) ☑ residences;

   (b) ☑ commercial establishments;

   (c) ☑ schools;

   (d) ☑ licensed day-care facilities;

   (e) ☑ churches;

   (f) ☑ cemeteries;

   (g) ☑ ponds or lakes; and

   (h) ☑ recreational areas.

IX. Impact on Surrounding Area - 30 TAC §330.61(h)

Address the facility's impacts on cities, communities, groups of property owners, or individuals and describe mitigation of conditions as required. Attach additional pages as necessary. If a land use compatibility analysis report prepared by a qualified professional is provided, indicate the location within the application. Attachment No.: See Section 8

1. **Impacts to Surrounding Areas:**
   (a) Provide information regarding the likely impacts of the facility on cities, communities, groups of property owners, or individuals by analyzing the compatibility of land use, zoning in the vicinity, community growth patterns, and other factors associated with the public interest; and

See Appendix IIB.

   (b) Describe any special design considerations and possible mitigation of potential impacts, as necessary.

See Section 8.

Published Zoning Map: If available, provide a published zoning map for the facility and within two miles of the facility for the county or counties in which the facility is or will be located.

See Appendix IIB

2. **Special or Nonconforming Use Permit:**

   (a) Does the site require approval as a nonconforming use or a special permit from the local government having jurisdiction? ☑ Yes ☐ No

   (b) If yes, provide a copy of such approval. Attachment No.: Appendix IIB

3. **Character of Surrounding Land Use:** Describe the character of the surrounding land uses within one mile of the proposed facility.

See Appendix IIB.

4. **Growth Trends and Directions of Major Development:**
(a) Provide information about growth trends within five miles of the facility.

See Appendix IIB.

(b) Describe the directions of major development.

See Appendix IIB.

5. **Number of and Proximity to Residences and Other Uses:** Indicate the approximate number and proximity of residences and other uses within one mile of the facility as follows. Population density and proximity to residences and other uses may be considered in the assessment.

(a) Number of, distance, and directions to residences:

1,764

(i) Indicate the distance to the nearest residences: 12 feet

(ii) Provide directions to the nearest residences:

North

(b) Number of, distance, and directions to commercial establishments:

82

(i) Indicate the distance to the nearest commercial establishments: 245 feet

(ii) Provide directions to the nearest commercial establishments:

East

(c) Number of, distance, and directions to schools:

5, 880 feet south

(d) Number of, distance, and directions to churches:

7, 63 feet south

(e) Number of, distance, and directions to cemeteries:

3, abutting the southern boundary

(f) Number of, distance, and directions to historic structures and sites:

0

(g) Number of, distance, and directions to archaeologically significant sites:

0

(h) Number of, distance, and directions to sites having exceptional aesthetic quality:

0

6. **Known Wells**. Provide information and discussion of all known wells within 500 ft. of the proposed facility. Provide the well information using Table VIII-1 below. If site has more than 5 wells within the radius, include wells information as an attachment.

Table VIII-1. Well Information

Wells Within 500 ft. Radius of the Proposed Facility							
Well Locator	Well ID No.	Depth (ft.)	Completion Date	Completion Formation	Well Use	Longitude	Latitude

X. Transportation and Airport Safety - 30 TAC §330.61(i) and §330.545

1. **Transportation:** Attach completed Transportation Data and Coordination Report Form for Municipal Solid Waste Type I Landfills, TCEQ-20719. Attachment No.: Appendix IIC

2. **Airport Safety:**

(a) Is the facility located, or will be located, within 10,000 feet of any airport runway end used by turbojet aircraft? ☑ Yes ☐ No

(b) Is the facility located, or will be located, within 5,000 feet of any airport runway end used by only piston-type aircraft? ☐ Yes ☑ No

(i) If the answer is "Yes" to either (a) or (b) above, indicate the distance of the facility from the nearest airport runway end used by only turbojet aircraft: feet or piston-type aircraft: feet; and

(ii) Provide required demonstration to show that the municipal solid waste facility units are or will be designed and operated so as not to pose a bird hazard to aircraft.

(c) Is the facility located, or will be located, within a six-mile radius of any small general service airport runway end used by turbojet or piston-type aircraft? ☑ Yes ☐ No

(d) Is the facility located, or will be located, within a five-mile radius of any large general public airport runway end used by turbojet or piston-type aircraft? ☑ Yes ☐ No

(i) If the answer to either of subsection (c) or (d) above is "Yes," has the applicant notified the affected airport as required?
☑ Yes ☐ No. Explain: See Appendix IIH.

(ii) Also, has the applicant notified the Federal Aviation Administration as required?
☑ Yes ☐ No. Explain: See Appendix IIH.

(iii) Provide copies of the notifications to the affected airport and to FAA.
See Appendix IIH.

(iv) All landfill facilities within a six-mile radius of any small general service airport runway or within a five-mile radius of any large general public commercial airport runway shall be critically evaluated to determine if an incompatibility exists. Include any coordination received from the affected airport and from the FAA concerning compatibility.
See Appendix IIH.

(e) Will the subject landfill accept waste streams that include putrescible waste?
☑ Yes ☐ No.

(i) If the answer to subsection (e) is "Yes," address the potential for the facility to attract birds and cause significant hazards to low-flying aircraft. Guidelines regarding location of landfills near airports can be found in Federal Aviation Administration Order 5200.5(A), January 31, 1990 (or the replacement active orders, notices, and advisory circular guidelines from the FAA can be used). See Part II Section 9.

XI. General Geology and Soils Statement and Location Restrictions - 30 TAC §330.61(j) and §§ 330.555 - 330.559

1. Discuss in general terms the geology and soils of the proposed site.

See Part II Section 10.

2. Fault Areas

(a) Will the municipal solid waste landfill units at the facility or a lateral expansion of the facility be located within 200 feet of a fault that has had displacement in Holocene time?
☐Yes ☑No
If the answer is "Yes," provide demonstration to show that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the landfill unit and will be protective of human health and the environment. Attachment No.:

(b) Is the facility located within areas that may be subject to differential subsidence or active geological faulting? ☐Yes ☑No
If the answer is "Yes," provide a detailed fault study. Attachment No.:

(c) Is an active fault known to exist within 1/2 mile of the site? ☐Yes ☑No
If the answer is "Yes," investigate the site for unknown faults and discuss its results. Attachment No.:

(d) Is the facility located in areas experiencing withdrawal of crude oil, natural gas, sulfur, etc., or significant amounts of groundwater? ☐Yes ☑No
If the answer is "Yes," investigate the site in detail for the possibility of differential subsidence or faulting that could adversely affect the integrity of landfill liners and discuss the site investigation and its results. Attachment No.:

(e) If conducted, were the studies of differential subsidence or faulting conducted under the direct supervision of a licensed professional engineer experienced in geotechnical engineering or a licensed professional geoscientist qualified to evaluate conditions of differential subsidence or faulting? ☑Yes ☐No. Explain
See Section 10.

(f) If conducted, do the studies of differential subsidence or faulting establish the limits (both upthrown and downthrown) of the zones of influence of all active faulted areas within the site vicinity? ☑Yes ☐No. Explain See Section 10.

(g) If conducted, do the studies of differential subsidence include information or data addressing the following shown below, as applicable:

Table X-1. Information included in Fault Area Studies

Information to be included, as applicable:	Yes	Not Applicable
(i) structural damage to constructed facilities (roadways, railways, and buildings);	☐	☐
(ii) scarps in natural ground;	☐	☐
(iii) presence of surface depressions (sag ponds and ponded water);	☐	☐
(iv) lineation's noted on aerial maps and topographic sheets;	☐	☐
(v) structural control of natural streams;	☐	☐
(vi) vegetation changes;	☐	☐
(vii) crude oil and natural gas accumulations;	☐	☐
(viii) electrical spontaneous potential and resistivity logs (correlation of subsurface strata to check for stratigraphic offsets);	☐	☐
(ix) earth electrical resistivity surveys (indications of anomalies that may represent fault planes);	☐	☐
(x) open cell excavations (visual examinations to detect changes in subsoil texturing and/or weathering indicating stratigraphic offsets);	☐	☐
(xi) changes in elevations of established benchmarks; and	☐	☐
(xii) references to published geological literature pertaining to area conditions.	☐	☐

(h) If the site is or will be located within a zone of influence of active geological faulting or differential subsidence, does the application provide substantial evidence that the zone of influence will not affect the site?
☐Yes ☐No Attachment No.:

Address the following statement:

3. ☑ No solid waste disposal shall be accomplished within a zone of influence of active geological faulting or differential subsidence because active faulting results in slippage along failure planes, thus creating preferred seepage paths for liquids.

4. Seismic Impact Zones

(a) Is the proposed facility located in a seismic impact zone, as defined in 30 TAC §330.557?
☐Yes ☑No
Provide information to support response. Attachment No.: Sec. 10.4

(b) For facilities located in a seismic impact zone, provide a detailed demonstration showing that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. Attachment No.:

5. Unstable Areas

(a) Is the facility located in an unstable area, as defined in 30 TAC §330.559?
☐Yes ☑No Explain: See Section 10.5.

(b) If the facility is located in an unstable area, provide a demonstration that engineering measures have been incorporated into the landfill unit's design to ensure that the integrity of the structural components of the landfill unit will not be disrupted.
Attachment No.:
The demonstration considered at least the following factors:

(i) on-site or local soil conditions that may result in significant differential settling;
☐Yes ☐No

(ii) on-site or local geologic or geomorphologic features; ☐Yes ☐No and

(iii) on-site or local human-made features or events (both surface and subsurface).
☐Yes ☐No

XII. Groundwater and Surface Water - 30 TAC §330.61(k) and §330.549

1. Groundwater

Provide an attachment containing data about the site-specific groundwater conditions at and near the site, from published and open-file sources, including:

- Aquifer names and their association with geologic units described in the General Geology and Soils Statement;
- Groundwater quality, including, if available, typical values or value ranges for total dissolved solids content; and
- Present use(s) of groundwater withdrawn from aquifers at and near the site, if available.

Attachment No.: Part II Section 10.

Address the following as applicable:

(a) Is the facility located over the Edwards Aquifer recharge zone, as defined in 30 TAC §330.549? ☐Yes ☑No.
If yes, discuss how the facility will comply with the applicable requirements in 30 TAC Chapter 213 (relating to Edwards Aquifer).

(b) A Type I or Type IAE landfill is prohibited on the recharge zone of the Edwards Aquifer; the applicant will not locate a Type I or Type IAE landfill on the recharge zone of the Edwards Aquifer. Select either statement that applies:

☑ (i) The facility is not or will not be located over the Edwards Aquifer Recharge Zone.

☐ (ii) The facility is not a Type I or Type IAE landfill.

(c) A new landfill cell or an aerial expansion of an existing landfill cell managing Class 1 non-hazardous industrial solid waste may not be located in areas described in 30 TAC § 335.584(b)(1) and (2) (relating to Location Restrictions), unless the Executive Director (ED) approves an engineered design that the applicant has demonstrated will provide equal or greater protection to human health and the environment:

(i) Does the application propose Class 1 nonhazardous industrial solid waste cells or units at the subject facility? ☐Yes ☑No

(ii) If yes, discuss how the facility would comply with the location restriction requirements under 30 TAC §335.584(b)(1) and (2). Include any applicable equivalency demonstration that would provide equivalent or greater protection to human health and the environment. Attachment No.:

2. Surface Water

(a) Provide data on surface water at and near the site (including lakes, ponds, creeks, streams, rivers, or similar water bodies).
Attachment Nos.: See Section 11.3.

(b) Provide information demonstrating how the municipal solid waste facility will comply with applicable Texas Pollutant Discharge Elimination System (TPDES) storm water permitting requirements and the Clean Water Act, §402, as amended See Section 11.4.

(i) The facility has obtained TPDES permit coverage under the following individual wastewater permit(s) (list permit number(s)): TXR05U147 . A copy of the permit(s) is provided in Attachment No.: Appendix IIG , or

(ii) A certification statement indicating that the applicant will obtain the appropriate TPDES permit coverage when required.
☑Yes ☐No. Explain

XIII. Abandoned Oil and Water Wells - 30 TAC §330.61(l)

1. Water Wells

(a) Are there any existing or abandoned water wells within the facility? ☐Yes ☐No

(i) If no, move to Item No. 2 below.

(ii) If yes, address the following:

(1) Provide a map showing the water well locations, identity, status, and use. Attachment No.: Drawing IIA.XX.

(2) Will all the water wells be capped, plugged, and closed prior to construction at the facility? ☐Yes ☑No.

(3) If yes, provide written certification that all such wells will be capped, plugged, and closed in accordance with all applicable rules and regulations of TCEQ or other state agency within 30 days prior to construction at the facility. Attachment No.:

(4) If no, identify and describe the water wells that will be capped, plugged, and closed in accordance with all applicable rules and regulations of TCEQ or other state agency. Attachment No.: Section 12.1.

(5) Also, identify the wells necessary for use, and that will remain in use, for supply for operations at the facility. Attachment No.:

(6) Are the water wells that will remain in use for supply for operations at the facility located outside of the groundwater monitoring well network and not subject to impact from landfill operations? ☐Yes ☐No. If no, explain

(7) The water wells that will remain in use for supply for operations at the facility and that are located inside of the groundwater monitoring network, but outside the landfill unit boundary, are identified in Attachment No.: for ED approval.

2. Oil and Gas Wells

(a) Are there any existing or abandoned on-site crude oil, natural gas, or other wells associated with mineral recovery under the jurisdiction of the Railroad Commission of Texas?
☐Yes ☑No

(i) If yes, address the following items:

(1) Provide a map showing well locations, identity, type, and status.
Attachment No.:

(2) Identify and annotate the oil or natural gas wells that are producing and will remain in their current state, provided such wells do not affect or hamper landfill operations.

(3) Provide written certification that all the oil and natural gas wells, other than the producing wells approved for retention, have been properly capped, plugged, and closed at the time of application in accordance with all applicable rules and regulations of the Railroad Commission of Texas.
Attachment No.:

XIV. Floodplains - 30 TAC §330.61(m)(1) and §330.547

1. Describe the location of the facility with respect to floodplains.

See Section 13.

2. Provide a copy of the Federal Emergency Management Administration (FEMA) flood map for the area to show the facility boundary and to illustrate the information described in Section 1 above. Attachment No.: IIJ.1

3. For construction of levees or other improvements associated with flood control on the proposed facility, provide data on floodplains in accordance with 30 TAC Chapter 301 Subchapter C (relating to Approval of Levees and Other Improvements). See Part II Section 13.

4. Address the following requirements with regard to the location of the facility:

(a) Provisions to ensure that no solid waste disposal operation is conducted within the facility in areas that are located in a 100-year floodway as defined by FEMA. See Part II Section 13.

(b) Designs that demonstrate that municipal solid waste management units, including storage and processing facilities, located in 100-year floodplains will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

See Part II Section 13.

(c) Demonstrate MSW storage and processing facilities shall be located outside of the 100-year floodplain unless the owner or operator demonstrates that the facility is designed and will operate to prevent washout during a 100-year storm event, or obtains a conditional letter of map amendment from FEMA. See Part II Section 13.

(d) If applicable, provide a copy of the conditional letter of map amendment (or other applicable FEMA approval) from the FEMA administrator for development within a floodplain. See Part II Section 13.

(e) References to provisions, designs, and narratives regarding floodplains in Part III of the application. See Part II Section 13.

XV. Wetlands - 30 TAC §330.61(m)(2) and §330.553

1. Provide a wetlands determination under applicable federal, state, and local laws and discuss wetlands in accordance with 30 TAC §330.553. Demonstration can be made by providing evidence that the facility has a Corps of Engineers permit for the use of any wetlands area. Attachment No.: Appendix IID

   (a) If applicable, provide a copy of any Corps of Engineers permit issued to the applicant for the use of any wetlands area within the facility. Attachment No.: See Part II, Section 13.2.

2. Identify wetlands located within the facility boundary, attach necessary maps and drawings.

   See Part II Section 13.2.

3. Where new municipal solid waste landfill units, lateral expansions, material recovery operations from a landfill, and storage or processing units are to be located in wetlands, discuss the identified wetlands considering the following:

   (a) Locating the landfill units, lateral expansions, material recovery operation from a landfill, and storage or processing units away from the identified wetlands. See Part II, Section 13.2.

   (b) Steps taken to avoid impacts to wetlands to the maximum extent practicable to achieve no net loss of wetlands (as defined by acreage and function).

   See Part II Section 13.2.

   (c) For unavoidable impacts:

      (i) Clearly rebut the presumption that a practicable alternative to the proposed facility or recovery operation is available that does not involve wetlands.

      (ii) Demonstrate that the construction and operation of the municipal solid waste landfill unit, material recovery operation from a landfill, and storage or processing units will not:

         (1) cause or contribute to violations of any applicable state water quality standard;

         (2) violate any applicable toxic effluent standard or prohibition under the Clean Water

         (3) jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; or

         (4) violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(iii) Demonstrate the integrity of the landfill unit and its ability to protect ecological resources by addressing the following factors showing that the municipal solid waste landfill unit or recovery operation will not cause or contribute to significant degradation of wetlands:

(1) erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the landfill unit;

(2) erosion, stability, and migration potential of dredged and fill materials used to support the landfill unit;

(3) the volume and chemical nature of the waste managed in the landfill unit;

(4) impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;

(5) the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and

(6) any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

(iv) Demonstrate steps taken to minimize unavoidable impacts to wetlands to the maximum extent practicable.

(v) Demonstrate offsetting of remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).

XVI. Endangered or Threatened Species - 30 TAC §330.61(n) and §330.551

1. Provide Endangered Species Act compliance demonstrations as required under applicable state and federal laws. Attachment No.: Appendix IIE.
2. Determine and discuss whether the facility is in the range of endangered or threatened species.

See Part II Section 14.

3. If the facility is located in the range of endangered or threatened species, provide a biological assessment prepared by a qualified biologist in accordance with standard procedures of the United States Fish and Wildlife Service (USFW) and the Texas Parks and Wildlife Department (TPWD) to determine the effect of the facility on the endangered or threatened species. Where a previous biological assessment has been made for another project in the general vicinity, a copy of that assessment may be submitted for evaluation. Attachment No.: Appendix IIE.
4. Provide coordination correspondence with and responses from the USFW and the TPWD concerning locations and specific data relating to endangered and threatened species in Texas.

See Appendix IIE.

5. Describe how the facility will comply with recommendations from the TPWD and USFW regarding protection of endangered and threatened species.

See Part II Section 14.

6. Discuss the impact of the solid waste disposal facility upon endangered or threatened species:

See Part II Section 14.

7. Describe how the facility design, construction, and operation will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.

See Part II Section 14.

XVII. Texas Historical Commission Review 30 TAC §330.61(o)

1. Provide correspondence to and a review letter from the Texas Historical Commission documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code.
   Attachment No.:

XVIII. Council of Governments 30 TAC §330.61(p)

1. Provide documentation that Parts I and II of the application were submitted to the applicable council of governments for compliance with regional solid waste plans. Also provide a review letter if received from the applicable council of governments.
   Attachment No.: Appendix IIF.
2. Provide documentation that a review letter was requested from any local governments as appropriate for compliance with local solid waste plans.
   Attachment No.: See Part II, Section 15.

XIX. Easement Protections 30 TAC §330.543(a)

1. Will the applicant design and operate the facility such that no solid waste unloading, storage, disposal, or processing operations will occur within any easement, buffer zone, or right-of-way that crosses the facility? ☑Yes
2. Will the applicant design and operate the facility such that no solid waste disposal shall occur within 25 feet of the center line of any utility line or pipeline easement but no closer than the easement? ☑Yes
3. Will the applicant clearly mark all pipeline and utility easements with posts that extend at least six feet above ground level, spaced at intervals no greater than 300 feet?
   ☑Yes

XX. Buffer Zones 30 TAC §330.543(b)

1. Provide the buffer zone distance (i.e. 50 feet for Arid Exempt and Type IV landfills, 125 feet for Type I landfills) at the facility to demonstrate compliance with 30 TAC §330.543(b).

See Part II Section 17.1.

2. Provide references for the application drawings and maps that clearly show the buffer zones around the facility. Attachment(s) No.: Drawing IIA.5

XXI. Coastal Areas 30 TAC §330.561

1. A new landfill cell or an aerial expansion of an existing landfill cell managing Class 1 industrial solid waste (other than waste which is Class 1 because of asbestos content) may not be located in areas:

   (a) On a barrier island or peninsula.

   (b) Within 1,000 feet of an area subject to active coastal shoreline erosion, if the area is protected by a barrier island or peninsula, except as allowed under 30 TAC §335.584(b)(4).

   (c) Within 5,000 feet of coastal shorelines that are subject to active shoreline erosion and which are unprotected by a barrier island or peninsula, except as allowed under 30 TAC §335.584(b)(4).

2. Describe the location of the facility with regard to distance to coastal shoreline subject to active shoreline erosion.

See Part II Section 17.10.

XXII. Type I and Type IV Landfill Permit Issuance Prohibited – 30 TAC §330.563

Address the following statements.

1. The commission may not issue a permit for a Type IV landfill that is subject to the conditions specified in Texas Health and Safety Code, §361.122, Denial of Certain Landfill Permits. Is the proposed facility a Type IV landfill located in the area subject to the referenced statute?
   ☐Yes ☑No Explain Facility is not a Type IV landfill.

2. The commission may not issue a permit for a Type I or Type IV landfill that is subject to the conditions specified in Texas Health and Safety Code, §361.123, Limitation on Locations of Municipal Solid Waste Landfills. Is the proposed facility a Type I or Type IV landfill located in the area subject to the referenced statute?
   ☐Yes ☑No Explain See Section 17.11.

Attachments

Table Att-1. Required Attachments

Attachments	Attachment No.
Existing Conditions Summary	Sec. 1
Waste Acceptance Plan Form	App. IIL
General Location Maps	App. IIA
Facility Layout Maps	App. IIA
General Topographic Maps	App. IIA
Aerial Photographs	App. IIA
Land Use Map	App. IIA
Transportation and Airport Safety Form	App. IIH
Federal Aviation Administration Coordination Letters, if applicable	App. IIH
Entity Exercising Maintenance Resp. of Public Roadway, if applicable	
Fault Lines, if applicable	
Seismic Impact Zones, if applicable	
Unstable areas, if applicable	
Site Specific Groundwater Conditions	
Site Specific Surface Water Conditions	
Texas Pollutant Discharge Elimination System (TPDES)	App. IIG
Abandoned Oil and Water Wells, if applicable	
FEMA Map	App. IIA
Facility Design Demonstration for Flood Map, or Conditional Letter of Map Amendment from FEMA, if applicable	App. IIK
Wetland Documentation, if applicable	App. IID
Endangered or Threatened Species Documents, if applicable	App. IIE
Texas Historical Commission Letter(s)	App. IIF
Council of Governments/Local Governments Review Request Coordination Letter(s)	App. III
Buffer Zones	App. IIA
Others (describe):	
Others (describe):	
Others (describe):	
Confidential Documents, if applicable	

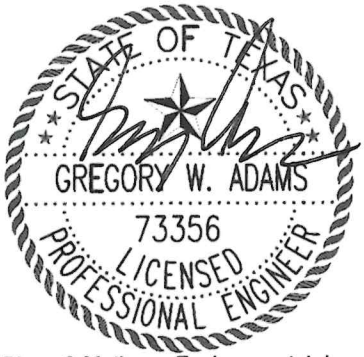
WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

PART I - SITE AND APPLICANT INFORMATION

Prepared for

WASTE MANAGEMENT OF TEXAS, INC.

March 2026



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

Prepared by

BIGGS & MATHEWS ENVIRONMENTAL
1700 Robert Road, Suite 100 • Mansfield, Texas 76063 • 817-563-1144

Texas Board of Professional Engineers and Land Surveyors
Firm Registration No. F-256 And No. 10194895

Texas Board of Professional Geoscientists
Firm Registration No. 50222

CONTENTS

1 GENERAL 1

2 FACILITY LOCATION 4

3 MAPS 5

4 PROPERTY OWNER INFORMATION 6

5 LEGAL AUTHORITY 7

6 EVIDENCE OF COMPETENCY 8

7 APPOINTMENTS 9

8 APPLICATION FEES 10

APPENDIX IA – GENERAL LOCATION MAPS

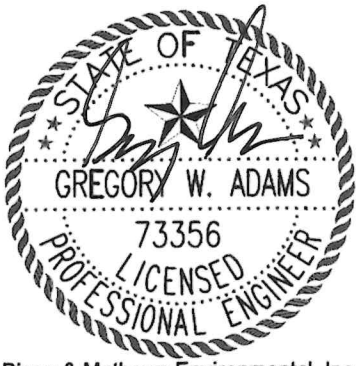
APPENDIX IB – LAND OWNERSHIP MAP AND LAND OWNERS LIST

APPENDIX IC – LEGAL DESCRIPTION AND PERMIT BOUNDARY MAP

APPENDIX ID – LEGAL AUTHORITY

APPENDIX IE – EVIDENCE OF COMPETENCY

APPENDIX IF - APPOINTMENTS



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

1 GENERAL

30 TAC §330.59(a)(1)

The Waste Management Skyline Landfill (Skyline Landfill) is an existing Type I Municipal Solid Waste Disposal Facility (Permit No. MSW 42D) owned and operated by Waste Management of Texas, Inc. (WMTX). The Skyline Landfill is located in Dallas and Ellis Counties, Texas, as shown in Appendix IA on Drawing IA.1. WMTX proposes to increase the permitted disposal capacity of this facility with a horizontal and vertical expansion.

This application has been prepared consistent with 30 TAC Chapter 330 Municipal Solid Waste Management Regulations adopted by the Texas Commission on Environmental Quality (TCEQ), effective the date of this application.

Part I of this permit amendment application contains information about the site and the applicant as required in 30 TAC §§281.5, 305.45, and 330.59. Part II describes the existing conditions and character of the facility and surrounding area as required in §330.61. Part III presents engineering information, detailed investigative reports, the schematic designs of the facility, and the required plans as required in §330.63. Part IV contains the Site Operating Plan, which includes specific information regarding the daily operations of the site as required in §330.65.

1.1 Permit History

The Skyline Landfill was originally permitted by the State of Texas in 1976 as Permit No. MSW 42. The Texas Department of Health issued Permit No. 42 to the City of Ferris for a solid waste disposal facility in December 1976. Permit No. 42 was transferred to Trinity Valley Reclamation, Inc., in September 1979. Waste Management of North America acquired Trinity Valley Reclamation, Inc. as a wholly owned subsidiary in January 1987. Trinity Valley Reclamation, Inc. was issued a permit amendment by the Texas Department of Health (Permit No. MSW 42A) in September 1987. Permit No. MSW 42A was transferred to WMTX in October 1991. Permit No. MSW 42C was issued to WMTX on April 18, 1995. Permit No. MSW 42D was issued to WMTX on June 9, 2015. The Skyline Landfill is operating under the 42D permit requirements and any subsequent modifications or authorizations.

Consistent with §305.45(a)(7), the permits and approvals received for the facility are listed as follows:

- Texas Commission on Environmental Quality Texas Pollutant Discharge Elimination System Storm Water Multi-Sector General Permit, Permit No. TXR05U147.
- Texas Commission on Environmental Quality Petroleum Storage Tank Registration, Registration No. 50511.

- Texas Commission on Environmental Quality Air Permits Division, Air New Source Permits 136148, 1485.
- Texas Commission on Environmental Quality Municipal Solid Waste Processing Registration, Registration No.'s 48018, 48048.
- Texas Commission on Environmental Quality Industrial and Hazardous Waste Solid Waste Registration No. H0042.
- U.S. Army Corps of Engineers, Section 404 Individual Permit No. SWF-2009-00371.
- U.S. Army Corps of Engineers, Nationwide Permit 39 No. SWF-2009-00138.
- City of Ferris Floodplain Administrator – Placement of Fill in the 100-Year Floodplain.

1.2 Facility Information

The Skyline Landfill has a 661.7-acre permit boundary. This permit amendment application will increase the permit boundary by 197.0 acres to 858.7 acres and will add 131.8 acres of disposal area, as shown on Drawing 1A.4. The maximum final elevation will be increased from 688 feet to 761 feet-msl. The landfill expansion will provide a total waste disposal capacity of approximately 126,075,000 cubic yards. The Skyline Landfill receives approximately 1,900,000 tons of waste annually (6,090 tons per day). The waste acceptance rate will vary over the life of the facility depending on market conditions. WMTX anticipates that the maximum rate of waste disposal will be approximately 2,412,500 tons per year (7,730 tons per day). Based on the anticipated waste acceptance rate, the facility will have a remaining site life of 24 years. The following table provides a summary of the current 42D permit conditions and proposed 42E permit conditions:

PERMIT CONDITION SUMMARY

	Current Condition 42D	Proposed Condition 42E
Permitted Area	661.7 ac	858.7 ac
Waste Disposal Unit Area	356.9 ac	488.7 ac
Buffer / Other Areas	304.8 ac	370.0 ac
Total Capacity	80,600,000 cy	126,075,000 cy
Remaining Projected Site Life	9 years	24 years

The Skyline Landfill is separated into 2 distinct units, Landfill Unit 1 and 2, as shown on Drawing IA.4. Landfill Unit 1 consists of a 68.3-acre area of pre-Subtitle D Type I liner with final cover in place, and a 4.2-acre area of Subtitle D Type I liner with final cover in place. Landfill Unit 2 consists of 284.4-acres of Subtitle D Type I lined area and the proposed 131.8-acres of Subtitle D Type I expansion area.

Entrance facilities, a Type IX Beneficial Landfill Gas Recovery Facility (Type IX Registration No. 48018 and 48048), a citizen's convenience center, a leachate storage facility, a mud grate facility, a maintenance facility, access roads, and surface water drainage facilities are located within the buffer areas. Waste processing and storage facilities located within the landfill footprint include a large item storage area, reusable materials storage area and a liquid stabilization area. Atmos Energy and Oncor easements pass through the facility.

In accordance with §330.141(a) and §330.543, solid waste unloading, storage, disposal, and processing operations will not occur within any easement, buffer zone, or right-of-way that crosses the site. The distance from the permit boundary to all solid waste unloading, storage, disposal, and processing operations exceed the minimum buffer zone distance of 125 feet. Drawing IA.4 depicts the location of these facilities and the distances from the permit boundary.

The major classifications of solid waste accepted at the Skyline Landfill include household waste, yard waste, commercial waste, Class 2 and class 3 nonhazardous industrial waste, construction-demolition waste, and some special wastes. The waste classifications are defined in §330.3. Consistent with §330.15, the facility will not accept for disposal lead acid storage batteries; used motor vehicle oil; used oil filters; whole used or scrap tires; refrigerators, freezers, air conditioners, or other items containing chlorinated fluorocarbon; bulk or noncontainerized liquid waste from non-household sources; regulated hazardous waste; polychlorinated biphenyls waste; radioactive materials or other wastes prohibited by TCEQ regulations.

2 FACILITY LOCATION

30 TAC §330.59(b)(1)-(3)

2.1 Location Description

The Skyline Landfill is located in Dallas and Ellis Counties, Texas, within the city limits of Ferris, Texas and west of North Central Street (Business IH 45). The eastern site boundary coincides with the Southern Pacific Railroad right-of-way. The facility address is 1201 N. Central Street, Ferris, TX 75125.

2.2 Access Routes

Access to the facility is by North Central Street (Business IH 45) As shown on Drawing IA.4.

2.3 Geographic Coordinates

The latitudinal and longitudinal geographic coordinates of the facility are:

Latitude: 32°32'48.0"
Longitude: 96°39'57.4"
Elevation (above msl): 438.58 ft

3 MAPS

30 TAC §330.59(c)(1)-(3)

3.1 General Location Maps

Drawings 1A.1 through 1A.4 provide the information required by 30 TAC §330.59(c)(1)-(2) and §305.45. The base map used for each of the general location maps is the most current version available from each respective source. The general location maps are provided in Appendix IA:

- Drawing IA.1 – General Location Map
- Drawing IA.2 – Wells, Springs, and Water Bodies Map
- Drawing IA.3 – General Character of the Area Map
- Drawing IA.4 – Facility Plan

3.2 Land Ownership Map and Land Owners List

A Land Ownership Map and Land Owners List, included in Appendix IB, shows property ownership within one-quarter mile of the permit boundary, and mineral interest ownership under the facility. The map and list meet the requirements of 30 TAC §305.45(a), §330.59(c)(3), and §281.5. The list will be provided in electronic format per the requirements of 30 TAC §330.59(c)(3)(B).

4 PROPERTY OWNER INFORMATION

30 TAC §330.59(d)(1)-(2)

4.1 Legal Description

The legal description and drawing for the proposed permit boundary is included in Appendix IC . This legal description meets the requirements of 30 TAC §330.59(d)(1).

4.2 Drainage, Pipeline, and Utility Easements

The drainage, pipeline, and utility easement locations are provided in Appendix IC, on the permit boundary drawing as required by §330.61(c)(10).

4.3 Property Owner Affidavit

The property owner affidavit is provided on Page 13 of the Part I Application Form and meets the requirements of §330.59(d)(2).

5 LEGAL AUTHORITY

30 TAC §330.59(e)

The legal authority and status of the applicant has been verified as required by §330.59(e) and §281.5 and is included in Appendix ID. WMTX owns and operates the Skyline Landfill. No other person or entity owns more than 20 percent of the facility.

6 EVIDENCE OF COMPETENCY

30 TAC §330.59(f)(1)-(6)

The evidence of competency is provided in Appendix IE and meets the requirements of §330.59(f).

7 APPOINTMENTS

30 TAC §330.59(g)

The appointments for this permit amendment application provided in Appendix IF meet the requirements of §330.59(g) and §305.44.

8 APPLICATION FEES

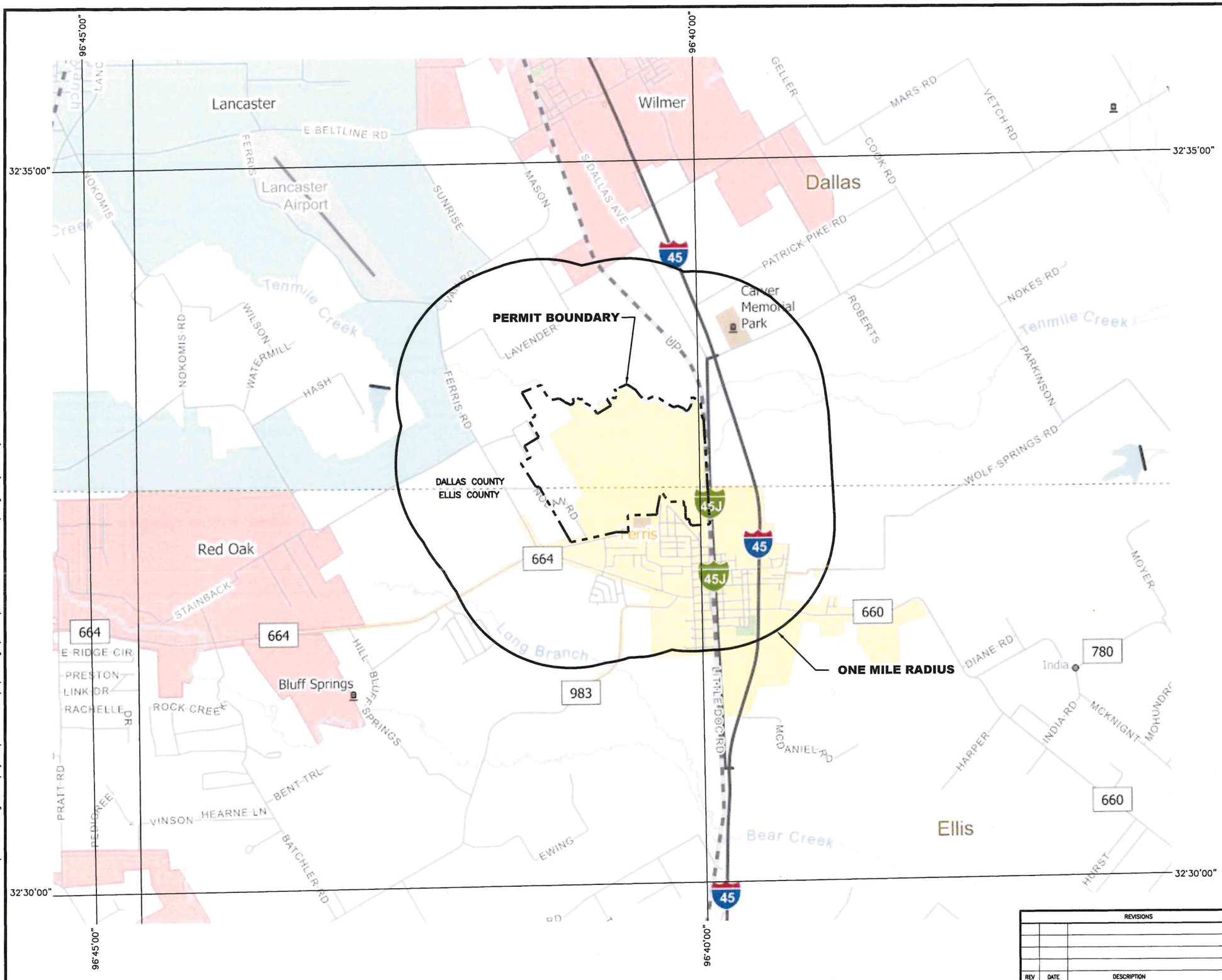
30 TAC §330.59(h)(1)

On behalf of Skyline Landfill, Biggs and Mathews Environmental, Inc. has made payment of the $2,050 permit amendment application fee in accordance with §330.59(h). This fee was paid online using TCEQ e-pay at www.tceq.state.tx.us/e-service/index.html.The e-pay confirmation number is listed on page 2 of the Part I Application Form.

SKYLINE LANDFILL

APPENDIX IA

GENERAL LOCATION MAPS



0 2000 4000

SCALE IN FEET

LEGEND

- Unincorporated Community
- County Seat
- Border Crossing
- Cemetery
- Cemetery (Inside City)
- Deep Draft Port
- Shallow Draft Port
- Railroad
- Dam
- River or Stream
- TXDOT District
- Lakes
- Education
- Military
- Airport Runway
- Airport
- Prison
- Parks and Other Public Land

NOTE:

1. GENERAL HIGHWAY MAP DOWNLOADED FROM TxDOT WEBSITE ON JULY 3, 2025.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

GENERAL LOCATION MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

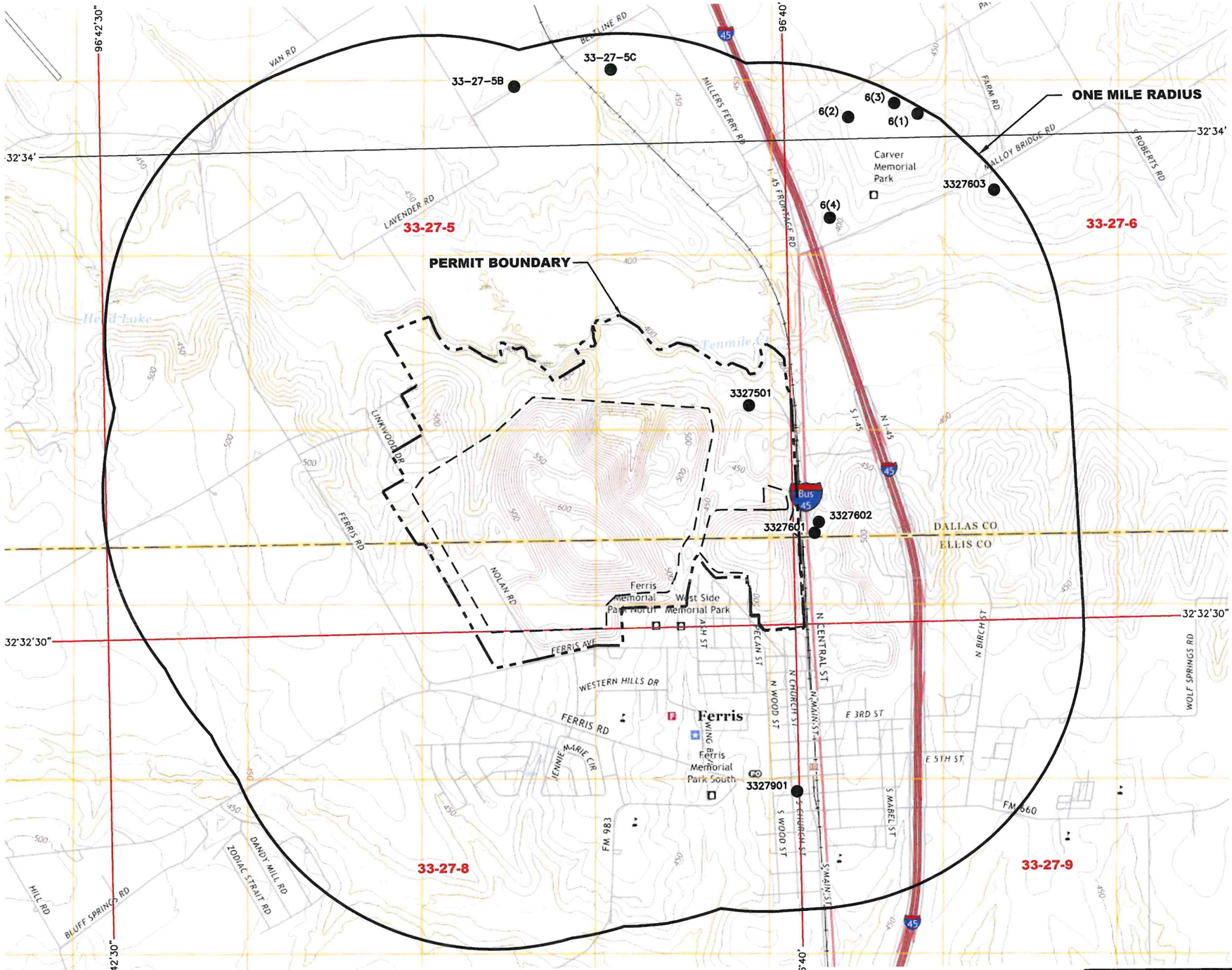
BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IA.1

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\A.1-GeneralLocationMap.dwg Layout: Layout1 User: awhite



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- ONE MILE RADIUS
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER
- WATER WELL
- WATER WELL ID GRID
- 33-27-5 WATER WELL GRID NUMBER

FERRIS, TX
2022

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route / State Route

NOTES:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.
2. WATER WELLS IDENTIFIED FROM ONLINE STATE RECORDS. REFER TO PART III, ATTACHMENT E, APPENDIX E1 FOR WATER WELL INFORMATION.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

WELLS, SPRINGS AND WATER BODIES MAP

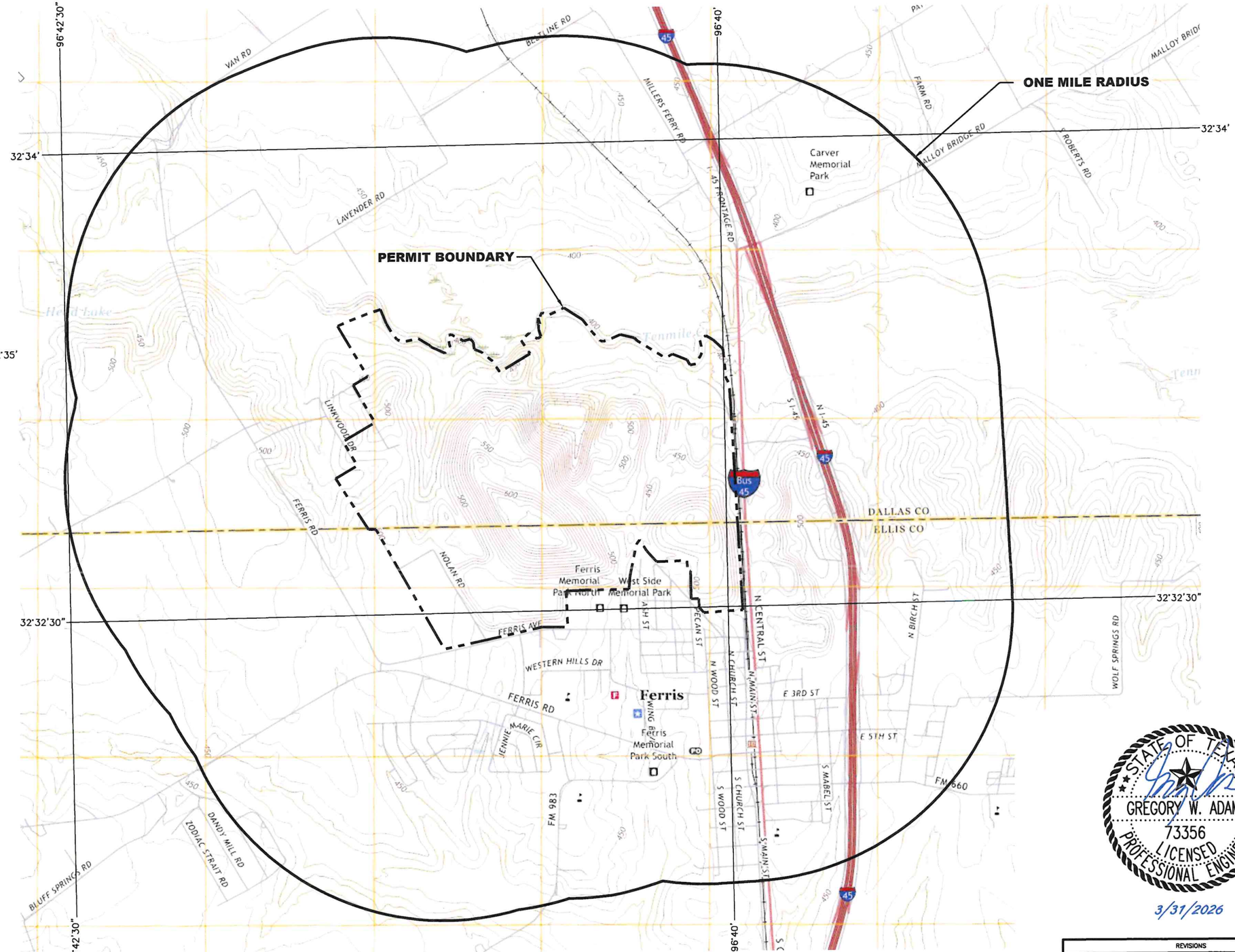
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IA.2

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part IA\IA.2-WaterWellMap.dwg Layout: Layout1 User: owhite



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- ONE MILE RADIUS
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER

FERRIS, TX
2022

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route / State Route

NOTES:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.
2. REFER TO PART II, APPENDIX B FOR DETAILED LAND USE INFORMATION AND LAND USE MAP.
3. THERE ARE 1679 RESIDENCES AND 82 INDUSTRIAL/COMMERCIAL ESTABLISHMENTS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
4. THERE ARE 7 CHURCHES, 3 CEMETERIES, AND 5 SCHOOLS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
5. THERE ARE NO TEXAS STATE HISTORICAL COMMISSION HISTORIC MARKERS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
6. THERE ARE NO ARCHAEOLOGICALLY SITES AND NO SITES HAVING EXCEPTIONAL AESTHETIC QUALITY WITHIN ONE MILE OF THE PERMIT BOUNDARY.
7. THERE ARE NO INTAKE/DISCHARGE STRUCTURES LOCATED WITHIN OR ASSOCIATED WITH THE FACILITY.
8. THERE ARE NO WASTE DISPOSAL ACTIVITIES WITHIN THE PERMIT BOUNDARY THAT ARE NOT INCLUDED IN THIS PERMIT AMENDMENT APPLICATION.
9. REFER TO APPENDIX IB FOR DRAINAGE, PIPELINE, AND UTILITY EASEMENT LOCATIONS WITHIN THE PERMIT BOUNDARY.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

GENERAL CHARACTER OF THE AREA MAP

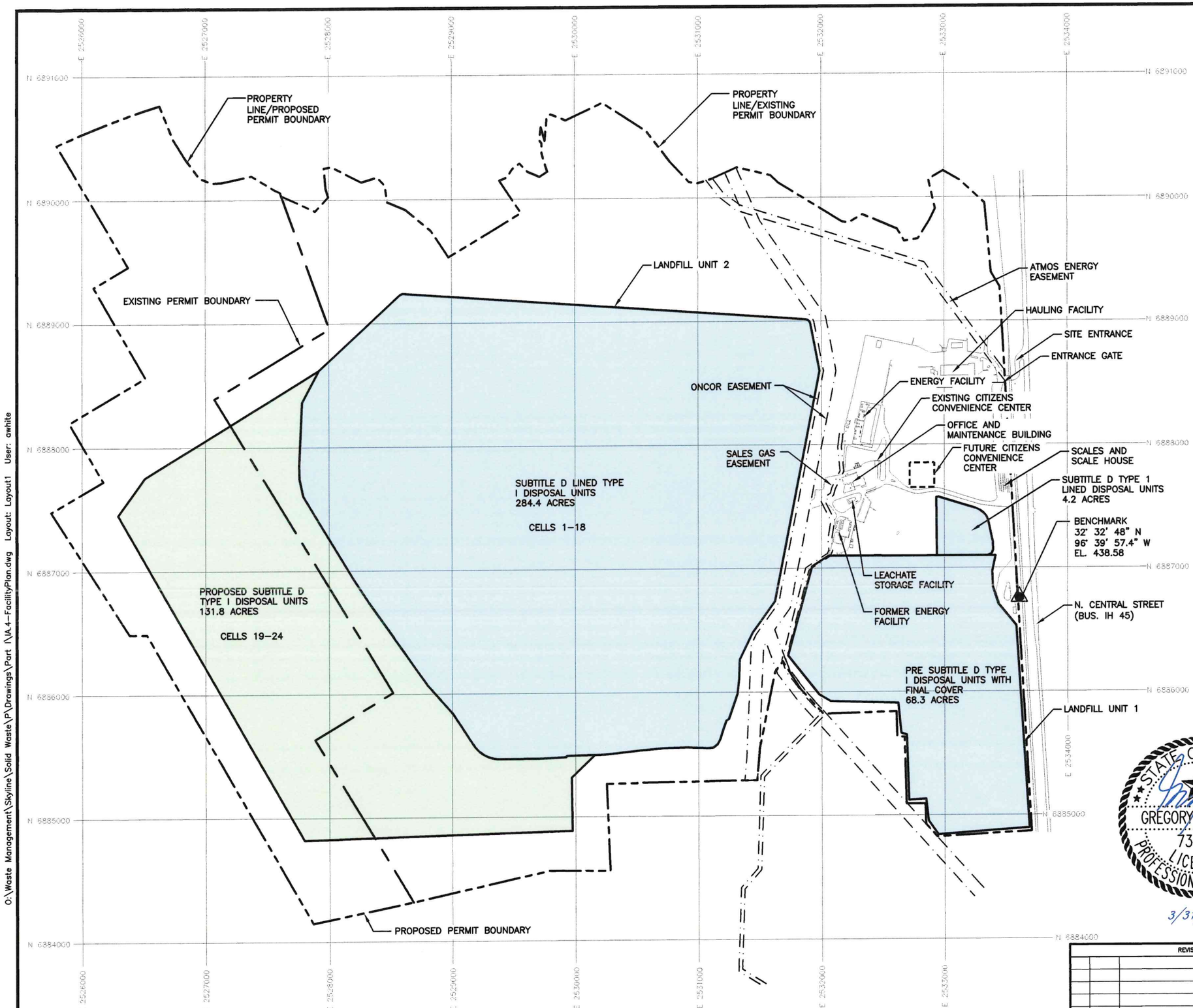
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IA.3

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Port I\IA.3-GeneralCharacterMap.dwg Layout: Layout1 User: awhite



0 400 800
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- STATE PLANE GRID (NAD 83)
- EASEMENT
- EXISTING DISPOSAL UNIT
- PROPOSED DISPOSAL UNIT

NOTES:

1. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 83 (2011), TEXAS NORTH CENTRAL ZONE, US FEET.
2. REFER TO APPENDIX IC FOR LEGAL DESCRIPTION OF PERMIT BOUNDARY AND EASEMENTS.
3. FOR CLARITY, ONLY EASEMENTS ADJACENT TO DISPOSAL AREAS ARE SHOWN. SEE APPENDIX IC FOR THE LOCATION AND DESCRIPTION OF ALL SITE EASEMENTS.

LANDFILL FOOTPRINT	
PERMITTED FOOTPRINT	356.9 Ac.
FOOTPRINT ADDED	131.8 Ac.
PROPOSED FOOTPRINT	488.7 Ac.

PERMIT BOUNDARY	
CURRENT BOUNDARY	661.7 Ac.
BOUNDARY ADDED	197.0 Ac.
PROPOSED BOUNDARY	858.7 Ac.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

REVISIONS

REV	DATE	DESCRIPTION	DWN BY

FACILITY PLAN

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IA.4

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\IA.4-FacilityPlan.dwg Layout: Layout1 User: awhite

SKYLINE LANDFILL

APPENDIX IB

LAND OWNERSHIP MAP AND LAND OWNERS LIST

LOOP 9 RIGHT OF WAY

1/4 MILE RADIUS

NORTH CENTRAL STREET (U.S. 75)

INTERSTATE HIGHWAY 45

96°40'

DALLAS COUNTY

ELLIS COUNTY

32°32'30"

SEE DRAWING 1B.2

SEE DRAWING 1B.3

SEE DRAWING 1B.4

0 500 1000

SCALE IN FEET

LEGEND

PROPOSED PERMIT BOUNDARY

LAND OWNED BY WASTE MANAGEMENT

(1) LAND OWNERSHIP IDENTIFICATION

NOTES:

1. REFER TO LAND OWNERS LIST FOR ADJACENT LAND OWNER NAMES.
2. ADJACENT LAND OWNERS IN DALLAS COUNTY BASED ON DALLAS COUNTY APPRAISAL DISTRICT RECORDS DOWNLOADED FROM DCAD WEBSITE ON FEBRUARY 12, 2026. ADJACENT LAND OWNERS IN ELLIS COUNTY BASED ON ELLIS COUNTY APPRAISAL DISTRICT RECORDS, DOWNLOADED FROM ECAD WEBSITE ON FEBRUARY 12, 2026.
3. LAND OWNERS HAVE BEEN IDENTIFIED ADJACENT TO AND WITHIN 1/4 MILE OF THE PERMIT BOUNDARY.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

LAND OWNERSHIP MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

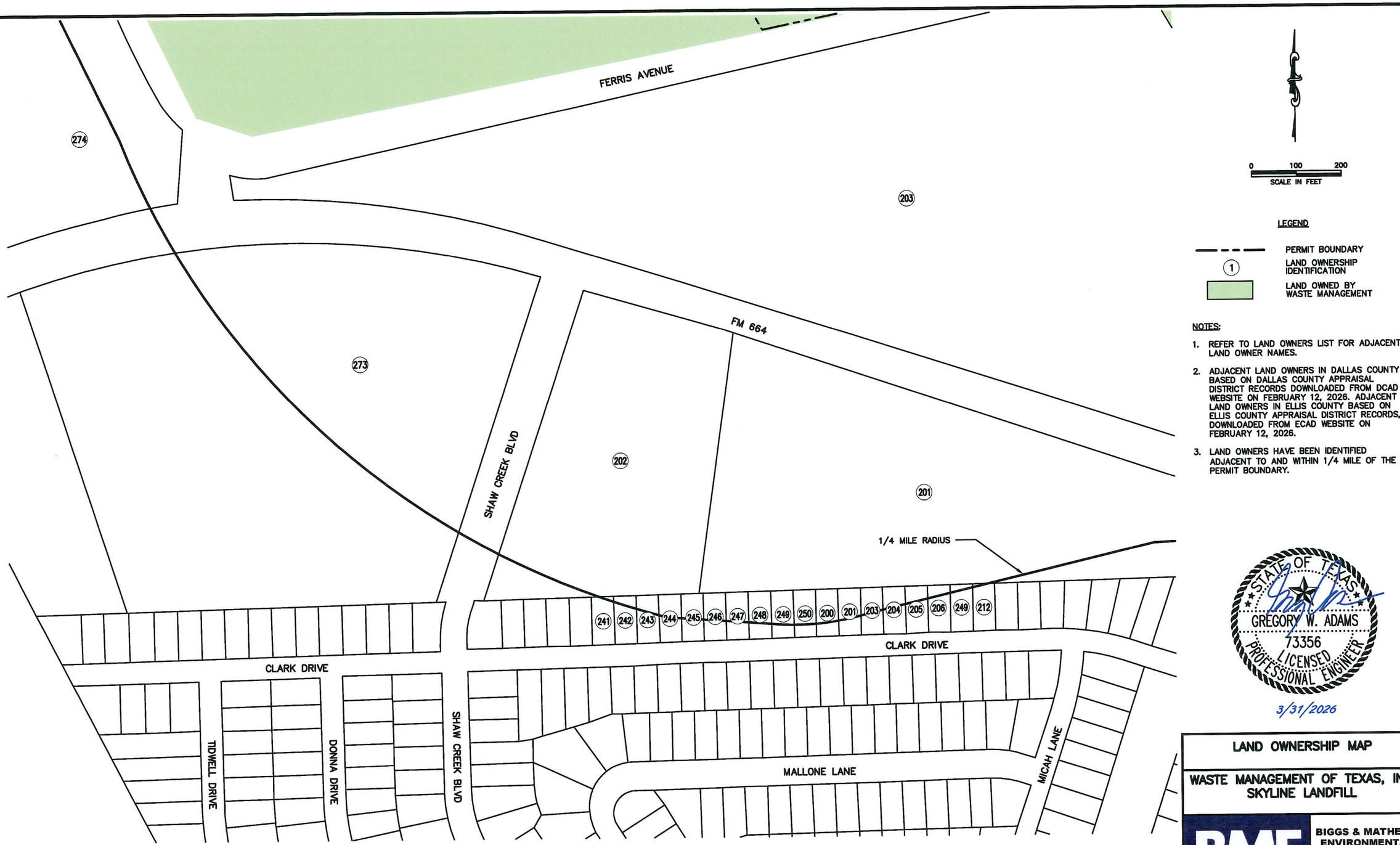
REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IB.1

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\B.1-Property Owner Map.dwg Layout: 1B.1 User: bboles



0 100 200
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- (1) LAND OWNERSHIP IDENTIFICATION
- LAND OWNED BY WASTE MANAGEMENT

NOTES:

1. REFER TO LAND OWNERS LIST FOR ADJACENT LAND OWNER NAMES.
2. ADJACENT LAND OWNERS IN DALLAS COUNTY BASED ON DALLAS COUNTY APPRAISAL DISTRICT RECORDS DOWNLOADED FROM DCAD WEBSITE ON FEBRUARY 12, 2026. ADJACENT LAND OWNERS IN ELLIS COUNTY BASED ON ELLIS COUNTY APPRAISAL DISTRICT RECORDS, DOWNLOADED FROM ECAD WEBSITE ON FEBRUARY 12, 2026.
3. LAND OWNERS HAVE BEEN IDENTIFIED ADJACENT TO AND WITHIN 1/4 MILE OF THE PERMIT BOUNDARY.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

LAND OWNERSHIP MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

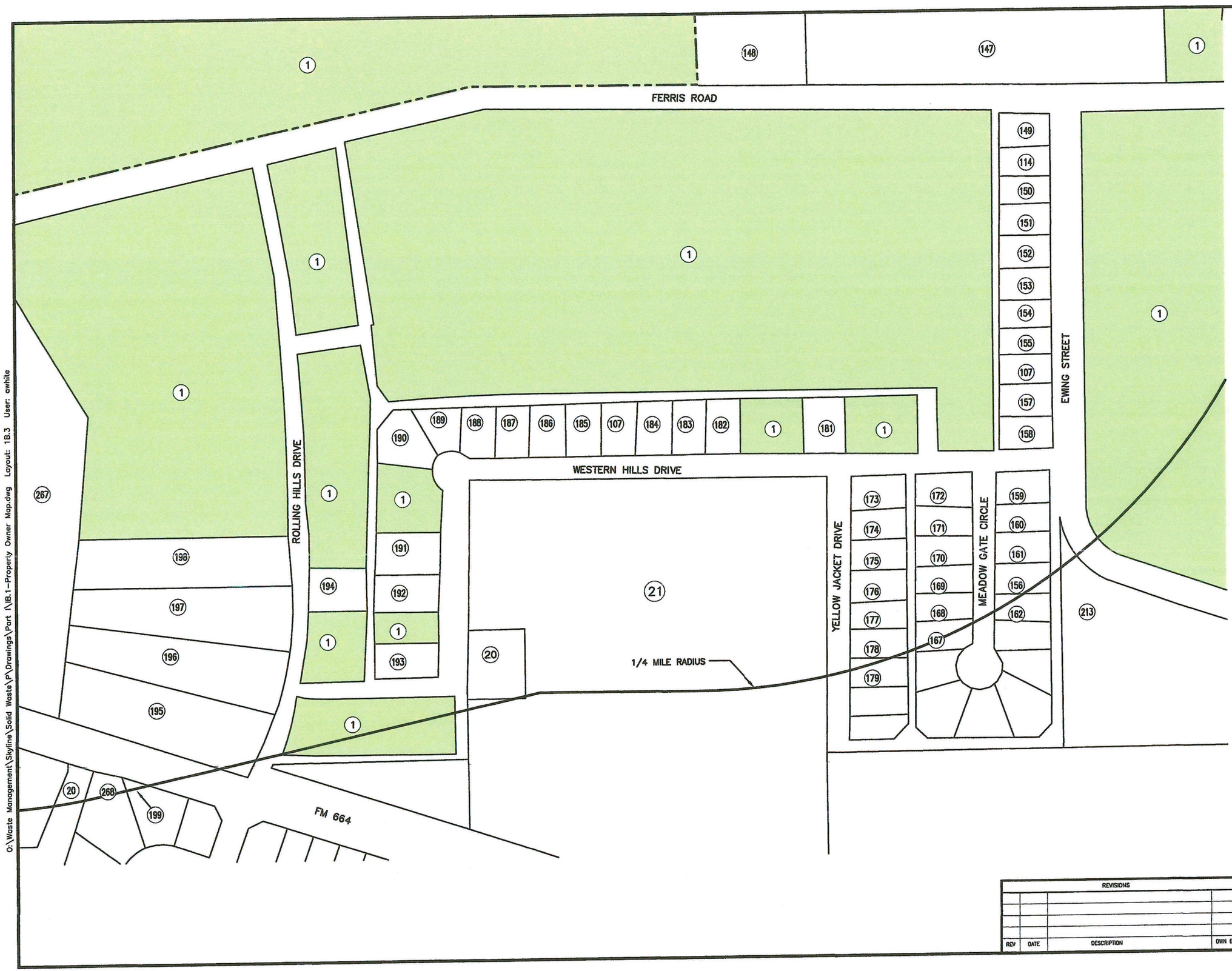
REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IB.2

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\B.1-Property Owner Map.dwg Layout: 1B.2 User: bboles



NOTES:

1. REFER TO LAND OWNERS LIST FOR ADJACENT LAND OWNER NAMES.
2. ADJACENT LAND OWNERS IN DALLAS COUNTY BASED ON DALLAS COUNTY APPRAISAL DISTRICT RECORDS DOWNLOADED FROM DCAD WEBSITE ON FEBRUARY 12, 2026. ADJACENT LAND OWNERS IN ELLIS COUNTY BASED ON ELLIS COUNTY APPRAISAL DISTRICT RECORDS, DOWNLOADED FROM ECAD WEBSITE ON FEBRUARY 12, 2026.
3. LAND OWNERS HAVE BEEN IDENTIFIED ADJACENT TO AND WITHIN 1/4 MILE OF THE PERMIT BOUNDARY.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

LAND OWNERSHIP MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144
TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IB.3

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\IB.1-Property Owner Map.dwg Layout: 1B.3 User: awhite



LEGEND

- PERMIT BOUNDARY
- EXISTING LANDFILL FOOTPRINT
- PROPOSED LANDFILL FOOTPRINT
- (1) LAND OWNERSHIP IDENTIFICATION
- LAND OWNED BY WASTE MANAGEMENT

NOTES:

1. REFER TO LAND OWNERS LIST FOR ADJACENT LAND OWNER NAMES.
2. ADJACENT LAND OWNERS IN DALLAS COUNTY BASED ON DALLAS COUNTY APPRAISAL DISTRICT RECORDS DOWNLOADED FROM DCAD WEBSITE ON FEBRUARY 12, 2026. ADJACENT LAND OWNERS IN ELLIS COUNTY BASED ON ELLIS COUNTY APPRAISAL DISTRICT RECORDS, DOWNLOADED FROM ECAD WEBSITE ON FEBRUARY 12, 2026.
3. LAND OWNERS HAVE BEEN IDENTIFIED ADJACENT TO AND WITHIN 1/4 MILE OF THE PERMIT BOUNDARY.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

LAND OWNERSHIP MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

REV	DATE	DESCRIPTION	DWN BY

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IB.4

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part I\IB.1-Property Owner Map.dwg Layout: 18.4 User: awhite

LANDOWNER'S LIST

1 Waste Management of Texas
P. O. Box 1450
C/O Waste Management
Chicago, IL 60690-1450

2 Johnson Harold Kenneth &
2080 Newton Rd
Ferris, TX 75125-1258

3 Curtis Dennis E &
2618 Sleepy Hollow Ln
Lancaster, TX 75146-5900

4 Absolute Properties LLC
605 18th St
Plano, TX 75074-5601

5 Perez, Hector C & Minerva
2614 Sleepy Hollow Ln
Lancaster, TX 75146-5900

6 Padierna, Eleno
3314 Linkwood Dr
Lancaster, TX 75146-5908

7 Stewart Veronica Life Estate
3418 Linkwood Dr
Lancaster, TX 75146-5909

8 Monroy Joaquin Cuevas
3420 Linkwood Dr
Lancaster, TX 7514-5909

9 Martinez Enrique
2417 Linkwood Dr
Lancaster, TX 75146-5911

10 Silva Rafael Argenis
3421 Linkwood Dr
Lancaster, TX 75146-5911

11 Huff Sabrina
3427 Linkwood Dr
Lancaster, TX 75146-5911

12 Rahmani Hamid &
2207 Midhurst Dr
Arlington, TX 76013-5431

13 Skybrees Real Estate
5930 Hillside Lme
Garland, TX 75043

14 Sassin Investments Inc
P. O. Box 266
Wilmer, TX 75172-0266

15 Sassin & Sons
P. O. Box 266
Wilmer, TX 75172-0266

16 Smith EL III Et Al
3100 Monticello Ave Ste 575
C/O Smith Trust Agency
Dallas, TX 75205-3439

17 Texas Utilities Electric Co
P. O. Box 139100
C/O State & Local Tax Dept
Dallas, TX 75313

18 Union Pacific RR Co
1400 Douglas St Stop 1640
C/O Tax Dept
Omaha, NE 68179-1001

19 Prime Rail Interest LLC
P. O. Box 249
Colleyville, TX 76034-0249

20 Ferris City of
100 Town Plz
Ferris, TX 75125-2537

21 Ferris ISD
P. O. Box 428
Ferris, TX 75125-0428

22 Johnson Michael
2080 Newton Rd
Ferris, TX 75125-1258

23 Duenas Maria
159 Harper Dr
Ferris, TX 75125

24 QTS Dallas V LLC
12851 Forest St
Overland Park, KS 66211

LANDOWNER'S LIST

25 Gandarilla Juana
408 E First St
Ferris, TX 75125-1725

26 Neil Tracy & Rebecca
510 Dunn St
Waxahachie, TX 75165-2508

27 Garcia Arturo M & Maribel P Hernandez
106 E 1st St
Ferris, TX 75125

28 Salano Sergio
7225 W Flower St
Phoenix, AZ 85033

29 Caldwell Pomerante Coleen
409 N Baker
Ferris, TX 75125

30 O Valle John & Victor Garcia Estate of
500 N Central St
Ferris, TX 75125

31 Rodriguez Ricardo
141 Alvis Ln
Ferris, TX 75125

32 Moreno Monica
309 N Main St
Ferris, TX 75125

33 Garcia Jaime
411 N Main St
Ferris, TX 75125-1622

34 De La Rosa Jesus & Amelia
700 A D Mosley St
Ferris, TX 75125-1545

35 Beck Brenda
204 Farley St
Waxahachie, TX 75165-2747

36 Mendez Rafael & Maria
207 W 2nd St
Ferris, TX 75125

37 Johnson Micheal D
695 Hampel Rd
Palmer, TX 75152

38 Garcia Maria G
404 N Church St
Ferris, TX 75125-1615

39 Moreno Monica & Cleotilde Moreno
309 N Main St
Ferris, TX 75125

40 Orozco Jesus & Lilia
2921 Holy Cross Ln
Garland, TX 75044-4673

41 Hernandez Jose G & Dora Mendez
308 A Ave
Ferris, TX 75125-1613

42 Ladd Vien
1015 Ferris Ave
Waxahachie, TX 75165-2588

43 Grass Robert K & Ofelia
1375 FM 1389 N
Combine, TX 75159-5410

44 Romero Juan
124 Hidden Ln
Red Oak, TX 75154-4028

45 Johnson Ophelia
515 N Main St
Ferris, TX 75125-1624

46 9th Planet Management LLC
6060 N Central Expy Ste 500
Dallas, TX 75206-5249

47 Escalante Felipe & Maria B D R Martinez
4315 NW County Rd 4200
Frost, TX 76641

48 Yeldell Pinkie
P. O. Box 150
Ferris, TX 75125-0150

49 Oncor Electric Delivery Company
P. O. Box 139100
Dallas, TX 75313

50 Old Brickyard Group LLC
605 N Interstate Highway 45
Ferris, TX 75125-1826

51 Delgadillo Israel & Arturo
800 Oak St
Ferris, TX 75125

52 Greater Lighthouse Church of God in Christ
507 N Wood St
Ferris, TX 75125-0305

53 Mendez Ruben & Olivia Garcia
607 N Wood st
Ferris, TX 75125

54 Hernandez Mendez Estefania
615 N Church St
Ferris, TX 75125-1618

55 Ferris Housing PFC
401 W 1st St
Ferris, TX 75125

56 Mendez Garcia Juan M & Maria G Garcia
311 N Wood St
Ferris, TX 75125

57 Moreno Hilario
518 N Wood St
Ferris, TX 7512-1629

58 Mendez Martin & Maria
310 S Church St
Ferris, TX 75125-2536

59 Mendez Edgar De Jesus Hernandez & Carolina M Davila
603 N Church St
Ferris, TX 75125-1618

60 Ozuna Jose
307 W 1st St
Ferris, TX 75125

61 Ramirez Maria E
311 W 1st St
Ferris, TX 75125

62 Bahena Santos & Reyna
219 Nocona Dr
Waxahachie, TX 75165-1566

63 Garcia Maria G
404 N Church St
Ferris, TX 75125-1615

64 Rivas Mario N Jr
300 W 1st St
Ferris, TX 75172-1605

65 Mixon Kristopher & Hamner Stehanie M
301 W 2nd St
Ferris, TX 75125-1608

66 Barajas Family Investments LLC
P. O. Box 1615
Red Oak, TX 75154-1563

67 Hernandez Daniel
309 W 2nd St
Ferris, TX 75125

68 Hernandez Manuel & Leticia
406 N Wood St
Ferris, TX 75125-1627

69 Luna Augustina C
405 N Wood St
Ferris, TX 75125-1626

70 Mendez Jaime Garcia
407 N Wood St
Ferris, TX 75125-1626

71 Ellis County Trustee
P. O. Box 188
Waxahachie, TX 75168-0188

72 Cardenas Hose E & Matilda
500 W 1st St
Ferris, TX 75125-1505

73 Banks Clayton H III & Terasa
508 W 1st St
Ferris, TX 75125-1505

74 Moreno Isidro & Sebastian Moreno
512 W 1st St
Ferris, TX 75125

75 Garibay Yilda & Anthon Kroeung
514 W 1st St
Ferris, TX 75125

76 Garcia Mireya C & Mendez Antonio
Antonio D J
516 W 1st St
Ferris, TX 75125-1505

77 True Vine Missionary Baptist Church
618 Meadow Ridge Dr1
Ferris, TX 75125-1507

78 Carey Marvin J & Icyrene
517 W 1st St
Ferris, TX 75125-1504

79 Hernandez Everardo
611 N Church St
Ferris, TX 75125-1618

80 Hames Alice Izora
505 W 1st St
Ferris, TX 75125-1504

81 Bruce Henry
2863 Marjorie Ave
Dallas, TX 75216-7242

82 Carbajal Gloria R
509 Pecan St
Ferris, TX 75125-1532

83 Olvera Anna C
512 A D Mosley St
Ferris, TX 75125-1541

84 Guevara Agustin & Maria A Aguillon
518 A D Mosley St
Ferris, TX 75125-1541

85 Vasquez Garardo & Ma D Garcia
Vasquez
524 A D Mosley St
Ferris, TX 75125-1541

86 Ferguson Ashley
513 A D Mosley St
Ferris, TX 75125-1540

87 Rivas Mario A Sr
1011 Mars Rd
Wilmer, TX 75172-3307

88 Jones Paul
515 N Main St
Ferris, TX 75125-1624

89 Carter Bud
317 Leads St
Dallas, TX 75203-3144

90 Ramirez Elmer & Jose
512 Ennis Scott St
Ferris, TX 75125-1527

91 Hernandez Jose & Leticia
648 Maple St
Ferris, TX 75125-1551

92 Greater Johnson Chapel AME Church
517 Front St
Ferris, TX 75125-1526

93 Chavez Gregoria & Minerva
616 Neck Rd
Ferris, TX 75125-8872

94 Armstrong Marsha K
505 Ennis Scott St
Ferris, TX 75125

95 Mendez Victor M H
504 S Mable St
Ferris, TX 75125

96 Hyder Vence
512 Ferris Rd
Ferris, TX 75125-1102

97 Rodriguez Matilde E
4445 Highland St
Lancaster, TX 75134-1423

98 Macedonia Baptist Church
509 Ferris St
Ferris, TX 752125

99 Gallegos Jose C
1440 Johns Ave
Lancaster, TX 75134

100 Saenz Paulo M & Maria R Vazquez Hernandez
809 Pecan St
Ferris, TX 75125

101 Notario Sergio V & Silvia E Gonzalez
808 Maple St
Ferris, TX 75125-1128

102 Brady Stephen L & Miranda S
510 Ennis Scott St
Ferris, TX 75125-1527

103 Najera Fermin & Francis Mendoza
821 Pecan St
Ferris, TX 75125-1125

104 Mowze Willie & Hubert L/E
829 Pecan St
Ferris, TX 75125-1125

105 Romero Juan
124 Hidden Ln
Red Oak, TX 75154-4028

106 Wiley Lawrence & Alice F
824 Maple St
Ferris, TX 75125-1128

107 M & M Investments & Partners Inc
P. O. Box 643
Ferris, TX 75125-0643

108 Hernandez Hilda M
829 Maple St
Ferris, TX 75125-1127

109 Maldonado Nicolasa
813 Maple St
Ferris, TX 75125-0428

110 Safiullah Zaida
747 Arrowood Ln Apt 201
Oak Park, CA 91377-5446

111 Cauich Wilberth G O & Garza Vanessa
821 Maple St
Ferris, TX 75125-1127

112 Jarvis Peggy L
713 Mill Creek Rd
Lancaster, TX 75146-2836

113 Brookins George Jr
803 Maple St
Ferris, TX 75125-1127

114 Hunter Marian Living Trust
8036 Olusta Dr
Dallas, TX 75217-6779

115 Castro-Gonzalez Jaime
812 Oak St
Ferris, TX 75141

116 Brookins Dorothy
803 Maple St
Ferris, TX 75125-1127

117 Hernandez Ma D J & Mendez Martin
310 S Church St
Ferris, TX 75125-2536

118 Delgadillo Arturo
800 Oak St
Ferris, TX 75125-1100

119 Torres Olivia D & Roberto Jr
607 Ennis Scott St
Ferris, TX 75125-1554

120 Solis Adriana
700 Ferris Rd
Ferris, TX 75125

121 Mount Rose Primitive Baptist Church
P. O. Box 276
Ferris, TX 75125-0276

122 Scott Opal M Et Al
616 Ferris Rd
Ferris, TX 75125

123 Rodriguez Francine D
600 Ennis Scott St
Ferris, TX 75125

124 Holbert Elmer J & Wanda F
604 Ash St
Ferris, TX 75125-1515

125 Pipkin Alton & Verda B
704 Ennis Scott St
Ferris, TX 75125-1553

126 Valdez Sandra M & Christopher Stone II
715 A D Mosley St
Ferris, St 75125-1544

127 Equity Trust Company
1221 N Oak Branch Rd
Waxahachie, TX 75167

128 Hess Property & Development LLC
327 Blue Ribbon Rd
Waxahachie, TX 75165-8722

129 Sargent Melissa
505 Meadowridge St
Ferris, TX 75125-1528

130 Lopez Rene
591 Alsdorf Rd
Ennis, TX 75119-7523

131 Thompson Billy
601 A D Mosley St
Ferris, TX 75125-1542

132 Scott Robert
603 W 1st St
Ferris, TX 75125-1506

133 Alvarado Carolina V
601 W 1st St
Ferris, TX 75125-1506

134 Oliphant Maude Est
604 A D Mosley St
Ferris, TX 75125-1543

135 Macedonia Church of God in Christ
610 A D Mosley St
Ferris, TX 75125-1543

136 Webb Gary W Jr & Mariah
611 W 1st St
Ferris, TX 75125-1506

137 Murray Mable Est
603 W 1st St
Ferris, TX 75125-1506

138 Garcia Pedro M
619 W 1st St
Ferris, TX 75125-1506

139 Black Datrelle D
708 A D Mosley St
Ferris, TX 75125-1545

140 Richard Barbara Et Al
708 A D Mosley St
Ferris TX 75125-1545

143 West Fork Properties LLC
5435 Garland Ave Ste 140274
Dallas, TX 75223-1815

144 Hobbs Mary Patricia
609 Ash St
Ferris, TX 75125-1514

145 Scroggins Earnie B & Shryl D
515 Lusino Ct
Grand Prairie, TX 75052

146 Cisneros Manuel
710 Genoa Ave
Dallas, TX 75216-1133

147 Ferris Memorial Parks Inc (25049)
P. O. Box 292
Ferris, TX 75125-0292

148 Ferris Memorial Parks Inc (63019)
120 Magnolia St
Ferris, TX 75125-2309

149 Johnson Sandra
541 Ewing St
Ferris, TX 75125-1524

150 Esquivel-Hidrogo Jessica M
533 Ewing St
Ferris, TX 75125-1524

151 Rouwtt Juliet D
529 Ewing St
Ferris, TX 75125-1524

152 Barajas Family Investments LLC
P. O. Box 615
Red Oak, TX 75154-1563

153 Hernandez Maricela S & Claudia O Solis
521 Ewing St
Ferris, TX 75125

154 Griggs Ruby
517 Ewing St
Ferris, TX 75125-1524

155 Hollywood Carolyn
513 Ewing St
Ferris, TX 75125-1524

156 Grand Homes Irrevokable Spendthrift Trust
P. O. Box 643
Ferris, TX 75125-0643

157 Williams Mack Troy
505 Ewing St
Ferris, TX 75125-1524

158 Reason Alfred
501 Ewing St
Ferris, TX 75125-1524

159 Swafford Sherman B & Nancy L
432 Meadowgate Cir
Ferris, TX 75125-1402

160 Rogers Randall & Tiffany
1300 Bluff Springs
Ferris, TX 75125

161 Garcia Jaime A
210 E 4th St
Ferris, TX 75125-2222

162 Richardson Ana
416 Meadowgate Cir
Ferris, TX 75125-1402

167 Jarvis Peggy Et Al
713 Mill Creek Rd
Lancaster, TX 75146

168 Mendez Octavio & Blanca
415 Meadowgate Cir
Ferris, TX 77030-4200

169 Mercado Juanita
P. O. Box 123
Ferris, TX 75125-0123

170 Alvarez Balbino F
423 Meadowgate Cir
Ferris, TX 75125

171 Carillo Christopher R Sr
422 McDaniel Rd
Ferris, TX 75125

172 Error Property Not Found

173 Dyal Javier
432 Yellow Jacket
Ferris, TX 75125-1416

174 Duran Mathew A
709 E 8th St
Ferris, TX 75125

175 Coumpy Paul H
424 Yellow Jacket Dr
Ferris, TX 75125-1416

176 Hooper Geneva G
420 Yellow Jacket Dr
Ferris, TX 75125

177 Balderas Jaime & Sandra Et Al
416 Yellow Jacket Dr
Ferris, TX 75125-1416

178 Johnson James C Jr & Juanita
412 Yellow Jacket Dr
Ferris, TX 75125-1416

179 Mendez Raul
114 Zodiac St
Ferris, TX 75125

181 Johnson Bobbie & Johnson Lois
1009 Western Hills Dr
Ferris, TX 75125-1411

182 Jarvis Deborah A
1021 Western Hills Dr
Ferris, TX 75125-1411

183 Hernandez Noe M
1025 Western Hills Dr
Ferris, TX 75125

184 Caldwell Amy J
1029 Western Hills Dr
Ferris, TX 75125

185 Coumpy Gloria M
1037 Western Hills Dr
Ferris, TX 75125-1411

186 Villa Rafael T & Nancy Trejo
1041 Western Hills Dr
Ferris, TX 75125

187 Foster Jame & Monique
1045 Western Hills Dr
Ferris, TX 75125-1411

188 Palmer Darlene
1049 Western Hills Dr
Ferris, TX 75125-1411

189 FKF Investment Group
P. O. Box 270067
Flower Mound, TX 75027

190 Caldwell Kenny & Ronny Caldwell
8542 FM 879
Palmer, TX 75152-9126

191 Morales Julio & Celia D
1069 Western Hills Dr
Ferris, TX 75125-1411

192 Robertson Dennis E & Elverton Earnest
1073 Western Hills Dr
Ferris, TX 75125

193 Bailey Glenn A
1081 Western Hills Dr
Ferris, TX 75125-1411

194 Pace Michael & Lesia Jackson
410 Rolling Hills Dr
Ferris, TX 75125-1406

195 Gonzales Gilberto & Frances
401 Rolling Hills Dr
Ferris, TX 75125-1405

196 Lopez Rene
591 Alsdorf Rd
Ennis, TX 75119

197 Moreno Marcus & Amelia
409 Rolling Hills Dr
Ferris, TX 75125

198 Kibble Freddie Mae
908 Pecan St
Ferris, TX 75125-1114

199 Hernandez Osiel R & Sorto Juana Y
516 Jennie Marie Cir
Ferris, TX 75125-4000

LANDOWNER'S LIST

200 Gilmore Allison
841 Clark Dr
Ferris, TX 75125-4042

201 Janjanam Gopala
837 Clark Dr
Ferris, TX 75125

202 MCH 259 LLC
41 Flatbush Ave Ste 3C
Brooklyn, NY 1117-1145

203 Rosas Mariano & Mayra Burciaga
833 Clark Dr
Ferris, TX 75125

204 Hernandez Ericka
829 Clark Dr
Ferris, TX 75125-4042

205 Wilson Antonio
825 Clark Dr
Ferris, TX 75125-4042

206 Diaz Erick A & Martinez Anna
821 Clark Ddr
Ferris, TX 75125-4042

207 Mendez Arcadio
404 E 8th St
Ferris, TX 75125-2708

208 Morris Olon & Theresa
821 Oak St.
Ferris, TX 75125-1107

209 Chavez-Garcia Rubisela
516 W 1st St
Ferris, TX 75125

210 Garcia J Cruz & Raquel
711 Ferris Rd
Ferris, TX 75125-1105

212 Marney Mac A & Camoleat
289 County Road 140
Streetman, TX 75859-4062

213 City of Ferris Texas
301 E 5th St
Ferris, TX 75125-2225

214 Urbanczyk Delmar
1610 Meadowlark Ln Trlr 703
Lancaster, TX 75146-3344

215 Rico Ismael
2063 Ferris Rd
Ferris, TX 75125-8868

216 Vazquez Francisco D & Hernandez Belinda C
211 E 3rd St
Ferris, TX 75125-2209

217 Castro Jesse Jr
834 Ash St
Ferris, TX 75125-1006

218 Error Property Not Found

219 JMG Luxury Homes LLC & J Osorios LLC
2100 Great Southwest Pkw Ste 203
Grand Prairie, TX 75051-5128

220 Paz Miguel
151 Ewing Rd
Ferris, TX 75125

221 Error Property Not Found

241 Tyler Natilie N & Carter Daylyn J
937 Clark Dr
Ferris, TX 75125-4043

242 510 SFR TX Oprations I LLC
1719 NJ-10 Ste 219
Parsippany, NJ 07054

243 Pita-Avalos Jose M
929 Clark Dr
Ferris, TX 75125-4043

244 Johnson Tracy
925 Clark Dr
Ferris, TX 75125-4043

245 Lydia Charles & Gillum Patricia
921 Clark Dr
Ferris, TX 75125-4043

246 McLaren Taylor
917 Clark Dr
Ferris, TX 75125-4043

247 Error Property Not Found

248 Hurtado Feliciano Jr
909 Clark Dr
Ferris, TX 75125-4043

249 SFR JV-HD TL Borrower A LLC
15771 Red Hill Ave Ste 100
Tustin, CA 92780-7333

250 CU Lakeview Management LLC
4625 Meadow Ridge Dr
Plano, TX 75093-3397

251 LKQ Auto Parts
5846 Crossings Blvd
Antioch, TN 37013-3129

252 Bailey Lasonya
600 A D Mosley St
Ferris, TX 75125-1543

253 Franco Efrain & Maria Gomez
106 Hurst Cir
Ferris, TX 75125-9791

254 Thibert Gary
701 Ennis Scott St
Ferris, TX 75125-1552

255 Avila Erica C
421 W Lawson Rd #129
Dallas, TX 75253

256 Sims Michael
616 Ferris Rd
Ferris, TX 75125-1104

257 Mendez Arcadic & Victor Mendez
826 Ash St
Ferris, TX 75125

258 Hunter Marian Et Al
8036 Olusta Dr
Dallas, TX 75217-6779

259 Castillo Jesus & Dora Y
4520 Ambassador Way Apt 436
Balch Springs, TX 75180

260 Christian Steve
134 Youngblood Rd
Waxahachie, TX 75165

261 Ortiz Jose F M & Reyna M Mendoza
833 Oak St
Ferris, TX 75125

262 McClain Willie L
715 Ferris Rd
Ferris, TX 75125

263 Ozuna Christopher R
812 Ash St
Ferris, TX 75125-1006

267 Vimo Casa LLC
5330 Alpha Rd Ste 200
Dallas, TX 75240-1309

268 Robles Abraham & Doris E
512 Jennie Marie Cir
Ferris, TX 75125

269 MJ Crocker Company LLC
P. O. Box 968
Midlothian, TX 76165

270 Magness Ronnie
107 Slate Rock Rd
Ennis, TX 75119-0277

271 Southern Star Custom Builders LLC
217 Clark Dr
Ferris, TX 75125

272 Oncor Electric Delivery Company
P. O. Box 139100
Dallas, TX 75313

273 Futex Property Company No 112 LLC
Et Al
2225 Southern Oaks Dr
Cedar Hill, TX 75104

274 Larson Mark & Hilda Margarita
2224 Merrimac Ln
Lancaster, TX 75146-1260

275 S2 Land Development LLC
10003 Technology Blvd W
Dallas, TX 75220-4316

276 Cantu Natalie Y
2082 Ferris Rd
Ferris, TX 75125

277 Cantu Bernardo L C/S
2094 Ferris Rd
Ferris, TX 75125-8869

278 Mendez Angel & Rosa
P. O. Box 532975
Harligen, TX 78553

279 Cantu Kathryn & Ricardo
2611 Ferris Rd
Lancaster, TX 75146

280 Brown Kathryn D &
2607 Ferris Rd
Lancaster, TX 75146

281 Garcia Christopher J
2551 Ferris Rd
Lancaster, TX 75146

282 Santamaria Brenda K & Alfredo
2547 Ferris Rd
Lancaster, TX 75146

283 Partida Joel O & Norma E
2541 Ferris Rd
Lancaster, TX 75146

284 Barron Adolfo
2053 Ferris Rd
Ferris, TX 75125-8868

285 Rico Maria Susana & Ismael Rico
Hernandez
2063 Ferris Rd
Ferris, TX 75125

286 Velez Ivan & Segura Angelica
2071 Ferris Rd
Ferris, TX 75125

287 Vargas Bernabe
2079 Ferris Rd
Ferris, TX 75125

288 Webb Garcia Elizabeth A
115 Becky Ln
Waxahachie, TX 75165-9656

289 Hernandez Daniel
2610 Nolan Rd
Ferris, TX 75125

290 Dorre Donnie Deen
2620 Nolan Rd
Ferris, TX 75125

291 Nunez Jose & Humbrtina A Aguirre
1701 Glenwick Ln
Irving, TX 75060-6544

292 Rojas Hector
2750 Nolan Rd
Lancaster, TX 75146-9711

293 Juarez Ruben R &
2609 Nolan Rd
Lancaster, TX 75146

294 Arostegvi Edward G &
2611 Nolan Rd
Lancaster, TX 75146

295 Johnson Paul Toby
2615 Nolan Rd
Lancaster, TX 75146

296 Williams Charya Keiarea K &
2616 Ferris Rd
Lancaster, TX 75146

297 Morales Deann Hermosillo
2612 Ferris Rd
Lancaster, TX 75146

298 Rodriguez Jacobo Mauricio & Laura Rodriguez
604 Short St
Ferris, TX 75146

299 Zabojnik Jimmy John &
2550 Ferris Rd
Lancaster, TX 75146

300 Vega Roberto & Maria Teresa
2536 Ferris Rd
Lancaster, TX 75146

301 Hudson Dorothy J Est of
2602 Sleepy Hollow Ln
Lancaster, TX 75146

302 Gallegos Jose
609 N Jefferson St
Lancaster, TX 75146

303 Leggett Lowell D
2608 Sleepy Hollow Ln
Lancaster, TX 75146

304 Saldana Marta Olivia
2612 Sleepy Hollow Ln
Lancaster, TX 75146

305 Canelo Dolores Adriana Sanchez
2603 Sleepy Hollow Ln
Lancaster, TX 75146

306 Lara Karla
170 Follett St
Richmond, CA 94801

307 Lule Carlos Pastor Lara
1560 Kildare Way
Pinole, CA 94564

308 Antonio S Lara Lule
2609 Sleepy Hollow Ln
Lancaster, TX 75146

309 Macias Arturo &
3305 Linkwood Dr
Lancaster, TX 75146

310 Ausbrooks Laura E
1118 W Marvin Ave
Waxahachie, TX 75165

311 Perez Marlene & Garcia Francisco
2613 Sleepy Hollow Ln
Lancaster, TX 75146

312 Carmillo Armando & Irene
2615 Sleepy Hollow Ln
Lancaster, TX 75146

313 Duran Jorge Luis Martinez &
2617 Sleepy Hollow Ln
Lancaster, TX 75146

314 Soroka Tommy James
1304 Lake Bardwell Dr
Ennis, TX 75119

315 Johnson Harold Kenneth Family
P O Box 375
Ferris, TX 75125

316 Starek Tammy G
1040 Lavender Rd
Lancaster, TX 75146

317 Starek Barbara Gaiel Est of
1132 Lanvender Rd
Lancaster, TX 75146

318 Fisher Cody
343 Walker Creek Rd
Ennis, TX 75119

LANDOWNER'S LIST

*Note: Parcel owner information from Dallas and Ellis County Appraisal Districts GIS Database 03/15/2026. No mineral interest ownership information was available within the Dallas and Ellis County Appraisal District Records.

SKYLINE LANDFILL

APPENDIX IC

LEGAL DESCRIPTION AND PERMIT BOUNDARY MAP

BIGGS & MATHEWS ENVIRONMENTAL
205 N. Green Street
Grand Saline, Texas 75140 ♦ Phone: 903-497-4998
TBPE No. F-256 ♦ TBPG No. 50222♦ TBPELS No. 10194895

PERMIT BOUNDARY – WASTE MANAGEMENT SKYLINE LANDFILL METES AND BOUNDS DESCRIPTION

BEING AN 858.73 ACRE TRACT OF LAND LOCATED IN THE FRANKLIN BRIGANCE SURVEY, ABSTRACT NO. 103, THE HARVEY BRIGANCE SURVEY, ABSTRACT NO. 104, THE S. A. & M. G. RR. CO. SURVEY, ABSTRACT NO. 1435, THE JAMES ABBOTT SURVEY, ABSTRACT NO. 23, AND THE MASON PHELPS SURVEY, ABSTRACT NO. 1112, DALLAS COUNTY, TEXAS, AND THE S. A. & M. G. RR. CO. SURVEY, ABSTRACT NO. 1368, THE JAMES ABBOTT SURVEY, ABSTRACT NO. 16, AND THE MASON PHELPS SURVEY, ABSTRACT NO. 824, ELLIS COUNTY, TEXAS, AND BEING A PORTION OF A CALLED 56.36 ACRE TRACT AS DESCRIBED IN DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN DOCUMENT NO. 2002094, OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS (O.P.R.E.C.T.), A CALLED 307.549 ACRE TRACT AS DESCRIBED IN DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN VOLUME 850, PAGE 177, OFFICIAL PUBLIC RECORDS, DALLAS COUNTY, TEXAS (O.P.R.D.C.T.), A CALLED 160.007 ACRE TRACT, DESCRIBED AS TRACT I AND A CALLED 161.671 ACRE TRACT, DESCRIBED AS TRACT II IN A DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN VOLUME 795, PAGE 513, O.P.R.D.C.T., A CALLED 9.20 ACRE TRACT AS DESCRIBED IN DEED TO THE CITY OF FERRIS, RECORDED IN VOLUME 408, PAGE 251, O.P.R.E.C.T., A CALLED 11.866 ACRE TRACT, DESCRIBED AS TRACT 3 IN A DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN VOLUME 1153, PAGE 63, DEED RECORDS, DALLAS COUNTY, TEXAS (D.R.D.C.T.), A CALLED 307.549 ACRE TRACT AS DESCRIBED IN A DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN VOLUME 850, PAGE 177, O.P.R.D.C.T., A CALLED 59.744 ACRE TRACT AS DESCRIBED IN A DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN DOCUMENT NO. 202300199124, O.P.R.D.C.T., A CALLED 19.00 ACRE TRACT AS DESCRIBED IN DEED TO WASTE MANAGEMENT OF TEXAS, INC., RECORDED IN VOLUME 92149, PAGE 3601, O.P.R.D.C.T., LOTS 1-5, BLOCK 4 AND LOTS 4-7, BLOCK 3 OF THE SLEEPY HOLLOW ADDITION, ACCORDING TO A PLAT RECORDED IN VOLUME 665, PAGE 1700, MAP RECORDS, DALLAS COUNTY, TEXAS (M.R.D.C.T.), AND LOTS 10-20 OF THE SLEEPY HOLLOW ADDITION UNIT II, RECORDED IN VOLUME 958, PAGE 1206, M.R.D.C.T., SAID 858.73 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

COMMENCING AT A MAG NAIL FOUND IN FERRIS ROAD, AT THE NORTHWEST CORNER OF SAID 56.36 ACRE TRACT;

THENCE NORTH 59 DEGREES 17 MINUTES 00 SECONDS EAST, WITH THE NORTH LINE OF SAID 56.36 ACRE TRACT, A DISTANCE OF 1,188.91 FEET TO THE **POINT OF BEGINNING** OF THE HEREIN DESCRIBED TRACT OF LAND, AND HAVING GRID COORDINATES OF N: 6885251.15, E: 2527234.37;

THENCE NORTH 29 DEGREES 46 MINUTES 04 SECONDS WEST, ACROSS LOT 12 OF SAID SLEEPY HOLLOW ADDITION UNIT II, PASS THE NORTH LINE OF SAID LOT 12 AT 525.59 FEET, CONTINUING WITH SAID COURSE AND ACROSS LOTS 10 AND 11 OF SAID SLEEPY HOLLOW ADDITION UNIT II, AND WITH THE EAST LINE OF NOLAN ROAD FOR A TOTAL 1,423.38 FEET TO A POINT FOR CORNER WITHIN SAID LOT 10, AND IN THE APPROXIMATE COUNTY LINE BETWEEN DALLAS AND ELLIS COUNTIES;

THENCE SOUTH 89 DEGREES 36 MINUTES 33 SECONDS WEST, WITH SAID APPROXIMATE COUNTY LINE, PASSING A 5/8-INCH IRON ROD FOUND AT 34.12 FEET AND CONTINUING FOR A TOTAL DISTANCE OF 140.41 FEET TO A POINT FOR CORNER, FROM WHICH A 1/2-INCH IRON ROD FOUND IN THE CENTERLINE OF SAID NOLAN ROAD BEARS SOUTH 89 DEGREES 36 MINUTES 33 SECONDS WEST, A DISTANCE OF 83.27 FEET;

BIGGS & MATHEWS ENVIRONMENTAL
205 N. Green Street
Grand Saline, Texas 75140 ♦ Phone: 903-497-4998
TBPE No. F-256 ♦ TBPG No. 50222♦ TBPELS No. 10194895

THENCE NORTH 32 DEGREES 45 MINUTES 49 SECONDS WEST, ACROSS SAID LOT 10, SLEEPY HOLLOW ADDITION UNIT II, PASS THE SOUTHWEST CORNER OF SAID 11.866 ACRE TRACT AT 40.58 FEET, CONTINUING WITH SAID COURSE, AND WITH THE WEST LINE OF SAID 11.866 ACRE TRACT FOR A TOTAL DISTANCE OF 1,184.25 FEET TO A 1/2-INCH IRON ROD FOUND AT THE NORTHWEST CORNER OF SAID 11.866 ACRE TRACT;

THENCE NORTH 59 DEGREES 57 MINUTES 38 SECONDS EAST, WITH THE NORTH LINE OF SAID 11.866 ACRE TRACT, AND WITH THE NORTH LINE OF SAID LOT 20, SLEEPY HOLLOW ADDITION UNIT II, A DISTANCE OF 492.59 FEET TO A POINT AT THE SOUTHWEST CORNER OF SAID LOT 5, BLOCK 3 OF SAID SLEEPY HOLLOW ADDITION;

THENCE NORTH 30 DEGREES 23 MINUTES 33 SECONDS WEST, WITH THE WEST LINE OF SAID LOTS 4 AND 5, BLOCK 3, SLEEPY HOLLOW ADDITION, A DISTANCE OF 549.15 FEET TO A 1/2-INCH IRON ROD FOUND AT THE NORTHWEST CORNER OF SAID LOT 4;

THENCE NORTH 59 DEGREES 37 MINUTES 09 SECONDS EAST, WITH THE NORTH LINE OF SAID LOT 4, BLOCK 3, SLEEPY HOLLOW ADDITION, PASSING A 1/2-INCH IRON ROD FOUND AT THE NORTHEAST CORNER OF SAME AT 332.65 FEET, CONTINUING WITH SAID COURSE, AND WITH THE NORTH LINE OF SAID LOT 7, BLOCK 3, SLEEPY HOLLOW ADDITION FOR A TOTAL DISTANCE OF 661.51 FEET TO A 1/2-INCH IRON ROD FOUND AT THE NORTHEAST CORNER OF SAID LOT 7;

THENCE NORTH 57 DEGREES 57 MINUTES 01 SECONDS EAST, A DISTANCE OF 58.18 FEET TO 5/8-INCH IRON ROD FOUND AT THE NORTHWEST CORNER OF LOT 4, BLOCK 4, SLEEPY HOLLOW ADDITION;

THENCE NORTH 29 DEGREES 53 MINUTES 32 SECONDS WEST, WITH THE WEST LINE OF SAID LOTS 1-3, BLOCK 4, SLEEPY HOLLOW ADDITION, A DISTANCE OF 842.55 FEET TO A 1/2-INCH IRON ROD FOUND AT THE NORTHWEST CORNER OF SAID LOT 1;

THENCE NORTH 59 DEGREES 45 MINUTES 21 SECONDS EAST, WITH THE NORTH LINE OF SAID LOT 1, BLOCK 4, SLEEPY HOLLOW ADDITION, A DISTANCE OF 324.80 FEET TO A POINT FOR CORNER IN THE SOUTHWEST LINE OF SAID 59.744 ACRE TRACT, AT THE NORTHEAST CORNER OF SAID LOT 1;

THENCE NORTH 30 DEGREES 14 MINUTES 32 SECONDS WEST, WITH THE SOUTHWEST LINE OF SAID 59.744 ACRE TRACT, A DISTANCE OF 391.22 FEET TO A 2-INCH IRON PIPE FOUND;

THENCE NORTH 30 DEGREES 48 MINUTES 37 SECONDS WEST, CONTINUING WITH THE SOUTHWEST LINE OF SAID 59.744 ACRE TRACT, A DISTANCE OF 539.88 FEET TO 5/8-INCH IRON ROD FOUND;

THENCE NORTH 30 DEGREES 31 MINUTES 39 SECONDS WEST, CONTINUING WITH THE SOUTHWEST LINE OF SAID 59.744 ACRE TRACT, A DISTANCE OF 214.06 FEET TO A 5/8-INCH IRON ROD WITH RED CAP STAMPED "SAM" FOUND, SAID POINT BEING AT THE BEGINNING OF A CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 03 DEGREES 39 MINUTES 06 SECONDS, A RADIUS OF 10,251.10 FEET AND A CHORD BEARING AND LENGTH OF NORTH 68 DEGREES 14 MINUTES 38 SECONDS EAST, 653.22 FEET, FROM WHICH A 5/8-INCH IRON ROD WITH A PINK CAP STAMPED "TXDOT" FOUND BEARS SOUTH 66 DEGREES 06 MINUTES 18 SECONDS WEST, A DISTANCE OF 113.18 FEET;

THENCE WITH SAID CURVE TO THE RIGHT, AN ARC LENGTH OF 653.33 FEET TO A 5/8-INCH IRON ROD WITH PINK CAP STAMPED "TXDOT" FOUND AT THE BEGINNING OF A CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 01 DEGREES 16 MINUTES 09 SECONDS, A RADIUS OF 11,007.01 FEET AND A CHORD BEARING AND LENGTH OF NORTH 72 DEGREES 08 MINUTES 27 SECONDS EAST, 243.81 FEET

THENCE WITH SAID CURVE TO THE RIGHT, AN ARC LENGTH OF 243.81 FEET TO A POINT FOR CORNER IN TEN MILE CREEK;

THENCE WITH SAID TEN MILE CREEK, THE FOLLOWING TWENTY (20) COURSES AND DISTANCES:

1. SOUTH 22 DEGREES 09 MINUTES 26 SECONDS EAST, A DISTANCE OF 299.61 FEET TO A POINT FOR CORNER;
2. SOUTH 31 DEGREES 45 MINUTES 39 SECONDS EAST, A DISTANCE OF 188.55 FEET TO A POINT FOR CORNER;
3. SOUTH 36 DEGREES 14 MINUTES 53 SECONDS EAST, A DISTANCE OF 187.56 FEET TO A POINT FOR CORNER;
4. SOUTH 70 DEGREES 51 MINUTES 01 SECONDS EAST, A DISTANCE OF 111.14 FEET TO A POINT FOR CORNER;
5. NORTH 86 DEGREES 51 MINUTES 56 SECONDS EAST, A DISTANCE OF 75.35 FEET TO A POINT FOR CORNER;
6. NORTH 77 DEGREES 59 MINUTES 27 SECONDS EAST, A DISTANCE OF 245.62 FEET TO A POINT FOR CORNER;
7. SOUTH 58 DEGREES 31 MINUTES 31 SECONDS EAST, A DISTANCE OF 217.36 FEET TO A POINT FOR CORNER;
8. SOUTH 65 DEGREES 16 MINUTES 44 SECONDS EAST, A DISTANCE OF 48.11 FEET TO A POINT FOR CORNER;
9. SOUTH 19 DEGREES 53 MINUTES 57 SECONDS EAST, A DISTANCE OF 28.23 FEET TO A POINT FOR CORNER;
10. SOUTH 65 DEGREES 27 MINUTES 43 SECONDS EAST, A DISTANCE OF 303.81 FEET TO A POINT FOR CORNER;
11. NORTH 42 DEGREES 37 MINUTES 30 SECONDS EAST, A DISTANCE OF 157.38 FEET TO A POINT FOR CORNER;
12. NORTH 17 DEGREES 06 MINUTES 24 SECONDS WEST, A DISTANCE OF 71.88 FEET TO A POINT FOR CORNER;
13. NORTH 05 DEGREES 27 MINUTES 20 SECONDS WEST, A DISTANCE OF 163.77 FEET TO A POINT FOR CORNER;
14. NORTH 79 DEGREES 45 MINUTES 12 SECONDS EAST, A DISTANCE OF 61.47 FEET TO A POINT FOR CORNER;
15. SOUTH 62 DEGREES 54 MINUTES 45 SECONDS EAST, A DISTANCE OF 274.18 FEET TO A POINT FOR CORNER;
16. NORTH 73 DEGREES 12 MINUTES 31 SECONDS EAST, A DISTANCE OF 136.39 FEET TO A POINT FOR CORNER;
17. SOUTH 43 DEGREES 08 MINUTES 28 SECONDS EAST, A DISTANCE OF 89.28 FEET TO A POINT FOR CORNER;
18. SOUTH 08 DEGREES 20 MINUTES 51 SECONDS EAST, A DISTANCE OF 137.06 FEET TO A POINT FOR CORNER;
19. SOUTH 67 DEGREES 33 MINUTES 23 SECONDS EAST, A DISTANCE OF 161.79 FEET TO A POINT FOR CORNER;
20. SOUTH 50 DEGREES 12 MINUTES 07 SECONDS EAST, A DISTANCE OF 266.04 FEET TO A POINT FOR CORNER IN A NORTHERLY LINE OF SAID 307.549 ACRE TRACT;

THENCE SOUTH 33 DEGREES 55 MINUTES 22 SECONDS EAST, WITH THE NORTHERLY LINE OF SAID 307.549 ACRE TRACT, A DISTANCE OF 258.42 FEET TO A POINT FOR CORNER;

THENCE NORTH 59 DEGREES 04 MINUTES 38 SECONDS EAST, CONTINUING WITH THE NORTHERLY LINE OF SAID 307.549 ACRE TRACT, A DISTANCE OF 687.20 FEET TO A 1-INCH IRON ROD FOUND;

THENCE NORTH 33 DEGREES 55 MINUTES 11 SECONDS WEST, CONTINUING WITH THE NORTHERLY LINE OF SAID 307.549 ACRE TRACT, A DISTANCE OF 317.66 FEET TO A POINT FOR CORNER IN SAID TEN MILE CREEK;

THENCE WITH SAID TEN MILE CREEK, THE FOLLOWING THIRTY-THREE (33) COURSES AND DISTANCES:

1. NORTH 68 DEGREES 21 MINUTES 40 SECONDS EAST, A DISTANCE OF 66.99 FEET TO A POINT FOR CORNER;
2. NORTH 33 DEGREES 34 MINUTES 11 SECONDS EAST, A DISTANCE OF 80.92 FEET TO A POINT FOR CORNER;
3. NORTH 52 DEGREES 16 MINUTES 39 SECONDS EAST, A DISTANCE OF 73.32 FEET TO A POINT FOR CORNER;
4. SOUTH 43 DEGREES 21 MINUTES 37 SECONDS EAST, A DISTANCE OF 89.86 FEET TO A POINT FOR CORNER;
5. SOUTH 66 DEGREES 49 MINUTES 57 SECONDS EAST, A DISTANCE OF 108.97 FEET TO A POINT FOR CORNER;
6. NORTH 56 DEGREES 30 MINUTES 06 SECONDS EAST, A DISTANCE OF 74.72 FEET TO A POINT FOR CORNER;
7. NORTH 16 DEGREES 48 MINUTES 35 SECONDS WEST, A DISTANCE OF 154.39 FEET TO A POINT FOR CORNER;
8. NORTH 00 DEGREES 03 MINUTES 47 SECONDS WEST, A DISTANCE OF 82.08 FEET TO A POINT FOR CORNER;
9. NORTH 38 DEGREES 21 MINUTES 37 SECONDS WEST, A DISTANCE OF 28.01 FEET TO A POINT FOR CORNER;
10. NORTH 05 DEGREES 17 MINUTES 36 SECONDS EAST, A DISTANCE OF 107.58 FEET TO A POINT FOR CORNER;
11. SOUTH 16 DEGREES 17 MINUTES 01 SECONDS EAST, A DISTANCE OF 114.72 FEET TO A POINT FOR CORNER;
12. NORTH 04 DEGREES 55 MINUTES 44 SECONDS EAST, A DISTANCE OF 184.63 FEET TO A POINT FOR CORNER;
13. NORTH 44 DEGREES 47 MINUTES 38 SECONDS EAST, A DISTANCE OF 42.38 FEET TO A POINT FOR CORNER;
14. SOUTH 68 DEGREES 04 MINUTES 21 SECONDS EAST, A DISTANCE OF 132.95 FEET TO A POINT FOR CORNER;
15. NORTH 64 DEGREES 55 MINUTES 39 SECONDS EAST, A DISTANCE OF 329.76 FEET TO A POINT FOR CORNER;
16. SOUTH 57 DEGREES 15 MINUTES 22 SECONDS EAST, A DISTANCE OF 424.99 FEET TO A POINT FOR CORNER;
17. SOUTH 37 DEGREES 43 MINUTES 29 SECONDS EAST, A DISTANCE OF 316.64 FEET TO A POINT FOR CORNER;
18. SOUTH 42 DEGREES 55 MINUTES 59 SECONDS EAST, A DISTANCE OF 220.65 FEET TO A POINT FOR CORNER;
19. SOUTH 75 DEGREES 31 MINUTES 44 SECONDS EAST, A DISTANCE OF 61.30 FEET TO A POINT FOR CORNER;

20. NORTH 73 DEGREES 04 MINUTES 06 SECONDS EAST, A DISTANCE OF 128.65 FEET TO A POINT FOR CORNER;
21. NORTH 65 DEGREES 57 MINUTES 31 SECONDS EAST, A DISTANCE OF 228.77 FEET TO A POINT FOR CORNER;
22. SOUTH 76 DEGREES 21 MINUTES 46 SECONDS EAST, A DISTANCE OF 282.45 FEET TO A POINT FOR CORNER;
23. SOUTH 45 DEGREES 30 MINUTES 20 SECONDS EAST, A DISTANCE OF 81.55 FEET TO A POINT FOR CORNER;
24. SOUTH 58 DEGREES 32 MINUTES 16 SECONDS EAST, A DISTANCE OF 607.69 FEET TO A POINT FOR CORNER;
25. SOUTH 81 DEGREES 17 MINUTES 34 SECONDS EAST, A DISTANCE OF 57.07 FEET TO A POINT FOR CORNER;
26. NORTH 59 DEGREES 48 MINUTES 22 SECONDS EAST, A DISTANCE OF 129.03 FEET TO A POINT FOR CORNER;
27. SOUTH 67 DEGREES 28 MINUTES 43 SECONDS EAST, A DISTANCE OF 306.52 FEET TO A POINT FOR CORNER;
28. SOUTH 31 DEGREES 07 MINUTES 06 SECONDS EAST, A DISTANCE OF 113.81 FEET TO A POINT FOR CORNER;
29. NORTH 80 DEGREES 43 MINUTES 10 SECONDS EAST, A DISTANCE OF 113.81 FEET TO A POINT FOR CORNER;
30. NORTH 31 DEGREES 41 MINUTES 43 SECONDS EAST, A DISTANCE OF 180.77 FEET TO A POINT FOR CORNER;
31. NORTH 25 DEGREES 55 MINUTES 11 SECONDS EAST, A DISTANCE OF 97.70 FEET TO A POINT FOR CORNER;
32. NORTH 13 DEGREES 08 MINUTES 48 SECONDS WEST, A DISTANCE OF 243.02 FEET TO A POINT FOR CORNER;
33. NORTH 59 DEGREES 51 MINUTES 11 SECONDS EAST, A DISTANCE OF 137.96 FEET TO A POINT FOR CORNER;

THENCE SOUTH 60 DEGREES 11 MINUTES 36 SECONDS EAST, WITH A NORTHERLY LINE OF SAID 19.00 ACRE TRACT, A DISTANCE OF 159.58 FEET TO A POINT FOR CORNER;

THENCE SOUTH 47 DEGREES 17 MINUTES 54 SECONDS EAST, CONTINUING WITH A NORTHERLY INE OF SAID 19.00 ACRE TRACT, A DISTANCE OF 270.51 FEET TO A POINT FOR CORNER;

THENCE WITH THE EAST LINE OF SAID 19.00 ACRE TRACT, SAID 160.007 ACRE TRACT, AND SAID 9.20 ACRE TRACT, THE FOLLOWING FIVE (5) COURSES AND DISTANCES:

1. SOUTH 05 DEGREES 27 MINUTES 24 SECONDS EAST, A DISTANCE OF 565.06 FEET TO A POINT FOR CORNER;
2. SOUTH 31 DEGREES 17 MINUTES 31 SECONDS EAST, A DISTANCE OF 133.59 FEET TO A POINT FOR CORNER;
3. SOUTH 03 DEGREES 17 MINUTES 31 SECONDS EAST, A DISTANCE OF 529.26 FEET TO A POINT AT THE SOUTHEAST CORNER OF SAID 19.00 ACRE TRACT, SAME BEING THE MOST EASTERLY NORTHEAST CORNER OF SAID 160.007 ACRE TRACT;
4. SOUTH 03 DEGREES 17 MINUTES 31 SECONDS EAST, A DISTANCE OF 2,882.50 FEET TO A POINT AT THE NORTHEAST CORNER OF SAID 9.20 ACRE TRACT;
5. SOUTH 03 DEGREES 17 MINUTES 31 SECONDS EAST, A DISTANCE OF 1,000.00 FEET TO A POINT AT THE SOUTHEAST CORNER OF SAID 9.20 ACRE TRACT;

THENCE SOUTH 86 DEGREES 41 MINUTES 15 SECONDS WEST, WITH THE SOUTH LINE OF SAID 9.20 ACRE TRACT AND SAID 160.007 ACRE TRACT, A DISTANCE OF 767.28 FEET TO A 1-INCH IRON ROD FOUND;

THENCE NORTH 42 DEGREES 21 MINUTES 46 SECONDS WEST, WITH A SOUTHWEST LINE OF SAID 160.007 ACRE TRACT, A DISTANCE OF 136.72 FEET TO A 1/2-INCH IRON ROD WITH A CAP FOUND;

THENCE NORTH 01 DEGREE 45 MINUTES 56 SECONDS WEST, WITH A WEST LINE OF SAID 160.007 ACRE TRACT, A DISTANCE OF 166.90 FEET TO A POINT FOR CORNER;

THENCE NORTH 89 DEGREES 52 MINUTES 12 SECONDS WEST, A DISTANCE OF 152.60 FEET TO A 1/2-INCH IRON ROD FOUND;

THENCE NORTH 01 DEGREES 36 MINUTES 09 SECONDS WEST, A DISTANCE OF 540.23 FEET TO A POINT FOR CORNER;

THENCE NORTH 89 DEGREES 47 MINUTES 24 SECONDS WEST, A DISTANCE OF 60.03 FEET TO A POINT FOR CORNER;

THENCE NORTH 01 DEGREES 33 MINUTES 22 SECONDS WEST, A DISTANCE OF 205.53 FEET TO A POINT FOR CORNER;

THENCE SOUTH 88 DEGREES 20 MINUTES 11 SECONDS WEST, A DISTANCE OF 596.89 FEET TO A 1-INCH IRON ROD FOUND;

THENCE NORTH 42 DEGREES 27 MINUTES 32 SECONDS WEST, A DISTANCE OF 275.46 FEET TO A CHAIN LINK FENCE CORNER FOUND;

THENCE NORTH 32 DEGREES 33 MINUTES 08 SECONDS WEST, A DISTANCE OF 263.72 FEET TO A 1/2-INCH IRON ROD FOUND;

THENCE SOUTH 36 DEGREES 27 MINUTES 57 SECONDS WEST, A DISTANCE OF 106.14 FEET TO A POINT FOR CORNER;

THENCE SOUTH 11 DEGREES 28 MINUTES 49 SECONDS WEST, A DISTANCE OF 625.75 FEET TO A POINT FOR CORNER;

THENCE SOUTH 04 DEGREES 53 MINUTES 52 SECONDS WEST, A DISTANCE OF 261.36 FEET TO A 1/2-INCH IRON ROD WITH A CAP STAMPED "LANDTECH ENGINEERING" FOUND AT THE MOST SOUTHERLY SOUTHEAST CORNER OF SAID 161.671 ACRE TRACT;

THENCE SOUTH 89 DEGREES 00 MINUTES 02 SECONDS WEST, WITH THE SOUTH LINE OF SAID 161.671 ACRE TRACT, A DISTANCE OF 625.74 FEET TO A 1-INCH IRON ROD FOUND AT THE SOUTHWEST CORNER OF SAME;

THENCE SOUTH 89 DEGREES 16 MINUTES 28 SECONDS WEST, WITH A SOUTH LINE OF SAID 307.549 ACRE TRACT, A DISTANCE OF 347.43 FEET TO A POINT FOR CORNER;

THENCE SOUTH 02 DEGREES 30 MINUTES 18 SECONDS EAST, CONTINUING WITH A SOUTH LINE OF SAID 307.549 ACRE TRACT, A DISTANCE OF 4.40 FEET TO A POINT FOR CORNER;

BIGGS & MATHEWS ENVIRONMENTAL
205 N. Green Street
Grand Saline, Texas 75140 ♦ Phone: 903-497-4998
TBPE No. F-256 ♦ TBPG No. 50222♦ TBPELS No. 10194895

THENCE ACROSS SAID 307.549 ACRE TRACT AND SAID 56.36 ACRE TRACT, AND GENERALLY WITH AN EXISTING FENCE, THE FOLLOWING FIVE (5) COURSES AND DISTANCES:

1. SOUTH 89 DEGREES 09 MINUTES 35 SECONDS WEST, A DISTANCE OF 249.52 FEET TO A CHAIN LINK FENCE CORNER FOUND;
2. SOUTH 02 DEGREES 19 MINUTES 54 SECONDS EAST, A DISTANCE OF 704.05 FEET TO A CHAIN LINK FENCE CORNER FOUND;
3. NORTH 89 DEGREES 44 MINUTES 43 SECONDS WEST, A DISTANCE OF 494.90 FEET TO A CHAIN LINK FENCE CORNER FOUND;
4. SOUTH 77 DEGREES 21 MINUTES 58 SECONDS WEST, A DISTANCE OF 1,119.96 FEET TO A CHAIN LINK FENCE CORNER FOUND;
5. SOUTH 78 DEGREES 20 MINUTES 37 SECONDS WEST, A DISTANCE OF 845.02 FEET TO A POINT FOR CORNER;

THENCE NORTH 29 DEGREES 46 MINUTES 04 SECONDS WEST, ACROSS SAID 56.36 ACRE TRACT, A DISTANCE OF 1,271.25 FEET TO THE **POINT OF BEGINNING**, CONTAINING 858.73 ACRES (37,406,313 SQUARE FEET) OF LAND, MORE OR LESS.

BASIS OF BEARING: ALL BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE (4202), NAD 83 (2011), AND WERE DERIVED BY USING G.P.S. EQUIPMENT.

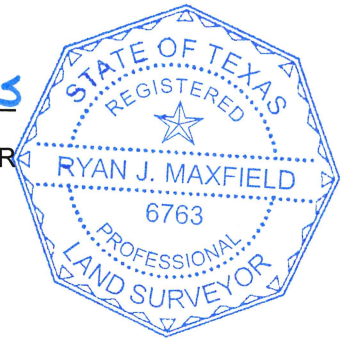
SURVEY PLAT OF EVEN DATE ACCOMPANIES THIS LEGAL DESCRIPTION.

I, RYAN J. MAXFIELD, REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, NUMBER 6763, DO HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH THE STANDARDS OF PRACTICE AS SET FORTH BY THE TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS.

GIVEN UNDER MY HAND AND SEAL, THIS THE 20TH DAY OF NOVEMBER, 2025.

11/20/25

RYAN J. MAXFIELD DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 6763, STATE OF TEXAS
TEXAS FIRM REGISTRATION NO. 10194895



PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL



PERMIT BOUNDARY

SKYLINE LANDFILL
WASTE MANAGEMENT OF TEXAS, INC.
DALLAS COUNTY & ELLIS COUNTY, TX

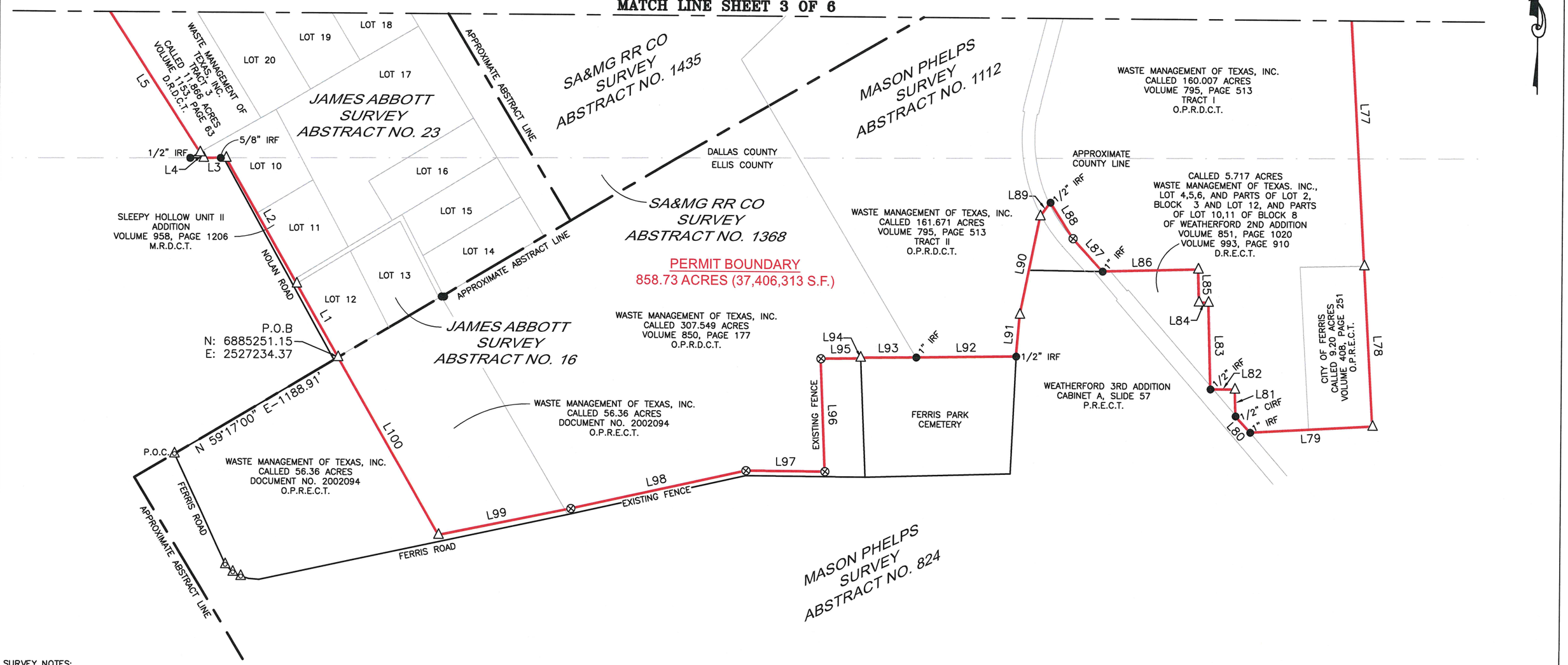
BIGGS & MATHEWS ENVIRONMENTAL
205 N. GREEN STREET
GRAND SALINE, TEXAS 75140
903-497-4998
TBPELS FIRM NO. 10194895

Not-to-Scale	DATE: 11/20/25	DRAWN: RM	SHEET: 1 OF 6

PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL

0 600 1200
SCALE IN FEET

MATCH LINE SHEET 3 OF 6



SURVEY NOTES:

1. ALL BEARINGS, DISTANCES, COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD 83 (2011), GEOID 18. DISTANCES SHOWN HEREON ARE GRID VALUES IN U.S. SURVEY FEET.

2. NO ATTEMPT WAS MADE BY BIGGS AND MATHEWS ENVIRONMENTAL (BME) TO LOCATE UNDERGROUND PIPELINES OR UTILITIES. ALL UTILITIES SHOWN HEREON ARE BASED UPON AN ON THE GROUND SURVEY OF MARKED AND/OR VISIBLE UTILITIES.

3. OWNERSHIP AND EASEMENT INFORMATION SHOWN HEREON WAS OBTAINED FROM RESEARCH CONDUCTED BY GLOBAL LAND PARTNERS. WHILE THOROUGH EFFORTS WERE MADE TO COMPILE ACCURATE DATA FROM AVAILABLE PUBLIC RECORDS, THERE MAY BE RECORDED DOCUMENTS OR ENCUMBRANCES NOT READILY ACCESSIBLE THAT COULD AFFECT THE PROPERTY AS SURVEYED.

4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.

5. THE PURPOSE OF THIS SURVEY IS FOR PERMITTING PURPOSES ONLY.

LEGEND:

D.R.D.C.T.	DEED RECORDS, DALLAS COUNTY, TEXAS
O.P.R.D.C.T.	OFFICIAL PUBLIC RECORDS, DALLAS COUNTY, TEXAS
D.R.E.C.T.	DEED RECORDS, ELLIS COUNTY, TEXAS
O.P.R.E.C.T.	OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE
⊗	FENCE POST FOUND
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
◬	MAG NAIL FOUND
———	PROPOSED PERMIT BOUNDARY LINE
———	ADJOINER TRACT BOUNDARY LINE
———	INTERIOR TRACT/LOT LINE
—— - ——	ABSTRACT LINE
—— E ——	OVERHEAD ELECTRIC LINE

PERMIT BOUNDARY

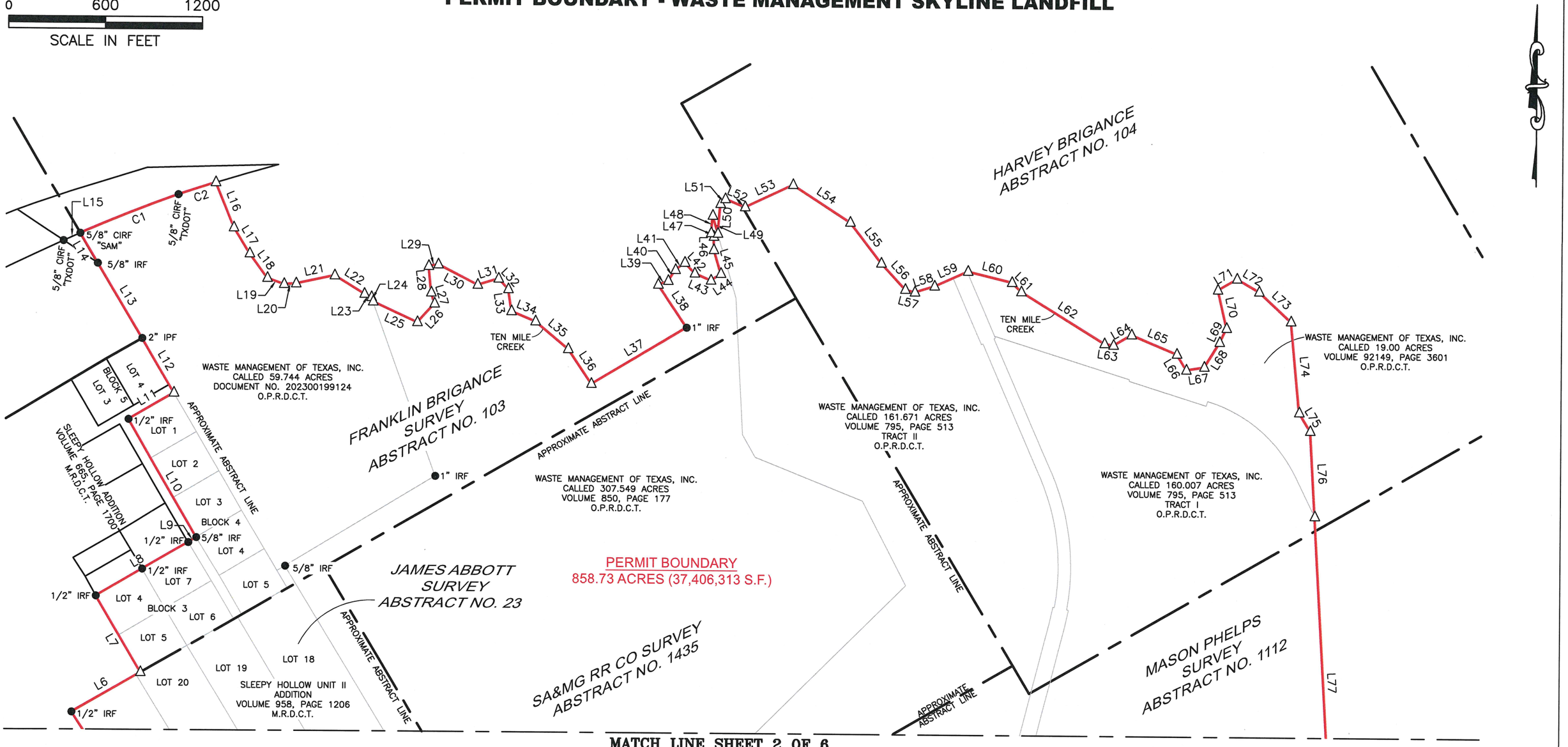
SKYLINE LANDFILL
WASTE MANAGEMENT OF TEXAS, INC.
DALLAS COUNTY & ELLIS COUNTY, TX

BME
BIGGS & MATHEWS ENVIRONMENTAL
205 N. GREEN STREET
GRAND SALINE, TEXAS 75140
903-497-4998
TBPELS FIRM NO. 10194895

1"=600'	DATE: 11/20/25	DRAWN: RM	SHEET: 2 OF 6

PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL

0 600 1200
SCALE IN FEET



MATCH LINE SHEET 2 OF 6

SURVEY NOTES:

1. ALL BEARINGS, DISTANCES, COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD 83 (2011), GEOID 18. DISTANCES SHOWN HEREON ARE GRID VALUES IN U.S. SURVEY FEET.

2. NO ATTEMPT WAS MADE BY BIGGS AND MATHEWS ENVIRONMENTAL (BME) TO LOCATE UNDERGROUND PIPELINES OR UTILITIES. ALL UTILITIES SHOWN HEREON ARE BASED UPON AN ON THE GROUND SURVEY OF MARKED AND/OR VISIBLE UTILITIES.

3. OWNERSHIP AND EASEMENT INFORMATION SHOWN HEREON WAS OBTAINED FROM RESEARCH CONDUCTED BY GLOBAL LAND PARTNERS. WHILE THOROUGH EFFORTS WERE MADE TO COMPILE ACCURATE DATA FROM AVAILABLE PUBLIC RECORDS, THERE MAY BE RECORDED DOCUMENTS OR ENCUMBRANCES NOT READILY ACCESSIBLE THAT COULD AFFECT THE PROPERTY AS SURVEYED.

4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.

5. THE PURPOSE OF THIS SURVEY IS FOR PERMITTING PURPOSES ONLY.

LEGEND:

D.R.D.C.T.	DEED RECORDS, DALLAS COUNTY, TEXAS
O.P.R.D.C.T.	OFFICIAL PUBLIC RECORDS, DALLAS COUNTY, TEXAS
D.R.E.C.T.	DEED RECORDS, ELLIS COUNTY, TEXAS
O.P.R.E.C.T.	OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE
⊗	FENCE POST FOUND
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
⊙	MAG NAIL FOUND
	PROPOSED PERMIT BOUNDARY LINE
	ADJOINER TRACT BOUNDARY LINE
	INTERIOR TRACT/LOT LINE
— - —	ABSTRACT LINE
— E —	OVERHEAD ELECTRIC LINE

PERMIT BOUNDARY

SKYLINE LANDFILL
WASTE MANAGEMENT OF TEXAS, INC.
DALLAS COUNTY & ELLIS COUNTY, TX

BME
BIGGS & MATHEWS ENVIRONMENTAL
205 N. GREEN STREET
GRAND SALINE, TEXAS 75140
903-497-4998
TBPELS FIRM NO. 10194895

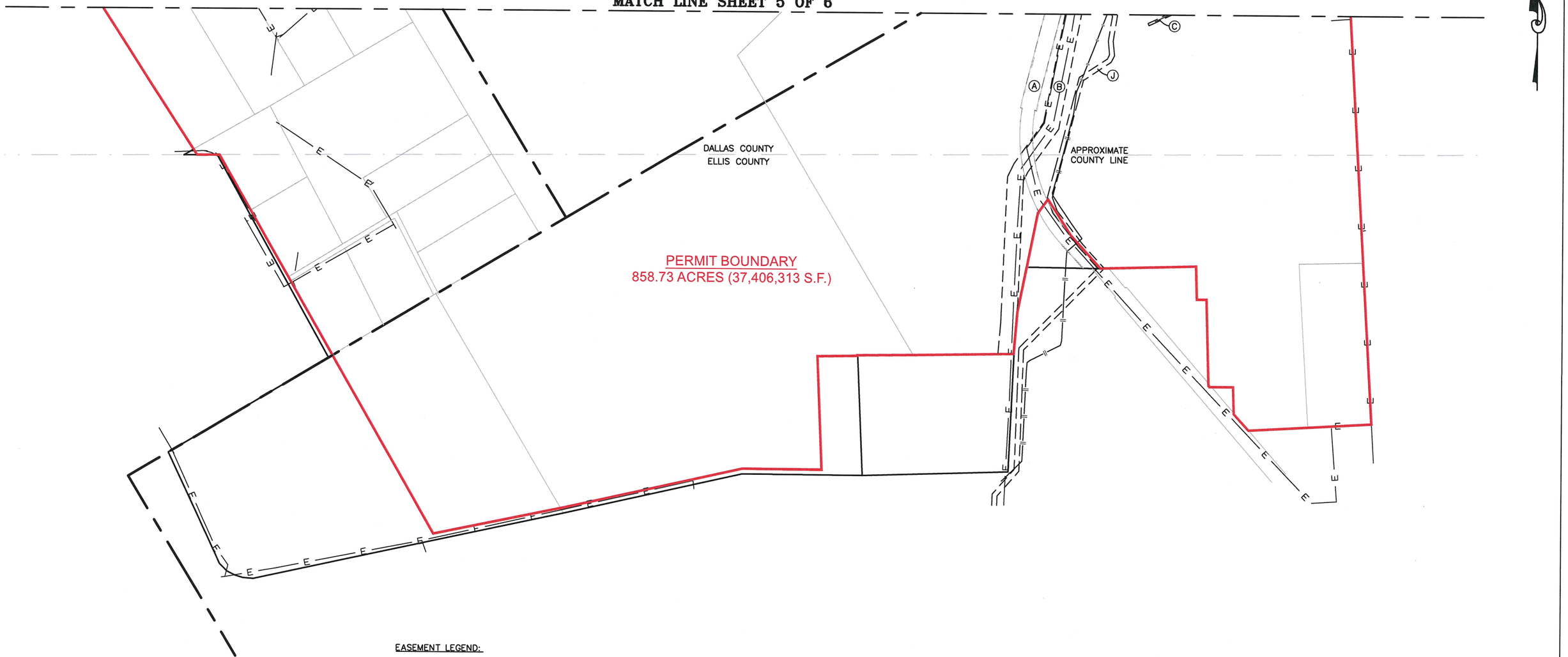
1"=600'	DATE: 11/20/25	DRAWN: RM	SHEET: 3 OF 6

PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL

0 600 1200

SCALE IN FEET

MATCH LINE SHEET 5 OF 6



SURVEY NOTES:

1. ALL BEARINGS, DISTANCES, COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD 83 (2011), GEOID 18. DISTANCES SHOWN HEREON ARE GRID VALUES IN U.S. SURVEY FEET.

2. NO ATTEMPT WAS MADE BY BIGGS AND MATHEWS ENVIRONMENTAL (BME) TO LOCATE UNDERGROUND PIPELINES OR UTILITIES. ALL UTILITIES SHOWN HEREON ARE BASED UPON AN ON THE GROUND SURVEY OF MARKED AND/OR VISIBLE UTILITIES.

3. OWNERSHIP AND EASEMENT INFORMATION SHOWN HEREON WAS OBTAINED FROM RESEARCH CONDUCTED BY GLOBAL LAND PARTNERS. WHILE THOROUGH EFFORTS WERE MADE TO COMPILE ACCURATE DATA FROM AVAILABLE PUBLIC RECORDS, THERE MAY BE RECORDED DOCUMENTS OR ENCUMBRANCES NOT READILY ACCESSIBLE THAT COULD AFFECT THE PROPERTY AS SURVEYED.

4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.

5. THE PURPOSE OF THIS SURVEY IS FOR PERMITTING PURPOSES ONLY.

EASEMENT LEGEND:

EASEMENT A: EXISTING TXU EASEMENT & TRANSMISSION LINE

EASEMENT B: FUTURE ONCOR EASEMENT & TRANSMISSION LINE

EASEMENT C: TXU EASEMENT & TRANSMISSION LINE

EASEMENT D: 10' R.O.W. TUEC EASEMENT

EASEMENT E: ATMOS ENERGY EASEMENT

EASEMENT F: EROSION CONTROL EASEMENT

EASEMENT G: T.R.A. SANITARY SEWER EASEMENT

EASEMENT H: EROSION CONTROL EASEMENT

EASEMENT I: EROSION CONTROL EASEMENT

EASEMENT J: ATMOS ENERGY EASEMENT

NOTE: UTILITIES SHOWN HEREON, OF WHICH THERE IS NO EASEMENT NOTED, NO EASEMENT OF RECORD WAS FOUND.

LEGEND:

D.R.D.C.T.	DEED RECORDS, DALLAS COUNTY, TEXAS
O.P.R.D.C.T.	OFFICIAL PUBLIC RECORDS, DALLAS COUNTY, TEXAS
D.R.E.C.T.	DEED RECORDS, ELLIS COUNTY, TEXAS
O.P.R.E.C.T.	OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE
⊗	FENCE POST FOUND
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
◬	MAG NAIL FOUND
———	PROPOSED PERMIT BOUNDARY LINE
———	ADJOINER TRACT BOUNDARY LINE
———	INTERIOR TRACT/LOT LINE
—— - ——	ABSTRACT LINE
—— E ——	OVERHEAD ELECTRIC LINE

PERMIT BOUNDARY

SKYLINE LANDFILL
WASTE MANAGEMENT OF TEXAS, INC.
DALLAS COUNTY & ELLIS COUNTY, TX

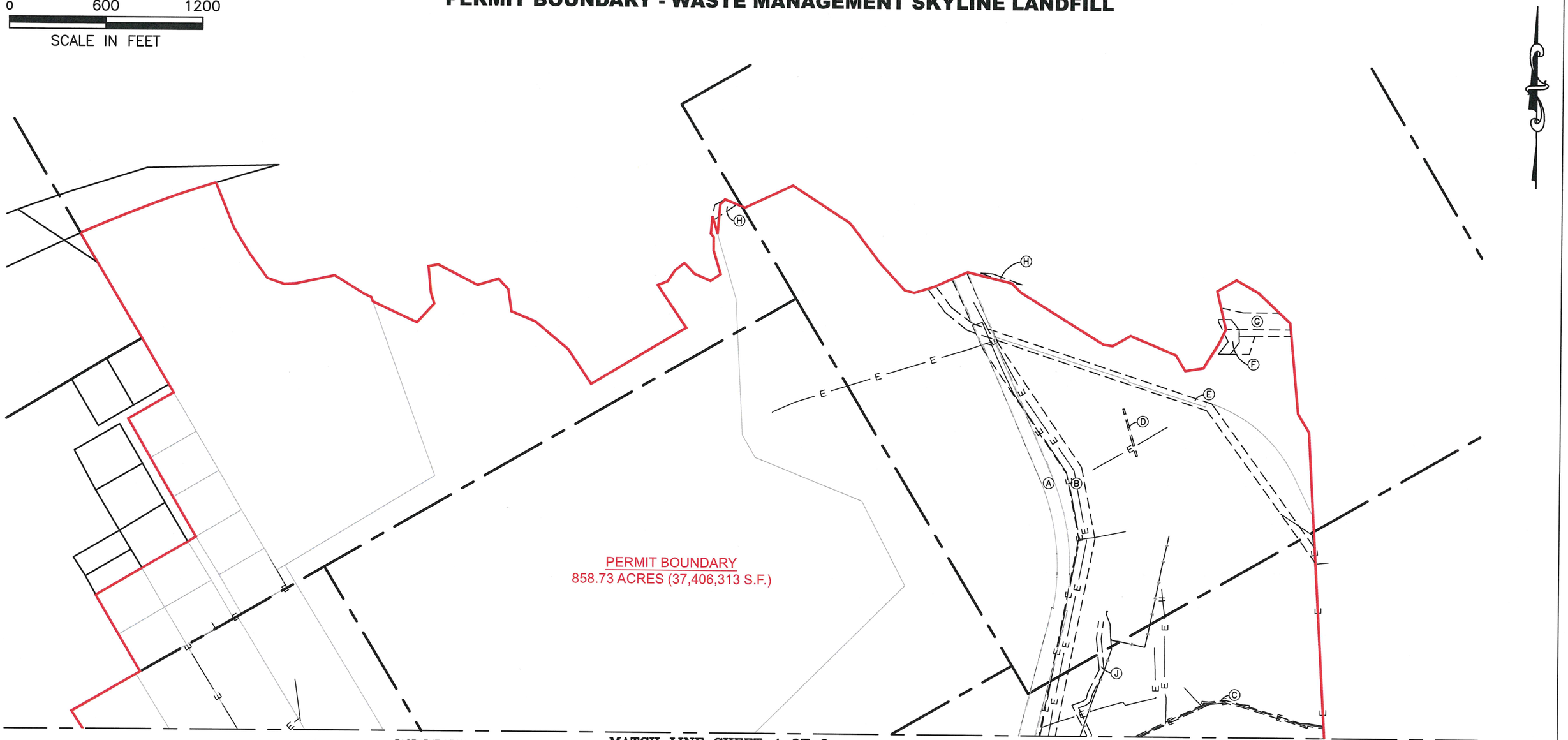
BME
BIGGS & MATHEWS ENVIRONMENTAL
205 N. GREEN STREET
GRAND SALINE, TEXAS 75140
903-497-4998
TBPELS FIRM NO. 10194895

1"=600'	DATE: 11/20/25	DRAWN: RM	SHEET: 4 OF 6

PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL

0 600 1200

SCALE IN FEET


H
H
G
F
E
D
A
B
J
C
E
E
E

PERMIT BOUNDARY - WASTE MANAGEMENT SKYLINE LANDFILL

LINE	BEARING	DISTANCE
L1	N 29°46'04" W	525.59'
L2	N 29°46'04" W	897.79'
L3	S 89°36'33" W	140.41'
L4	N 32°45'49" W	40.58'
L5	N 32°45'49" W	1143.67'
L6	N 59°57'38" E	492.59'
L7	N 30°23'33" W	549.15'
L8	N 59°37'09" E	661.51'
L9	N 57°57'01" E	58.18'
L10	N 29°53'32" W	842.55'
L11	N 59°45'21" E	324.80'
L12	N 30°14'32" W	391.22'
L13	N 30°48'37" W	539.88'
L14	N 30°31'39" W	214.06'
L15	S 66°06'36" W	113.18'
L16	S 22°09'26" E	299.61'
L17	S 31°45'39" E	188.55'
L18	S 36°14'53" E	187.56'
L19	S 70°51'01" E	111.14'
L20	N 86°51'56" E	75.35'
L21	N 77°59'27" E	245.62'
L22	S 58°31'30" E	217.36'
L23	S 65°16'44" E	48.11'
L24	S 19°53'57" E	28.23'
L25	S 65°27'43" E	303.81'
L26	N 42°37'30" E	157.38'
L27	N 17°06'24" W	71.88'
L28	N 05°27'20" W	163.77'
L29	N 79°45'12" E	61.47'
L30	S 62°54'45" E	274.18'
L31	N 73°12'31" E	136.39'
L32	S 43°08'28" E	89.28'
L33	S 08°20'51" E	137.06'
L34	S 67°33'23" E	161.79'
L35	S 50°12'07" E	266.04'

LINE	BEARING	DISTANCE
L36	S 33°55'22" E	258.42'
L37	N 59°04'38" E	687.20'
L38	N 33°55'11" W	317.66'
L39	N 68°21'40" E	66.99'
L40	N 33°34'11" E	80.92'
L41	N 52°16'39" E	73.32'
L42	S 43°21'37" E	89.86'
L43	S 66°49'57" E	108.97'
L44	N 56°30'06" E	74.72'
L45	N 16°48'35" W	154.39'
L46	N 00°03'47" W	82.08'
L47	N 38°21'37" W	28.01'
L48	N 05°17'36" E	107.58'
L49	S 16°17'01" E	114.72'
L50	N 04°55'44" E	184.63'
L51	N 44°47'38" E	42.38'
L52	S 68°04'21" E	132.95'
L53	N 64°55'39" E	329.76'
L54	S 57°15'22" E	424.99'
L55	S 37°43'29" E	316.64'
L56	S 42°55'59" E	220.65'
L57	S 75°31'44" E	61.30'
L58	N 73°04'06" E	128.65'
L59	N 65°57'31" E	228.77'
L60	S 76°21'46" E	282.45'
L61	S 45°30'20" E	81.55'
L62	S 58°32'16" E	607.69'
L63	S 81°17'34" E	57.07'
L64	N 59°48'22" E	129.03'
L65	S 67°28'43" E	306.52'
L66	S 31°07'06" E	113.81'
L67	N 80°43'10" E	113.81'
L68	N 31°41'43" E	180.77'
L69	N 25°55'11" E	97.70'
L70	N 13°08'48" W	243.02'

LINE	BEARING	DISTANCE
L71	N 59°51'11" E	137.96'
L72	S 60°11'35" E	159.58'
L73	S 47°17'54" E	270.51'
L74	S 05°27'23" E	565.06'
L75	S 31°17'31" E	133.59'
L76	S 03°17'30" E	529.26'
L77	S 03°17'31" E	2882.50'
L78	S 03°17'31" E	1000.00'
L79	S 86°41'16" W	767.28'
L80	N 42°21'46" W	136.72'
L81	N 01°45'56" W	166.90'
L82	N 89°52'12" W	152.60'
L83	N 01°36'09" W	540.23'
L84	N 89°47'24" W	60.03'
L85	N 01°33'22" W	205.53'
L86	S 88°20'11" W	596.89'
L87	N 42°27'32" W	275.46'
L88	N 32°33'08" W	263.72'
L89	S 36°27'57" W	106.14'
L90	S 11°28'49" W	625.75'
L91	S 04°53'52" W	261.36'
L92	S 89°00'02" W	625.74'
L93	S 89°16'28" W	347.43'
L94	S 02°30'18" E	4.40'
L95	S 89°09'35" W	249.52'
L96	S 02°19'54" E	704.05'
L97	N 89°44'43" W	494.90'
L98	S 77°21'58" W	1119.96'
L99	S 78°20'37" W	845.02'
L100	N 29°46'04" W	1271.25'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	653.33'	10251.10'	3°39'06"	N 68°14'38" E	653.22'
C2	243.81'	11007.01'	1°16'09"	N 72°08'27" E	243.81'

SURVEY NOTES:

1. ALL BEARINGS, DISTANCES, COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD 83 (2011), GEOID 18. DISTANCES SHOWN HEREON ARE GRID VALUES IN U.S. SURVEY FEET.

2. NO ATTEMPT WAS MADE BY BIGGS AND MATHEWS ENVIRONMENTAL (BME) TO LOCATE UNDERGROUND PIPELINES OR UTILITIES. ALL UTILITIES SHOWN HEREON ARE BASED UPON AN ON THE GROUND SURVEY OF MARKED AND/OR VISIBLE UTILITIES.

3. OWNERSHIP AND EASEMENT INFORMATION SHOWN HEREON WAS OBTAINED FROM RESEARCH CONDUCTED BY GLOBAL LAND PARTNERS. WHILE THOROUGH EFFORTS WERE MADE TO COMPILE ACCURATE DATA FROM AVAILABLE PUBLIC RECORDS, THERE MAY BE RECORDED DOCUMENTS OR ENCUMBRANCES NOT READILY ACCESSIBLE THAT COULD AFFECT THE PROPERTY AS SURVEYED.

4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.

5. THE PURPOSE OF THIS SURVEY IS FOR PERMITTING PURPOSES ONLY.

STATE OF TEXAS
REGISTERED
RYAN J. MAXFIELD
6763
PROFESSIONAL
LAND SURVEYOR

I, RYAN J. MAXFIELD, REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, NUMBER 6763, DO HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH THE STANDARDS OF PRACTICE AS SET FORTH BY THE TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS.

GIVEN UNDER MY HAND & SEAL, THIS THE 20TH DAY OF NOVEMBER, 2025.

RYAN J. MAXFIELD DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 6763, STATE OF TEXAS
TEXAS FIRM REGISTRATION NO. 10194895

PERMIT BOUNDARY

SKYLINE LANDFILL
WASTE MANAGEMENT OF TEXAS, INC.
DALLAS COUNTY & ELLIS COUNTY, TX

BME
BIGGS & MATHEWS ENVIRONMENTAL
205 N. GREEN STREET
GRAND SALINE, TEXAS 75140
903-497-4998
TBPELS FIRM NO. 10194895

Not-to-Scale | DATE: 11/20/25 | DRAWN: RM | SHEET: 6 OF 6

SKYLINE LANDFILL

APPENDIX ID

LEGAL AUTHORITY

Corporations Section
P.O.Box 13697
Austin, Texas 78711-3697

Jane Nelson
Secretary of State

Office of the Secretary of State

Certificate of Fact

The undersigned, as Secretary of State of Texas, does hereby certify that the document, Articles of Incorporation for WASTE MANAGEMENT OF TEXAS, INC. (file number 22300000), a Domestic For-Profit Corporation, was filed in this office on March 30, 1966.

It is further certified that the entity status in Texas is in existence.

In testimony whereof, I have hereunto signed my name officially and caused to be impressed hereon the Seal of State at my office in Austin, Texas on April 22, 2024.

Jane Nelson
Secretary of State

SKYLINE LANDFILL

APPENDIX IE

EVIDENCE OF COMPETENCY

EVIDENCE OF COMPETENCY

30 TAC §330.59(f)(1)-(6)

Solid Waste Sites

The Waste Management Skyline Landfill (Skyline Landfill) is owned and operated by Waste Management of Texas, Inc. (WMTX), a wholly owned subsidiary of Waste Management, Inc. (WM), a Delaware Corporation based in Houston, Texas, whose shares are publicly traded on the New York Stock Exchange. WM is an international supplier of solid waste management services and specializes in collection, transfer, disposal, recycling, and other waste management services provided to municipal, commercial, industrial, and residential customers.

WMTX has operated municipal solid waste facilities in Texas since 1980. The Skyline Landfill was acquired by WMTX in 1987. The existing facility operates under TCEQ Permit No. MSW 42D, issued on June 9, 2015.

Below is a list of Texas solid waste sites that WMTX has owned and/or operated within the past ten years unless otherwise indicated.

Site Name	Type	Registration/ Permit Number	County	Dates of Operation
Addicks Fairbanks Landfill	Type IV	1301	Harris	1995 to present
Atascocita RDF	Type I	1307D	Harris	1983 to present
Atascosa County Transfer Station	Type V	1871	Atascosa	1991 to 2015
Austin Community RDF	Type I	249D	Travis	1983 to present
Baytown Landfill	Type I	1535B	Chambers	1995 to present
Bluebonnet Landfill	Type I	1279	Harris	1982 to present
City of Conroe Landfill	Type I	81A	Montgomery	1995 to present
City of Dekalb Citizens Collection Station	5CC	120112	Bowie	2014 to 2015
City of Fort Worth SE Landfill	Type 1	218C	Tarrant	1998 to 2003
Coastal Plains RDF	Type I	1721A	Galveston	1991 to present
Cougar Landfill	Type IV	1921A	Harris	1995 to present
Covel Gardens Landfill	Type I/Class 1	2093B	Bexar	1992 to present
DeKalb Transfer Station	Type V	120112	Bowie	1991 to present
DFW RDF	Type I	1025B	Denton	1980 to present

Site Name	Type	Registration/ Permit Number	County	Dates of Operation
Fairbanks North Houston Landfill	Type IV	1565B	Harris	1995 to present
Greenshadows Landfill	Type IV	1540A	Harris	1995 to present
Hawthorn Park Landfill	Type IV	2185	Harris	1995 to present
Hillside Landfill	Type I	523B	Grayson	1996 to present
Jourdanton Transfer Station	Type V	1871	Atascosa	1999 to 2015
Kingsland Transfer Station	Type V	40003	Llano	1994 to present
Koenig Street Transfer Station	Type V	1483A	Harris	1998 to present
Lacy Lakeview RDF	Type I	1646A	McLennan	1986 to present
Mesquite Creek Landfill	Type I	66B	Comal	1987 to present
New Boston Landfill	Type I	576C	Bowie	1997 to present
Newton County Regional Solid Waste Complex	Type I/Class 1	2242A	Newton	1998 to present
Paris Landfill	Type I	1454B	Lamar	2000 to present
Pecan Prairie RDF	Type I	1503	Hunt	1989 to present
Pharr Transfer Station	Type V	748	Hidalgo	2000 to present
Pittsburg Transfer Station	Type V	40174	Camp	1999 to present
Sam Houston Transfer Station	Type V	1471	Harris	1998 to present
Security Landfill	Type I	1752B	Montgomery	1992 to present
Skyline Landfill	Type I	42D	Dallas/Ellis	1987 to present
Temple RDF	Type I	692B	Bell	1993 to present
Conroe/Western Waste Industrial	Class 1	SW39001	Montgomery	1995 to present
Westside RDF	Type I	1019A	Tarrant	1983 to present
Westside Transfer Station	Type V	40186	Tarrant	2003 to present
Wharton Transfer Station	Type V	2099	Wharton	1991 to 2015
Williamson County RDF	Type I	1405B	Williamson	1998 to present

Site Name	Type	Registration/ Permit Number	County	Dates of Operation
Winnsboro Transfer Station	Type V	40058	Wood	2000 to 2015

WMTX has no financial interests outside the state of Texas.

Mr. James Smith, Area Director, Landfill Operations

Mr. Smith has over 30 years of experience in the solid waste industry as well as 10 years' experience as a field engineer in the construction industry. Mr. Smith has served as a Construction Manager, Landfill Manager, Sr. District Manager, and Area Operations Manager, gaining broad experience in the areas of landfill and earthwork construction.

Mr. Smith was affiliated with Browning Ferris Industries, Inc. (BFI) for 9 years and Allied Waste for 2 years before moving to WMTX. Mr. Smith has held positions with steadily increasing responsibilities in personnel management and corporate financial management.

Mr. Smith joined WMTX as a Sr. District Manager, responsible for the operations of multiple municipal solid waste landfills in Central Texas and South Texas.

Mr. Guy Campbell, Engineering Manager

Mr. Campbell is responsible for engineering and construction for WMTX's North Texas landfills. Mr. Campbell has over 25 years of experience with environmental and engineering projects, including municipal solid waste in Texas. Mr. Campbell has been affiliated with several engineering consultants and has been with WMTX for over thirteen years.

Ms. Mayra Lopez, Environnemental Protection Manager

Ms. Lopez is the environmental protection manager for WMTX's North Texas landfills. Ms. Lopez has 6 years of experience in the waste management industry, including direct involvement with environmental compliance issues related to municipal solid waste in Texas.

Mr. Ross Boring, Landfill Manager

Mr. Boring oversees all landfill operations for the Skyline Landfill. He has over 10 years of experience in earthwork construction and 15 years of experience in municipal solid waste disposal operations and management of landfills. Mr. Boring holds a current MSW Facility Class A license as a municipal solid waste facility supervisor in accordance with 30 TAC, Chapter 30, Subchapter F: Municipal Solid Waste Facility Supervisors.

Equipment Dedicated to the Skyline Landfill

Sufficient equipment will be provided to conduct site operations in accordance with the landfill design and permit conditions.

Equipment Dedicated to the Skyline Landfill[1]

Equipment[3]	Typical Size[4]	Number[5]			Function
		Less than 2000 tpd	2001 to 5000 tpd	5001 to 8000 tpd	
Compactor(s)	CAT 826, 836	1	2	3	Waste compaction and fire protection
Dozer(s)	CAT D6, D7, D8	1	2	2	Soil movement and placement, waste spreading, and fire protection
Excavator(2)	CAT 330C	1	2	2	Soil excavation
Haul Truck(s) (2)	10 to 40 ton	1	2	3	Soil hauling and fire protection
Motor Grader	CAT 120, 12G	1	1	1	Roadway maintenance
Farm Tractor	35 HP	1	1	1	Miscellaneous maintenance
Pickup Truck(s)	1/2 ton	1	1	1	Personnel use, litter control, maintenance
Water Truck(s)	1,000 gallons	1	1	1	Fire control, dust control, earthfill compaction
Pump(s)	10 to 500 gpm	1	1	1	Stormwater pumping

[1]The manufacturers of the heavy equipment and miscellaneous vehicles and equipment may vary.

[2]Soil excavation will be conducted with an excavator and haul trucks(s). The landfill will determine the appropriate excavation equipment as the landfill is developed.

[3]Backup equipment will be provided from other WMTX facilities, contractors, or local rental companies to obtain equipment in the event of equipment breakdown or maintenance to avoid interruption of waste services.

[4]Typical size is minimum size to be provided.

[5]The number stated for each piece of equipment is the minimum number for each piece of equipment to be provided.

SKYLINE LANDFILL

APPENDIX IF

APPOINTMENTS

CERTIFICATE OF AUTHORIZATION
Authorization to Execute Documents

Ms. Kelly Keel
Executive Director
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

RE: Waste Management Skyline Landfill
Dallas and Ellis Counties, TCEQ Permit No. MSW 42E

Dear Ms. Keel:

I am the Area Director of Landfill Operations of Waste Management of Texas, Inc., a Texas corporation. I am authorized to act as an officer for the corporation, and in the execution of this permit amendment application to conduct other business in connection with such application, submitted as Waste Management Skyline Landfill, TCEQ Permit No. MSW 42E.

ATTEST:
Waste Management of Texas, Inc.

James Smith
Area Director of Landfill Operations

STATE OF TEXAS §
§
COUNTY OF DALLAS §

SWORN TO AND SUBSCRIBED BEFORE ME by James Smith on this 31ST day of MARCH, 2026, which witness my hand and seal of office.

JANET E ANDERSON
Notary Public, State of Texas
Comm. Expires 11-19-2029
Notary ID 133456696

Janet E. Anderson
Notary Public in and for the State of Texas

JANET E. ANDERSON
Printed Name

My Commission Expires 11/19/2029

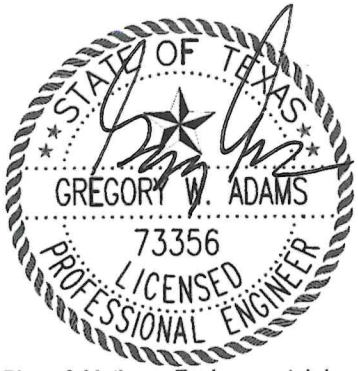
WASTE MANAGEMENT SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
PERMIT AMENDMENT APPLICATION NO. MSW 42E

PART II - EXISTING CONDITIONS AND CHARACTER OF THE FACILITY AND SURROUNDING AREA

Prepared for

WASTE MANAGEMENT OF TEXAS, INC.

March 2026



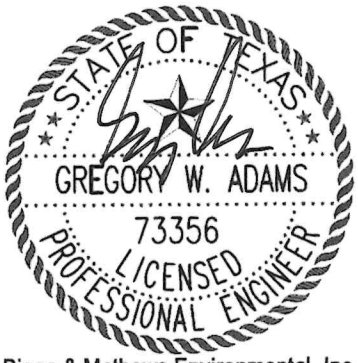
Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

Prepared by

Biggs & Mathews Environmental
1700 Robert Road, Suite 100 ◆ Mansfield, Texas 76063 ◆ 817-563-1144

Texas Board of Professional Engineers and Land Surveyors
Firm Registration No. F-256 And No. 10194895

Texas Board of Professional Geoscientists
Firm Registration No. 50222



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256
3/31/2026

CONTENTS

1 EXISTING CONDITIONS SUMMARY 1

2 WASTE ACCEPTANCE PLAN 2

3 GENERAL LOCATION MAPS 4

4 FACILITY LAYOUT MAPS 5

5 GENERAL TOPOGRAPHIC MAP 6

6 AERIAL PHOTOGRAPH 7

7 LAND USE MAP 8

8 IMPACT ON SURROUNDING AREA 9

9 TRANSPORTATION 11

10 GENERAL GEOLOGY AND SOILS STATEMENT 13

11 GROUNDWATER AND SURFACE WATER 19

12 ABANDONED OIL AND WATER WELLS 22

13 FLOODPLAINS AND WETLANDS 23

14 ENDANGERED OR THREATENED SPECIES 25

15 TEXAS HISTORICAL COMMISSION REVIEW 26

16 COUNCIL OF GOVERNMENTS AND LOCAL GOVERNMENT REVIEW REQUEST 27

17 LOCATION RESTRICTIONS 28

APPENDIX IIA – MAPS AND DRAWINGS

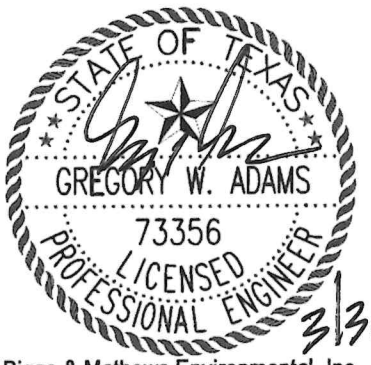
APPENDIX IIB – LAND USE ANALYSIS

APPENDIX IIC – TRANSPORTATION STUDY

APPENDIX IID – WETLANDS DOCUMENTATION

APPENDIX IIE – ENDANGERED OR THREATENED SPECIES DOCUMENTATION

APPENDIX IIF – ARCHAEOLOGICAL SURVEY



3/31/2026

Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256

CONTENTS (Continued)

APPENDIX IIG – TPDES PERMIT

APPENDIX IIH – FEDERAL AVIATION ADMINISTRATION DOCUMENTATION

APPENDIX III – NORTH CENTRAL TEXAS AREA COUNCIL OF GOVERNMENTS DOCUMENTATION

APPENDIX IIJ – FEMA APPROVAL

APPENDIX IIK – WASTE ACCEPTANCE PLAN FORM

1 EXISTING CONDITIONS SUMMARY

30 TAC §330.61(a)

The Waste Management Skyline Landfil (Skyline Landfill) is an existing Type I Municipal Solid Waste Disposal facility (Permit No. MSW 42D) owned and operated by Waste Management of Texas, Inc. (WMTX). The Skyline Landfill is located in Dallas and Ellis Counties, within the city limits of Ferris, Texas and west of North Central Street (Business IH 45) as shown on Drawing IIA.I. The Skyline Landfill provides waste disposal capacity for residences and businesses in Dallas, Ellis and surrounding counties.

The Skyline Landfill currently has a 661.7 acre permit boundary. The area within the permit boundary includes 356.9 acres of waste disposal area and 304.8 acres of buffer and other areas.

Existing entrance facilities, a Type IX Beneficial Landfill Gas Recovery Facility (Type IX Registration No. 48018 and 48048), a citizen's convenience center, a leachate storage facility, a mud grate facility, a maintenance facility, access roads, and surface water drainage facilities are located within the buffer areas. Waste processing and storage facilities located within the landfill footprint include a large item storage area, reusable materials storage area and a liquid stabilization area.

This permit amendment will expand the permit boundary and the waste diposal footprint to the west. The permit boundary will be increased by 197.0 acres to a total of 858.7 acres and the disposal footprint will be increased by 131.8 acres to a total of 488.7 acres. The maximum final elevation will be 761 feet-msl. The deepest excavation in the existing landfill is 377 feet-msl and the deepest excavation in the expansion area will be 406 feet-msl. The total waste disposal capacity will increase from 80,600,000 to 126,075,000 cubic yards with this expansion. Refer to Appendix IIA for drawings illustrating existing and proposed conditions at the Skyline Landfill.

Sections 8 through 15 provide a detailed discussion of site-specific conditions that potentially require special design considerations as set forth in §330.61(a), including impact on the surrounding area, transportation, geology, soils, groundwater, surface water, abandoned oil and water wells, floodplains, wetlands, endangered or threatened species, and the Texas Historical Commission review.

2 WASTE ACCEPTANCE PLAN

30 TAC §330.61(b)

2.1 Properties and Characteristics of Waste

The major classifications of solid waste to be accepted at the Skyline Landfill include municipal solid waste, special waste in accordance with §330.171, and Class 2 and 3 industrial wastes in accordance with §330.173. Included among these are wastes resulting from or incidental to municipal, community, commercial, institutional and recreational activities, including putrescible wastes, rubbish, ashes, brush, construction-demolition debris, and inert material. Regulated asbestos containing material (RACM) and non-regulated asbestos containing material (non-RACM) will be accepted for disposal. Petroleum contaminated soil is accepted and treated in accordance with the approved bioremediation treatment pad as authorized by TCEQ. Industrial nonhazardous wastes in Class 2 and 3 are also accepted at the facility.

The facility has not in the past accepted, and will not accept, Class 1 industrial solid waste, except RACM that has been designated Class 1 industrial waste only because of its asbestos content. There are no existing Class 1 cells at the facility.

Consistent with §330.15, the facility will not accept for disposal lead acid storage batteries; used motor vehicle oil; used oil filters; whole used or scrap tires; refrigerators, freezers, air conditioners or other items containing chlorinated fluorocarbon; bulk or noncontainerized liquid waste from nonhousehold sources; regulated hazardous waste; polychlorinated biphenyls waste; radioactive materials; or other wastes prohibited by TCEQ regulations.

2.2 Volume and Rate of Disposal

The Skyline Landfill serves individuals, businesses, and communities in Dallas, Ellis and surrounding counties. The landfill receives approximately 1,900,000 tons of incoming waste annually (6,090 tons per day). The waste acceptance rate will vary over the life of the facility depending on market conditions. With this expansion, the Skyline Landfill will have a total disposal capacity of 126,075,000 cubic yards and remaining waste disposal capacity of approximately 71,300,000 cubic yards as of the date of this application.

The estimated maximum annual waste acceptance rate for the Skyline Landfill projected for five years is as follows:

Year	Estimated Maximum Annual Waste Acceptance Rate
1	1,900,000
2	1,919,000
3	1,938,000
4	1,958,000
5	1,977,000

As population and economic conditions and available landfill disposal capacity change within the region, the volume of incoming waste could vary considerably. WMTX will maintain records to document the annual waste acceptance rate for the facility. If the rate exceeds the estimated rate and is not due to a temporary occurrence, WMTX will file a permit modification application consistent with §330.125(h). The modification would propose any needed changes in the site operating plan to properly manage the increased waste acceptance rate. Consistent with §330.125(h), the executive director may require permit conditions that are different from or absent in the existing permit, due to the increased waste acceptance rate. As provided by §330.125(h), the estimated waste acceptance rate is not a limiting parameter of the permit.

The TCEQ defines population equivalent as "the hypothetical population that would generate an amount of solid waste equivalent to that actually being managed based on a generation rate of five pounds per capita per day and applied to situations involving solid waste not necessarily generated by individuals." Based on this definition, the approximate population equivalents of the areas being served is 2,436,000 persons.

2.3 Hours of Operation

The Skyline Landfill is authorized for waste acceptance 24 hours per day, Monday through Friday, and until 5:00 p.m. on Saturday. The facility will post on the site entrance sign the hours for waste acceptance from public and private haulers. The Skyline Landfill is also authorized to conduct site operations (i.e. transportation of materials and heavy equipment operation) 24 hours per day, 7 days per week.

2.4 Waste Acceptance Plan Form

Refer to Appendix IIK for the completed Waste Acceptance Plan Form.

3 GENERAL LOCATION MAPS

30 TAC §330.61(c)

The general location maps are provided on Drawings IIA.1 through IIA.5 in Appendix IIA. These maps accurately show the proximity of the facility to surrounding features listed in §330.61(c)(1)-(12).

4 FACILITY LAYOUT MAPS

30 TAC §330.61(d)

The facility layout maps are provided on Drawings IIA.6 through IIA.11 in Appendix IIA. These facility layout maps show the items listed in §330.61(d)(1)-(9).

5 GENERAL TOPOGRAPHIC MAP

30 TAC §330.61(e)

The General Topographic Map is included in Appendix IIA on Drawing IIA.8. The topographic map consists of the relevant portion of the USGS 7 ½-minute quadrangle sheet for Ferris, Texas. Drawing IIA.8 is at a scale of one-inch equals 2,000 feet as required by §330.61(e).

6 AERIAL PHOTOGRAPH

30 TAC §330.61(f)

The aerial photograph of the site and surrounding area is presented in Appendix IIA on Drawing IIA.9. This aerial photograph represents conditions as downloaded from Google Map Pro. The aerial photograph shows the proposed permit boundary and limits of waste and the area within at least a one-mile radius of the permit boundary.

7 LAND USE MAP

30 TAC §330.61(g)

A land use map is included in Appendix IIA as Figure IIA.10. This land use map has been prepared based on the land use analysis conducted by Integrated Environmental Solutions, LLC (IES). The land use features identified and depicted on this drawing, as required by §330.61(g), include the facility permit boundary, uses within the permit boundary, and existing uses such as agricultural, industrial, and residential uses within one mile of the permit boundary. Locations of residences, commercial establishments, schools, licensed day care facilities, churches, cemeteries, ponds or lakes, and recreational areas within one mile of the permit boundary and drainage, pipeline, and utility easements within the permit boundary are shown.

8 IMPACT ON SURROUNDING AREA

30 TAC §330.61(h)

8.1 Land Use

A land use analysis of the area surrounding the facility was conducted by IES, and is included in Appendix IIB. The land use analysis addresses zoning within two miles of the facility, character of surrounding land uses within one mile of the facility, growth trends within five miles of the facility, and proximity to residences and other uses within one mile of the facility. Based on consideration of the nature of the proposed landfill, existing land uses in the area, and other factors as set out in 30 TAC §330.61(h), the facility will be a compatible use.

8.2 Wells Within 500 Feet

A description of known wells within 500 feet of the facility has been prepared. A water well search was compiled for a one-mile radius around the site. The search identified 3 wells within 500 feet of the site permit boundary. The search included a review of records and maps on file at the TWDB WIID Water Well Database (http://wiid.twdb.state.tx.us/) and the TCEQ Water Well Report Viewer (http://tceq.state.tx.us/waterwellview.html). The water well search details and the state well numbering system identification number cross reference table may be found with additional information about each of the wells in Part III, Attachment E. Consistent with §330.61(c)(2), the water wells located within 500 feet of the permit boundary are shown in Appendix IIA, on Drawing IIA.2.

One well identified in the TWDB database as 33-27-501 was plugged in 1992 by Waste Management; it is within the permit boundary but outside the limits of the waste disposal area and outside the groundwater monitoring system. Another well identified in the TWDB database as 33-27-601 was abandoned and plugged in 1965; it is within 500 feet of the permit boundary. Although both of these wells may appear to be active wells as listed in the TWDB database, the wells have been confirmed to have been plugged and abandoned. The plugging report for 33-27-501 is located in Part III, Attachment E, Appendix E1.

Skyline Landfill
Water Wells Within 500-Foot Radius of the Site

Well Locator	Well ID No.	Depth (ft)	Completion Date	Completion Formation	Well Use	Longitude	Latitude
501	33-27-501	1,500	1933	Woodbine	Plugged	-96.66888	32.553055
601	33-27-601	1,408	1914	Woodbine	Plugged	-96.665	32.546388
602	33-27-602	1,362	6/1/63	Woodbine	P	-96.664722	32.546944

*No wells were identified within 500 feet of the facility boundary during a windshield search conducted in February, 2025.

P = Public

An oil and gas well search of state records was conducted in February 2025 to locate any oil and gas wells on the site and within 1 mile of the permit boundary. The search included a review of records and maps on file at the Texas Railroad Commission. The oil and gas search details are included in Part III, Attachment E. There are no known existing or abandoned crude oil or natural gas wells or other wells associated with mineral recovery within the Skyline Landfill permit boundary or within 500 feet of the permit boundary, as shown in Appendix IIA, on Drawing IIA.2. If any abandoned crude oil or natural gas wells or other wells associated with mineral recovery are located during facility development they will be handled as described in Section 12.2.

9 TRANSPORTATION

30 TAC §330.61(i)

9.1 Traffic

A transportation study is included as Appendix IIC. The transportation study provides information on the availability and adequacy of access roads, provides data on the existing and expected vehicular traffic on access roads within one mile of the facility during the expected site life of the facility, and projects the volume of traffic expected to be generated by the facility on the access roads within one mile of the facility. Documentation of coordination with the Texas Department of Transportation (TxDOT), is also included in Appendix IIC. Information in the Transportation Study shows that access roads to the site are available and adequate.

9.2 Airport Impact

An evaluation of the facility impact on surrounding airports was conducted in accordance with §330.545. Refer to Appendix IIA, Drawing IIA.4 for the location of the facility in relationship to area airports. The map depicts the location of the facility, a 5,000-foot radius, a 10,000-foot radius, and a 6-mile radius from the facility permit boundary. As depicted on Drawing IIA.4, the closest airport is the Lancaster Airport, located approximately 2 miles from the Skyline Landfill. The Lancaster Airport is classified as a small general service airport.

TCEQ defines an airport (§330.3(5)) as a public-use airport open to the public without prior permission and without restrictions within the physical capabilities of available facilities; this definition is used for all references to airports in this section unless otherwise stated.

Section 330.545 requires a demonstration that landfill units will be designed and operated so that the landfill unit does not pose a bird hazard to aircraft if new landfill units are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft. Further, §330.545 requires that new landfill units within a 6-mile radius of any small general service airport runway end used by turbojet or piston-type aircraft or 5-mile radius of a large general service public-use airport runway end used by turbojet or piston-type aircraft notify the FAA and the airport.

The Skyline Landfill is located within a 6-mile radius of a small general service airport runway end used by turbojet or piston-type aircraft. WMTX has adopted a "Bird Control Plan" at the Skyline Landfill to eliminate bird hazards to aircraft. WMTX conducts daily bird control activities. . The Skyline Landfill will continue to follow the Bird Control Plan, refer to Part IV, Appendix IVF for a copy of the Bird Control Plan.

Refer to Appendix IIH for documentation of coordination with FAA regarding location of the facility in relation to airports in the designated areas as required by §330.61(i)(5) and §330.545. FAA has confirmed that they have no objection from the standpoint of obstructions if warning beacons are installed.

10 GENERAL GEOLOGY AND SOILS STATEMENT

30 TAC §330.61(j)

A general discussion of the geology and soils of the site has been prepared. Detailed discussion of the geology of the site can be found in Part III, Attachment E.

10.1 General Geology

The project site is in the regional physiographic subdivision known as the Blackland Prairie. This north-south trending belt is underlain by the Eagle Ford, Austin, Taylor, and Navarro formations of the Cretaceous System. Topography of the Blackland Prairie is typically flat to rolling and has a gentle slope to the east. The Blackland Prairie is poorly drained with sparse timber (Nordstrom, 1982).

The Eagle Ford Group outcrops in the extreme western portion of Dallas and Ellis counties and consists primarily of bluish-black and gray shales of marine origin with a maximum thickness of 300 feet. East and above the Eagle Ford is the Austin Chalk Group, which is made up of chalks and marls up to 500 feet thick. Above the Austin Chalk lies the Taylor Group. This group has an overall thickness estimated to be approximately 500 feet. Locally, the thickness is estimated at approximately 250 feet. The Woodbine Group, stratigraphically situated beneath the Eagle Ford and composed of clay and permeable sandstone up to 250 feet thick, is the first major water bearing zone beneath the counties. The regional dip of the Cretaceous in Dallas and Ellis Counties is approximately 50 feet to the mile and trends to the southeast. The site varies in elevation from about 505 feet above mean sea level (msl) in the center of the property to about 450 feet above msl along the west and east property boundaries. There is no unfavorable topography that would limit the facility present on the site.

The nearest surface water body in the area is a branch of Ten Mile Creek located several hundred feet north of the site.

Regional Stratigraphy and Lithology

Formations of the Cretaceous System were deposited by northward advancing seas over extensively eroded Paleozoic strata. The Comanche and Gulf Series of the Cretaceous System represent two major transgressions of Cretaceous seas. The project site is underlain by strata deposited during the late Cretaceous Gulf Series. Toward the end of the Cretaceous period, marine deposition ceased after a general uplift to the west resulted in regression of the seas gulfward. Subsequent erosion of the Cretaceous deposits continued through the Cenozoic era to the present.

Regional stratigraphy includes geologic units of the Cretaceous System from the lower Comanche Series Trinity Group to the upper Gulf Series Navarro Group. The site is on the outcrop of the Taylor Formation (lower Taylor Marl).

Regional cross sections indicate that the Cretaceous System forms a southeastward-thickening wedge extending into the East Texas Basin structural feature. Outcrops of Cretaceous geologic formations generally trend north-northeastward with the regional dip to the east-southeast ranging from about 15 to 40 feet per mile (Nordstrom, 1982).

Skyline Landfill
General Regional Stratigraphic Column

System	Series	Group	Formation	Maximum Thickness (ft)	
Upper Cretaceous	Gulf	Navarro	Kemp Clay	400	
			Corsicana Marl	20	
			Nacatoch Sand	450	
			Neylandville Marl	125	
		Taylor		600	← SITE
		Austin		400	
		Eagle Ford		400	
		Woodbine		400	
Lower Cretaceous	Comanche	Fredericksburg & Washita Groups undifferentiated		1000 250	
		Trinity	Paluxy	100	
			Glen Rose	600	
			Twin Mountains	500	
			Antler	100	

Source: Barnes, 1972 (Rev. 1987)

Refer to Part III, Attachment E for more detailed information.

Site Stratigraphy

The facility is located on the outcrop of the Taylor Marl. The Taylor Marl is a very dense, low permeability formation consisting of calcareous clays. More than 200 borings have been drilled and sampled on the site and were examined to characterize site stratigraphic conditions. Three geologic cross sections are presented in Appendix E3 that incorporate historic and newly drilled borings. In addition, historical geologic cross sections are included in Appendix E7. For identification purposes, the interpreted units have been labeled Stratum I and Stratum II. These sections illustrate the stratigraphy and lithology

present beneath the site. Detailed descriptions of these strata are included in the following sections.

Stratum I – Weathered Taylor Marl

The weathered Taylor consists of 40 feet of brown to yellow to light gray stiff to hard, clay weathered from the marl. The average thickness is about 28 feet. The samples range from dry and friable where they are above the water table to moist where they occur below the top of the water table. The weathered Taylor contains occasional calcareous and iron nodules and some silt and sand partings. Near vertical fracturing occurs as a result of the weathering process. Occasional angular jointing is present. Fractures and joints may be filled with calcite or gypsum. Fracture frequency decreases with depth. Slug testing of the material shows permeabilities ranging from 5.44×10^{-10} to 1.59×10^{-8} cm/sec. The geometric mean of calculated permeabilities is 4.23×10^{-9} cm/sec. A structural contour map of the top of the unweathered Taylor (base of the weathered Taylor) is shown in Part III, Attachment E, Appendix E3.

Stratum I, as defined in this application, includes the uppermost groundwater zone at the site, which occurs in shallow, fractured, weathered Taylor Marl under unconfined, water table conditions. Groundwater in Stratum I is characterized by fracture flow. In the weathered marl, fracturing is abundant due to weathering processes and expansion from the release of overburden pressure. The groundwater movement in the weathered marl is characterized by flow through the interconnected vertical and horizontal fractures and bedding planes that have hydraulic characteristics of normally porous medium such as a sand or silt. The flow is generally topographically controlled.

Stratum II – Unweathered Taylor Marl

The unweathered Taylor consists of several hundred feet of dark gray to blue gray, hard clayey shale (marl) with iron stains, gypsum seams, and occasional fossils. The surface of the unweathered Taylor is the contact between the weathered and the unweathered Taylor. This surface is a result of the depth of weathering created by shrinking and swelling as a result of alternating rainfall and drying. Eighty-three soil borings penetrate into this unit at a minimum of 10 feet into this stratum. Geotechnical testing performed on samples from this stratum concludes that this unit is primarily a clay. Some investigators refer to this material and this part of the Taylor as claystone.

As stated above, the stratigraphy of the site has been defined by the degree of weathering. To illustrate the unweathered surface of the Taylor Marl, a structural contour map of the top of the unweathered Taylor was prepared using information obtained from the borings (Part III, Attachment E, Appendix E3). This map indicates that the unweathered unit (Stratum II) surface mimics the original surface topography and slopes to the north-northwest, as does the surface topography. These maps and the generalized cross sections (Part III, Attachment E, Appendix E3) support the conclusion that the geologic units generally parallel the surface and are thus related to weathering processes, not to depositional processes.

Fracture density and fracture aperture decreases significantly in the unweathered marl. This decrease in fracturing with depth was observed in the samples from site borings and in excavations in the unweathered zone at this and other sites within the areas of Dallas and Ellis Counties. This decreased fracture density with depth corresponds to the lower permeability seen in permeability tests conducted in the unweathered zone compared to the permeability results for the weathered zones. Geologic and hydrogeologic characteristics observed in the deeper, unweathered Taylor Marl (Stratum II) indicate that this unit functions as an aquiclude or lower confining unit to the uppermost groundwater zone at the site.

10.2 General Soils

The information from the field investigations included in Part III, Attachment E indicates that the subsurface materials at the site consist of the two general soil units that have been identified at the site, and are summarized as:

Skyline Landfill
Generalized Site Stratigraphy

Geologic Unit	Lithology	Average Depth to Top of Unit (ft)	Average Thickness of Unit (ft)	Hydrogeologic Unit
Stratum I Weathered Taylor Marl	Clay and Weathered Shale	Surface Outcrop	28	Uppermost Aquifer*
Stratum II Unweathered Taylor Marl	Shale, Clayey	28	425	Aquiclude

*The Taylor Marl is not recognized by the State of Texas as an aquifer, but has been recognized by the TCEQ as such for groundwater monitoring purposes.

The laboratory test results are included in Part III, Attachment E, Appendix E5. These test results were reviewed along with the boring logs to develop generalized soil properties for use in the analysis. As shown on the cross sections in Part III, Attachment E, Appendix E3, the landfill excavation will be in clay.

10.3 Fault Areas

The property on which Skyline Landfill is located was examined for the presence of faulting according to §330.555 criteria. A fault study was conducted by reviewing aerial photographs for the site, reviewing available geologic literature and maps of the area, conducting site reconnaissance, and examining the subsurface boring data from the site.

Aerial photographs of the site were reviewed for indications of faults in the area of the site. The Geologic Atlas of Texas, Dallas Sheet shown in Part III, Attachment E, Appendix E1 shows no surface evidence of surface faulting in the area.

A site walkover was conducted by an experienced geologist familiar with both faulting and solid waste disposal facilities. No unusual scarps or topographic breaks were interpreted within 200 feet of the site. No evidence of faulting was found associated with formation outcrops; no evidence of faulting was found by examination of area roadways; no structural influence of stream courses was found; and no unusual relief or topographic features, such as sag ponds or truncated alluvial spurs, were observed on the site. No evidence of structural damage to buildings on the property was identified.

Cores retrieved from exploration borings revealed no evidence of faulting. Fractures seen in the cores showed no evidence of displacement.

No oil and gas wells were identified within one mile of Skyline Landfill. Accordingly, there is no apparent differential subsidence or faulting potential of shallow sediments associated with oil and gas withdrawal.

In summary, no fault scarps were observed at the surface within 200 feet of the site and there was no evidence of vertical subsidence on any outcrops of geologic materials. No vertical displacement or stratigraphic offset indicative of faults was observed in outcrops or in any of the cores from the site borings. There is no active faulting within 200 feet of the site; therefore, the site complies with §330.555.

10.4 Seismic Impact Zones

The location criterion in TAC §330.557 requires that new MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the executive director that all containment structures (including liners, leachate collection systems, and surface water control systems) are designed to resist the maximum horizontal acceleration in lithified earth material for the site. A seismic impact zone is defined as an area with a probability of 10 percent or greater than the maximum horizontal acceleration in rock, expressed as a percentage of the earth's gravitational pull, will exceed 0.10g in 250 years. If the maximum horizontal acceleration is less than 0.10g, then the design of the unit will not be required to incorporate an evaluation of seismic effects.

Areas within the United States where seismic effects need to be evaluated, as determined by the USGS interactive website (http://earthquake.usgs.gov/research/hazmaps), are shown on Drawing IIA.11. As indicated on this figure, the Skyline Landfill is not located within a seismic impact zone.

10.5 Unstable Areas

An unstable area is defined by the TCEQ as a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill's structural components responsible for preventing releases from a landfill. An unstable area can exhibit poor foundation conditions, areas susceptible to mass movement, and karst terrains.

The determination of potential unstable areas at the landfill site is based on site observations and a review of existing documentation for the site by a licensed professional engineer. Based on this review, the foundation conditions and the geological formations are stable. In addition, there is no evidence to suspect mass movement of natural formations of earthen material on or in the vicinity of this site. No foundation problems exist at the site. The landfill components were evaluated with respect to settlement, heave, and slope stability. The detailed analysis is included in Part III, Attachment D5. Based on the results of these analyses, the existing and proposed human-made features have been predicted to have adequate factors of safety with respect to stability.

Based on site observations, a review of existing geological data, and geotechnical analysis of the structural components of landfill development, the site is not located in an unstable area and the integrity of the landfill is not expected to become impaired by natural, surface, or subsurface human-made features or events.

11 GROUNDWATER AND SURFACE WATER

30 TAC §330.61(k)

11.1 Groundwater

A groundwater investigation report is included in Part III, Attachment E. The groundwater monitoring system proposed for the site is discussed in Part III, Attachment F. Groundwater conditions at the site were determined using data from a combination of piezometers and monitoring wells that are a part of the approved site Subtitle D groundwater monitoring system. Details and logs of the borings, monitoring wells and piezometers are provided in Part III, Attachment E, Appendix E2.

11.2 Regional Aquifers

Regional Cretaceous aquifers that supply groundwater to wells in Dallas and Ellis counties are the Paluxy and Woodbine formations. Groundwater is obtained for public supply primarily from municipal wells tapping the Woodbine Formation. The largest users of groundwater in Ellis County include the cities of Waxahachie, Ennis, Ferris, and Midlothian.

The Woodbine Aquifer is the uppermost aquifer beneath this site. It is separated from the surface by approximately 100 feet of Taylor, Austin, and Eagle Ford formations. This stratigraphic section forms a regional confining system. The low permeability rocks of these formations retard the vertical and lateral flow of groundwater and separate the underlying aquifers from the surficial groundwater-bearing unit (weathered Ozan) (Dutton et al., 1994). The Dutton et al. (1994) report is a comprehensive geologic/hydrogeologic study conducted in Ellis County in conjunction with the Superconducting Super Collider. That project included boring large-scale tunnels within the Ozan Formation.

11.2.1 Paluxy Formation

Outcrops of the Paluxy Formation are located in northwestern Tarrant County and in western Johnson County, almost 60 miles west of the site. Depth to the top of the Paluxy ranges from about 830 feet in northwestern Ellis County to more than 2,950 feet to the east. Depth to the top of the Paluxy in the landfill area is approximately 1,600 feet (Thompson, 1967). Although the thickness of the Paluxy is irregular, the formation generally thickens northward with thicknesses in Ellis County ranging from 77 to 160 feet. Regional dip of the formation is eastward at approximately 42 feet per mile in west Ellis County and 85 feet per mile in east-central Ellis County (Thompson, 1967).

11.2.2 Woodbine Formation

The Woodbine Formation crops out in eastern Tarrant and Johnson counties and in northwestern Ellis County. The site location spans the north central boundary line of Ellis County where it adjoins Dallas County, approximately 30 miles east of the Woodbine outcrop. The top of the formation in the southeastern part of Ellis County is at a depth of approximately 1,980 feet. Depth to the Woodbine in the vicinity of the landfill is approximately 300 feet (Thompson, 1967). Thicknesses of the Woodbine vary greatly in Ellis County with ranges from 190 to 405 feet. The formation dips east-southeast at an average of about 60 feet per mile (Thompson, 1967). The Woodbine Aquifer is confined by the overlying Eagle Ford, Austin, and Taylor formations in the Ellis County area (Dutton et al., 1994).

The lower part of the Woodbine in the western three-quarters of Ellis County is an important source of groundwater for domestic, livestock, and public-supply use (Thompson, 1967).

11.2.3 Taylor Group

The Taylor Marl (Ozan Formation) crops out in a north-northwestward trending belt across Ellis County; maximum thickness is about 625 feet. Skyline Landfill is located on the outcrop of the Ozan. This formation is not considered an aquifer but in effect is an aquitard to overlying water-bearing sediments. In areas east of the site where the Taylor Marl (Ozan) is overlain by water-bearing formations, it effectively serves as the lower confining unit. Only a few shallow domestic and livestock wells tap the weathered Taylor Marl in Ellis County and yield small quantities of fresh to slightly saline hard water (Thompson, 1967).

Skyline Landfill
Hydraulic Properties of Regional Aquifer
Compiled from Texas Water Department Board (TWDB), 1990 and 1999

Parameters	Woodbine	Paluxy
Composition	Sand, sandstone	Sand and shale
Hydraulic Conductivity	44 gal/d/ft^2	78 gal/d/ft^2
Water Table/Confined	Confined	Confined
Groundwater Flow Rate	15 ft/yr	2 ft/yr
Water Quality: Total Dissolved Solids Total Dissolved Chlorides	 877.39 85.88	 606.7 36.08
Recharge Zones	West	West
Regional Water Table	See Part III, Attachment E, Figure E1-4	See Part III, Attachment E, Figure E1-5
Present Use of Water	Municipal, Industrial, and Irrigation	Municipal, Industrial, and Irrigation
Identification of Water Wells Within One Mile	See Part III, Attachment E, Table E-3 and Figure E1-6	See Part III, Attachment E, Table E-3 and Figure E1-6

*Regional groundwater potentiometric surface map(s) are included in Part III, Attachment E, Appendix E-1.

11.3 Surface Water

The Skyline Landfill is located in the Ten Mile Creek watershed which is part of the Trinity River Basin. Ten Mile Creek is immediately north of the facility permit boundary with two unnamed tributaries flowing south to north. There is also an unnamed tributary flowing southward in the southwestern corner of the area. The Ten Mile Creek drainage area adjacent to the facility includes areas north and west of the Skyline Landfill. Surface water runoff from the facility enters Ten Mile Creek at several discharge points. Surface water is routed to these discharge points through existing perimeter drainage channels, ditches, detention ponds, and retention ponds. The detention and retention ponds are designed to provide the necessary storage and outlet control to mitigate impacts to the receiving channels downstream of the Skyline Landfill. The surface water drainage evaluation and design is included in Part III, Attachment C.

11.4 Stormwater Permitting

The facility has been designed to prevent the discharge of pollutants into waters of the state of Texas or waters of the United States, as defined by the Texas Water Code and the Federal Clean Water Act, respectively. WMTX submitted a notice of intent (NOI) to comply with TPDES General Permit No. TXR050000 relating to stormwater discharge associated with industrial activity (Multi-Sector General Permit) and received Permit No. TXR05U147. A copy of the permit is included in Appendix IIG.

12 ABANDONED OIL AND WATER WELLS

30 TAC §330.61(l)

12.1 Water Wells

One known water well (33-27-501) that was abandoned and plugged in 1992 is within the permit boundary of the Skyline Landfill but it was located outside the waste disposal footprint and the groundwater monitoring system. The plugging record for this well is provided in Part III, Attachment E, Appendix E1. However, should any unknown abandoned water wells be discovered during facility development, Skyline Landfill will immediately provide written notification to the TCEQ executive director of their location.

A copy of the well plugging report for any found well will be submitted to the appropriate state agency and executive director within 30 days after the well is plugged. A permit modification will be submitted to the executive director if revisions to the liner installation plan are required as the result of well abandonment.

12.2 Oil and Gas Wells

There are no known existing or abandoned crude oil or natural gas wells or other wells associated with mineral recovery within the Skyline Landfill permit boundary. If any abandoned crude oil or natural gas wells or other wells associated with mineral recovery are located, the landfill will provide written notification to the TCEQ's executive director of their location within 30 days of their discovery. For any abandoned crude oil or natural gas wells, or other wells associated with mineral recovery, the landfill will provide the executive director of the TCEQ with written certification that all such wells have been properly capped, plugged, and closed in accordance with all applicable rules and regulations of the Railroad Commission of Texas.

A copy of the well plugging report to be submitted to the appropriate state agency will also be submitted to the executive director of the TCEQ within 30 days after the well has been plugged. A permit modification will be submitted to the executive director if revisions to the liner installation plan are required as the result of well abandonment. Any producing crude oil or natural gas well that does not affect or hamper landfill operations may be installed or remain in its current state if identified in the permit for the landfill.

13 FLOODPLAINS AND WETLANDS

30 TAC §330.61(m)

13.1 Floodplains

An evaluation of the 100-year floodplain has been conducted for the Skyline Landfill. Skyline Landfill's existing and proposed waste disposal operations will be conducted outside the 100-year floodplain. The limits of the 100-year floodplain and base flood elevations for Ten Mile Creek adjacent to the Skyline Landfill are from the FEMA Flood Insurance Rate Map (FIRM) of Dallas County, Texas and Unincorporated Areas Community Panel Numbers 48113C0670K, 48113C0665K, 48113C0655K, 48113C0660K, with an effective date of July 7, 2014. FEMA has defined the limits of the 100-year floodplain in the vicinity of the landfill as Zone AE; base flood elevations have been determined by FEMA. The limits of the floodplain are depicted in Appendix IIJ on Drawing IIJ.1. As shown on this drawing, the waste disposal operations will be conducted outside the limits of the FEMA defined 100-year floodplain.

The City of Ferris (Community Number 481076) is the FEMA designated Floodplain Adminstrator for the FEMA defined 100-year floodplain located in Dallas County, within the city limits of the City of Ferris, as located on Community Panels 48113C0665K and 48113C0670K. As depicted on Drawing IIJ.1, the small area of the existing Skyline Landfill that encroaches into the FEMA defined 100-year floodplain is located entirely within the City of Ferris city limits. As the FEMA Floodplain Administrator, the City is authorized by FEMA to regulate placement of fill within the limits of the 100-year floodplain. Refer to Appendix IIJ for approval from the City of Ferris, as the FEMA designated Floodplain Administrator, to encroach into the 100-year floodplain.

The proposed expansion of the Skyline Landfill does not require fill within the 100-year floodplain. The postdeveloped landfill footprint will not be located within the limits of the 100-year floodplain and no disposal operations will be conducted within the 100-year floodplain. In accordance with §330.547(a), the Skyline Landfill's waste disposal operations are not located in the 100-year floodway. In accordance with §330.547(b), the Skyline Landfill's new and existing municipal solid waste disposal units are not located in the 100-year floodplain, will not restrict the flow of the 100-year flood, will not reduce the temporary water storage capacity of the floodplain, and will not result in the washout of solid waste. Further, in accordance with §330.547(c), the Skyline Landfill's processing and/or storage units are not located within the 100-year floodplain. Further, approval for construction of the Skyline Landfill under Texas Water Code, §16.236 is not required.

13.2 Wetlands

A wetlands determination under applicable federal, state, and local laws has been prepared. The wetlands determination was conducted to evaluate areas subject to jurisdiction under Section 404 of the federal Clean Water Act and areas subject to determination under state designation, as defined in 30 TAC 307.3(81). There are no local laws related to wetland areas. Further, if the state definition of wetland conflicts with the federal definition in any manner, the state regulations provide that the federal definition prevails. A wetlands determination was conducted for the currently permitted Skyline

Landfill boundary. Based on this wetlands determination and the development of Skyline Landfill, the United States Army Corps of Engineers, Ft. Worth District (CESWF) issued Nationwide Permit 39 (SWF-2009-00138). The construction of Skyline Landfill was conducted consistent with this authorization. A copy of Nationwide Permit No. 39 (SWF-2009-00138) is included in Appendix IID.

A wetlands determination for the proposed Skyline Landfill expansion area was conducted by IES and is included as Appendix IID. The wetlands determination identified jurisdictional waters of the United States, including wetlands. As such, coordination with the United States Army Corps of Engineers, Ft. Worth District (CESWF) has resulted in an Individual Permit application submittal for the Skyline landfill expansion. Refer to Appendix IID for a copy of the Individual Permit, as submitted to CESWF, and subsequent documentation.

14 ENDANGERED OR THREATENED SPECIES

30 TAC §330.61(n)

An evaluation of the potential occurrence of endangered or threatened species at the site, including contact with the U.S. Fish and Wildlife Service and the Texas Parks and Wildlife Department for locations and specific data relating to endangered and threatened species, has been conducted by IES and is documented in Appendix IIE. IES concluded that 1 proposed endangered and 1 candidate species have the potential to occur at the site. However, those species are not currently afforded protection under the Endangered Species Act. Along with no critical habitat for any such species existing on site, IES has concluded that the Skyline Landfill and its expansion and operation will not result in the destruction or adverse modification of critical habitat for, or cauase or contribute to the taking of, any federally-listed or state-listed threatened or endangered species. There will be "no effect" to any federally-listed threatened or endangered species.

15 TEXAS HISTORICAL COMMISSION REVIEW

30 TAC §330.61(o)

A Cultural Resources Report of the Skyline Landfill expansion area has been prepared by IES and correspoindance has been submitted to the Texas Historical Commission. Because the project will not be located on state or local public land and no state archaeological landmark is located within the site, the project is not subject to any requirements in the Natural Resources Code, Chapter 191, Texas Antiquities Code. A copy of the report is provided in Appendix IIF.

16 COUNCIL OF GOVERNMENTS AND LOCAL GOVERNMENT REVIEW REQUEST

30 TAC §330.61(p)

Parts I and II of the application were submitted for review to the North Central Texas Council of Governments to determine compliance with the regional solid waste plan. The Skyline Landfill is located within the city limits of Ferris, Texas; however, there is no local government solid waste plan or review process. Documentation of coordination with the North Central Texas Area Council of Governments is provided in Appendix III.

17 LOCATION RESTRICTIONS

30 TAC §§330.543 through 330.563

17.1 Easements and Buffer Zones

The facility is consistent with the provisions of §330.543. No solid waste unloading, storage, disposal, or processing operations shall occur within any easement, buffer zone, or right-of-way that crosses the facility. No solid waste disposal shall occur within 25 feet of the center line of any utility line or pipeline easement, but no closer than the easement, unless otherwise authorized by the executive director. All pipeline and utility easements shall be clearly marked with posts that extend at least 6 feet above ground level, spaced at intervals no greater than 300 feet. There are no pipeline or utility easements that will affect solid waste unloading, storage, disposal or processing operations; refer to Appendix IIA, Drawing IIA.5.

The buffer zone distance for the waste disposal activities exceeds the minimum distance of 125 feet. Buffer distances vary along the permit boundary with the minimum distance to the proposed disposal units being 225 feet as shown in Appendix IIA on Drawing IIA.5. The buffer zone distance for waste storage or processing operational activities exceeds the minimum buffer distance of 125 feet. Buffer zone distances vary to each storage or processing facility with the minimum distance being 1,062 feet as shown in Appendix IIA on Drawing IIA.5.

17.2 Airport Safety

The facility is consistent with the provisions of §330.545 related to airport safety. The evaluation of the facility impact on surrounding airports is discussed in detail in Section 9.2. Documentation of coordination with the Federal Aviation Administration is provided in Appendix IIH.

17.3 Floodplains

The facility is consistent with the provisions of §330.547 related to floodplains. A discussion of floodplains is provided in Section 13.1. Refer to Appendix IIJ for authorization from the City of Ferris as Floodplain Administrator for placement of fill within the limits of the 100-year floodplain and excavation of a compensating volume of floodplain storage.

17.4 Groundwater

Consistent with the provisions of §330.549 related to groundwater, the facility is not located within the recharge zone of the Edwards Aquifer, as identified in 30 TAC Chapter 213. Additional information related to groundwater is provided in Part III, Attachment E and Attachment F.

17.5 Endangered or Threatened Species

The facility is consistent with the provisions of §330.551 related to endangered or threatened species. The evaluation of the facility's potential impact on endangered or threatened species is provided in Section 14. The measures the facility will take to avoid and minimize the impact to the endangered or threatened species is included in Part IV. Additional information is provided in Appendix IIE.

17.6 Wetlands

The facility is consistent with the provisions of §330.553 related to wetlands. A discussion of wetlands is provided in Section 13.2. Additional documentation is provided in Appendix IID.

17.7 Fault Areas

The facility is consistent with the provisions of §330.555 related to fault areas. A discussion of fault areas is provided in Section 10.3. Additional information is provided in Part III, Attachment E.

17.8 Seismic Impact Zones

The facility is consistent with the provisions of §330.557 related to seismic impact zones. A discussion of seismic impact zones is provided in Section 10.4. Additional information is provided in Part III, Attachment E.

17.9 Unstable Areas

The facility is consistent with the provisions of §330.559 related to unstable areas. A discussion of unstable areas is provided in Section 10.5. Additional information is provided in Part III, Attachment D5.

17.10 Coastal Areas

The facility is consistent with the provisions of §330.561; it is not located within a coastal area or within 5,000 feet of an area subject to active coastal shoreline erosion as defined in 30 TAC §335.584(b)(3) or (4).

17.11 Type I Landfill Permit Issuance Prohibited

The facility is consistent with the provisions of §330.563; it is not subject to the conditions specified in Texas Health and Safety Code §361.123.

18 REFERENCES

*Barnes, V.E., 1972 (Revised 1987), *Geologic Atlas of Texas, Dallas Sheet, Bureau of Economic Geology*, University of Texas, Austin, Texas.

*Dutton, A.R. , Collins, E.W., Hovorka, S.D., Mace, R.E., Scanion, B.R., and Xiang, J., 1994, Occurrence and Movement of Ground Water in Austin Chalk and Eagle Ford and Ozan Formations at the Superconducting Super Collider (SSC) Site, Ellis County, Texas, Contract report prepared by Bureau of Economic Geology for Texas National Research Laboratory Commission, Contract No. IAC(92-93)-0301, May.

*Nordstrom, P.L., 1982, *Occurrence, availability, and chemical quality of groundwater in the Cretaceous aquifers of north-central Texas*: Texas Department of Water Resources, Report 269, v. 1 and 2.

*Texas Water Department Board (TWDB), 1990 (Rev. 1999), Minor Aquifers of Texas.

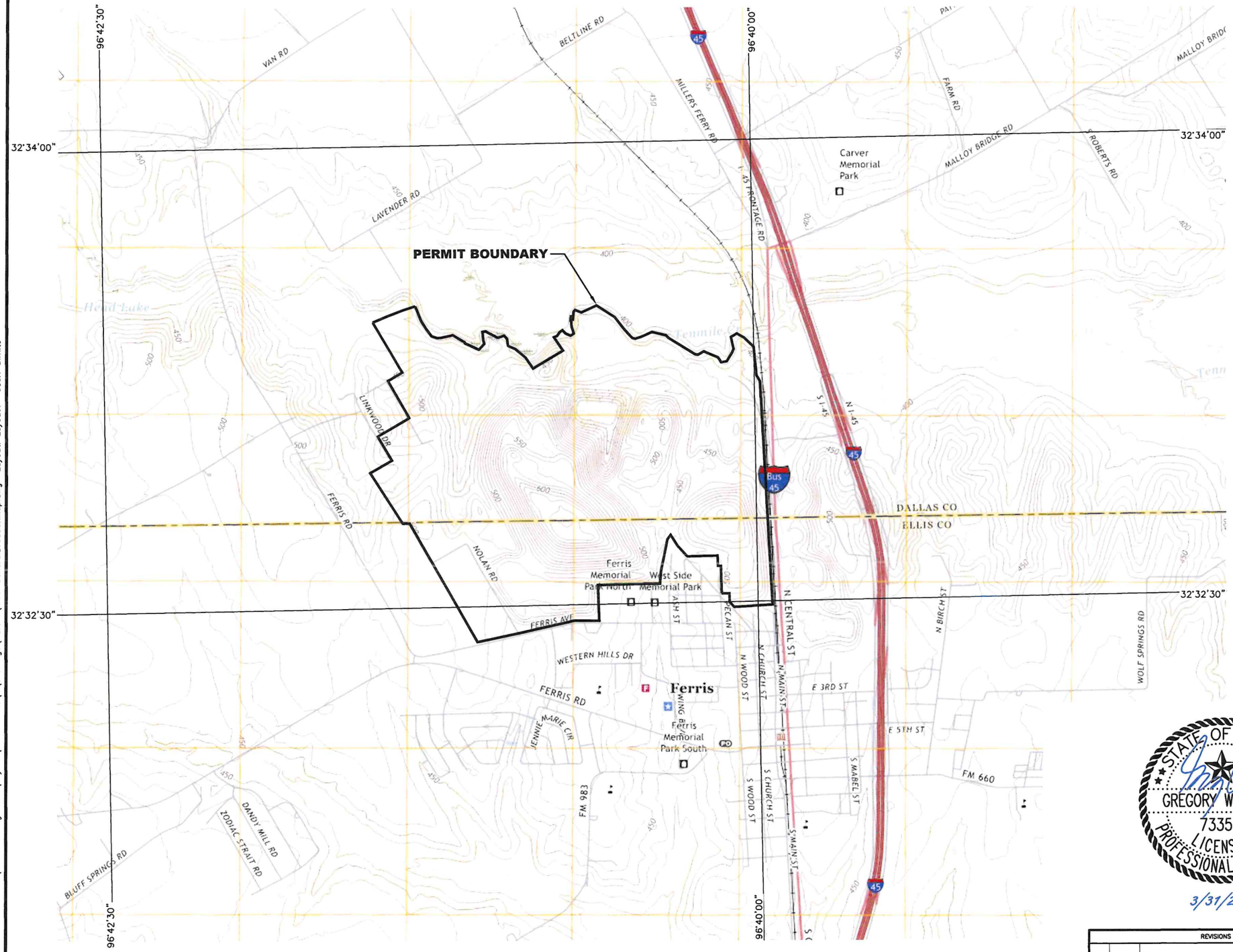
*Thompson, G.L., 1967, *Groundwater Resources of Ellis County, Texas*, Texas Water Development Board Report 62.

*Cited.

SKYLINE LANDFILL

APPENDIX IIA

MAPS AND DRAWINGS



0 1000 2000

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER

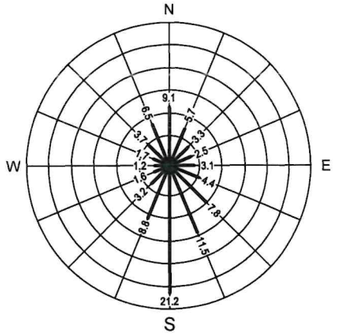
FERRIS, TX

2022

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route / State Route

WIND ROSE
SOURCE: TCEQ PUBLIC WIND ROSE
ANNUAL: 1984-1992



CALM WINDS 4.64%

WIND ROSE REPRESENTS AVERAGE PERCENT OF TIME WIND BLOWS FROM EACH OF THE 16 COMPASS POINTS SHOWN

NOTE:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

GENERAL LOCATION MAP

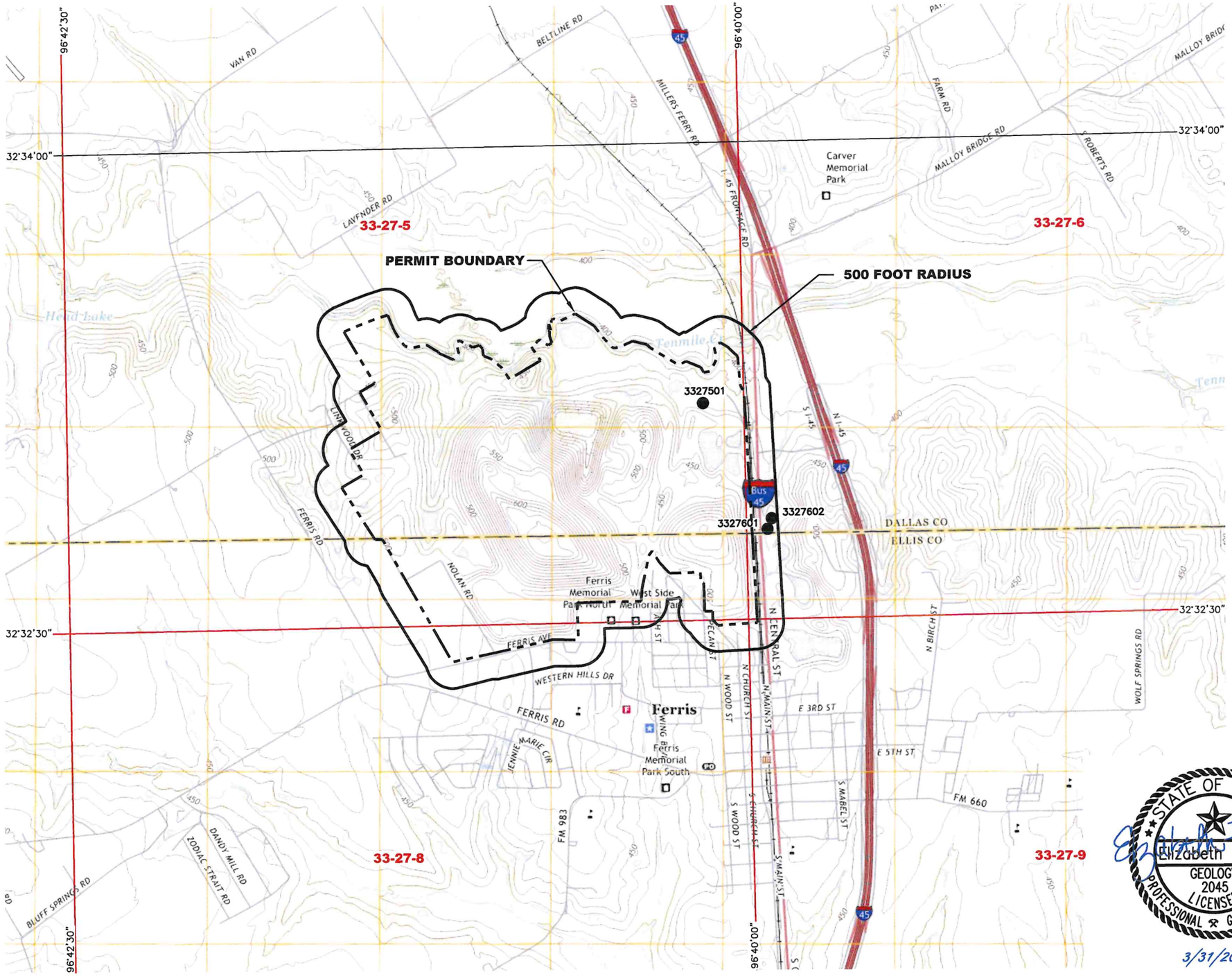
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IIA.1

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.1-GeneralLocationMap.dwg Layout: Layout1 User: awhite



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- 500 FOOT RADIUS
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER
- WATER WELL
- WATER WELL ID GRID
- 33-27-5 WATER WELL GRID NUMBER

FERRIS, TX
2022

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route / State Route

NOTES:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.
2. WATER WELLS IDENTIFIED FROM ONLINE STATE RECORDS. REFER TO PART III, ATTACHMENT E, APPENDIX E1 FOR WATER WELL INFORMATION.

STATE OF TEXAS
Elizabeth Floyd
GEOLOGY
2045
LICENSED
PROFESSIONAL GEOSCIENTIST

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

WATER WELLS WITHIN 500 FEET OF THE FACILITY

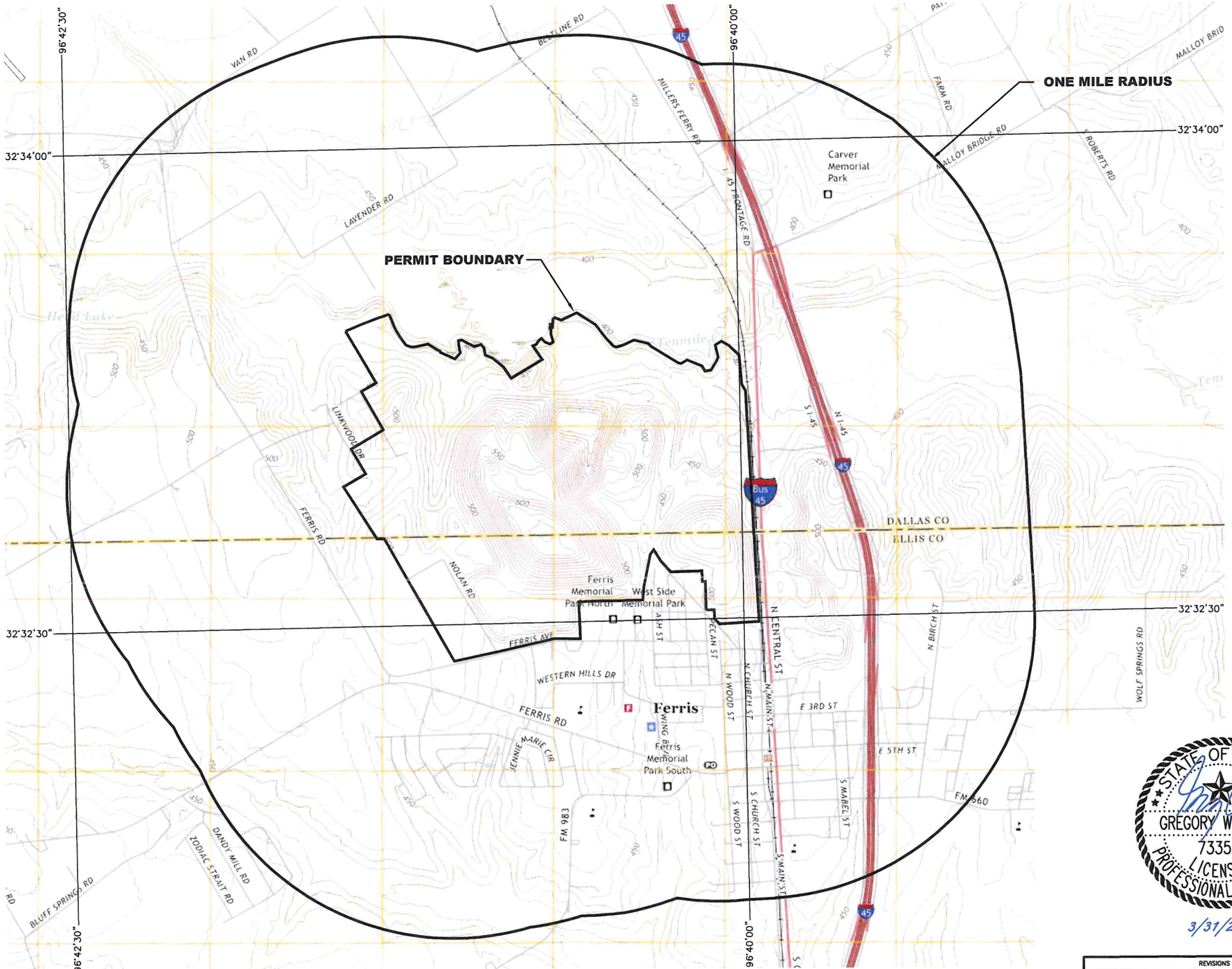
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.2

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.2-WaterWellsWithin500Ft.dwg Layout: Layout1 User: awhite



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- ONE MILE RADIUS
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER

FERRIS, TX
2022

ROAD CLASSIFICATION

- Expressway
- Secondary Hwy
- Ramp
- Local Connector
- Local Road
- 4WD
- Interstate Route
- US Route
- State Route

NOTES:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.
2. REFER TO APPENDIX IIB FOR DETAILED LAND USE INFORMATION.
3. THERE ARE 1679 RESIDENCES AND 82 INDUSTRIAL/COMMERCIAL ESTABLISHMENTS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
4. THERE ARE 7 CHURCHES, NO DAY CARE CENTERS, 3 CEMETERIES, AND 5 SCHOOLS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
5. THERE ARE NO TEXAS STATE HISTORICAL COMMISSION HISTORIC MARKERS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
6. THERE ARE NO ARCHAEOLOGICALLY SIGNIFICANT SITES AND NO SITES HAVING EXCEPTIONAL AESTHETIC QUALITY WITHIN ONE MILE OF THE PERMIT BOUNDARY.
7. LANDFILL TRAFFIC WILL NORMALLY USE IH 45, BUSINESS IH 45 AND MALLOY BRIDGE ROAD TO ENTER OR LEAVE THE FACILITY. EACH OF THESE ROADS IS PAVED WITH A HARD SURFACE.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

FEATURES WITHIN ONE MILE OF THE FACILITY

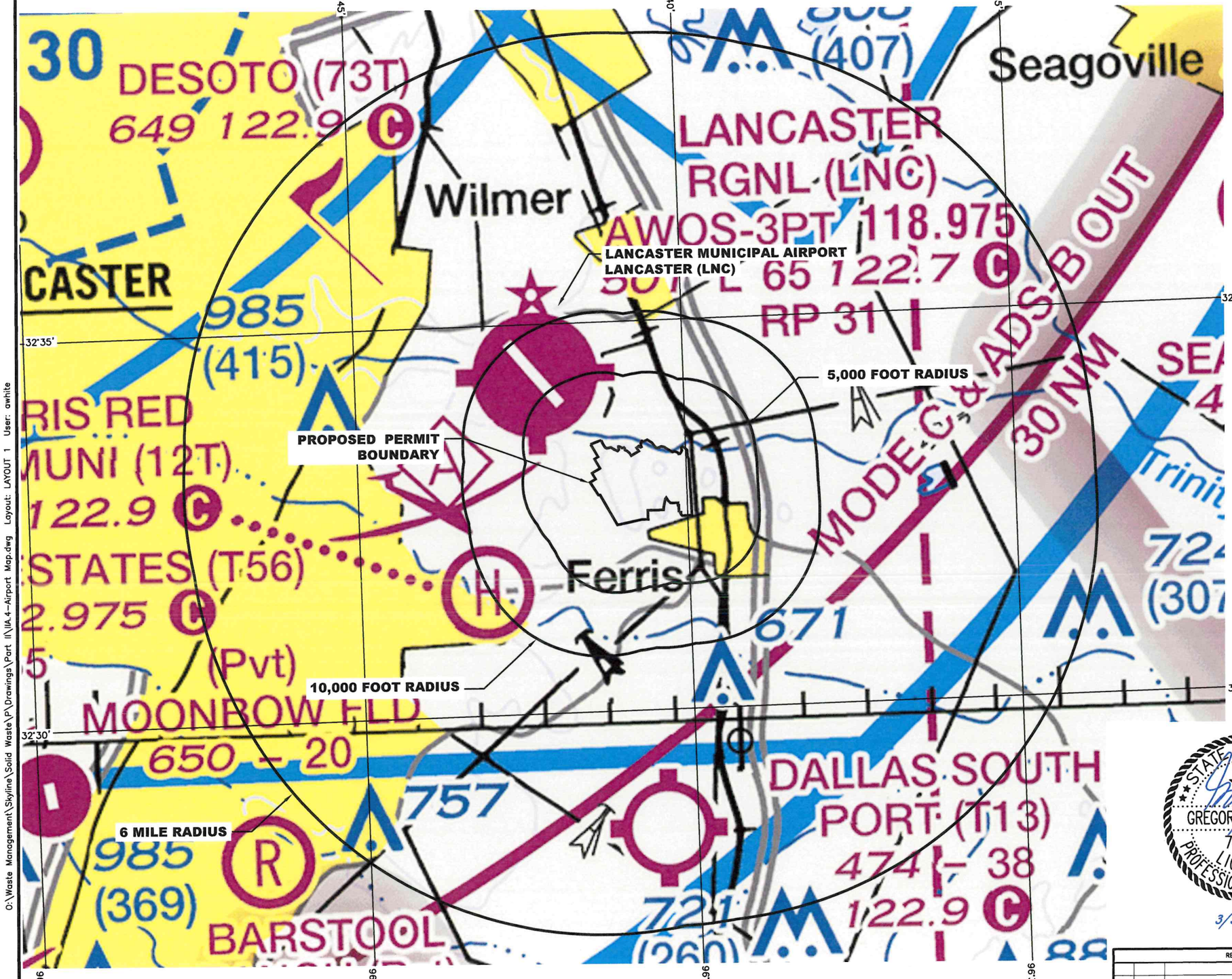
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.3

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.3-FeaturesWithin1Mile.dwg Layout: Layout1 User: awhite



0 4000 8000
SCALE IN FEET

AIRPORTS

Other than hard-surfaced runways

Seaplane Base

Hard-surfaced runways 1500 ft. to 8069 ft. in length

Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.

Open dot within hard-surfaced runway configuration indicates approximate VOR, VOR-DME, DME or VORTAC location.

All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.

OBSTRUCTIONS
(may be lit or unlit)

1000 ft and higher AGL

Wind Turbine

Wind Turbine Farm

2894 UC

Above 200 ft & below 1000 ft AGL (above 299 ft AGL in urban area)

Group Obstruction

Elevation of the top above mean sea level — 2049
Height above ground — (1149)
Under construction or reported: position and elevation unverified — UC

Obstruction with high-intensity lights; may operate part-time

NOTICE: Guy wires may extend outward from structures.

TOPOGRAPHIC INFORMATION

Power Transmission Line

Aerial Cable

Lookout Tower
618 (Elevation Base of Tower)

Mountain Pass
11823 (Elevation of Pass)

Pass symbol does not indicate a recommended route or direction of flight and pass elevation does not indicate a recommended clearance altitude. Hazardous flight conditions may exist within and near mountain passes.

NOTES:

1. THE ONLY PUBLIC–USE AIRPORT LOCATED WITHIN SIX MILES IS THE LANCASTER MUNICIPAL AIRPORT, LOCATED APPROXIMATELY 2.0 MILES NORTHWEST OF THE FACILITY.
2. BASE MAP IS FAA SECTIONAL AERONAUTICAL CHART DALLAS–FT.WORTH, EFFECTIVE JUNE 12, 2025 THROUGH AUGUST 7, 2025.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

AIRPORT MAP

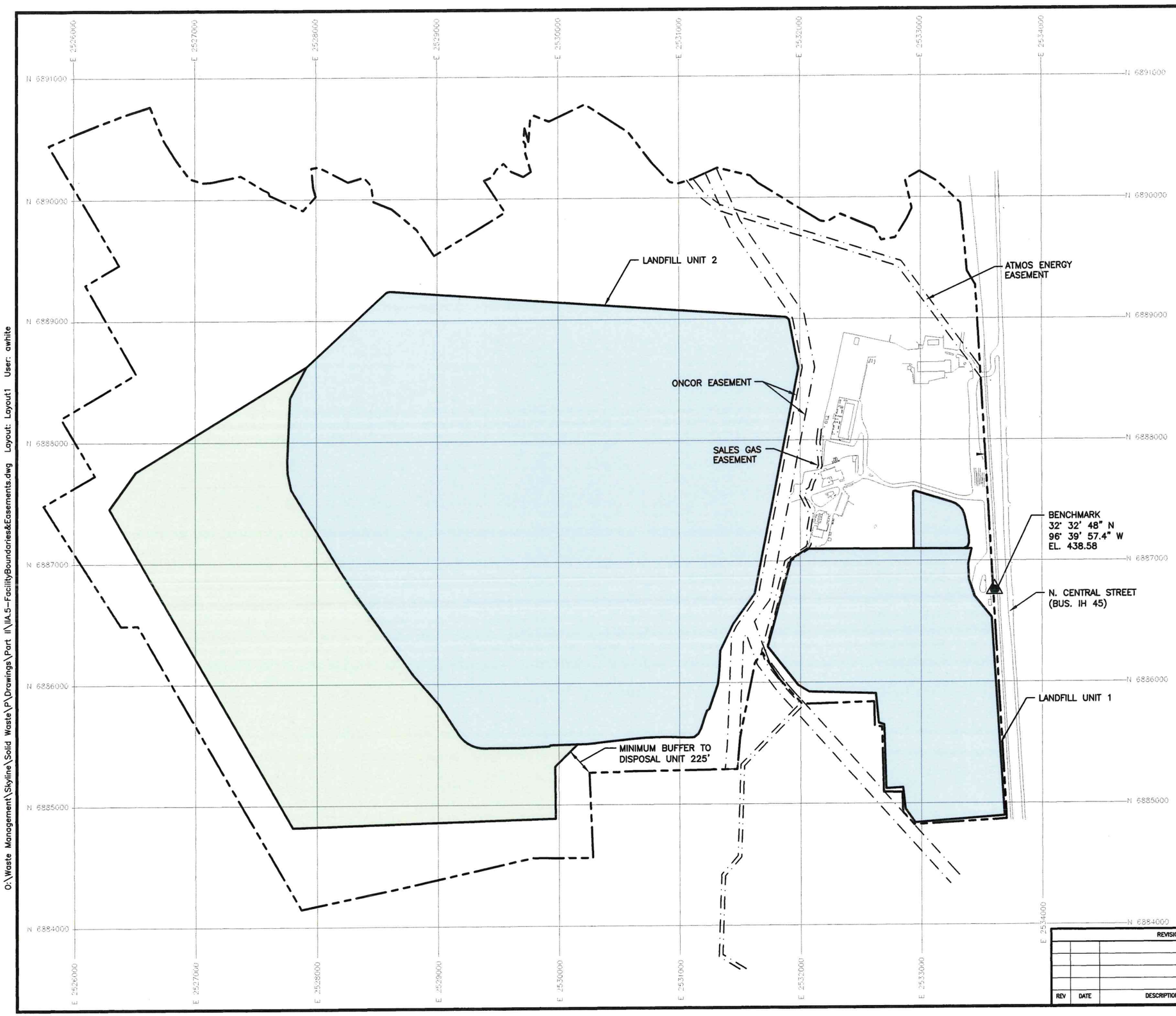
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL

BME
BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817–563–1144

TBPELS FIRM NO. F–256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.4

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.4–Airport Map.dwg Layout: LAYOUT 1 User: awhite



0 400 800
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- STATE PLANE GRID (NAD 83)
- EXISTING EASEMENT
- EXISTING DISPOSAL UNIT
- PROPOSED DISPOSAL UNIT

NOTES:

1. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 83 (2011), TEXAS NORTH CENTRAL ZONE, US FEET.
2. REFER TO APPENDIX IC FOR LEGAL DESCRIPTION OF PERMIT BOUNDARY AND EASEMENTS.
3. FOR CLARITY, ONLY EASEMENTS ADJACENT TO DISPOSAL AREAS ARE SHOWN. SEE APPENDIX IC FOR THE LOCATION AND DESCRIPTION OF ALL SITE EASEMENTS.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

FACILITY BOUNDARY AND EASEMENTS

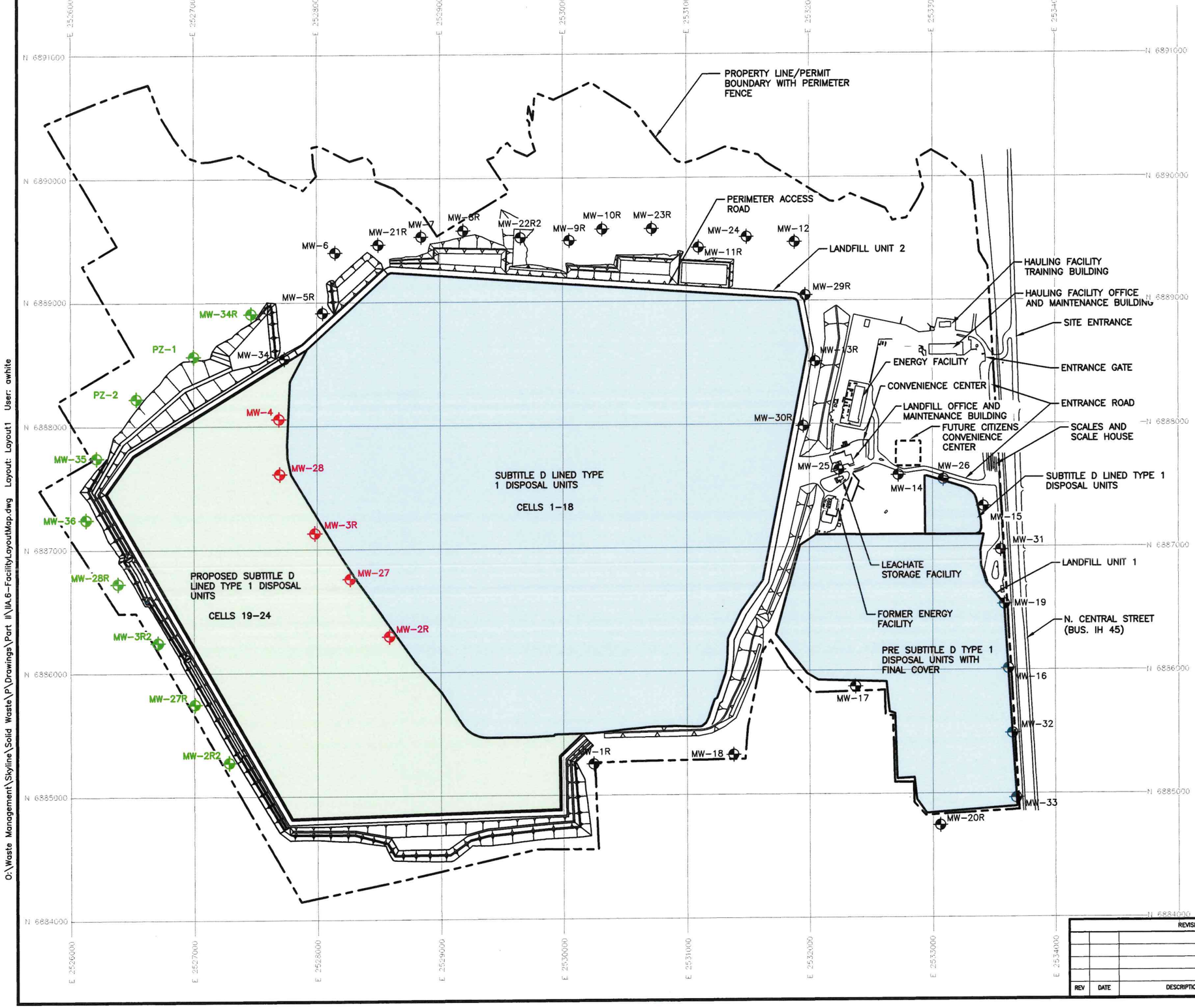
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.5

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.5-FacilityBoundaries&Easements.dwg Layout: Layout1 User: awhite



0 400 800
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- STATE PLANE GRID (NAD 83)
- MW-15 EXISTING MONITORING WELL
- MW-3R2 PROPOSED MONITORING WELL
- MW-2R EXISTING MONITORING WELL TO BE REMOVED
- EXISTING DISPOSAL UNIT
- PROPOSED DISPOSAL UNIT

NOTES:

1. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 83 (2011), TEXAS NORTH CENTRAL ZONE, US FEET.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

FACILITY LAYOUT MAP

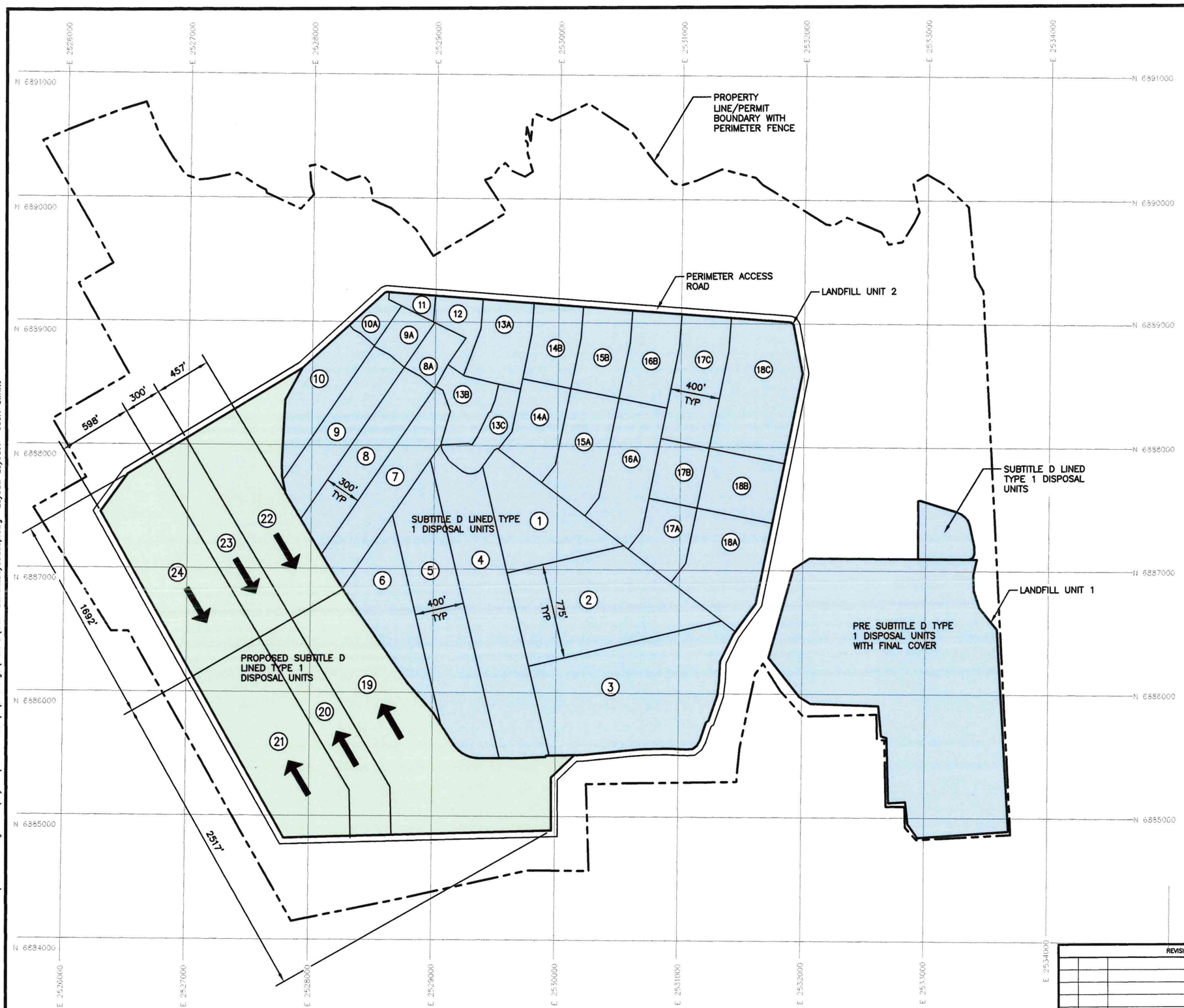
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

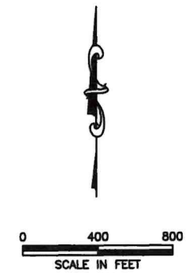
BME
BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.6

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.6-FacilityLayoutMap.dwg Layout: Layout1 User: awhite





LEGEND

- PERMIT BOUNDARY
- N 323000 — STATE PLANE GRID (NAD 83)
- EXISTING DISPOSAL UNIT
- PROPOSED DISPOSAL UNIT
- FILL DIRECTION
- (18C) CELL NUMBER

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED PROFESSIONAL ENGINEER

3/31/2026

LANDFILL LAYOUT MAP

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

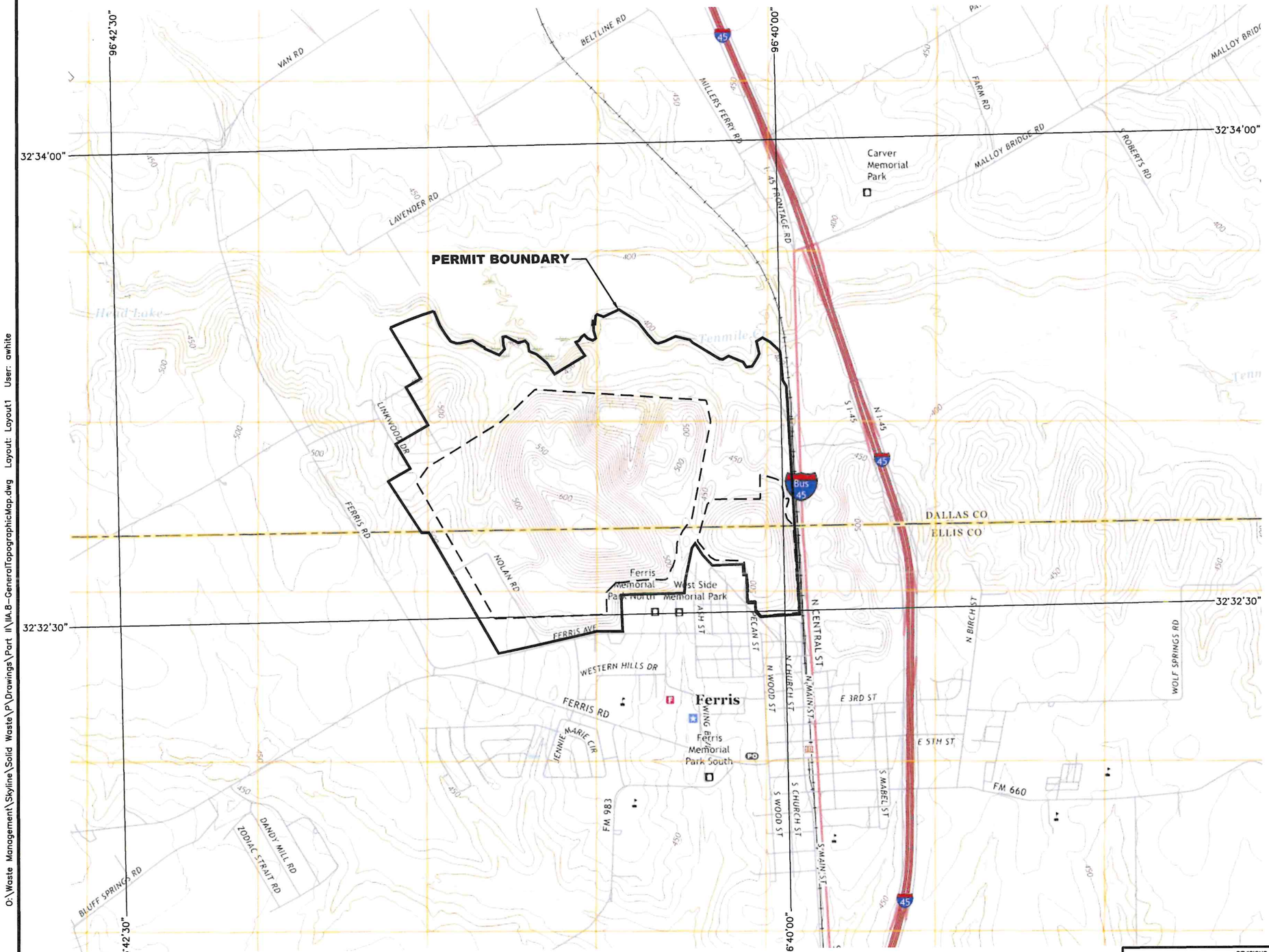
BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IIA.7

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.7-LandfillLayoutMap.dwg Layout: Layout1 User: awhite



0 1000 2000

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER

FERRIS, TX

2022

ROAD CLASSIFICATION

- Expressway
- Secondary Hwy
- Ramp
- Local Connector
- Local Road
- 4WD
- Interstate Route
- US Route
- State Route

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED PROFESSIONAL ENGINEER

3/31/2026

NOTE:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

GENERAL TOPOGRAPHIC MAP

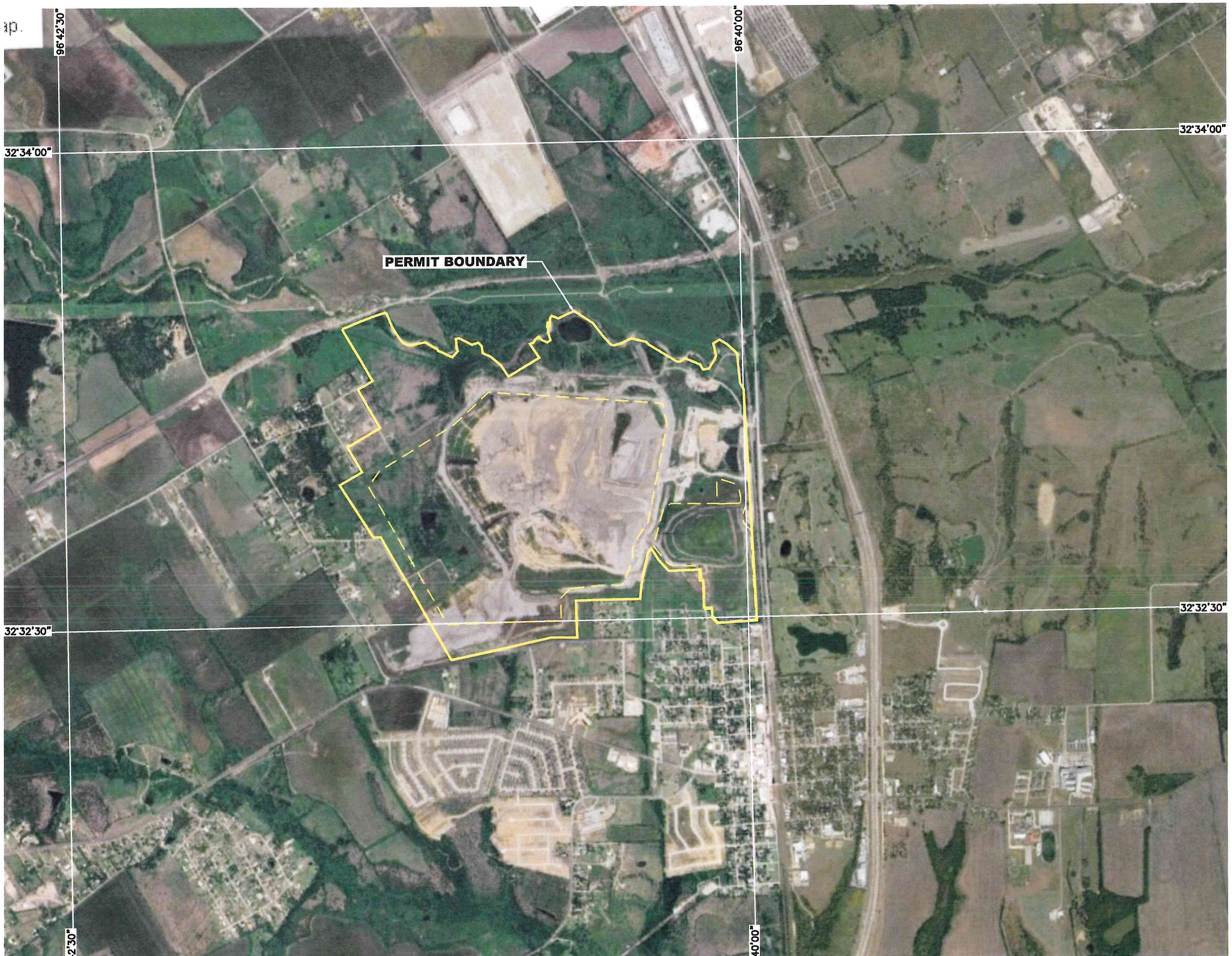
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IIA.8

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.8-GeneralTopographicMap.dwg Layout: Layout1 User: awhite



0 1000 2000
SCALE IN FEET

LEGEND

PERMIT BOUNDARY

LANDFILL FOOTPRINT

NOTE(S):

1. AERIAL PHOTOGRAPH TAKEN FROM GOOGLE EARTH, AERIAL DATE JULY 3, 2025.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

AERIAL PHOTOGRAPH

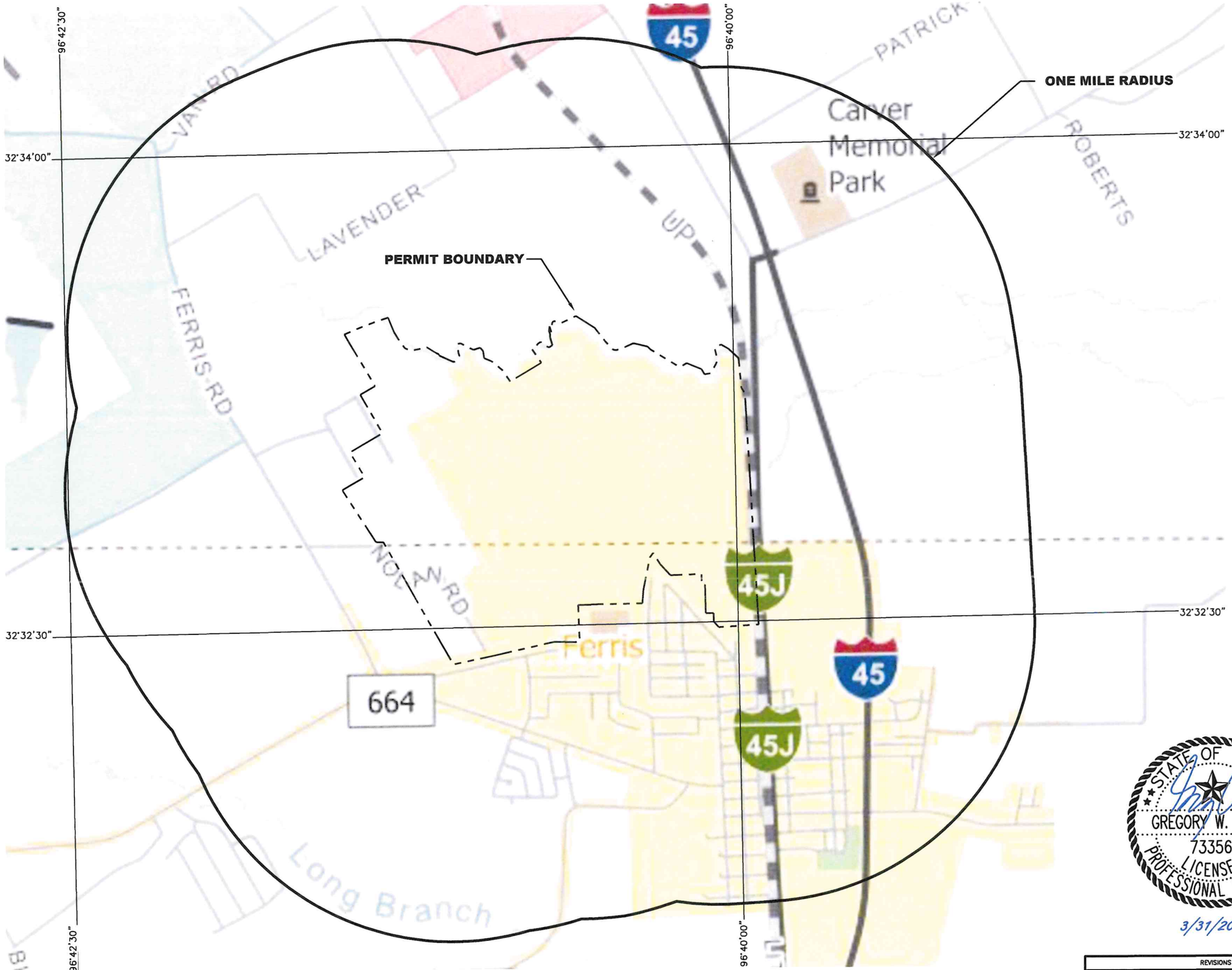
WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.9

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.9-AerialPhotograph.dwg Layout: Layout1 User: awhite



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- ONE MILE RADIUS
- Unincorporated Community
- County Seat
- Border Crossing
- Cemetery
- Cemetery (Inside City)
- Deep Draft Port
- Shallow Draft Port
- Railroad
- Dam
- River or Stream
- TXDOT District
- Lakes
- Education
- Military
- Airport Runway
- Airport
- Prison
- Parks and Other Public Land

NOTES:

1. GENERAL HIGHWAY MAP DOWNLOADED FROM TxDOT WEBSITE ON JULY 3, 2025.
2. REFER TO APPENDIX IIB FOR DETAILED LAND USE INFORMATION.
3. THERE ARE 1679 RESIDENCES AND 82 INDUSTRIAL/COMMERCIAL ESTABLISHMENTS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
4. THERE ARE 7 CHURCHES, NO DAY CARE CENTERS, 3 CEMETERIES, AND 5 SCHOOLS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
5. THERE ARE NO TEXAS STATE HISTORICAL COMMISSION HISTORIC MARKERS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
6. THERE ARE NO ARCHAEOLOGICALLY SIGNIFICANT SITES AND NO SITES HAVING EXCEPTIONAL AESTHETIC QUALITY WITHIN ONE MILE OF THE PERMIT BOUNDARY.

NDFILL TRAFFIC WILL NORMALLY USE IH 45, BUSINESS IH 45 AND ALLOY BRIDGE ROAD TO ENTER OR LEAVE THE FACILITY. EACH OF IESE ROADS IS PAVED WITH A HARD SURFACE.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

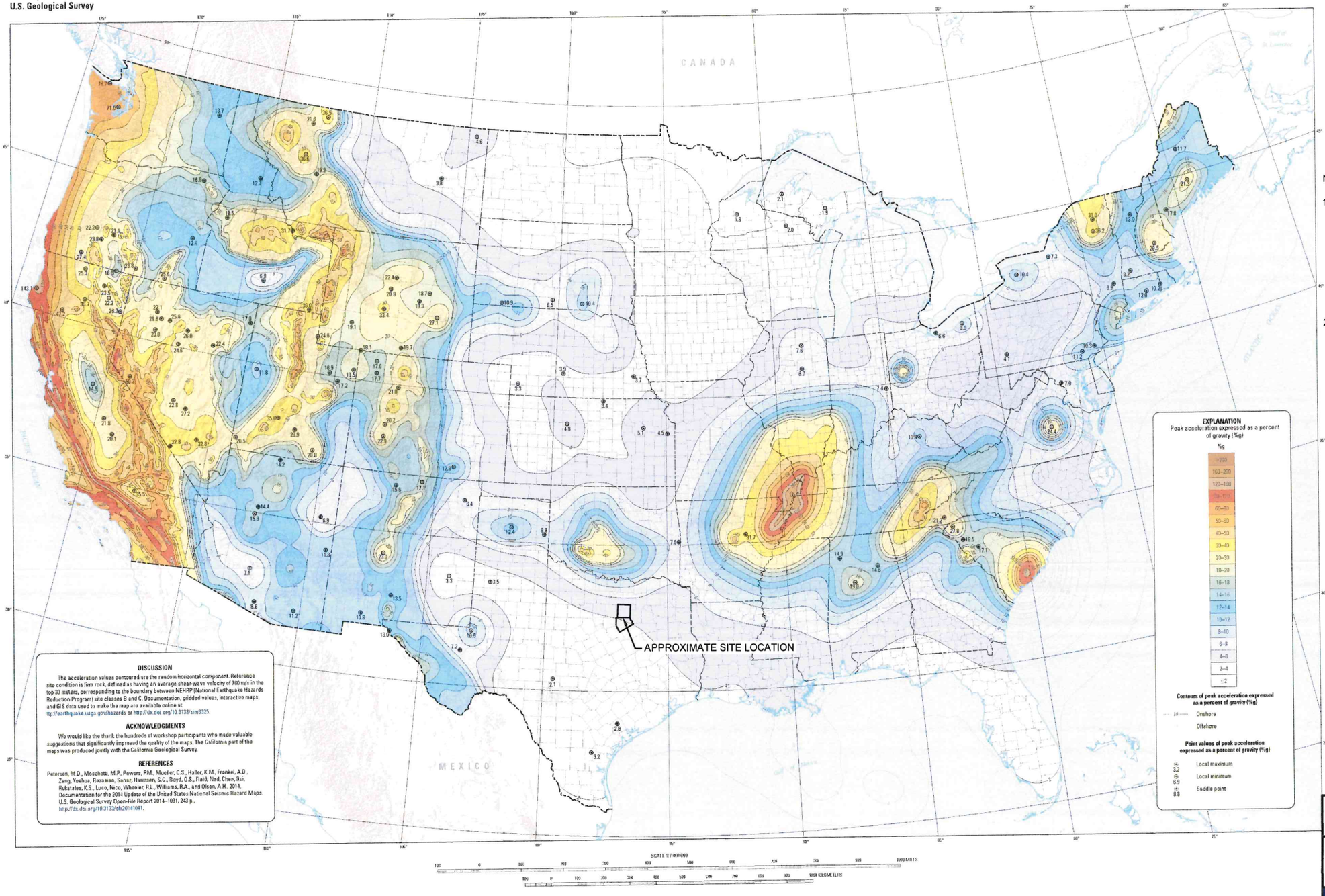
LAND USE MAP
DALLAS AND ELLIS COUNTY
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.10

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.10-LandUseMap.dwg Layout: Layout1 User: awhite



DISCUSSION

The acceleration values contoured are the random horizontal component. Reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/s in the top 30 meters, corresponding to the boundary between NEHRP (National Earthquake Hazards Reduction Program) site classes B and C. Documentation, gridded values, interactive maps, and GIS data used to make the map are available online at: http://earthquake.usgs.gov/hazards or http://dx.doi.org/10.3133/sim3325.

ACKNOWLEDGMENTS

We would like the thank the hundreds of workshop participants who made valuable suggestions that significantly improved the quality of the maps. The California part of the maps was produced jointly with the California Geological Survey.

REFERENCES

Petersen, M.D., Moschetti, M.P., Powers, P.M., Mueller, C.S., Haller, K.M., Frankel, A.D., Zeng, Yuehua, Rezaeian, Sanaz, Harmsen, S.C., Boyd, O.S., Field, Ned, Chen, Rui, Rukstales, K.S., Luco, Nico, Wheeler, R.L., Williams, R.A., and Olsen, A.H., 2014, Documentation for the 2014 Update of the United States National Seismic Hazard Maps: U.S. Geological Survey Open-File Report 2014–1091, 243 p., http://dx.doi.org/10.3133/ofr20141091.

Seismic-Hazard Maps for the Conterminous United States, 2014

Peak Horizontal Acceleration with 2 Percent Probability of Exceedance in 50 Years

By

Mark D. Petersen,[1] Morgan P. Moschetti,[1] Peter M. Powers,[1] Charles S. Mueller,[1] Kathleen M. Haller,[1] Arthur D. Frankel,[1] Yuehua Zeng,[1] Sanaz Rezaeian,[1] Stephen C. Harmsen,[1] Oliver S. Boyd,[1] Edward H. Field,[1] Rui Chen,[2] Nicolas Luco,[1] Russell L. Wheeler,[1] Robert A. Williams,[1] Anna H. Olsen,[1] and Kenneth S. Rukstales[1]

2015

NOTES:

1. THE FACILITY LIES IN AN AREA WHERE THE PGA, WITH A 2% PROBABILITY OF BEING EXCEEDED IN 50 YEARS, IS LESS THAN 10% OF GRAVITY (LESS THAN 0.1g). THIS IS EQUIVALENT TO A 10% PROBABILITY IN 250 YEARS. A PRINTOUT OF THE USGS FAQ RESPONSE CONFIRMING THE EQUIVALENCY IS INCLUDED IN THIS SUBMITTAL ON THE NEXT PAGE.
2. THE MAP PRESENTED HERE IS INTENDED TO ONLY DEPICT THE IMPACT ZONE IN WHICH THE FACILITY LIES. PLEASE REFER TO PETERSON, M.D., ET AL., 2015, SEISMIC HAZARD MAPS FOR THE CONTERMINOUS UNITED STATES, 2014: U.S. GEOLOGICAL SURVEY SCIENTIFIC INVESTIGATION MAP 3325, 6 SHEETS, SCALE 1:7,000,000. HTTPS://PUBS.USGS.GOV/SIM/3325/PDF/SIM3325_SHEET2.PDF FOR A FULLY LEGIBLE VERSION.

STATE OF TEXAS
Elizabeth Floyd
GEOLOGY
2045
LICENSED
PROFESSIONAL GEOSCIENTIST

3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

SEISMIC IMPACT ZONE MAP

WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL

BME
BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817–563–1144

TBPELS FIRM NO. F–256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.11

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.11–Seismic_Impact.dwg Layout: LAYOUT 1 User: awhite

SKYLINE LANDFILL

APPENDIX IIB

LAND USE ANALYSIS

16 January 2026

Mr. Gregg Adams, P.E.
Biggs & Mathews Environmental, Inc.
1700 Robert Road, Suite 100
Mansfield, Texas 76063

Re: Skyline Landfill Expansion Land Use Analysis
Approximately 858.7 acres associated with the expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road 664, partially within the City of Ferris, Dallas and Ellis Counties, Texas.

Dear Mr. Adams,

Integrated Environmental Solutions, LLC (IES) performed a land use analysis of the area on and around an approximately 858.7-acre tract associated with the expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road (FM) 664, partially within the City of Ferris, Dallas and Ellis Counties, Texas (**Attachment A, Figure 1**).

INTRODUCTION

Waste Management of Texas, Inc. (WMTX) is proposing to expand the existing Type I Skyline Municipal Solid Waste (MSW) Landfill in Dallas and Ellis Counties. The proposed expansion and existing landfill site encompasses 858.7 acres located partially within the City of Ferris corporate limits (**Attachment A, Figure 1**).

The purpose of this land use evaluation is to provide land use information as required by the Texas Commission on Environmental Quality (TCEQ) in support of an application for TCEQ municipal solid waste facility authorization for the Skyline Landfill Expansion. The relevant rule provisions, as excerpted from 30 Texas Administrative Code (TAC) § 330.61, are:

> *(g) Land-use map. This is a constructed map of the facility showing the boundary of the facility and any existing zoning on or surrounding the property and actual uses (e.g., agricultural, industrial, residential, etc.) both within the facility and within one mile of the facility. The owner or operator shall make every effort to show the location of residences, commercial establishments, schools, licensed day-care facilities, churches, cemeteries, ponds or lakes, and recreational areas within one mile of the facility boundary…*
>
> *(h) Impact on surrounding area. A primary concern is that the use of any land for a municipal solid waste facility not adversely impact human health or the environment. The owner or operator shall provide information regarding the likely impacts of the facility on cities, communities, groups of property owners, or individuals by analyzing the compatibility of land use, zoning in the vicinity, community growth patterns, and other factors associated with the public interest. To assist the commission in evaluating the impact of the site on the surrounding area, the owner or operator shall provide the following:*
>
> > *(1) if available, a published zoning map for the facility and within two miles of the facility for the county or counties in which the facility is or will be located. If the site requires approval as a nonconforming use or a special permit from the local government having jurisdiction, a copy of such approval shall be submitted;*
> >
> > *(2) information about the character of surrounding land uses within one mile of the proposed facility;*
> >
> > *(3) information about growth trends within five miles of the facility with directions of major development;*
> >
> > *(4) the proximity to residences and other uses (e.g., schools, churches, cemeteries, historic structures and sites, archaeologically significant sites, sites having exceptional aesthetic quality, etc.) within one mile of the facility. The owner or operator shall provide the approximate number of residences and commercial establishments within one mile of the proposed facility including the distances and directions to the nearest residences and commercial establishments. Population density and proximity to residences and other uses described in this paragraph may be considered for assessment of compatibility…*

LIST OF FIGURES

1 General Location Map
2 Zoning Map
3 Land Use Map
4 Growth Trends Map

ZONING

The western landfill expansion portion of the site is currently not within an incorporated area, therefore, there is no current land use zoning. This western portion of the site is located immediately north of the City of Ferris corporate limits; within the City's extraterritorial jurisdiction (ETJ) (**Attachment A, Figure 2**).

The remainder of the site (existing landfill limits) is located within a special use permits (S.U.P.) zoning class and is located within the City of Ferris corporate limits (**Attachment A, Figure 2**).

With the site being within the City of Ferris' ETJ and city limits, it is subject to the City's subdivision regulations. The site may require approval as a nonconforming use or a special permit from the local government.

CHARACTER OF SURROUNDING LAND USES

The predominant land use within 1 mile of the Skyline Landfill Expansion site is classified as Other (open, agricultural, vacant, floodplain) (**Table 1**). This land use comprises 68.4 percent of the land area within 1 mile of the expansion facility boundary (**Attachment A, Figure 3**). Nearly all this open land is agricultural fields, pastureland, or forested floodplain.

Table 1. Land Use within 1 Mile from the Ellis County Facilities

Land Use	Acres	Percentage	Remarks
Other	4,178	68.4	Open, agricultural, vacant, forested floodplain
Water Bodies	114	1.9	December 2025 surface area
Residential	839	13.7	1,679 residences
Commercial	842	13.8	82 establishments
Cemetery	45	0.7	3 Cemeteries
Church	11	0.2	7 Churches
Park	37	0.6	5 Parks
School	46	0.7	5 Schools
Total	6,112	100.0	Including the Skyline Expansion site

Source: 2025 Google Earth Aerial Photography

There are approximately 114 acres of *Water Bodies* within a 1-mile radius of the site, representing approximately 1.9 percent of the land area. The water bodies consist of commercial use ponds, stock ponds, ornamental water features, other ponds, and Ten Mile Creek. Water surface area was calculated based on the most recent available August 2025 Google Earth aerial photographic interpretation.

The *Residential* land (839 estimated acres) is comprised of rural, suburban, and urban single and multi-family residential, consisting of 1,679 residences or residence buildings and representing an estimated 13.7 percent of the land area within a 1-mile radius of the site. In the case of the varied residence types, 0.5 acre is attributed to each residence.

Commercial land use (82 establishments) makes up 13.8 percent of the land area within a 1-mile radius of the site.

GROWTH TRENDS

The Skyline Landfill Expansion site is in Dallas and Ellis Counties, within the City of Ferris' ETJ and city limits. Growth projections for the nearest zip codes and counties are listed in **Table 2**.

Dallas and Ellis Counties, where the Skyline Landfill Expansion facilities will be located, are in the upper and middle of the ranges in terms of population size and growth, respectively, when compared to the surrounding counties. For purposes of comparison, the State of Texas is projected to grow 1.54 percent annually from 2021 through 2026.

Table 2. Projected Population Growth, by Zip Code and County

Community or County	2021 Population	2026 Population Estimate	% Annual Rate of Change 2021-2026
Zip Code			
Azle - 76020	32,873	35,250	1.41
Boyd - 76023	7,810	8,398	1.46
Decatur- 76234	19,346	20,628	1.29
Fort Worth - 76179	71,146	86,597	4.01
Newark - 76071	4,515	5,382	3.58
Rhome - 76078	10,751	12,134	2.45
County			
Collin County	1,117,623	1,283,452	2.81
Dallas County	2,680,115	2,846,506	1.21
Denton County	948,666	1,086,333	2.75
Ellis County	197,274	222,625	2.45
Hill County	39,210	40,606	0.70
Johnson County	182,857	197,860	1.59
Kaufman County	142,616	170,944	3.69
Navarro County	53,694	55,597	0.70
Rockwall County	112,169	128,962	2.83
Tarrant County	2,126,201	2,293,453	1.53

Source: Esri's U.S. Updated Demographic (2021/2026) Data

Attachment A, Figure 4 depicts annual growth trends within 5 miles of the site, as well as regional growth trends for the projected period of 2021 through 2026. Within 5 miles of the site, annual population growth in the census block groups within the northern and southern regions of the site are projected to grow by 1.94 and 0.27 percent, respectively, from 2021 through 2026. East of the site, the census blocks are projected to grow annually by 0.45 and 0.91 percent, respectively, from 2021 through 2026. West and southwest of the site, the census blocks are projected to grow annually by 4.63 and 2.08 percent, respectively, from 2021 through 2026.

Within the region, the highest growth is occurring within the census block group northwest of downtown Ferris at 6.55 percent, located west of the proposed solid waste facility expansion.

PROXIMITY

- As of aerial imagery from August 2025, there are 1,679 residences within 1 mile of the facility boundary. The nearest residence to the proposed facility is at 3420 Linkwood Drive, estimated to be approximately 12 feet north of the site boundary.
- There are 82 commercial business establishments within 1 mile of the site. The most proximate business establishment aside from the existing Skyline Landfill is Ferris Animal Shelter, located at 1200 North Central Street, approximately 245 feet east of the site boundary.
- There are three cemeteries within 1 mile of the site. The most proximate cemetery is Ferris Park Cemetery, located north of Ferris Road on a 21.9-acre tract that is abutting the southern site boundary.
- There are five churches within 1 mile of the site. The most proximate church is Covenant Church, located south of Ferris Road on a 3.8-acre tract that is approximately 63 feet south of the site boundary.
- There are five parks within 1 mile of the site. The most proximate park is Ferris Memorial Park, located south of Ferris Road on a 21-acre tract that is approximately 41 feet south of the site boundary.
- There are five schools within 1 mile of the site. The most proximate school is Lee Longino Elementary School, located south of Western Hills Drive on a 38.2-acre tract that is approximately 880 feet south of the site boundary.

The Texas Archeological Sites Atlas and the Texas Historic Sites Atlas, maintained by the Texas Historical Commission, identified no previously recorded archeological sites, National Register properties, historical markers, or cemeteries located within the project area. Nine previously recorded archaeological sites were identified within 1 mile of the expansion facility boundary. Integrated Environmental Solutions, LLC conducted an extensive cultural resource survey and encountered eight newly recorded historic-age archeological sites and six above-ground resources within the expansion boundary Area of Potential Effects (APE). Based on the lack of association with a significant historical

event(s) or person(s), lack of remarkable architectural or structural elements or features, and the low potential to yield significant archeological data, the eight archeological sites and six above- ground resources are recommended not eligible for listing in the National Register of Historic Places (NRHP). (Refer to the Cultural Resources Report for further information.)

The Sunshine Kids Academy of Ferris was identified at 100 Interstate Highway 45, approximately 3,000 feet southeast of the existing landfill boundary. No other hospitals, daycare centers, or sites having exceptional aesthetic quality were identified within 1 mile of the facility boundary.

IES appreciates the opportunity to work with you and Biggs and Mathews Environmental, Inc. on this project, and we hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact us. We can be reached at 972-562-7672 or via email at kfenton@intenvsol.com or rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.

Karisa Fenton

Ms. Karisa Fenton
Biologist

Attachments

File ref: 04.393.003

ATTACHMENT A
Figures

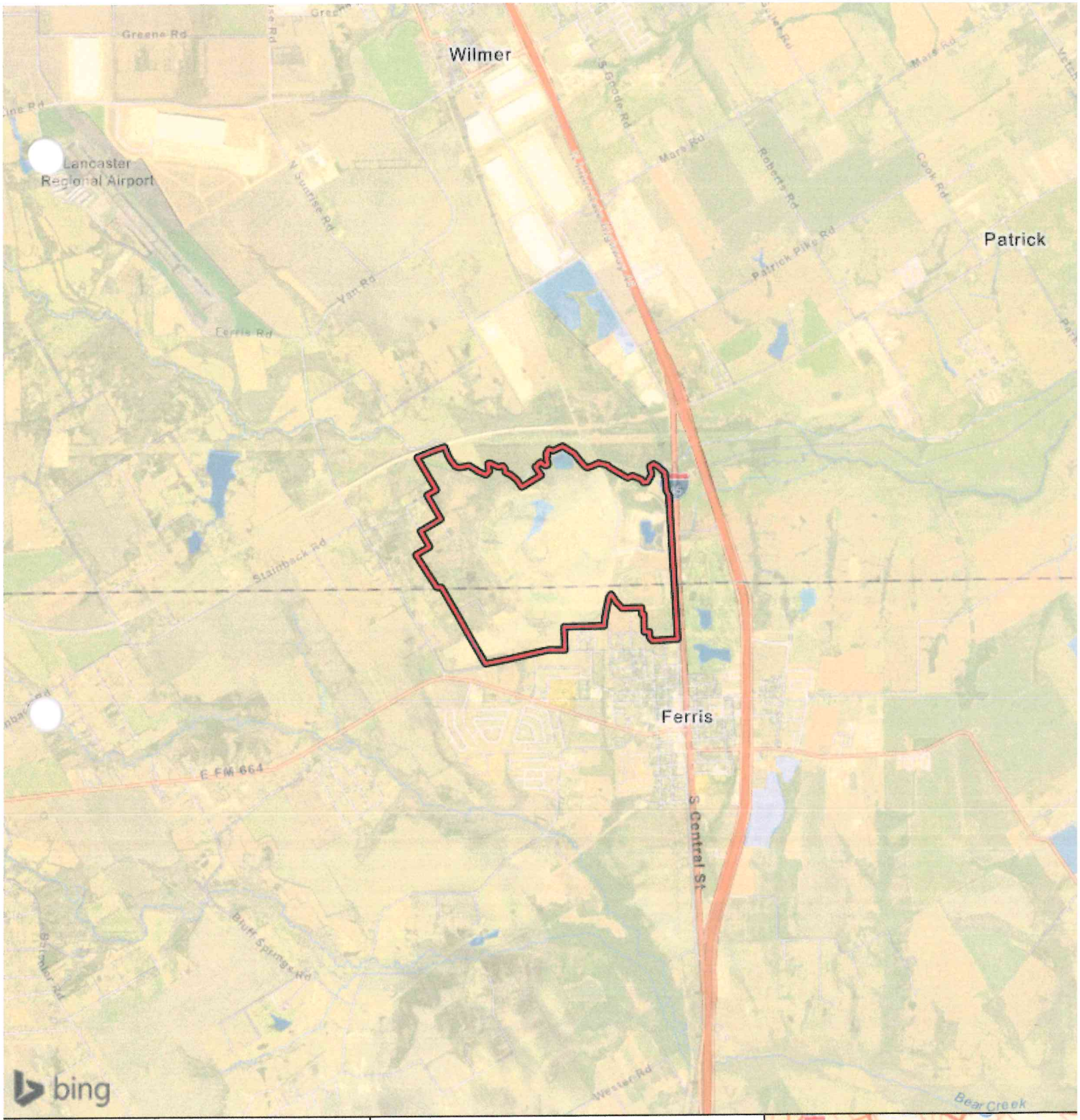


Figure 1.
General Location Map

Skyline Landfill Expansion
City of Ferris
allas and Ellis Counties, Texas

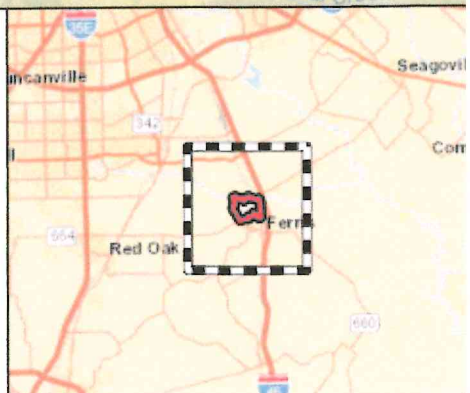
Survey Area

1 in = 4,000 ft

Feet
0
4,000

N
W
E
S

File Ref. 04.393.003
Date: 12/11/2025



Area of Detail

Scale: 1 inch equals 10 miles

L:\Record Drawings\Ferris, City of\Ferris, City of - GIS Map - 2684.2\Ferris GIS Map - 2015 with edits from Nov 2020 - revised 2.dwg,
11/13/2020 8:40:03 AM, 1:2.39778

ZONING CLASSIFICATION		
ZONING CLASS.	ABBREV.	COLOR
PLANNED DEVELOPMENT DISTRICT	P.D.D.	
PLANNED UNIT DEVELOPMENT	P.U.D.	
SPECIAL USE PERMIT	S.U.P.	
AGRICULTURAL	AGRICULTURE	
COMMERCIAL NEIGHBORHOOD	C-N	
COMMERCIAL CORRIDOR	C-C	
OFFICE AND PROFESSIONAL SERVICE DISTRICT	CO	
INDUSTRIAL LIGHT	I-L	
MULTI-FAMILY	MF-18	
RESIDENTIAL	R-1	
RESIDENTIAL	R-2	
RESIDENTIAL	R-3	

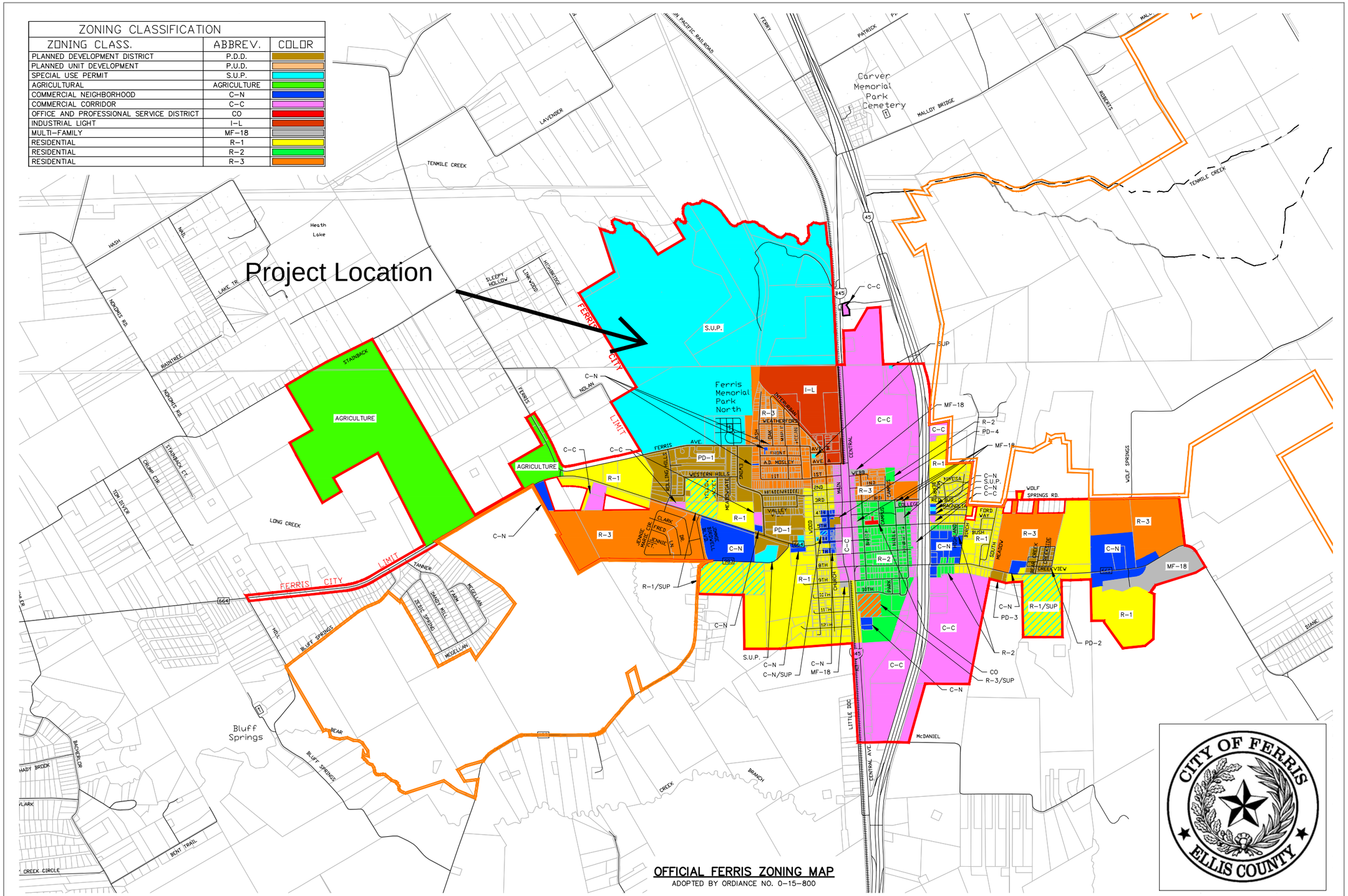


Figure 2. Zoning Map

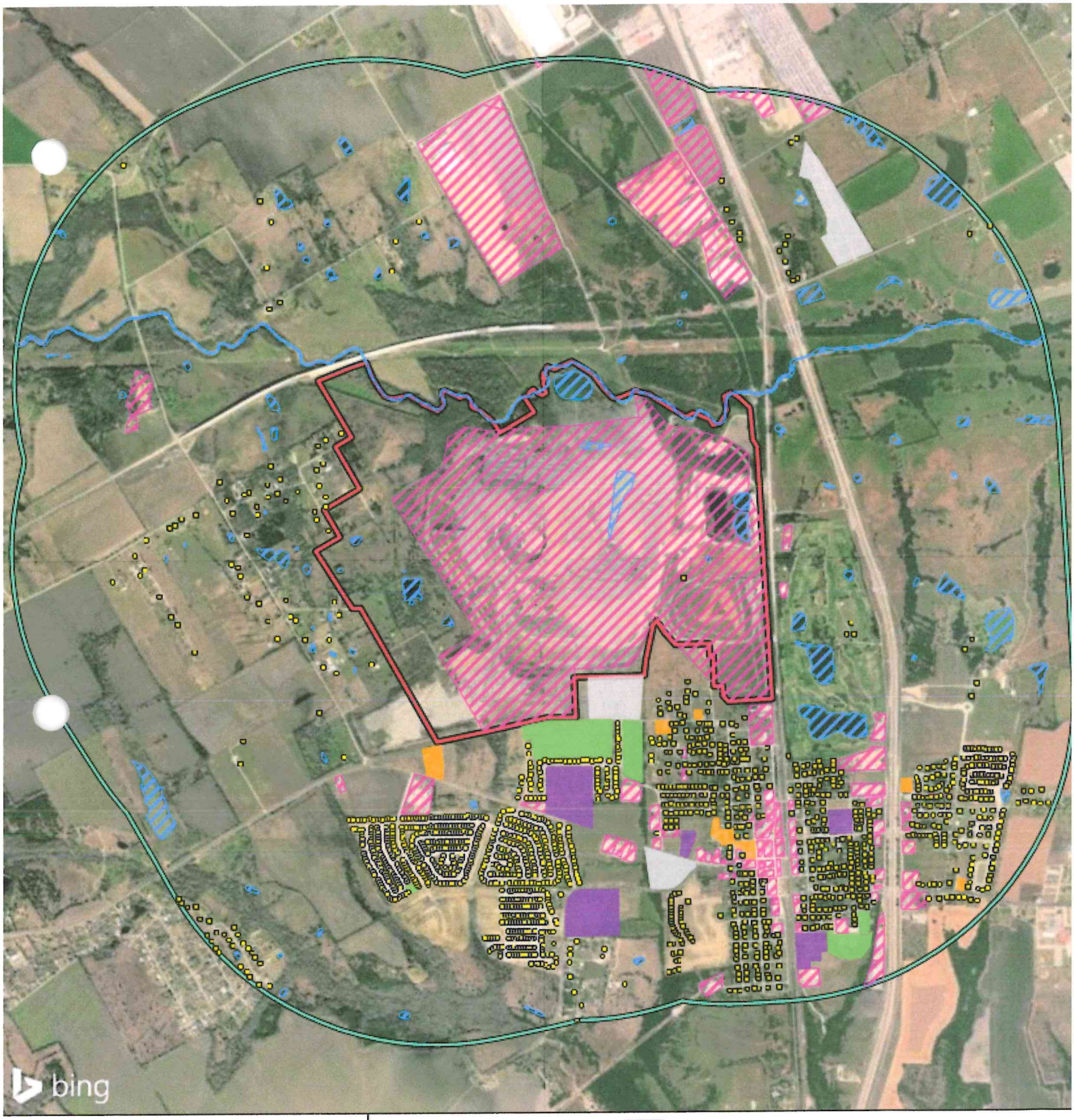


Figure 3.
Land Use Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 2,275 ft

Feet
0
2,275

N
W
E
S

File Ref: 04.393.003
Date: 12/11/2025

Survey Area
1 Mile Radius

Land Use

Cemetery (3 units)
Church (7 units)
Commercial (82 units)
Park (5 units)
School (5 units)
Residential (1,679 Units)
Open Water

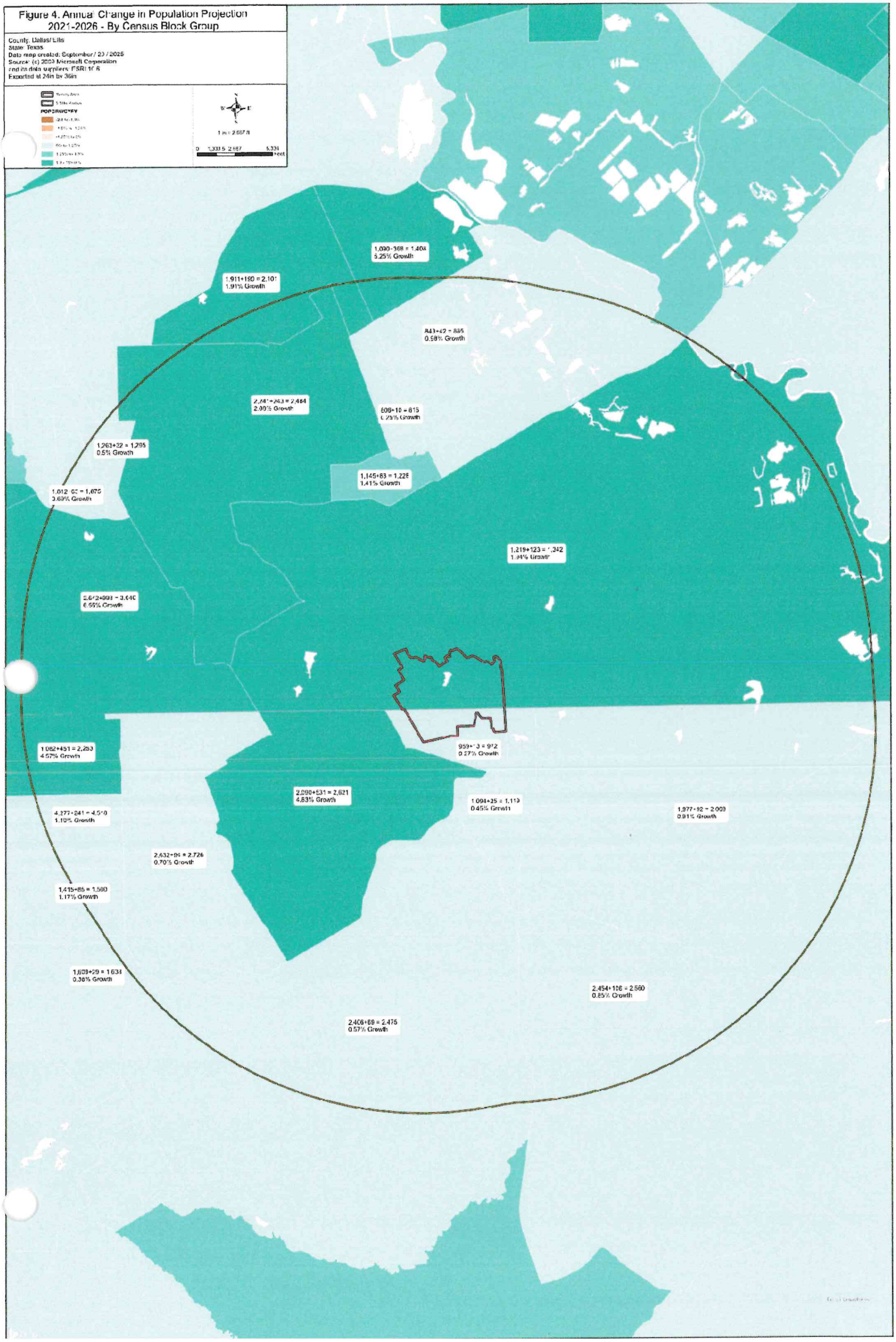


Figure 4. Annual Change in Population Projection 2021-2026 - By Census Block Group
County: Dallas/ Ellis
State: Texas
Data map created: September/ 23 / 2025
Source: (c) 2023 Microsoft Corporation and its data suppliers; ESRI 10.8
Exported at 24in by 36in
POPSAVGCHGY
1 in = 2,667 ft
0 1,333.5 2,667 5,334 Feet
1,090+368 = 1,404
5.25% Growth
1,911+190 = 2,101
1.91% Growth
843+42 = 885
0.58% Growth
2,441+243 = 2,484
2.00% Growth
609+10 = 619
0.25% Growth
1,263+32 = 1,295
0.5% Growth
1,145+83 = 1,228
1.41% Growth
1,012 68 = 1,080
3.69% Growth
1,219+123 = 1,342
1.94% Growth
3,642+998 = 3,640
6.55% Growth
1,082+451 = 2,253
4.57% Growth
959+13 = 972
0.27% Growth
2,090+531 = 2,621
4.83% Growth
1,094+25 = 1,119
0.45% Growth
1,977+92 = 2,069
0.91% Growth
4,277+241 = 4,518
1.10% Growth
2,632+94 = 2,726
0.70% Growth
1,415+85 = 1,500
1.17% Growth
1,609+29 = 1,634
0.36% Growth
2,454+106 = 2,560
0.85% Growth
2,406+69 = 2,475
0.57% Growth

SKYLINE LANDFILL

APPENDIX IIC

TRANSPORTATION STUDY

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

Ceason Clemens, P.E.
District Engineer
Texas Department of Transportation
Dallas District
4777 E Highway 80
Mesquite, Texas 75150

Re: Waste Management Skyline Landfill Permit Amendment
TCEQ Permit No. MSW 42E
Dallas and Ellis Counties, Texas
Documentation of Coordination

Dear Ms. Clemens:

On behalf of Waste Management of Texas, Inc., Biggs & Mathews Environmental, Inc. (BME) is submitting a permit amendment application for the existing Waste Management Skyline Landfill (Skyline Landfill), located in Dallas and Ellis Counties, Texas to the Texas Commission on Environmental Quality (TCEQ). Pursuant to 30 TAC §330.61 (i)(4), this letter is to document coordination with the Texas Department of Transportation (TxDOT) for traffic and location restrictions. A plan showing the location of the Skyline Landfill and facility entrance in relation to public access roadways within 1 mile of the entrance is attached for reference.

Previous permit amendment and modification applications for the Skyline Landfill were submitted and approved by the Texas Commission on Environmental Quality (TCEQ) in 2015 and in 2021. For the 2015 permit amendment application, HDR Engineering, Inc. completed a comprehensive transportation study including traffic counts on access roads within 1 mile of the landfill entrance and projections for traffic growth during the expected life of the landfill facility. For the 2021 permit modification, the HDR transportation study was updated with current/projected facility traffic and traffic count data on access roads used by facility traffic. TxDOT reviewed the updated 2021 transportation study and concurred that the Skyline Landfill facility traffic volumes would not have an adverse effect on the public access roads within 1 mile of the Skyline Landfill entrance.

In compliance with TCEQ regulations for permit amendment applications, BME has updated the previous transportation studies with the most recent traffic counts and concluded that current and projected landfill facility traffic will not have an adverse effect on the public access roads within 1 mile of the Skyline Landfill entrance and that additional controls are not needed. A copy of the updated 2026 Traffic Analysis is attached for your review.

TCEQ requires that an applicant provide correspondence documenting coordination with TxDOT for traffic and location restrictions. Please review the attached Traffic Analysis and provide written (mail or email) concurrence that the existing and projected Skyline Landfill facility traffic will not have an adverse effect on public access roads within 1 mile of the Skyline Landfill entrance.

Correspondence indicating concurrence can be mailed to my attention at the address included on the letterhead or emailed to gadams@biggsandmathews.com. If there are any questions during the review process, please call me at 817-563-1144 or contract me through the email address above.

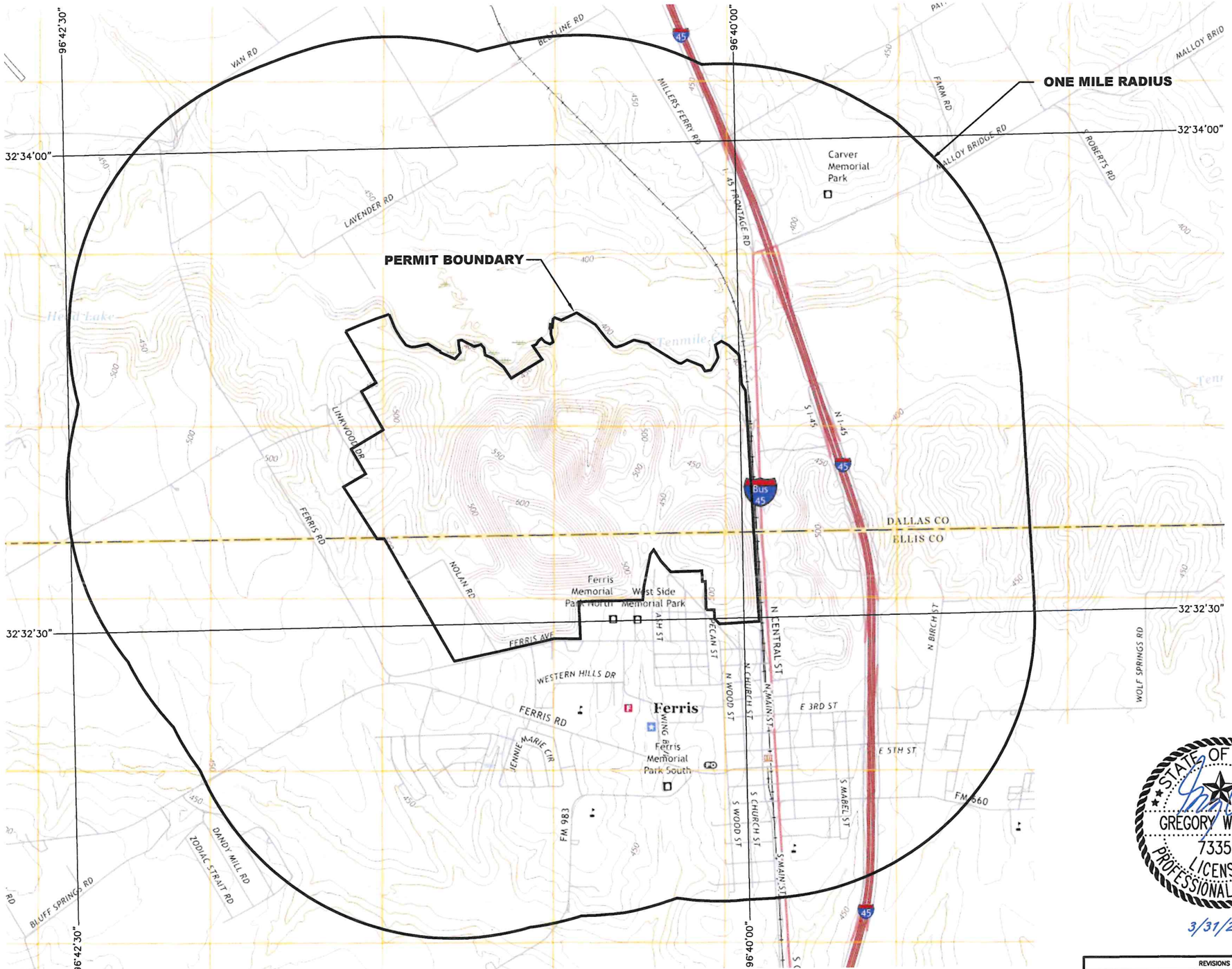
Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ◆ TBPG No. 50222

Gregory W. Adams, P.E.
Principal

Attachments: Drawing IIA.3 – Features Within One Mile Of The Facility
Skyline Landfill Traffic Analysis (March 2026)

cc: Mr. James Smith, Area Director, Disposal Operations, Waste Management of Texas, Inc.



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- ONE MILE RADIUS
- 450 EXISTING 10' GROUND CONTOUR
- SURFACE WATER BODY OR OTHER WATER

FERRIS, TX
2022

ROAD CLASSIFICATION

- Expressway
- Secondary Hwy
- Ramp
- Local Connector
- Local Road
- 4WD
- Interstate Route
- US Route
- State Route

NOTES:

1. TOPOGRAPHIC BASE MAP DOWNLOADED FROM USGS WEBSITE ON JULY 3, 2025.
2. REFER TO APPENDIX IIB FOR DETAILED LAND USE INFORMATION.
3. THERE ARE 1679 RESIDENCES AND 82 INDUSTRIAL/COMMERCIAL ESTABLISHMENTS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
4. THERE ARE 7 CHURCHES, NO DAY CARE CENTERS, 3 CEMETERIES, AND 5 SCHOOLS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
5. THERE ARE NO TEXAS STATE HISTORICAL COMMISSION HISTORIC MARKERS WITHIN ONE MILE OF THE PERMIT BOUNDARY.
6. THERE ARE NO ARCHAEOLOGICALLY SIGNIFICANT SITES AND NO SITES HAVING EXCEPTIONAL AESTHETIC QUALITY WITHIN ONE MILE OF THE PERMIT BOUNDARY.
7. LANDFILL TRAFFIC WILL NORMALLY USE IH 45, BUSINESS IH 45 AND MALLOY BRIDGE ROAD TO ENTER OR LEAVE THE FACILITY. EACH OF THESE ROADS IS PAVED WITH A HARD SURFACE.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

FEATURES WITHIN ONE MILE OF THE FACILITY

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING
IIA.3

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IIA.3-FeaturesWithin1Mile.dwg Layout: Layout1 User: awhite

Skyline Landfill
Traffic Analysis

Required: Evaluate whether access routes to the Skyline LF will have adverse effect due to facility traffic.

References

1. HDR Engineering Transportation Study (Part II Appendix IIC in 2015 Permit Application)
2. Traffic Count (TCDS) Data for Location ID 57D12 as of 3/27/26.

Given:

1. The HDR Transportation Study was comprehensive and covered all of the access roads and intersections within 1 mile of the landfill entrance on North Central Street (BR 45).
2. A review of the HDR study indicates that 83% of the landfill traffic is on the section of BR 45 north of the landfill entrance and that section of access is the most critical of all of the access roads.
3. If an analysis of the section of BR 45 north of the landfill access road indicates no adverse effect on traffic, the other access roads within 1 mile will also not have an adverse effect on traffic due to an increase in waste tonnage/vehicles.
4. Traffic counts from Location Id: 57D12 which is just north of the landfill entrance on North Central Street (BR45) are on the most critical section of access road and provide AADT as well as Peak Hour Volumes.
5. The estimated maximum annual waste tonnage will increase from approximately 1,900,000 tons/yr to approximately 2,400,000 tons/yr due to growth and consolidation of waste disposal facilities.
6. Maximum tonnage is anticipated to occur in approximately 25 years… use year 2049.

Analysis: Determine the Peak Hour Volume of landfill vehicles on BR 45 north of the Skyline LF entrance and compare it to the capacity of that section of roadway.

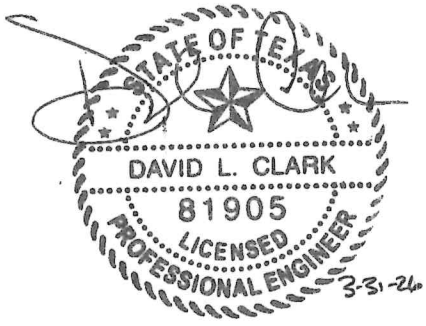
	2021	2022	2025	2049
Annual Waste Tonnage	1,825,949	1,889,898	1,947,267	2,496,000
Average Daily LF Trips	1,012	1,047	1,079	1,383
Peak Hour Volume (veh)*	494	504	Not Available	Not Available
Peak Hour LF Volume (veh)**	119	124	127	163
Capacity (pc/hr)	3,200	3,200	3,200	3,200
Total Capacity Used	15.4%	15.8%		
Peak Capacity Used by LF vehicles	**3.7%**	**3.9%**	**4.0%**	**5.1%**

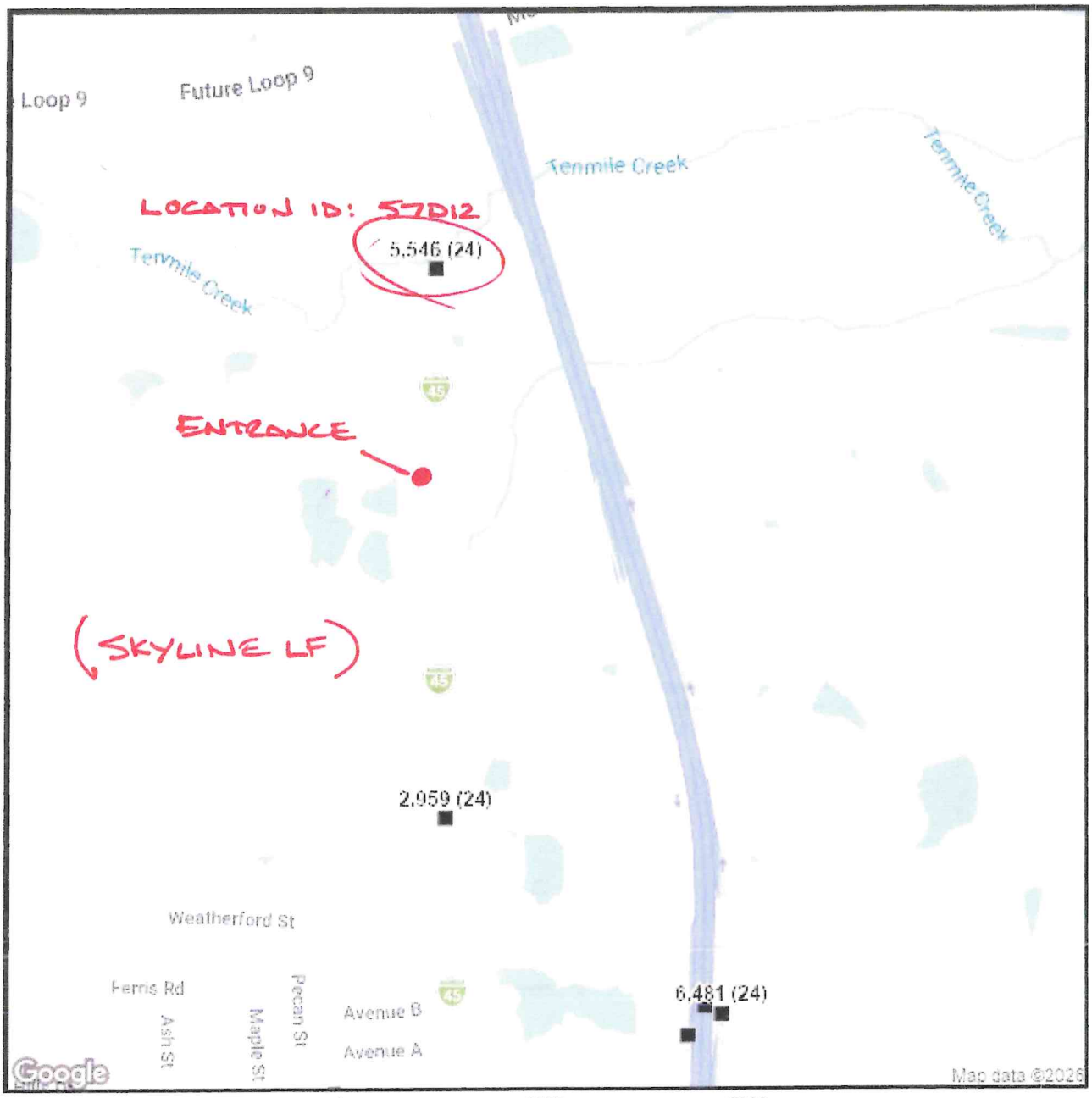
*From TCDS counts

**Peak Hour LF Volume (veh) for future estimated using same ratio as current years

Conclusion: Landfill vehicles transporting the estimated maximum annual waste tonnage of 2,400,000 tons/year will only use about 5.1% of the peak hourly capacity of BR 45 north of the Skyline LF entrance.
The north section of BR 45 is the most critical of all access roads used by landfill traffic.

Vehicle traffic associate with an annual waste tonnage of 2,400,000 tons/yr will not have an adverse effect on access roads within 1 mile of the Skyline LF entrance.




Loop 9
Future Loop 9
Tenmile Creek
Tenmile Creek
Tenmile Creek
LOCATION ID: 57D12
5,546 (24)
ENTRANCE
(SKYLINE LF)
2,959 (24)
Weatherford St
Ferris Rd
Ash St
Maple St
Pecan St
Avenue B
Avenue A
6,481 (24)
Google
Map data ©2026
0
1500
3000
Feet
N
TCDS Locations
Annual ACR
HOV, NON-TPP
Inactive
M/C
Perm
Ramp
TIC
Toll
Urban ACR
WIM/LTPP

3/27/2026

Auto-Locate:

List View | Report Center

go

Location ID	57D12	MPO ID	282
Type	SPOT	HPMS ID	ASSIGNED
SF Group	STATEWIDE U FC 4 5 6 7 (2025)	Route Type	BI
AF Group	BR1801 (2025)	Route	0045
GF Group	Code 2 (1) (2024)	Active	Yes
Class Dist Grp	M1151_SB (2017)	Category	ANNUAL ACR
Seas Clss Grp	DALLAS (2016)		
WIM Group	Statewide (2017)		
QC Group	Volume Group 2		
Fnct'l Class	(4)Minor Arterial		
Located On	BI0045J		
Loc On Alias	BI0045J-KG		

More Detail

Directions: 2-WAY

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2024	5,546[3]				5,243 (95%)	303 (5%)	Grown from 2023
2023	5,491	419	8		5,287 (96%)	204 (4%)	
2022	5,808	486	8		5,529 (95%)	279 (5%)	
2021	5,698	464	8		5,305 (93%)	393 (7%)	
2020	4,990	400	8		4,824 (97%)	166 (3%)	

> >>| 1-5 of 15

	Date	Int	Total
	Wed 8/2/2023	15	5,773
	Wed 9/7/2022	15	6,878
	Mon 8/9/2021	15	6,312
	Mon 8/3/2020	15	5,212
	Mon 12/30/2019	15	5,183
	Wed 8/9/2017	15	4,993
	Wed 5/25/2016	15	4,624
	Mon 8/10/2015	15	4,269
	Mon 9/15/2014	15	4,919
	Wed 7/24/2013	15	4,111

> >>| 1-10 of 11

mm / dd / yyyy To Date

Year	Annual Growth
2025	16%
2024	1%
2023	-5%
2022	2%
2021	14%
2020	2%
2019	4%
2018	0%
2017	11%
2016	7%

> >>| 1-10 of 14

	Date	Int	Pace	85th	Total
No Data					

	Date	Int	Total
No Data			

Texas Commission on Environmental Quality

Transportation Data and Coordination Report Form for Municipal Solid Waste Type I Landfills

This form is for use by applicants or site operators of Municipal Solid Waste (MSW) Type I landfills to provide data and information to address the availability and adequacy of access roads to a landfill site, the volume of vehicular traffic on and generated by the facility on area roadways, and to provide coordination information as required under 30 TAC §330.61(i). Roadways that provide primary access to a landfill facility must be adequate and possess appropriate design capacity to safely accommodate the additional volumes and weights of traffic generated or expected to be generated by this landfill facility during its active life. Data provided in this form should correspond with data contained in the coordination documents submitted to the Texas Department of Transportation or other agency that has jurisdiction over affected area roads.

If you need assistance in completing this form, please contact the Municipal Solid Waste Permits Section of the Waste Permits Division at (512) 239-2335.

I. General Information

Facility Name: Waste Management Skyline Landfill

MSW Permit No.: 42E

Site Operator/Permittee Name and Mailing Address: Waste Management of Texas, Inc. 9708 Giles Road, Austin, TX 78754

II. Documentation of Coordination with the Texas Department of Transportation (TXDOT) for Traffic and Location Restrictions

1. A traffic study document and cover letter was submitted to TXDOT as Coordination for traffic and location restrictions for the subject facility and a copy of the documents submitted to TXDOT is attached herein: ☒ Yes ☐ No

   If you checked "No" , provide explanation:

2. Date of submission of the coordination documents to TXDOT: March 31, 2026

3. TXDOT's response received? ☐ Yes ☒ No

4. If "No" is checked in response to Item I.3 above, complete Items I.4 and I.5 below only after TxDOT's response is received.

5. Did TxDOT's response include recommendation of improvements to any of the roadways or intersections that lead to the site? ☐ Yes ☐ No

6. If you checked "Yes" in Item I.5 above, proceed to Section III., TxDOT's Recommended Roadway or Intersection Improvements (as applicable).

7. If you checked "No" in Item I.5 above, provide TxDOT's response to the traffic and location restrictions compliance coordination for the subject site: *(Enter TxDOT's response to coordination correspondence)*

III. TxDOT Recommended Roadway or Intersection Improvements (as applicable)

Enter TxDOT's recommendations for improvement of roadways or intersections that lead to the site:

1.

2.

3.

IV. Documentation of Coordination of Improvement Designs of Public Roadways (turning lanes, storage lanes, acceleration/deceleration lanes, etc.) at and Near the Site Entrances with Agencies that Exercise Maintenance Responsibility

1. Complete Table 1 with information regarding documentation of coordination of improvement designs for existing and proposed roads.

Table 1: Public Roadway Improvements Coordination

Existing and Proposed Roads Associated with the Site Entrance(s)	Agency Exercising Maintenance Responsibility	Date of Coordination Correspondence from the Applicant or Site Operator to the Agency Responsible	Date of the Coordination Response Letter from the Agency Responsible	Did the Agency Responsible Require Improvements to the Roadway(s) Associated with the Site Entrance(s) (check Yes or No as applicable)
North Central St (BR45)	TxDOT	March 31, 2026		☐Yes ☐No
				☐Yes ☐No
				☐Yes ☐No
				☐Yes ☐No

2. If you checked "Yes" in the last column of Table 1, indicating that improvements are required, address the following:

   (a) Briefly describe the improvements proposed for the public roadway(s) associated with the site entrance(s):

   (b) A copy of the proposed improvement design submitted to the agency exercising maintenance responsibility over the roadway is attached herein: ☐Yes ☐No. If you checked "No" please explain:

   (c) A copy of the response letter from the agency exercising maintenance responsibility over the roadway(s) associated with the site entrance(s) approving the improvement design is attached herein: ☐Yes ☐No. If you checked "No" please explain:

V. Facility Location and Operation Information Used in Estimating Transportation Data

1. Facility Location Information

   West of N Central Street (BR 45) between Avenue A and Malloy Bridge Road in Ferris, TX. Access is provided via the existing Waste Management Skyline Landfill driveway on N Central Street (BR 45).

2. Waste Acceptance Rates

   (a) Initial Waste Acceptance Rate: 1,900,000 tons/year

   (b) Estimated Maximum Waste Acceptance Rate at any Time During Facility Life: 2,412,496 tons/year

3. Hours of Operation and Site Life

   (a) a. Operating Hours: 24 hours/day, 7 days/week

   (b) b. Waste Acceptance Hours: 24 hours/day M-F and until 5:00 p.m. Sat.

   (c) c. Estimated Site Life: 24 years

4. Other Information Used or Assumed in Estimating Transportation Data: Facility scalehouse records for tonnage/vehicles and TxDOT Traffic Count Data for Location ID 57D12 located just north of the facility entrance on BR 45.

5.

VI. Facility Daily Traffic Volume Data

1. Complete Table 2 with estimated existing daily volume of traffic generated by the facility.

Table 2: Estimated Existing Daily Volume of Traffic Generated

Vehicle Type	Traffic Volume to Facility (vehicles per day, vpd)	Traffic Volume from Facility (vpd)
Trucks	863	863
Employee Vehicles	35	35
Visitors Vehicles	5	5
Other Vehicles	176	176
Summation of Daily Volume of Traffic to and from the Facility		
Total Daily Volume of Traffic	1079	1079

(a) Describe the source(s) of or method(s) used to obtain the existing daily volume of traffic generated by the facility: Scalehouse records/estimates

(b) Location(s) of traffic counts (if applicable): N/A

2. Complete Table 3 with estimated future daily volume of traffic generated by the facility.

Table 3: Estimated Future Daily Volume of Traffic Generated

Vehicle Type	Traffic Volume to Facility (vpd)	Traffic Volume from Facility (vpd)
Trucks	1106	1106
Employee Vehicles	48	48
Visitors Vehicles	5	5
Other Vehicles	224	224
Summation of Daily Volume of Traffic to and from the Facility		
Total Daily Volume of Traffic	1383	1383

3. Describe the method(s) used to obtain the estimated future daily volume of traffic generated by the facility, including dates, traffic growth rates, and sources of the growth rates: Growth rate for waste/traffic was estimated at 1% annual based on history and online projections for area population/economic growth from 0.5 to 0.75%.

4. Maps showing the facility boundary and roads within 1 mile of the facility that provide access to the site are attached herein. Yes ☒ No☐. If you checked "No" please explain: See Drawing IIA.3.

VII. Availability and Adequacy of Roads

1. Complete Table 4 with information regarding the primary access roadways.

Table 4: Roadway Characteristics of the Primary Access Roadways

List the roads that the owner or operator will use as primary access to the site	Existing Annual Average Daily Traffic on Roadway (vpd)	Expected Annual Average Daily Traffic on Roadway (vpd)	Existing Roadway Capacity	Expected Roadway Capacity	Max Gross Weight Allowed (lbs)	Max/Min Posted Speed Limit (mph)	Min Vertical Clearance (ft)	Surface Type and No. of Lanes	Level of Service	Existing Traffic Generated by the Facility on Each Roadway	Expected Traffic Generated by the Facility on Each Roadway
North Central St (BR 45)	5,600	7100	3200	3200	80000	55	14	Asph,2 lanes	A/B	1100	1400

2. Complete Table 5 with information regarding other access roadways within one mile.

Table 5: Roadway Characteristics of Other Access Roadways within One Mile of the Facility Boundary

List other access roadways within 1 mile of the facility	Existing Annual Average Daily Traffic on Roadway	Expected Annual Average Daily Traffic on Roadway	Existing Roadway Capacity	Expected Roadway Capacity	Max Gross Weight Allowed (lbs)	Max/Min Posted Speed Limit (mph)	Min Vertical Clearance (ft)	Surface Type and No. of Lanes	Level of Service	Existing Traffic Generated by the Facility on Each Roadway	Expected Traffic Generated by the Facility on Each Roadway
N/A											

3. Complete Table 6 with information regarding access roadway intersections within one mile.

Table 6: Roadway Intersection Characteristics

Please list major (signalized) roadway intersections for access roads within 1 mile of facility	Existing Capacity	Existing Level of Service
N/A		

Please list major (signalized) roadway intersections for access roads within 1 mile of facility	Existing Capacity	Existing Level of Service

4. (For applicants that conducted traffic counts) Peak period traffic counts were conducted at critical intersections and roadways in the area: ☐ Yes ☐ No

   If "No" is checked, please explain: N/A

VIII. Conclusions on the availability and adequacy of roads to be used for accessing the facility

Enter conclusions regarding the availability and adequacy of roads to be used for accessing the facility using information obtained from access roadway data; data on the volume of existing and expected vehicular traffic on the access roads within one mile of the facility; and the projection of the volume of traffic expected to be generated by the facility on the access roads:

Based off the current and projected waste acceptance and information presented previously, there are no existing or future restrictions on the main access roadways within one mile of the site that would preclude safe and efficient operations for landfill vehicles and other traffic in the area.

IX. Highway Beautification

Enter facility distance from interstate or primary highways and screening information as required by 30 TAC 330.23(a).

1. Distance of Facility from Interstate or Primary Highway: Minimum of 125 feet

2. Type of Facility Screening Provided, if applicable: Existing vegetation and fencing

X. Analysis of the Impact of the Facility upon Airports

Enter the Part, Appendix, Attachment, Section, and Page Number of the application where analysis of the impact of the facility upon airports is provided: Part II, Appendix IIH

XI. Documentation of Coordination with the Federal Aviation Administration for Compliance with Airport Location Restrictions

1. Applicant has submitted written information to FAA describing the facility location, maximum height of waste units, type of waste accepted at the facility, and other facility-relevant data and information as required: ☐ Yes ☐ No

   (a) Enter Date of Coordination Letter to FAA:

   (b) Enter Date of FAA Response:

2. Indicate FAA Response and Final Action:

   ☐ FAA Acknowledged No Adverse Impact.

   ☐ FAA Recommended Safety Improvements. (*Complete Section XII if you check this item.*)

3. A copy of the Documentation of Coordination with FAA for compliance with airport location restrictions is attached herein. ☒Yes ☐No. If you checked "No" please explain:

XII. FAA Recommended Changes or Improvements for Airport Safety, (as applicable)

Enter FAA's recommended changes or improvements to the facility for airport safety or for compliance with airport location restrictions.

XIII. Attachments

- Maps showing the facility boundary and roads within 1 mile of the facility.
- Documentation of coordination of all designs of proposed public roadway improvements associated with site entrances with the agency exercising maintenance responsibility of the public roadway involved; and the response letter received from the agency, as applicable.
- Documentation of coordination with the Texas Department of Transportation (TxDOT) for traffic and location restrictions, including any traffic study report; and the response letter received from TxDOT.

- Documentation of coordination with the Federal Aviation Administration for compliance with airport location restrictions; and the response letter received from FAA.

- Other documents attached: Currently approve Skyline Landfill Traffic Study by HDR Engineering, Inc.

SKYLINE LANDFILL

< TRANSPORTATION STUDY >

Technically Complete: April 2, 2015

SKYLINE LANDFILL

< TRANSPORTATION STUDY >

Prepared for

Waste Management of Texas, Inc.

Prepared by

HDR Engineering Inc.

Texas P.E. Registration No. F-754
504 Lavaca Street, Suite 1175
Austin, Texas 78701 USA
Telephone: 512.904.3700
Facsimile: 512.904.3773
Website: www.hdrinc.com



Technically Complete: April 2, 2015

TABLE OF CONTENTS

Table of Contents ..... II.C-i

List of Figures ..... II.C-ii

List of Tables ..... II.C-iii

Introduction II.C-1

Roadway System in Proximity to Site II.C-3

Data Collection II.C-12

Existing Traffic Analysis II.C-35

Roadway Capacity Analysis Methodology II.C-35

Intersection Analysis II.C-40

Future Traffic Analysis II.C-44

Roadway Capacity Analysis II.C-45

Intersection Analysis II.C-49

Conclusions and Recommendations II.C-52

References II.C-54

APPENDIX II.C-55

LIST OF FIGURES

FIGURES

II.C-1 Detailed Highway Map II.C-5
II.C-2 General Site Plan II.C-6
II.C-3 Entrance Road and Entrance Facilities Plan II.C-7

LIST OF TABLES

TABLES

II.C-1 Existing Access Roadway Characteristics II.C-11
II.C-2 Hourly Traffic Volumes – Skyline Landfill Driveway, West of BR 45 ..... II.C-14
II.C-3 Hourly Traffic Volumes – BR 45, North of Skyline Landfill Driveway II.C-15
II.C-4 Hourly Traffic Volumes – BR 45, South of Skyline Landfill Driveway II.C-16
II.C-5 Hourly Traffic Volumes – IH 45 SBFR, North of Malloy Bridge Road II.C-17
II.C-6 Hourly Traffic Volumes – IH 45 NBFR, North of Malloy Bridge Road II.C-18
II.C-7 Hourly Traffic Volumes – IH 45 SBFR, South of FM 660 ..... II.C-19
II.C-8 Hourly Traffic Volumes – IH 45 NBFR, South of FM 660 ..... II.C-20
II.C-9 Hourly Traffic Volumes – FM 660, East of BR 45 ..... II.C-21
II.C-10 Hourly Traffic Volumes – FM 983, West of BR 45 ..... II.C-22
II.C-11 Hourly Traffic Volumes – FM 664, West of FM 983 ..... II.C-23
II.C-12 Hourly Traffic Volumes – East 5th Street, East of BR 45 ..... II.C-24
II.C-13 Hourly Traffic Volumes – Malloy Bridge Road, East of IH 45 ..... II.C-25
II.C-14 Existing Vehicle Classification – BR 45, North of Skyline Landfill Driveway II.C-26
II.C-15 Existing Vehicle Classification – BR 45, South of Skyline Landfill Driveway II.C-27
II.C-16 Existing Vehicle Classification – IH 45 SBFR, North of Malloy Bridge Road II.C-28
II.C-17 Existing Vehicle Classification – IH 45 NBFR, North of Malloy Bridge Road II.C-28
II.C-18 Existing Vehicle Classification – IH 45 SBFR, South of FM 660 ..... II.C-29
II.C-19 Existing Vehicle Classification – IH 45 NBFR, South of FM 660 ..... II.C-29
II.C-20 Existing Vehicle Classification – FM 660, East of BR 45 ..... II.C-30
II.C-21 Existing Vehicle Classification – FM 983, West of BR 45 ..... II.C-31
II.C-22 Existing Vehicle Classification – FM 664, West of FM 983 ..... II.C-32
II.C-23 Existing Vehicle Classification – East 5th Street, East of BR 45 ..... II.C-33
II.C-24 Existing Vehicle Classification – Malloy Bridge Road, East of IH 45 ..... II.C-34
II.C-25 2011 Existing Traffic Volumes II.C-38

II.C-26 Level of Service for 2011 Existing Traffic Volumes (Two-Lane Highway Analysis) II.C-39
II.C-27 Level of Service for 2011 Existing Traffic Volumes (Multilane Highway Analysis) II.C-39
II.C-28 Estimated Average Daily Traffic Volumes for the Landfill II.C-44
II.C-29 2044 Forecasted Traffic Volumes II.C-47
II.C-30 Level of Service for 2044 Forecasted Traffic Volumes (Two-Lane Highway Analysis) II.C-48
II.C-31 Level of Service for 2044 Forecasted Traffic Volumes (Multilane Highway Analysis) II.C-48

INTRODUCTION

This transportation study was conducted by HDR Engineering, Inc. at the request of Waste Management of Texas, Inc. to provide information concerning factors related to access roads and vehicular traffic with respect to the proposed expansion of the Skyline Landfill. The landfill site is located west of N Central Street (BR 45) between Avenue A and Malloy Bridge Road in Ferris, Texas. Access to the landfill site is provided via the existing Waste Management landfill driveway on N Central Street (BR 45). Based on the proposed expansion and current and projected waste receipts, the facility is expected to continue operation until the year 2044. Existing conditions and one future time period were analyzed as part of the study.

Section 330.61 of the Texas Administrative Code contains regulations of the Texas Commission on Environmental Quality (TCEQ) regarding solid waste facility applications. These regulations require the following technical issues related to access roads and associated restrictions be identified and/or analyzed:

- Provide data on the availability and adequacy of roads that the owner or operator will use to access the site.
- Provide data on the volume of vehicular traffic on access roads within one mile of the proposed facility, both existing and expected, during the expected life of the proposed facility.
- Project the volume of traffic expected to be generated by the facility on the access roads within one mile of the proposed facility.

Activities completed during the transportation study included research of records and/or contacts with personnel from the Texas Department of Transportation (TxDOT), Dallas County, Ellis County, City of Ferris, City of Wilmer, Ferris Independent School District, Dallas Independent School District, and Lancaster Independent School District for information pertaining to the transportation system serving the proposed landfill expansion, and collection

of vehicular traffic counts. Daily traffic volumes were obtained for the following roadways within one-mile of the proposed facility using 24-hour electronic tube counters:

- IH 45 Southbound Frontage Road, north of Malloy Bridge Road
- IH 45 Northbound Frontage Road, north of Malloy Bridge Road
- IH 45 Southbound Frontage Road, south of FM 660
- IH 45 Northbound Frontage Road, south of FM 660
- N Central Street (BR 45), north of Landfill Driveway
- N Central Street (BR 45), south of Landfill Driveway
- Malloy Bridge Road, east of IH 45
- FM 660, east of BR 45
- FM 983, west of BR 45
- FM 664, west of FM 983
- E 5th Street, east of BR 45
- Skyline Landfill Driveway, west of BR 45

Turning movement counts were also collected at the following intersections:

- IH 45 and Malloy Bridge Road
- IH 45 and E 5th Street
- IH 45 and FM 660/E 8th Street
- N Central Street (BR 45)/Miller's Ferry Road and Malloy Bridge Road
- N Central Street (BR 45) and Skyline Landfill Driveway
- Central Street (BR 45) and 5th Street
- S Central Street (BR 45) and FM 983/E 6th Street
- S Central Street (BR 45) and FM 660/W 8th Street
- FM 983 and FM 664

TxDOT, Dallas County, Ellis County, the City of Ferris, and the City of Wilmer were consulted regarding future roadway construction and load limits since area access roadways are under their jurisdictions. Information on population and traffic projections and proposed

transportation improvements was obtained from the North Central Texas Council of Governments (NCTCOG) Mobility 2035 Metropolitan Transportation Plan (Ref. 1) and the 2011-2014 Transportation Improvement Program for North Central Texas (Ref. 2). Historical traffic volume data were obtained from Texas Department of Transportation (TxDOT) AADT maps (Ref. 3). In addition, school bus route information was obtained for Ferris ISD, Lancaster ISD, and Dallas ISD for school bus routes in the vicinity of the landfill. The responses from TxDOT and Ellis Counties have been documented in the following sections and the Appendix.

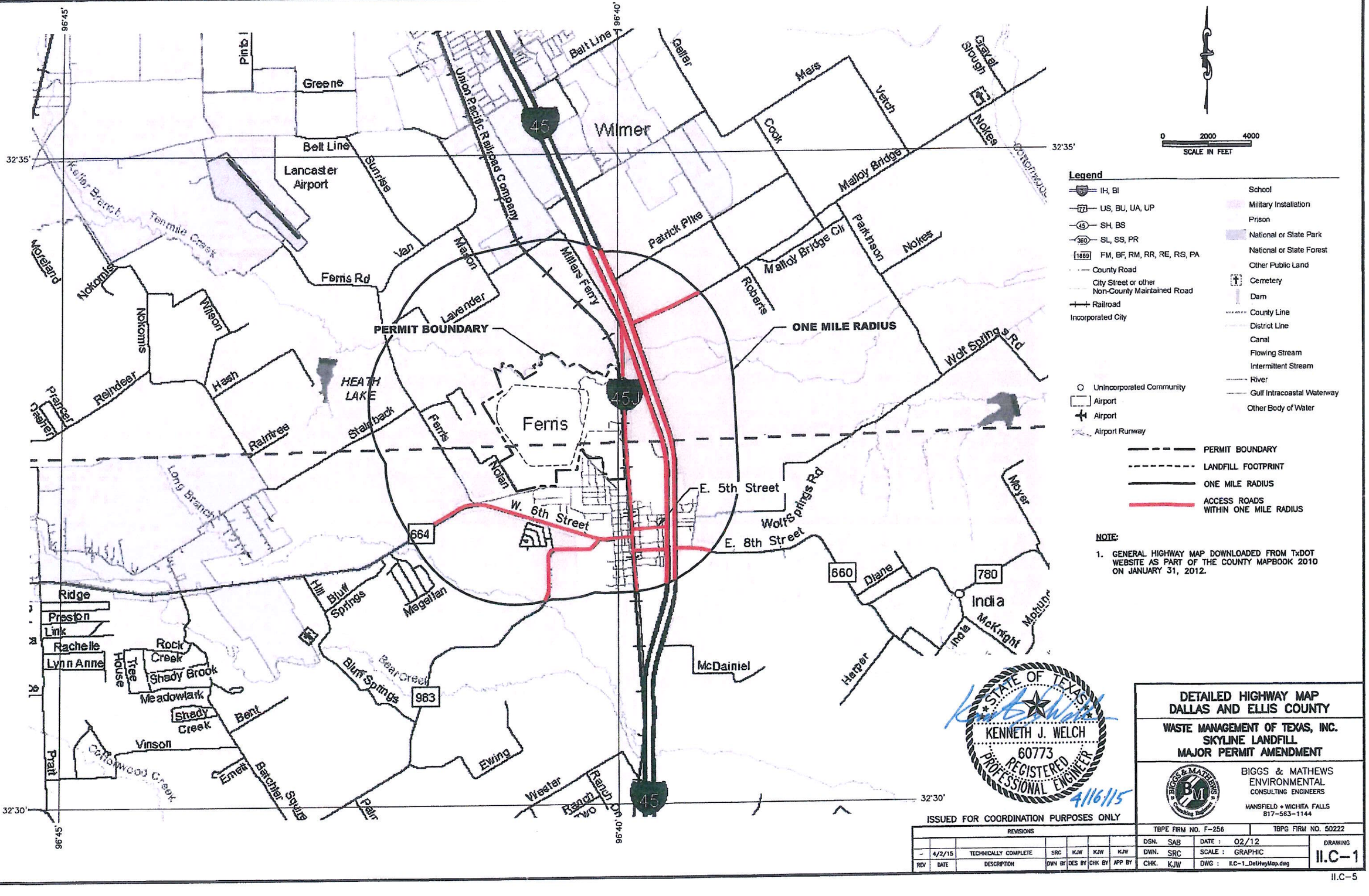
Based upon the results of this study, conclusions are provided regarding the expected impact of the proposed landfill expansion with respect to existing access roadways.

ROADWAY SYSTEM IN PROXIMITY TO SITE

The landfill site is located west of N Central Street (BR 45) between Avenue A and Malloy Bridge Road in Ferris, Texas. Figure II.C-1 shows the roadway system serving the landfill. Access to the site is provided via the existing Waste Management landfill driveway on N Central Street, as shown in Figure II.C-2 and Figure II.C-3.

A field study was conducted to note roadway conditions and intersection design for roadways which could be used by vehicles accessing the landfill. This information, combined with the roadway capacity analysis, was utilized to assess the availability and adequacy of the area roadway network. Descriptions of the following area roadways within one mile of the landfill site are provided:

- IH 45
- Miller's Ferry Road/BR 45 (Central Street)
- FM 660 (8th Street)
- FM 983 (6th Street)
- FM 664
- 5th Street
- Malloy Bridge Road
- Loop 9 (Future)



NOTE:

1. GENERAL HIGHWAY MAP DOWNLOADED FROM TxDOT WEBSITE AS PART OF THE COUNTY MAPBOOK 2010 ON JANUARY 31, 2012.

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED PROFESSIONAL ENGINEER
4/16/15

ISSUED FOR COORDINATION PURPOSES ONLY

REVISIONS							
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	
-	4/2/15	TECHNICALLY COMPLETE	SRC	KJW	KJW	KJW	

DETAILED HIGHWAY MAP
DALLAS AND ELLIS COUNTY

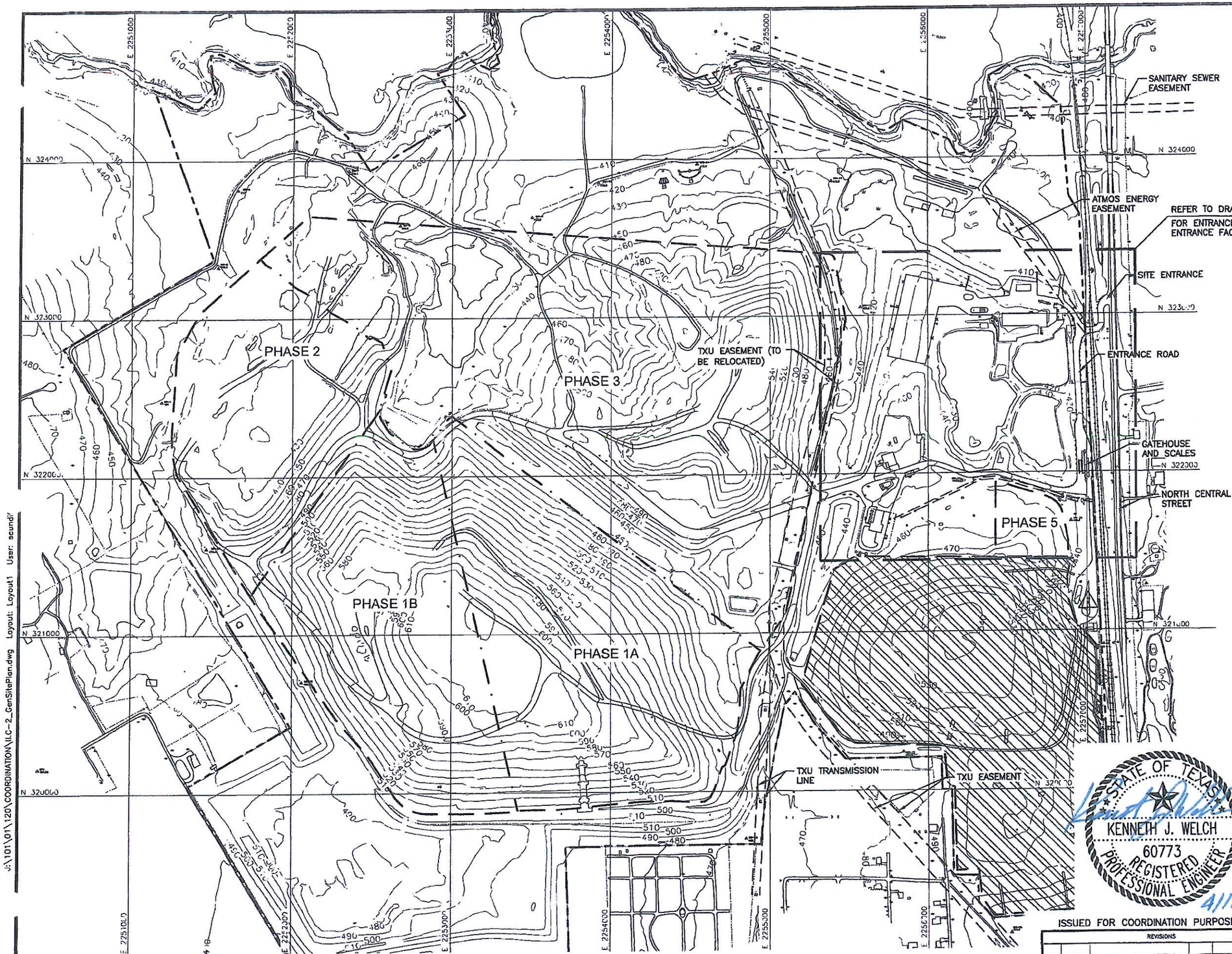
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD • WICHITA FALLS
817-563-1144

TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222

DSN. SAB	DATE : 02/12	DRAWING	II.C-1
DWN. SRC	SCALE : GRAPHIC		
CHK. KJW	DWG : II.C-1_DetHwyMap.dwg		

J:\101\01\120\COORDINATION\II.C-1_DetHwyMap.dwg Layout: Layout1 User: scundiff



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- 550 EXISTING GROUND CONTOUR
- N 322000 STATE PLANE GRID (NAD 27)
- PHASE BOUNDARY
- PRE-SUBTITLE D AREA WITH FINAL COVER

NOTE:

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.

SUBTITLE D LANDFILL FOOTPRINT	
PHASE NO.	PLAN AREA (AC)
1A	64.9
1B	53.7
2	40.1
3	125.7
5	4.2
TOTAL	288.6
PRE-SUBTITLE D LANDFILL FOOTPRINT	
	68.3
TOTAL	356.9

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED PROFESSIONAL ENGINEER
4/16/15

ISSUED FOR COORDINATION PURPOSES ONLY

REVISIONS						
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
-	4/2/15	TECHNICALLY COMPLETE	SRC	KJW	KJW	KJW

GENERAL SITE PLAN

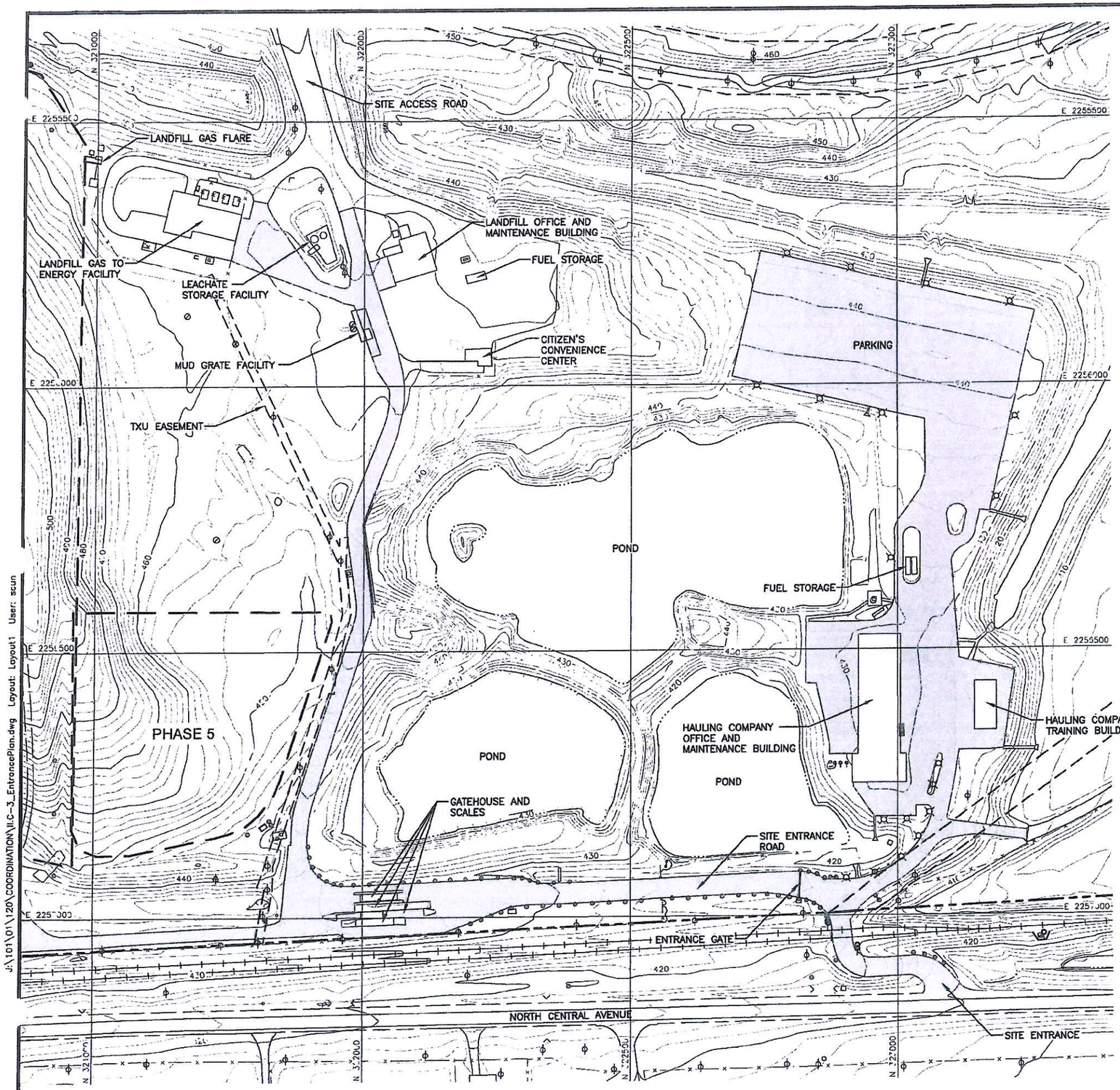
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD • WICHITA FALLS
817-563-1144
TBPE FIRM NO. F-256 TBPG FIRM NO. 50222

DSN.	SAB	DATE :	02/12
DWN.	SRC	SCALE :	GRAPHIC
CHK	KJW	DWG :	II.C-2_GenSitePlan.dwg

DRAWING II.C-2

J:\101\01\120\COORDINATION\II.C-2_GenSitePlan.dwg Layout: Layout1 User: scundi



0 100 200
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- 550 EXISTING GROUND CONTOUR
- N 323000 STATE PLANE GRID (NAD 27)
- CONCRETE PAVEMENT

NOTES:

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED
PROFESSIONAL ENGINEER
4/16/15

ISSUED FOR PERMITTING PURPOSES ONLY

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
–	4/2/15	TECHNICALLY COMPLETE	SRC	KJW	KJW	KJW

ENTRANCE ROAD AND ENTRANCE FACILITIES PLAN

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD • WICHITA FALLS
817-583-1144

TBPE FIRM NO. F-256 TBPG FIRM NO. 50222

DSN.	SAB	DATE :	02/12
DWN.	SRC	SCALE :	GRAPHIC
CHK.	KJW	DWG :	II.C-3_EntrancePlan.dwg

DRAWING II.C-3

J:\101\01\120\COORDINATION\II.C-3_EntrancePlan.dwg Layout: Layout1 User: scun

IH 45 – IH 45 is currently a six-lane Portland cement concrete-surfaced freeway facility with intermittent frontage roads in the vicinity of the site. The 2010 daily traffic volume on IH 45 was 41,000 vehicles per day (vpd), north of 5th Street, according to TxDOT AADT maps. TxDOT and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for IH 45. No roadway improvements are currently planned along IH 45 in the study area. According to NCTCOG, TxDOT plans to install wireless incident detection and response system from IH 20 to the Dallas/Ellis County Line along IH 45. There are no known weight restrictions on IH 45 in the proximity of the site other than the maximum legal weight limit of 80,000 pounds.

Millers Ferry Road/BR 45 (Central Street) – Central Street is currently a two-lane Portland cement concrete-surfaced roadway consisting of 11-foot travel lanes and improved shoulders in the vicinity of the site. At various locations within the study area, Central Street is asphalt surfaced, and has lane widths that vary between 10 feet and 11 feet. Traffic volumes recorded during the study on Central Street, north and south of the Landfill Driveway, were 4,061 and 2,913 vpd, respectively. Dallas County, TxDOT and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for Miller's Ferry Road/Central Street. Based on the information obtained from Dallas County, TxDOT, and NCTCOG, no improvements are currently planned along this roadway. There are no known weight restrictions on Millers Ferry Road/Central Street in the proximity of the site other than the maximum legal weight limit of 80,000 pounds.

FM 660 (8th Street) – 8th Street is currently a two-lane asphalt-surfaced roadway consisting of 10.5-foot travel lanes in the vicinity of the site. At various locations within the study area, 8th Street is concrete surfaced, and has lane widths that vary between 10 and 12 feet. The traffic volume recorded during the study on 8th Street east of Central Street was 4,015 vpd. TxDOT, the City of Ferris, Ellis County, and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for 8th Street. The Ellis County Thoroughfare Plan designates FM 660 as a principal (6 lane) arterial. No time frame was provided for this upgrade, and no upgrade was assumed as part of this study. Based on the

information provided by Ellis County and TxDOT, and obtained from the City of Ferris and NCTCOG, no improvements are currently planned for 8th Street/FM 660. The maximum allowable gross vehicle weight on FM 660 is 58,420 pounds.

FM 983 (6th Street) – FM 983 (6th Street) is currently a two-lane asphalt-surfaced roadway consisting of 11-foot travel lanes in the vicinity of the site. At various locations within the study area, FM 983 (6th Street) is Portland cement concrete-surfaced and has lane widths that vary between 11 and 15 feet. The traffic volume recorded during the study on 6th Street, west of Central Street, was 7,606 vpd. The City of Ferris, Ellis County, TxDOT and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for 6th Street/FM 983. The Ellis County Thoroughfare Plan designates FM 983 as a minor (4 lane) arterial. No time frame was provided for this upgrade, and no upgrade was assumed for this study. Based on the information provided by Ellis County and TxDOT, and obtained from the City of Ferris and NCTCOG, no improvements are currently planned for 6th Street/FM 983. The maximum allowable gross vehicle weight on FM 983 is 58,420 pounds.

FM 664 – FM 664 is currently a two-lane asphalt-surfaced roadway consisting of 12-foot travel lanes and full-size shoulders west of FM 983. The traffic volume recorded during the study on FM 664, west of FM 983, was 6,676 vpd. Ellis County, TxDOT and the Mobility 2035 Regional Transportation Plan were consulted regarding future roadway upgrade plans for FM 664. The Ellis County Thoroughfare Plan designates FM 664 as a principal (6 lane) arterial. NCTCOG is funding a study to determine the feasibility of upgrading FM 664 to a four-lane divided roadway from US 287 in Waxahachie to IH 45 in Ferris. In addition, TxDOT is preparing a corridor study to examine realignment of FM 664 to the south in order to reduce pedestrian/vehicle conflicts in the downtown (Ferris) area. These potential improvements were not assumed as part of this study for analysis purposes. There are no known weight restrictions on FM 664 in the proximity of the site other than the maximum legal weight limit of 80,000 pounds.

5th Street – 5th Street is currently a two-lane Portland cement concrete-surfaced divided roadway consisting of a 24-foot and an 18-foot unstriped pavement section east of BR 45. West of BR 45, 5th Street is an asphalt surfaced undivided roadway with a 25-foot pavement section and no striping. At various locations within the study area, 5th Street has lane widths that vary between 12 and 24 feet. Between Central Street and Campus Street, 5th Street is divided by a raised median. 5th Street is undivided elsewhere in the vicinity of the site. The traffic volume recorded during the study on 5th Street, east of Central Street, was 4,449 vpd. The City of Ferris and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for 5th Street. Based on the information obtained from the City of Ferris, and NCTCOG, no improvements are currently planned for 5th Street. There are no known weight restrictions on 5th Street in the proximity of the site other than the maximum legal weight limit of 80,000 pounds.

Malloy Bridge Road – Malloy Bridge Road is currently a two-lane Portland cement concrete surfaced roadway consisting of 12-foot travel lanes in the vicinity of the site. At various locations within the study area, Malloy Bridge Road is asphalt surfaced. The traffic volume recorded during the study on Malloy Bridge Road, east of IH 45, was 2,375 vpd. Dallas County and the Mobility 2035 Metropolitan Transportation Plan were consulted regarding future roadway upgrade plans for Malloy Bridge Road. Based on the information obtained from Dallas County and NCTCOG, no improvements are currently planned for Malloy Bridge Road. There are no known weight restrictions on Malloy Bridge Road in the proximity of the site other than the maximum legal weight limit of 80,000 pounds.

Loop 9 (Future) – Loop 9 is a proposed freeway type facility that will circumvent the Dallas/Fort Worth Metroplex area, as proposed by NCTCOG. The proposed alignment of Loop 9 will run adjacent to the northern property boundary, and intersect with IH 45 in the vicinity of the current interchange of Malloy Bridge Road and IH 45. Currently, no proposed design plans are available for Loop 9, and no construction date has been set. Construction of Loop 9 will have significant impact on the roadway network in the vicinity of the landfill. It can be expected that

upon completion, Loop 9 will reduce overall traffic demands on existing roadways within the study area network, although local traffic could increase near access points due to rerouting of trips. However, forecasting future travel demand on Loop 9 is outside the scope of this traffic study. For this reason, Loop 9 was not included as part of the existing or closing year analysis for the landfill facility.

Design factors and use restrictions for these roadways are summarized in Table II.C-1.

Table II.C-1.
Existing Access Roadway Characteristics

Roadway	Maximum Vehicle Height (feet)	Maximum Weight (1,000's pounds)	Cross-Section[1] (# of Lanes)	Surface Type	Average Daily Traffic (vpd)
IH 45, north of 5th Street	14	80.0	6	PC Concrete	41,000[3]
BR 45, north of Landfill Driveway	14	80.0	2	PC Concrete	4,061[2]
BR 45, south of Landfill Driveway	14	80.0	2	PC Concrete	2,913[2]
FM 660, east of BR 45	14	58.42	2	Asphalt	4,015[2]
FM 983, west of BR 45	14	58.42	2	Asphalt	7,606[2]
FM 664, west of FM 983	14	80.0	2	Asphalt	6,676[2]
5th Street, east of BR 45	14	80.0	2	PC Concrete	4,449[2]
Malloy Bridge Road, east of IH 45	14	80.0	2	Asphalt	2,375[2]

Notes:
1. Cross-section shown is that for the primary portions of the roadway.
2. Average daily traffic volumes were obtained from 2011 HDR 24-hour electronic tube counts performed by Gram North Texas, as shown in Tables II.C-2 through II.C-13.
3. Average daily traffic volume obtained from TxDOT AADT traffic maps for year 2010.

DATA COLLECTION

Traffic volume data collected during the study consisted of automatic tube counts and turning movement counts. Summaries of daily (24-hour) traffic volumes collected on September 13, 2011 and November 10, 2011 on the roadways mentioned previously are presented in Tables II.C-2 through II.C-13. Turning movement counts collected on September 13, 2011 were used to develop the summary of vehicle classifications and hourly traffic volumes presented in Tables II.C-14 through II.C-24. Due to limitations in data collection and availability of site traffic ticketing data, it was necessary to extrapolate hourly traffic volumes at certain locations. A detailed discussion of data collection and extrapolation methodology used for this study follows.

Daily traffic volumes were collected at the following locations:

1. Both directions on BR 45, north and south of Landfill Driveway
2. FM 660, east of BR 45
3. FM 983, west of BR 45
4. FM 664, west of FM 983
5. Malloy Bridge Road, east of IH 45
6. E 5th Street, east of BR 45
7. Skyline Landfill driveway, west of BR 45
8. IH 45 frontage roads, north of Malloy Bridge Road and south of FM 660

The results are reported in the following tables as collected.

All tube count data collected were validated by comparison with adjacent turning movement count data. It is expected that there will be minor discrepancies between the data collected, as the 24-hour volumes are collected by an automated pneumatic tube counter and adjusted to arrive at a reasonable volume estimate, whereas the turning movement count is performed by an individual observing and recording traffic data. There is additional potential for discrepancy when clock synchronicity, tube malfunction, and human error are considered. Given this expected potential for error between the counts, it was determined that all of the 24-hour traffic

volume data collected were reasonable, with the exception of the Skyline Landfill Driveway count. Based on discussions with Gram North Texas, the geometrics of this driveway did not provide for a reliable tube count; therefore, a supplemental turning movement count covering all of the operating hours of the facility was performed on November 10, 2011 in order to determine an accurate estimate of landfill trips.

Vehicle classification data were collected during the study at each of the study area intersections. This information was included in the visual turning movement counts to differentiate among the following vehicle types: waste vehicles, defined as waste collection vehicles, transfer trailers, open bed tractor/trailer trucks hauling solid waste, and pick-up trucks with trailers hauling waste; heavy vehicles that were not identified to be hauling solid waste; and all other vehicles, including passenger cars and buses. These vehicle classification counts are presented in Tables II.C-14 through II.C-24.

The traffic volume results described previously can be expected to vary throughout the year. As noted in AASHTO (Ref. 4), "The amount by which the volume of an average day is exceeded on certain days is appreciable and varied. At typical rural locations, the volume on certain days may be significantly higher than the ADT [average daily traffic]."

Table II.C-2.

Hourly Traffic Volumes – Skyline Landfill Driveway, West of BR 45

Skyline Landfill Driveway			
West of BR 45			
November 10, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	-	-	-
1:00 AM	-	-	-
2:00 AM	-	-	-
3:00 AM	26	9	35
4:00 AM	3	22	25
5:00 AM	25	32	57
6:00 AM	29	44	73
7:00 AM	42	45	87
8:00 AM	42	62	104
9:00 AM	47	50	97
10:00 AM	57	48	105
11:00 AM	62	59	121
12:00 PM	66	59	125
1:00 PM	62	56	118
2:00 PM	51	55	106
3:00 PM	60	28	88
4:00 PM	26	11	37
5:00 PM	19	2	21
6:00 PM	8	1	9
7:00 PM	9	0	9
8:00 PM	-	-	-
9:00 PM	-	-	-
10:00 PM	-	-	-
11:00 PM	-	-	-
Total	**634**	**583**	**1,217**

Note: Data not collected before 3:00 AM or after 8:00 PM due to facility operating hours

Table II.C-3

Hourly Traffic Volumes – BR 45, North of Skyline Landfill Driveway

BR 45			
North of Skyline Landfill Driveway			
September 13, 2011			
Time	Northbound	Southbound	Total
12:00 AM	11	6	17
1:00 AM	4	5	9
2:00 AM	6	21	27
3:00 AM	35	28	63
4:00 AM	36	17	53
5:00 AM	55	54	109
6:00 AM	122	102	224
7:00 AM	196	133	329
8:00 AM	138	101	239
9:00 AM	110	127	237
10:00 AM	105	116	221
11:00 AM	133	146	279
12:00 PM	139	137	276
1:00 PM	110	104	214
2:00 PM	126	172	298
3:00 PM	137	152	289
4:00 PM	109	164	273
5:00 PM	108	197	305
6:00 PM	93	124	217
7:00 PM	57	75	132
8:00 PM	39	54	93
9:00 PM	27	45	72
10:00 PM	30	23	53
11:00 PM	11	21	32
Total	**1,937**	**2,124**	**4,061**

Table II.C-4.

Hourly Traffic Volumes – BR 45, South of Skyline Landfill Driveway

BR 45			
South of Skyline Landfill Driveway			
September 13, 2011			
Time	Northbound	Southbound	Total
12:00 AM	13	7	20
1:00 AM	1	5	6
2:00 AM	7	5	12
3:00 AM	8	8	16
4:00 AM	15	5	20
5:00 AM	41	16	57
6:00 AM	87	43	130
7:00 AM	172	115	287
8:00 AM	120	73	193
9:00 AM	58	75	133
10:00 AM	63	80	143
11:00 AM	74	75	149
12:00 PM	83	85	168
1:00 PM	72	70	142
2:00 PM	66	110	176
3:00 PM	90	105	195
4:00 PM	83	132	215
5:00 PM	86	195	281
6:00 PM	70	115	185
7:00 PM	52	81	133
8:00 PM	41	52	93
9:00 PM	29	42	71
10:00 PM	30	24	54
11:00 PM	11	23	34
Total	**1,372**	**1,541**	**2,913**

Table II.C-5.

Hourly Traffic Volumes – IH 45 SBFR, North of Malloy Bridge Road

IH 45 SBFR	
North of Malloy Bridge Road	
September 13, 2011	
Time	Southbound
12:00 AM	10
1:00 AM	4
2:00 AM	22
3:00 AM	22
4:00 AM	11
5:00 AM	66
6:00 AM	113
7:00 AM	114
8:00 AM	72
9:00 AM	110
10:00 AM	129
11:00 AM	125
12:00 PM	159
1:00 PM	107
2:00 PM	155
3:00 PM	144
4:00 PM	160
5:00 PM	170
6:00 PM	93
7:00 PM	73
8:00 PM	51
9:00 PM	33
10:00 PM	23
11:00 PM	24
Total	**1,990**

Table II.C-6.

Hourly Traffic Volumes – IH 45 NBFR, North of Malloy Bridge Road

IH 45 NBFR	
North of Malloy Bridge Road	
September 13, 2011	
Time	Northbound
12:00 AM	9
1:00 AM	3
2:00 AM	6
3:00 AM	33
4:00 AM	29
5:00 AM	64
6:00 AM	128
7:00 AM	157
8:00 AM	123
9:00 AM	125
10:00 AM	95
11:00 AM	136
12:00 PM	119
1:00 PM	119
2:00 PM	133
3:00 PM	149
4:00 PM	102
5:00 PM	71
6:00 PM	75
7:00 PM	36
8:00 PM	26
9:00 PM	16
10:00 PM	24
11:00 PM	12
Total	**1,790**

Table II.C-7.
Hourly Traffic Volumes – IH 45 SBFR, South of FM 660

IH 45 SBFR	
South of FM 660	
September 13, 2011	
Time	Southbound
12:00 AM	4
1:00 AM	3
2:00 AM	0
3:00 AM	4
4:00 AM	5
5:00 AM	39
6:00 AM	60
7:00 AM	92
8:00 AM	50
9:00 AM	59
10:00 AM	50
11:00 AM	65
12:00 PM	61
1:00 PM	37
2:00 PM	57
3:00 PM	91
4:00 PM	67
5:00 PM	86
6:00 PM	49
7:00 PM	63
8:00 PM	52
9:00 PM	33
10:00 PM	15
11:00 PM	6
Total	**1,048**

Table II.C-8.
Hourly Traffic Volumes – IH 45 NBFR, South of FM 660

IH 45 NBFR	
South of FM 660	
September 13, 2011	
Time	Northbound
12:00 AM	1
1:00 AM	2
2:00 AM	3
3:00 AM	1
4:00 AM	3
5:00 AM	38
6:00 AM	61
7:00 AM	129
8:00 AM	79
9:00 AM	46
10:00 AM	49
11:00 AM	40
12:00 PM	44
1:00 PM	47
2:00 PM	50
3:00 PM	73
4:00 PM	85
5:00 PM	96
6:00 PM	72
7:00 PM	37
8:00 PM	42
9:00 PM	19
10:00 PM	9
11:00 PM	5
Total	**1,031**

Table II.C-9.
Hourly Traffic Volumes – FM 660, East of BR 45

FM 660			
East of BR 45			
September 13, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	13	14	27
1:00 AM	5	4	9
2:00 AM	2	1	3
3:00 AM	1	3	4
4:00 AM	3	8	11
5:00 AM	32	35	67
6:00 AM	84	70	154
7:00 AM	177	153	330
8:00 AM	183	147	330
9:00 AM	111	88	199
10:00 AM	83	98	181
11:00 AM	100	103	203
12:00 PM	123	111	234
1:00 PM	103	97	200
2:00 PM	126	162	288
3:00 PM	231	153	384
4:00 PM	226	216	442
5:00 PM	142	126	268
6:00 PM	82	81	163
7:00 PM	77	99	176
8:00 PM	59	66	125
9:00 PM	51	53	104
10:00 PM	38	31	69
11:00 PM	26	18	44
Total	**2,078**	**1,937**	**4,015**

Table II.C-10.
Hourly Traffic Volumes – FM 983, West of BR 45

FM 983			
West of BR 45			
September 13, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	15	9	24
1:00 AM	11	10	21
2:00 AM	12	9	21
3:00 AM	14	14	28
4:00 AM	43	15	58
5:00 AM	113	42	155
6:00 AM	263	148	411
7:00 AM	386	363	749
8:00 AM	284	237	521
9:00 AM	188	151	339
10:00 AM	168	179	347
11:00 AM	181	208	389
12:00 PM	212	194	406
1:00 PM	176	174	350
2:00 PM	228	294	522
3:00 PM	258	303	561
4:00 PM	242	349	591
5:00 PM	273	390	663
6:00 PM	213	294	507
7:00 PM	147	214	361
8:00 PM	111	175	286
9:00 PM	73	100	173
10:00 PM	37	35	72
11:00 PM	21	30	51
Total	**3,669**	**3,937**	**7,606**

Table II.C-11.
Hourly Traffic Volumes – FM 664, West of FM 983

FM 664			
West of FM 983			
September 13, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	14	11	25
1:00 AM	12	9	21
2:00 AM	7	4	11
3:00 AM	11	14	25
4:00 AM	28	14	42
5:00 AM	91	40	131
6:00 AM	259	114	373
7:00 AM	494	303	797
8:00 AM	263	178	441
9:00 AM	160	145	305
10:00 AM	145	145	290
11:00 AM	161	168	329
12:00 PM	170	176	346
1:00 PM	143	148	291
2:00 PM	172	211	383
3:00 PM	233	309	542
4:00 PM	227	260	487
5:00 PM	235	340	575
6:00 PM	179	237	416
7:00 PM	136	176	312
8:00 PM	108	156	264
9:00 PM	62	89	151
10:00 PM	34	40	74
11:00 PM	19	26	45
Total	**3,363**	**3,313**	**6,676**

Table II.C-12.
Hourly Traffic Volumes – East 5th Street, East of BR 45

East 5th Street			
East of BR 45			
September 13, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	10	11	21
1:00 AM	5	5	10
2:00 AM	7	5	12
3:00 AM	5	9	14
4:00 AM	19	5	24
5:00 AM	89	17	106
6:00 AM	193	67	260
7:00 AM	316	169	485
8:00 AM	161	108	269
9:00 AM	90	94	184
10:00 AM	91	100	191
11:00 AM	107	124	231
12:00 PM	90	121	211
1:00 PM	92	109	201
2:00 PM	105	143	248
3:00 PM	166	227	393
4:00 PM	110	214	324
5:00 PM	129	239	368
6:00 PM	98	160	258
7:00 PM	93	105	198
8:00 PM	69	91	160
9:00 PM	66	79	145
10:00 PM	38	43	81
11:00 PM	28	27	55
Total	**2,177**	**2,272**	**4,449**

Table II.C-13.
Hourly Traffic Volumes – Malloy Bridge Road, East of IH 45

Malloy Bridge Road			
East of IH 45			
September 13, 2011			
Time	Eastbound	Westbound	Total
12:00 AM	8	2	10
1:00 AM	9	2	11
2:00 AM	3	5	8
3:00 AM	4	12	16
4:00 AM	6	12	18
5:00 AM	38	47	85
6:00 AM	89	83	172
7:00 AM	108	102	210
8:00 AM	66	64	130
9:00 AM	63	86	149
10:00 AM	61	47	108
11:00 AM	54	79	133
12:00 PM	64	47	111
1:00 PM	53	50	103
2:00 PM	69	78	147
3:00 PM	95	90	185
4:00 PM	100	117	217
5:00 PM	84	87	171
6:00 PM	69	80	149
7:00 PM	51	36	87
8:00 PM	47	31	78
9:00 PM	15	19	34
10:00 PM	8	17	25
11:00 PM	7	11	18
Total	**1,171**	**1,204**	**2,375**

Table II.C-14.

Existing Vehicle Classification – BR 45, North of Skyline Landfill Driveway

BR 45							
North of Skyline Landfill Driveway							
September 13, 2011							
Northbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	5	3%	24	13%	157	84%	186
8:00 - 9:00 AM	1	1%	23	18%	104	81%	128
4:00 – 5:00 PM	0	0%	14	14%	86	86%	100
5:00 – 6:00 PM	4	4%	11	11%	85	85%	100
NB SUBTOTAL	10	2%	72	14%	432	84%	514
Southbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	1	1%	23	18%	105	81%	129
8:00 - 9:00 AM	2	2%	24	25%	71	73%	97
4:00 – 5:00 PM	3	2%	24	15%	131	83%	158
5:00 – 6:00 PM	2	1%	7	4%	183	95%	192
SB SUBTOTAL	8	1%	78	14%	490	85%	576
TOTAL	**18**	**2%**	**150**	**14%**	**922**	**84%**	**1,090**

Table II.C-15.

Existing Vehicle Classification – BR 45, South of Skyline Landfill Driveway

BR 45							
South of Skyline Landfill Driveway							
September 13, 2011							
Northbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	5	3%	4	2%	159	95%	168
8:00 - 9:00 AM	1	1%	8	7%	103	92%	112
4:00 – 5:00 PM	1	1%	6	8%	67	91%	74
5:00 – 6:00 PM	4	5%	2	3%	73	92%	79
NB SUBTOTAL	11	3%	20	5%	402	92%	433
Southbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	1	1%	8	7%	99	92%	108
8:00 - 9:00 AM	2	3%	2	3%	68	94%	72
4:00 – 5:00 PM	2	1%	5	4%	131	95%	138
5:00 – 6:00 PM	2	1%	1	1%	184	98%	187
SB SUBTOTAL	7	1%	16	3%	482	96%	505
TOTAL	**18**	**2%**	**36**	**4%**	**884**	**94%**	**938**

Table II.C-16.

Existing Vehicle Classification – IH 45 SBFR, North of Malloy Bridge Road

IH 45 SBFR							
North of Malloy Bridge Road							
September 13, 2011							
Southbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	3	3%	16	13%	101	84%	120
8:00 - 9:00 AM	5	6%	20	24%	59	70%	84
4:00 – 5:00 PM	3	2%	21	13%	141	85%	165
5:00 – 6:00 PM	2	1%	8	5%	157	94%	167
TOTAL	**13**	**2%**	**65**	**12%**	**458**	**86%**	**536**

Table II.C-17.

Existing Vehicle Classification – IH 45 NBFR, North of Malloy Bridge Road

IH 45 NBFR							
North of Malloy Bridge Road							
September 13, 2011							
Northbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	7	5%	8	5%	131	90%	146
8:00 - 9:00 AM	6	7%	12	14%	70	79%	88
4:00 – 5:00 PM	0	0%	9	10%	81	90%	90
5:00 – 6:00 PM	3	5%	5	8%	54	87%	62
TOTAL	**16**	**4%**	**34**	**9%**	**336**	**87%**	**386**

Table II.C-18.

Existing Vehicle Classification – IH 45 SBFR, South of FM 660

IH 45 SBFR							
South of FM 660							
September 13, 2011							
Southbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	87	100%	87
8:00 - 9:00 AM	0	0%	0	0%	39	100%	39
4:00 – 5:00 PM	0	0%	0	0%	64	100%	64
5:00 – 6:00 PM	0	0%	0	0%	82	100%	82
TOTAL	**0**	**0%**	**0**	**0%**	**272**	**100%**	**272**

Table II.C-19.

Existing Vehicle Classification – IH 45 NBFR, South of FM 660

IH 45 NBFR							
South of FM 660							
September 13, 2011							
Northbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	132	100%	132
8:00 - 9:00 AM	0	0%	0	0%	72	100%	72
4:00 – 5:00 PM	3	4%	0	0%	77	96%	80
5:00 – 6:00 PM	0	0%	0	0%	92	100%	92
TOTAL	**3**	**1%**	**0**	**0%**	**373**	**99%**	**376**

Table II.C-20

Existing Vehicle Classification – FM 660, East of BR 45

FM 660							
East of BR 45							
September 13, 2011							
Eastbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	163	100%	163
8:00 - 9:00 AM	0	0%	0	0%	179	100%	179
4:00 – 5:00 PM	0	0%	0	0%	224	100%	224
5:00 – 6:00 PM	0	0%	0	0%	136	100%	136
EB SUBTOTAL	0	0%	0	0%	702	100%	702
Westbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	1	1%	0	0%	148	99%	149
8:00 - 9:00 AM	0	0%	0	0%	152	100%	152
4:00 – 5:00 PM	1	<1%	1	<1%	202	99%	204
5:00 – 6:00 PM	0	0%	0	0%	128	100%	128
WB SUBTOTAL	2	<1%	1	<1%	630	99%	633
TOTAL	**2**	**<1%**	**1**	**<1%**	**1,332**	**99%**	**1,335**

Table II.C-21.
Existing Vehicle Classification – FM 983, West of BR 45

FM 983							
West of BR 45							
September 13, 2011							
Eastbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	1	<1%	1	<1%	371	99%	373
8:00 - 9:00 AM	2	1%	5	2%	281	97%	288
4:00 – 5:00 PM	1	<1%	4	2%	228	98%	233
5:00 – 6:00 PM	1	<1%	1	<1%	268	99%	270
EB SUBTOTAL	5	<1%	11	1%	1,148	99%	1,164
Westbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	1	<1%	1	<1%	334	99%	336
8:00 - 9:00 AM	0	0%	0	0%	226	100%	226
4:00 – 5:00 PM	0	0%	2	1%	328	99%	330
5:00 – 6:00 PM	0	0%	1	<1%	386	99%	387
WB SUBTOTAL	1	<1%	4	<1%	1,274	99%	1,279
TOTAL	**6**	**<1%**	**15**	**1%**	**2,422**	**99%**	**2,443**

Table II.C-22.
Existing Vehicle Classification – FM 664, West of FM 983

FM 664							
West of FM 983							
September 13, 2011							
Eastbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	3	1%	1	<1%	474	99%	478
8:00 - 9:00 AM	3	1%	5	2%	239	97%	247
4:00 – 5:00 PM	2	1%	4	2%	206	97%	212
5:00 – 6:00 PM	1	<1%	1	<1%	241	99%	243
EB SUBTOTAL	9	1%	11	1%	1,160	98%	1,180
Westbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	305	100%	305
8:00 - 9:00 AM	0	0%	0	0%	180	100%	180
4:00 – 5:00 PM	2	1%	2	1%	257	98%	261
5:00 – 6:00 PM	1	<1%	1	<1%	347	99%	349
WB SUBTOTAL	3	<1%	3	<1%	1,089	99%	1,095
TOTAL	**12**	**1%**	**14**	**1%**	**2,249**	**98%**	**2,275**

Table II.C-23.

Existing Vehicle Classification – East 5th Street, East of BR 45

East 5th Street							
East of BR 45							
September 13, 2011							
Eastbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	324	100%	324
8:00 - 9:00 AM	0	0%	0	0%	149	100%	149
4:00 – 5:00 PM	0	0%	0	0%	112	100%	112
5:00 – 6:00 PM	0	0%	0	0%	128	100%	128
EB SUBTOTAL	0	0%	0	0%	713	100%	713
Westbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	0	0%	162	100%	162
8:00 - 9:00 AM	0	0%	0	0%	106	100%	106
4:00 – 5:00 PM	0	0%	0	0%	188	100%	188
5:00 – 6:00 PM	0	0%	0	0%	246	100%	246
WB SUBTOTAL	0	0%	0	0%	702	100%	702
TOTAL	**0**	**0%**	**0**	**0%**	**1,415**	**100%**	**1,415**

Table II.C-24.

Existing Vehicle Classification – Malloy Bridge Road, East of IH 45

Malloy Bridge Road							
East of IH 45							
September 13, 2011							
Eastbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	0	0%	4	5%	84	95%	88
8:00 - 9:00 AM	0	0%	3	6%	51	94%	54
4:00 – 5:00 PM	1	1%	1	1%	79	98%	81
5:00 – 6:00 PM	0	0%	0	0%	78	100%	78
EB SUBTOTAL	1	<1%	8	3%	292	97%	301
Westbound							
Time Period	Heavy Vehicles		Waste Vehicles		Other Vehicles		Total
	No.	%	No.	%	No.	%	
7:00 - 8:00 AM	8	8%	1	1%	89	91%	98
8:00 - 9:00 AM	4	7%	4	7%	51	86%	59
4:00 – 5:00 PM	1	1%	1	1%	106	98%	108
5:00 – 6:00 PM	1	1%	0	0%	82	99%	83
WB SUBTOTAL	14	4%	6	2%	328	94%	348
TOTAL	**15**	**2%**	**14**	**2%**	**620**	**96%**	**649**

EXISTING TRAFFIC ANALYSIS

Roadway Capacity Analysis Methodology

The Highway Capacity Manual (Ref. 5) provides methodologies for estimating roadway operating levels of service (LOS) in terms of comparing expected speed-flow and density-flow relationships. Roadway LOS is characterized by four performance measures:

- Density of the traffic lane (passenger cars per mile per lane)
- Speed of the traffic (miles per hour)
- Volume to capacity ratio of the travel lane
- Percent time spent following

Each of these measures affects the overall roadway operating level of service. In general, overall operating levels of service A to D are typically deemed acceptable, while an overall LOS of E or F is unacceptable, in terms of the roadway capacity. Each level of service is described in detail within the Highway Capacity Manual and is summarized below:

- Level of Service A – Under LOS A, the roadway operates at free flow conditions. There is very little interaction among vehicles on the roadway. All drivers can travel at the posted speed limit if they desire and maneuverability is good.
- Level of Service B – Under LOS B, drivers start to notice other vehicles on the roadway but operations are still at free flow conditions. Maneuverability is somewhat limited due to the presence of vehicles.
- Level of Service C – Under LOS C, drivers are affected by the presence of other vehicles on the roadway. The speed at which drivers can travel has become clearly affected and maneuverability is limited due to the presence of vehicles. Due to the higher number of vehicles, a minor incident can easily turn into a major traffic problem.
- Level of Service D – Under LOS D conditions, the driver's ability to maneuver is severely impaired. Due to the high volume of vehicles, the travel speed has become greatly reduced.

- Level of Service E – Under LOS E conditions, the roadway is operating at or near capacity. Vehicle headways have reached minimum spacing, and incidents cannot be easily absorbed into the system.
- Level of Service F – Under LOS F conditions, the roadway has reached capacity and is experiencing breakdown flow. Long queues are easily formed due to vehicles arriving at a rate that is faster than they can be discharged.

Based on the criteria given in the Highway Capacity Manual, the first step in the analysis of the roadway network was to categorize the roadways within one mile of the landfill facility for analysis purposes. Based on its operating characteristics, IH 45 was classified as a freeway facility; however, the IH 45 frontage roads operate as multilane highway facilities. BR 45, FM 660, FM 983, and East 5th Street also operate as urban street facilities. Further discussion of urban street facilities and analysis methodologies used for each follows. FM 664 and Malloy Bridge Road were classified as rural two-lane highways based on their functional characteristics.

Urban street facilities are roadways that experience interrupted flow. Stop signs, traffic signals, and/or roundabout intersections located within two mile intervals along the roadway effectively meter the flow of traffic on the roadway. For this reason, urban street facilities experience level of service differently than rural two-lane and multilane highway facilities. However, since roadway capacity is a function of roadway cross-section, analysis of urban streets using rural highway analysis methodologies provides a baseline value for the effectiveness of the facility. For this reason, BR 45, FM 660, FM 983, and East 5th Street were analyzed as two-lane rural highways using the microcomputer software program HCS2000 (Ref. 6). In order to quantify the factors related to urban street levels of service on these facilities, intersection analysis was also performed for major intersections within the study area, using the microcomputer software program "Synchro 7.0" (Ref. 7), which is based on the methodology specified in the Highway Capacity Manual.

The existing traffic volumes on study area roadways are listed in Table II.C-25. Estimated daily landfill trips and landfill trip distribution were provided by Biggs & Matthews Environmental. Tables II.C-26 and II.C-27 summarize the volumes and LOS results.

Table II.C-25.
2011 Existing Traffic Volumes

Location	Existing Traffic Volumes 2011					
	Daily			Peak Hour		
	Landfill Trips[1]	Non-Landfill Trips[2]	Total	Landfill Trips	Non-Landfill Trips	Total
BR 45, North of Skyline Landfill Driveway	569	3,492	4,061	67	272	339
BR 45, South of Skyline Landfill Driveway	117	2,796	2,913	11	276	287
IH 45 SBFR, North of Malloy Bridge Road	239	1,751	1,990	21	144	165
IH 45 NBFR, North of Malloy Bridge Road	161	1,629	1,790	15	138	153
IH 45 SBFR, South of FM 660	0	1,048	1,048	0	85	85
IH 45 NBFR, South of FM 660	0	1,031	1,031	0	134	134
FM 660, East of BR 45	3	4,012	4,015	0	534	534
FM 983, West of BR 45	76	7,530	7,606	0	1,170	1,170
FM 664, West of FM 983	67	6,609	6,676	0	797	797
East 5th Street, East of BR 45	0	4,449	4,449	0	525	525
Malloy Bridge Road, East of IH 45	48	2,327	2,375	2	189	191

Notes:
1 – Calculated from waste vehicle percentages in vehicle classification counts
2 – Total 24 hour volume minus calculated landfill trips

Table II.C-26.

Level of Service for 2011 Existing Traffic Volumes (Two-Lane Highway Analysis)

Location	Roadway Capacity (pc/hr)	Peak Hour Volume (veh/hr)	% of Access Road Capacity Used[1]	HCM Roadway LOS[2]	% of Roadway Capacity Used by Existing Landfill Vehicles[1]
BR 45, North of Landfill Drwy	3,200	339	10.6	n/a[3]	2.1
FM 660	3,200	534	16.7	n/a[3]	<0.1
FM 983	3,200	1,170	36.6	n/a[3]	<0.1
FM 664	3,200	797	24.9	D	<0.1
East 5th Street	3,200	525	16.4	n/a[3]	<0.1
Malloy Bridge Road	3,200	191	6.0	A	0.1

Notes:

1 – Based on traffic volumes (veh/hr) compared with capacity (pc/hr).
2 – Refer to HCM Exhibit 20-3 for Class I LOS criteria and Exhibit 20-4 for Class II LOS Criteria
3 – Two-lane rural highway analysis LOS not applicable on urban streets – Refer to intersection analyses for LOS

Table II.C-27.

Level of Service for 2011 Existing Traffic Volumes (Multilane Highway Analysis)

Location	Access Road Capacity (Calculated)	One Way Peak Hour Volume (veh/hr)	% of Access Road Capacity Used[1]	HCM Roadway LOS	Landfill Vehicles % of One Way Capacity - Peak Hour[1]
IH 45 SBFR, North of Malloy Bridge Road	2,090 pc/hr/ln	165	3.9	A	0.5
IH 45 NBFR, North of Malloy Bridge Road	2,056 pc/hr/ln	153	3.7	A	0.4
IH 45 SBFR, South of FM 660	1,900 pc/hr/ln[2]	85	2.2	A	<0.1
IH 45 NBFR, South of FM 660	1,902 pc/hr/ln	134	3.5	A	<0.1

Notes:

1 – Based on traffic volumes (veh/hr) compared with capacity (pc/hr)
2 - Minimum access road capacity used – calculated free flow speed < 45 mph.

Intersection Analysis

BR 45 and Skyline Landfill Driveway

The Waste Management Driveway forms the stop-controlled eastbound approach at this unsignalized "T" intersection. The northbound approach of BR 45 provides one left turn/through shared lane, and the southbound approach provides one through/right turn shared lane. The eastbound approach of Skyline Landfill Driveway provides one left turn/right turn shared lane. Current overall LOS is A during both the AM and PM peak periods. No sight distance limitations were observed during field review of intersection operations.

IH 45 and Malloy Bridge Road (East Intersection)

Malloy Bridge Road and the IH 45 Northbound Frontage Road form an all-way stop controlled intersection. The IH 45 Northbound Frontage Road provides one left turn/through/right turn shared lane. The eastbound approach of Malloy Bridge Road provides one left turn/through shared lane, and the westbound approach provides one through/right turn shared lane. Current overall LOS is A during both the AM and PM peak periods. No sight distance limitations or other safety factors were observed during field review of intersection operations.

IH 45 and Malloy Bridge Road/BR 45/Millers Ferry Road (West Intersection)

Malloy Bridge Road, the IH 45 Southbound Frontage Road, Millers Ferry Road, and BR 45 form an all-way stop controlled intersection. The northbound approach of BR 45 provides one left turn/right turn shared lane. The IH 45 Southbound Frontage Road provides one left turn lane and one through/right turn shared lane. The eastbound approach of Millers Ferry Road provides one through/right turn lane. The westbound approach of Malloy Bridge Road provides one left turn/through lane. Immediately to the east of the intersection, Malloy Bridge Road provides an eastbound right turn and a westbound left turn onto the southbound IH 45 on-ramp. Current overall LOS is A during both the AM and PM peak periods. No sight distance limitations or other safety factors were observed during field review of intersection operations.

BR 45 and FM 660/West 8th Street

BR 45 and FM 660/West 8th Street form an all-way stop controlled intersection. The northbound and southbound approaches of BR 45 each provide one left turn/through/right turn shared lane. The eastbound approach of West 8th Street is unstriped, but provides one left turn/through/right turn shared lane. The westbound approach of FM 660 provides one left turn/through/right turn shared lane. Current overall LOS is A and B during the AM and PM peak periods, respectively. No sight distance limitations or other safety factors were observed during field review of intersection operations.

BR 45 and FM 983

BR 45 and FM 983/East 6th Street form an all-way stop controlled intersection. The northbound and southbound approaches of BR 45 each provide one left turn/through/right turn shared lane. The eastbound approach of FM 983 provides one left turn/through/right turn shared lane. The westbound approach of East 6th Street is unstriped, but provides one left turn/through/right turn shared lane. Current overall LOS is B during both the AM and PM peak periods. No sight distance limitations or other safety factors were observed during field review of intersection operations.

BR 45 and 5th Street

BR 45 and 5th Street form an all-way stop controlled intersection. The northbound and southbound approaches of BR 45 each provide one left turn/through/right turn shared lane. The eastbound and westbound approaches of 5th Street each provide one left turn/through/right turn shared lane. Current overall LOS is B and A during the AM and PM peak periods, respectively. No sight distance limitations or other safety factors were observed during field review of intersection operations.

FM 983 and FM 664

The south leg of FM 983 forms the stop-controlled northbound approach of this "T"-intersection. The south and east legs of this intersection are designated as FM 983, and the

west leg is designated as FM 664. The northbound approach of FM 983 provides one left turn/right turn shared lane. The eastbound approach of FM 664 provides one through/right turn shared lane. The westbound approach of FM 983 provides one left turn lane and one through lane. Current overall LOS is A during both the AM and PM peak periods. No sight distance limitations or other safety factors were observed during field review of intersection operations.

IH 45 and FM 660 (East Intersection)

The IH 45 Northbound Frontage Road and FM 660 form an all-way stop controlled intersection. The IH 45 Northbound Frontage Road provides one left turn/through shared lane and one through/right turn shared lane; however, due to the offset alignment of the IH 45 Northbound Frontage Road through the intersection, the left turn/through shared lane operates as a de facto left turn lane. The eastbound approach of FM 660 provides one left turn/through shared lane, and the westbound approach provides one through/right turn shared lane. Current overall LOS is C and B during the AM and PM peak periods, respectively. No sight distance limitations or other safety factors were observed during field review of intersection operations.

IH 45 and FM 660 (West Intersection)

The IH 45 Southbound Frontage Road and FM 660 form an all-way stop controlled intersection. The IH 45 Southbound Frontage Road provides one left turn/through shared lane and one through/right turn shared lane. The eastbound approach of FM 660 provides one through/right turn shared lane, and the westbound approach provides one left turn/through shared lane. Current overall LOS is B during both the AM and PM peak periods. No sight distance limitations or other safety factors were observed during field review of intersection operations.

IH 45 and East 5th Street (East Intersection)

The IH 45 Northbound Frontage Road and East 5th Street form an all-way stop controlled intersection. The IH 45 Northbound Frontage Road provides one left turn/through shared lane

and one through/right turn shared lane. The eastbound approach of East 5th Street provides one left turn/through shared lane, and the westbound approach provides one through/right turn shared lane. Current overall LOS is B and A during the AM and PM peak periods, respectively. No sight distance limitations or other safety factors were observed during field review of intersection operations.

IH 45 and East 5th Street (West Intersection)

The IH 45 Southbound Frontage Road and East 5th Street form an all-way stop controlled intersection. The IH 45 Southbound Frontage Road provides one left turn/through shared lane and one through/right turn shared lane. The eastbound approach of East 5th Street provides one through/right turn shared lane, and the westbound approach provides one left turn/through shared lane. Current overall LOS is B and A during the AM and PM peak periods, respectively. No sight distance limitations or other safety factors were observed during field review of intersection operations.

FUTURE TRAFFIC ANALYSIS

Projected landfill traffic volumes include the following contributing elements:

- Private vehicles belonging to facility personnel
- Waste shipment vehicles
- Hauling facility (Waste Management) vehicles staged on-site

Existing and future site-generated vehicular traffic volumes were provided by Biggs & Matthews Environmental. Existing and proposed landfill trip distributions were calculated based on existing turning movement and classification data collected during the study. Estimated daily site-generated traffic is shown in Table II.C-28. Biggs & Matthews Environmental provided the following description of projected landfill operations:

- Landfill traffic growth was developed independently of background traffic. Existing classification counts noted in Tables II.C-14 through II.C-24 above provided the basis for determining future landfill trip distribution. All landfill traffic will enter and exit the site to BR 45 via the landfill driveway. Based on classification counts collected during the study, approximately 83 percent of all landfill traffic will enter and exit from the north on BR 45, and approximately 17 percent of all landfill traffic will enter and exit from the south on BR 45.
- Under the expanded operational permit being proposed by the landfill facility, the landfill is projected to be operational 24-hours per day, Monday through Friday, and 12:00 AM through 3:00 PM on Saturday.

Table II.C-28.
Estimated Average Daily Traffic Volumes for the Landfill

Year 2011 Number of Existing Trips	Year 2044 Projected Number of Trips
1,004	1,567

Background traffic growth rates were determined based on information obtained from TxDOT Historical ADT Traffic Maps (Ref. 3), and the Skyline Landfill Facility Traffic Projections table prepared as part of this permit application and attached in the appendix (Ref. 8). Based on the data obtained during the study, it was assumed that background traffic (or non-site traffic) within the study area will increase annually at a rate of one (1) percent over the life of the facility.

The projected traffic volumes on each study area roadway are listed in Table II.C-29.

Roadway Capacity Analysis

In order to determine the roadway level of service under existing and 2044 traffic conditions, a comparison between the expected speed-flow and density-flow was made. Traffic volumes were projected using the traffic counts collected by HDR as the base value. All roadway improvements noted within this report were assumed to be completed prior to design year 2044 conditions. Tables II.C-30 and II.C-31 summarize peak hour volume projections and capacity analysis results for year 2044. As shown, traffic generated by the landfill will represent a very small portion of the capacity of each study area roadway during the peak hour: 3.3 percent on BR 45, 0.8 percent on IH 45 SBFR, 0.6 percent on IH 45 NBFR, 0.1 percent on Malloy Bridge Road, and less than 0.1 percent on FM 660, FM 664, FM 983, and East 5th Street.

It should be noted that these calculations are based on traffic volumes assumed to occur during the peak period of traffic flow for each roadway, not on daily traffic volumes. It is more appropriate to evaluate a roadway based on its peak hour volume rather than the 24-hour volume, since peak hour volumes provide a better indication of the operating conditions of the roadway. Peak hour flows were determined based on existing traffic turning movement counts collected by HDR during the study. The future peak hour volumes were determined using historical count data obtained from TxDOT and the Skyline Landfill Traffic Projections included as part of this permit application. Projected landfill site traffic volumes were based on the

projected waste acceptance rate provided by Biggs & Matthews Environmental. It should be noted that the proposed change to the operational hours of the facility may have an impact on the peak hour landfill traffic accessing the site. However, this impact is likely to be minor – the distribution of waste acceptance vehicles is not uniform throughout the day – and will generally result in fewer vehicles per hour for each hour of operation, including the peak hour of operation. For this reason, and to provide a reasonable and conservative estimation of landfill trips, the current landfill trip distribution was maintained for future projection of landfill based trips.

Table II.C-29.
2044 Forecasted Traffic Volumes

Location	Projected Traffic Volume at 2044 Facility Closure					
	Daily			Peak Hour		
	Landfill Trips	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total
BR 45, North of Skyline Landfill Driveway	888	4,854	5,742	105	378	483
BR 45, South of Skyline Landfill Driveway	183	3,886	4,069	17	384	401
IH 45 SBFR, North of Malloy Bridge Road	373	2,434	2,807	33	200	233
IH 45 NBFR, North of Malloy Bridge Road	251	2,264	2,515	23	192	215
IH 45 SBFR, South of FM 660	0	1,457	1,457	0	118	118
IH 45 NBFR, South of FM 660	0	1,433	1,433	0	186	186
FM 660, East of BR 45	5	5,577	5,582	0	742	742
FM 983, West of BR 45	119	10,467	10,586	0	1,626	1,626
FM 664, West of FM 983	105	9,187	9,292	0	1,108	1,108
East 5th Street, East of BR 45	0	6,184	6,184	0	730	730
Malloy Bridge Road, East of IH 45	75	3,235	3,310	3	263	266

Table II.C-30.

Level of Service for 2044 Forecasted Traffic Volumes (Two-Lane Highway Analysis)

Location	Roadway Capacity (pc/hr)	Peak Hour Volume (veh/hr)	% of Access Road Capacity Used[1]	HCM Roadway LOS[2]	% of Roadway Capacity Used by Forecasted Landfill Vehicles[1]
BR 45, North of Landfill Drwy	3,200	483	15.1	n/a[3]	3.3
FM 660	3,200	742	23.2	n/a[3]	<0.1
FM 983	3,200	1,626	50.8	n/a[3]	<0.1
FM 664	3,200	1,108	34.6	E	<0.1
East 5th Street	3,200	730	22.8	n/a[3]	<0.1
Malloy Bridge Road	3,200	266	8.3	A	0.1

Note:

1 – Based on traffic volumes (veh/hr) compared to capacity (pc/hr)
2 – Refer to HCM Exhibit 20-3 for Class I LOS criteria and Exhibit 20-4 for Class II LOS Criteria
3 – Two-lane rural highway analysis LOS not applicable on urban streets – Refer to intersection analyses for LOS

Table II.C-31

Level of Service for 2044 Forecasted Traffic Volumes (Multilane Highway Analysis)

Location	Access Road Capacity (Calculated)	One Way Peak Hour Volume (veh/hr)	% of Access Road Capacity Used[1]	Roadway LOS	Landfill Vehicles % of One Way Capacity - Peak Hour[1]
IH 45 SBFR, North of Malloy Bridge Road	2,090 pc/hr/ln	233	5.6	A	0.8
IH 45 NBFR, North of Malloy Bridge Road	2,056 pc/hr/ln	215	5.2	A	0.6
IH 45 SBFR, South of FM 660	1,900 pc/hr/ln[2]	118	3.1	A	<0.1
IH 45 NBFR, South of FM 660	1,902 pc/hr/ln	186	4.9	A	<0.1

Notes:

1 – Based on volumes (veh/hr) compared to capacity (pc/hr)
2 – Minimum access road capacity used – calculated free flow speed < 45 mph.

Intersection Analysis

BR 45 and Skyline Landfill Driveway

This intersection will operate at LOS A during both the AM and PM peak periods under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained.

IH 45 and Malloy Bridge Road (East Intersection)

This intersection will operate at LOS A during both the AM and PM peak periods under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

IH 45 and Malloy Bridge Road/BR 45/Millers Ferry Road (West Intersection)

This intersection will operate at LOS A during both the AM and PM peak periods under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

BR 45 and FM 660

This intersection will operate at LOS B and F during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. It should be noted that landfill traffic does not cause this intersection to operate at unacceptable levels of service; therefore, no improvements are recommended at this intersection as part of this transportation study.

BR 45 and FM 983

This intersection will operate at LOS E and C during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. It should be noted that landfill traffic does not cause this intersection to operate at unacceptable levels of service; therefore, no improvements are recommended at this intersection as part of this transportation study.

BR 45 and East 5th Street

This intersection will operate at LOS C and B during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

FM 983 and FM 664

This intersection will operate at LOS F and A during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. It should be noted that landfill traffic does not cause this intersection to operate at unacceptable levels of service; therefore, no improvements are recommended at this intersection as part of this transportation study.

IH 45 and FM 660 (East Intersection)

This intersection will operate at LOS F and C during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. It should be noted that landfill traffic does not cause this intersection to operate at unacceptable levels of service; therefore, no improvements are recommended at this intersection as part of this transportation study.

IH 45 and FM 660 (West Intersection)

This intersection will operate at LOS C and B during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

IH 45 and East 5th Street (East Intersection)

This intersection will operate at LOS C and A during the AM and PM peak periods, respectively, under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

IH 45 and East 5th Street (West Intersection)

This intersection will operate at LOS C and B during the AM and PM peak periods, respectively under 2044 forecasted conditions, assuming existing geometrics and traffic controls are maintained. No improvements are recommended at this intersection.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the information gathered during this transportation study, the following conclusions are made concerning the impact of the proposed expansion of the Skyline Landfill Facility on the local transportation system serving the site.

- FM 660 and FM 983 have maximum gross vehicle weights of 58,420 lbs. All other access roadways within one mile of the site have maximum gross vehicle weight limits of 80,000 lbs.
- Roadway improvements currently planned or under construction within the study area include construction of a six lane toll-road running east-west through the roadway network (Loop 9) between US 287 and IH 20, installation of wireless incident detection and response system on IH 45 from IH 20 to the Dallas/Ellis County line, a feasibility study to widen FM 664 from two to four lanes between US 287 and IH 45, and a study to realign FM 664 to the south of downtown Ferris. For the purpose of this study, none of these improvements were assumed to be constructed prior to 2044 conditions. Implementation of these improvements, and others identified and implemented during the life of the facility, will have an impact on the operation of the roadway network, prediction of which is beyond the scope of this study.
- Based on the roadway capacity analysis, all main access roadways within one mile of the site will operate at acceptable levels of service, with the exception of FM 664.
- FM 664 will operate at an unacceptable level of service under 2044 forecasted conditions, with or without facility related traffic. Addition of site traffic does not result in a deterioration of LOS on this roadway. Upgrade/realignment of FM 664, as proposed by NCTCOG and TxDOT, will have a significant positive impact on the level of service of this facility.
- Based on the intersection capacity analysis, the intersections of BR 45 with FM 660 and FM 983, FM 983 with FM 664, and FM 660 with the IH 45 Southbound Frontage Road will operate at unacceptable levels of service under 2044 forecasted conditions, with or without facility related traffic. It should be noted that site traffic does not result in a deterioration of LOS for any of the study area intersections.

- As detailed in Tables II.C-26 and II.C-27, 2011 existing landfill traffic accounts for less than three (3) percent of the overall roadway capacity on each of the study area roadways during the observed peak hour for each.
- As detailed in Tables II.C-30 and II.C-31, under 2044 forecasted traffic conditions, the landfill traffic will account for less than four (4) percent of the overall roadway capacity on each of the study area roadways during the observed peak hour for each.
- No sight distance limitations were observed during field review of intersection operations.
- Based on the information presented previously, there are no existing or future restrictions on the main access roadways within one mile of the site that would preclude safe and efficient operations for landfill vehicles and other traffic in the area.

REFERENCES

1. Mobility 2035: The Metropolitan Transportation Plan for North Central Texas, North Central Texas Council of Governments, Arlington, Texas, March 2011.
2. 2011-2014 Transportation Improvement Program for North Central Texas, North Central Texas Council of Governments, Arlington, Texas, Approved on June 3, 2010, Amended on March 10, 2011.
3. 2000 - 2010 Traffic Maps, Dallas District, Texas Department of Transportation, http://www.txdot.gov/travel/planning_map.htm, Austin, Texas.
4. A Policy on Geometric Design of Highways and Streets, Sixth Edition, American Association of State Highway and Transportation Officials, Washington, D.C., 2011.
5. Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010.
6. HCS2000 Highway Capacity Software, v4.1f, McTrans Center, University of Florida, Gainesville, Florida, 2003.
7. David Husch, John Albeck, "Synchro 7.0", Trafficware, Albany, California, 2007
8. Skyline Landfill Traffic Projections, WMI Skyline Landfill Permit Amendment, Prepared by Biggs & Matthews Environmental, Appendix 12 to Appendix II.C, January 24, 2012.

APPENDIX

1. TxDOT-Dallas Coordination Letter II.C-56
2. TxDOT-Ellis Coordination Letter II.C-59
3. City of Ferris Coordination Letter II.C-62
4. City of Wilmer Coordination Letter II.C-65
5. Dallas County Coordination Letter II.C-68
6. Ellis County Coordination Letter II.C-71
7. Ferris I.S.D. Coordination Letter II.C-74
8. Dallas I.S.D. Coordination Letter II.C-76
9. Lancaster I.S.D. Coordination Letter II.C-77
10. TxDOT-Ellis Formal Response II.C-78
11. Ellis County Formal Response II.C-79
12. Skyline Landfill Traffic Projections II.C-113
13. Site Traffic Distribution Worksheets II.C-115
14. HCS Analysis Worksheets II.C-127
15. Synchro Analysis Worksheets II.C-149

October 10, 2011

Mr. Paul Williams, P.E.
Area Engineer
TxDOT Dallas District – Dallas East
P.O. Box 3067
Dallas, Texas 75221

Subject: Skyline Landfill, Ferris, Texas

Dear Mr. Williams:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with the Texas Department of Transportation (TxDOT) consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on BR 45 (N Central Street), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is BR 45. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like TxDOT to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for the following roadways in the vicinity of the site. This information will be used to compare the traffic anticipated to be generated by the Skyline Landfill with the TxDOT traffic projections:
    1. BR 45 (North Central Street)
    2. IH 45
- Please provide the capacity determined by TxDOT for the roadways listed above in the vicinity of the site.
- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site, specifically on roadways listed above. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.
- Please provide any special design criteria that may be required for the operation of the landfill.
- Please provide existing cross-section data showing travel lane and shoulder widths for the roadways listed above in the vicinity of the site.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

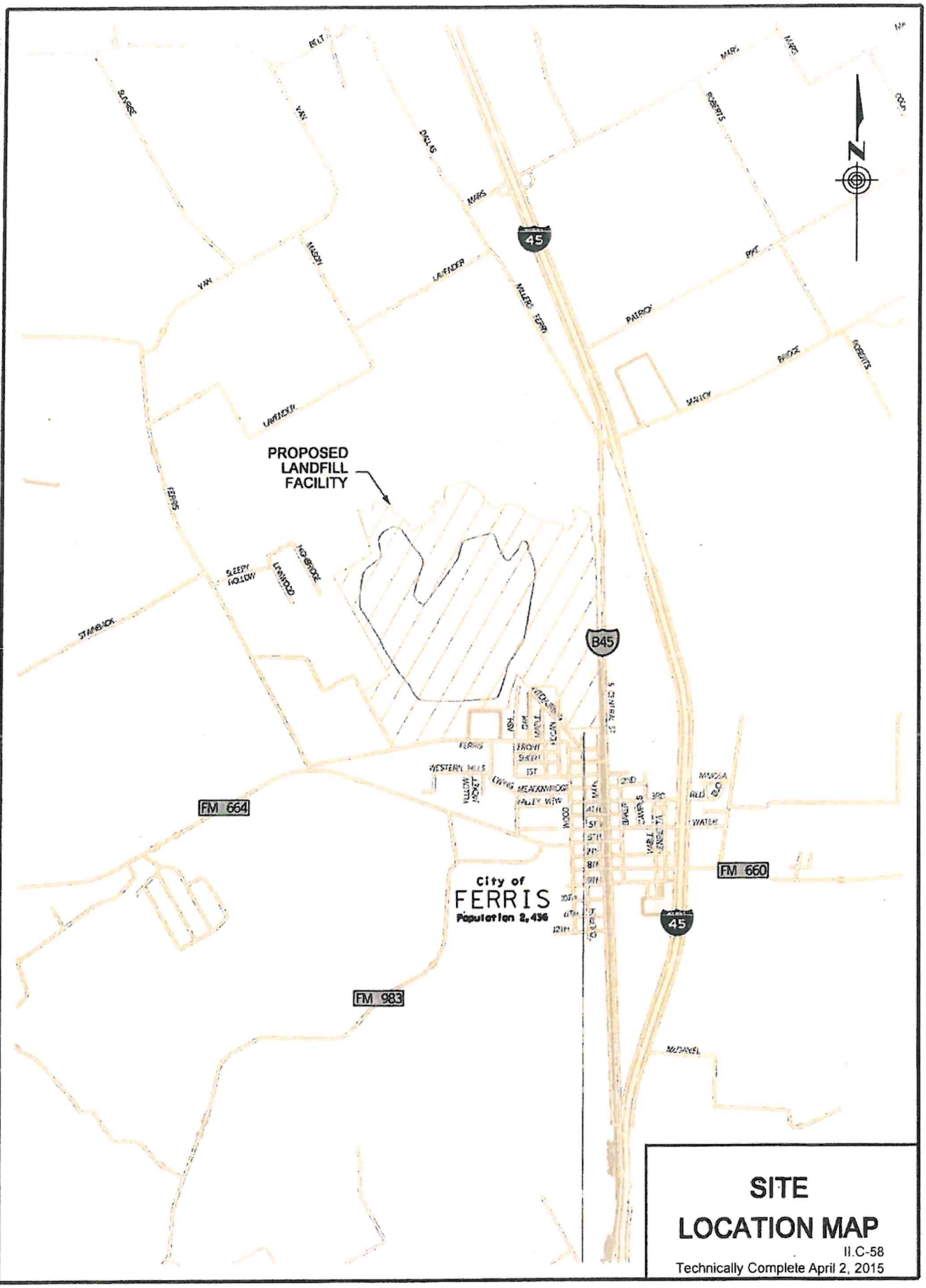
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



9/8/2011 2:05:28 PM

Z:\VR-S\Skyline Landfill\Figures\01\Areamap.dgn

SITE LOCATION MAP

II.C-58

Technically Complete April 2, 2015

October 10, 2011

Mr. Bill Pierce, P.E.
Area Engineer
TxDOT Dallas District – Ellis
124 FM 876
Waxahachie, Texas 75167

Subject: Skyline Landfill, Ferris, Texas

Dear Mr. Pierce:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with the Texas Department of Transportation (TxDOT) consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on BR 45 (N Central Street), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is BR 45. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like TxDOT to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for the following roadways in the vicinity of the site. This information will be used to compare the traffic anticipated to be generated by the Skyline Landfill with the TxDOT traffic projections:
    1. BR 45 (Central Street)
    2. IH 45
    3. FM 660
    4. FM 983
    5. FM 664
- Please provide the capacity determined by TxDOT for the roadways listed above in the vicinity of the site.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site, specifically on roadways listed above. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.
- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.
- Please provide any special design criteria that may be required for the operation of the landfill.
- Please provide existing cross-section data showing travel lane and shoulder widths for the roadways listed above in the vicinity of the site.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

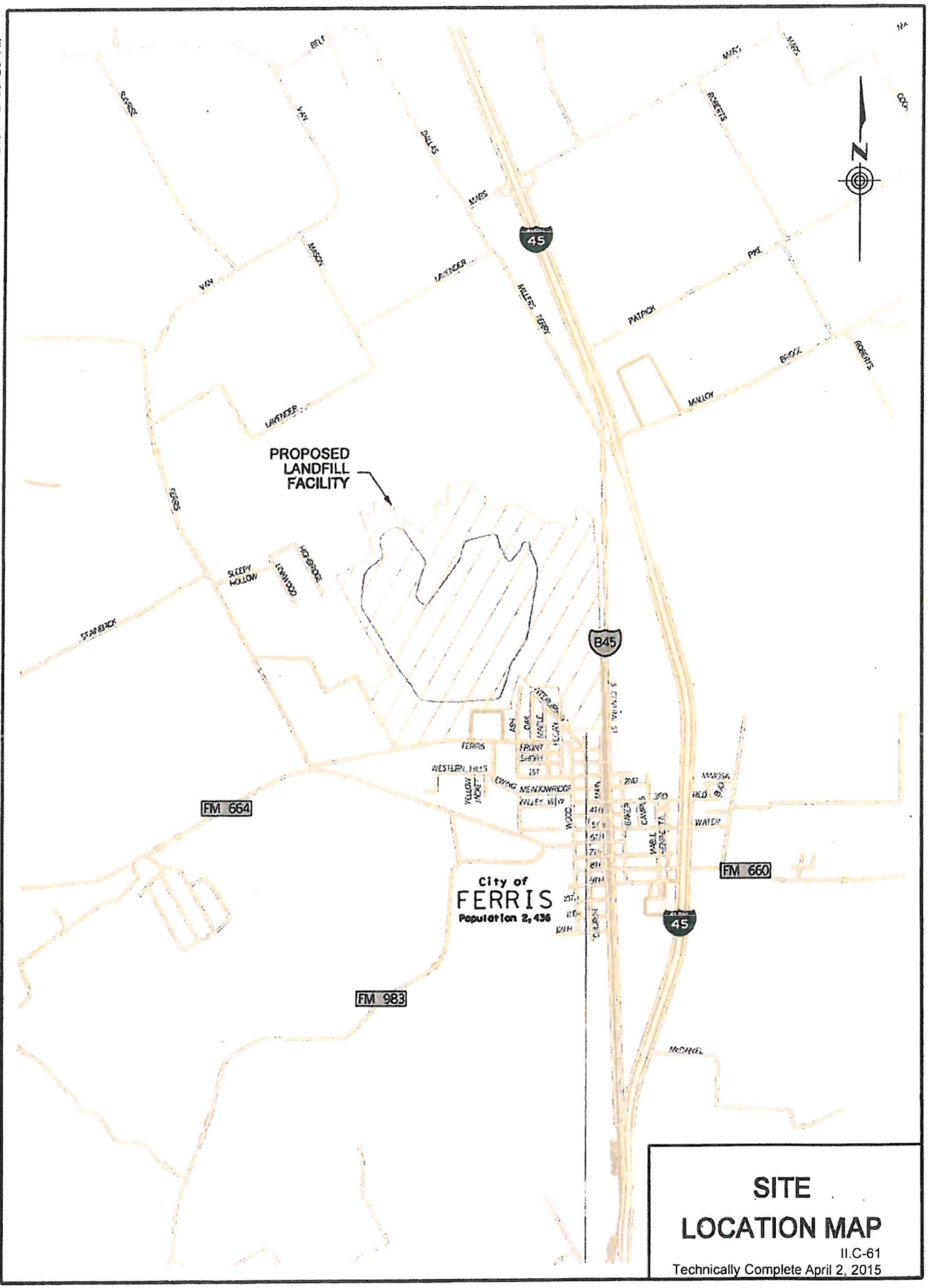
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



SITE LOCATION MAP

II.C-61

Technically Complete April 2, 2015

9/8/2011 2:05:28 PM

Z:\R-S\Skyline Landfill\Figures\01*AreaMap.dgn

October 10, 2011

Mr. Eric Strong
City Manager
City of Ferris, Texas
100 Town Plaza
Ferris, Texas 75125

Subject: Skyline Landfill, Ferris, Texas

Dear Mr. Strong:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with the City of Ferris consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on N Central Street (BR 45), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is N Central Street. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like the City to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for the following roadways in the vicinity of the site. This information will be used to compare the traffic anticipated to be generated by the Skyline Landfill with the City's traffic projections:
    1. Central Street
    2. 5th Street
    3. E 6th Street
    4. W 8th Street
- Please provide the capacity determined by the City for the roadways listed above within the City limits, if available.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site, specifically along the roadways listed above. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.
- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.
- Please provide any special design criteria that may be required for the operation of the landfill.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

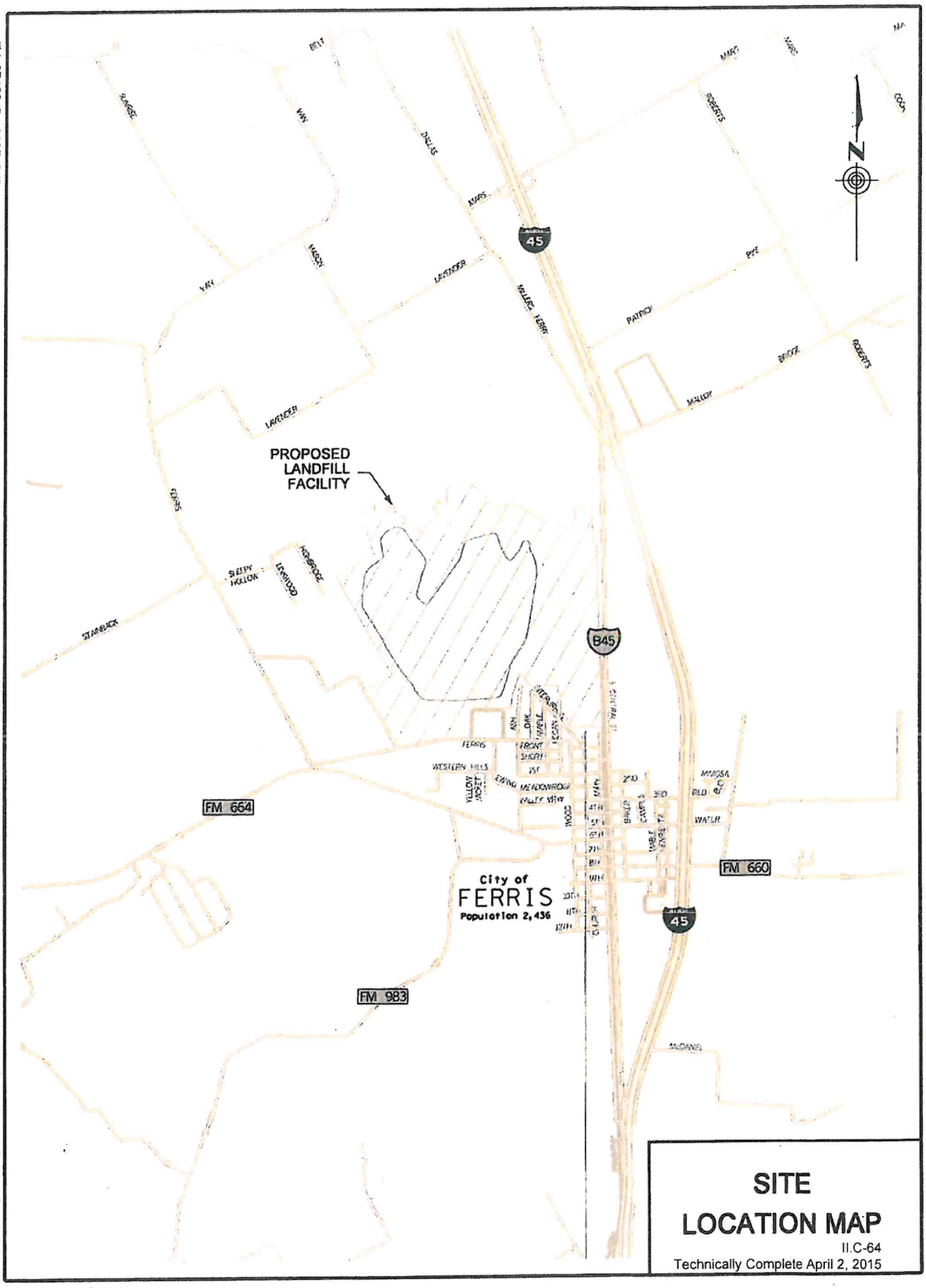
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



9/8/2011 2:05:28 PM

Z:\R-S\Skyline Landfill\Figures\01 AreaMap.dgn

SITE LOCATION MAP

II.C-64

Technically Complete April 2, 2015

October 10, 2011

Ms. Crystol Birdwell
City Secretary
City of Wilmer, Texas
128 N Dallas Avenue
Wilmer, Texas 75172

Subject: Skyline Landfill, Ferris, Texas

Dear Ms. Birdwell:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with the City of Wilmer consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on N Central Street (BR 45), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is N Central Street. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like the City to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for S Dallas Avenue in the vicinity of the site.
- Please provide the capacity determined by the City for S Dallas Avenue, if available, in the vicinity of the site.
- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.
- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide any special design criteria that may be required for the operation of the landfill.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

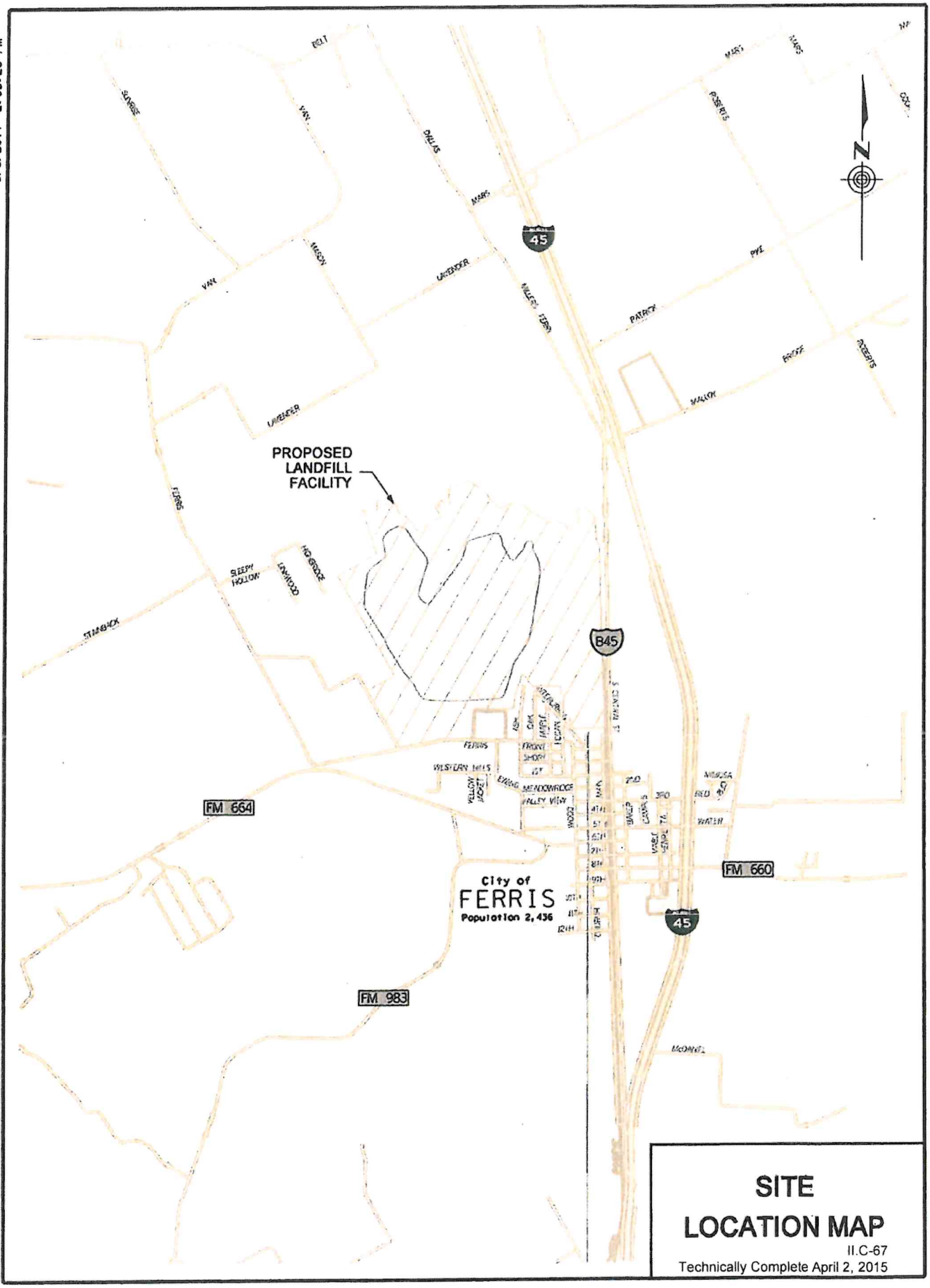
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



SITE LOCATION MAP

II.C-67

Technically Complete April 2, 2015

9/8/2011 2:05:28 PM

Z:\R-S\Skyline Landfill\Figures\01*AreaMap.dgn

October 10, 2011

Ms. Alberta L. Blair, P.E.
Public Works Director
Dallas County, Texas
411 Elm Street, 4th Floor
Dallas, Texas 75202

Subject: Skyline Landfill, Ferris, Texas

Dear Ms. Blair:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with Dallas County consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on BR 45 (N Central Street), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is BR 45. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like the County to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for the following roadways in the vicinity of the site. This information will be used to compare the traffic anticipated to be generated by the Skyline Landfill with the County's traffic projections:
    1. Malloy Bridge Road
    2. S Dallas Avenue
- Please provide the capacity determined by the County for the roadways listed above, if available.
- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site, specifically along the roadways listed above. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.
- Please provide any special design criteria that may be required for the operation of the landfill.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

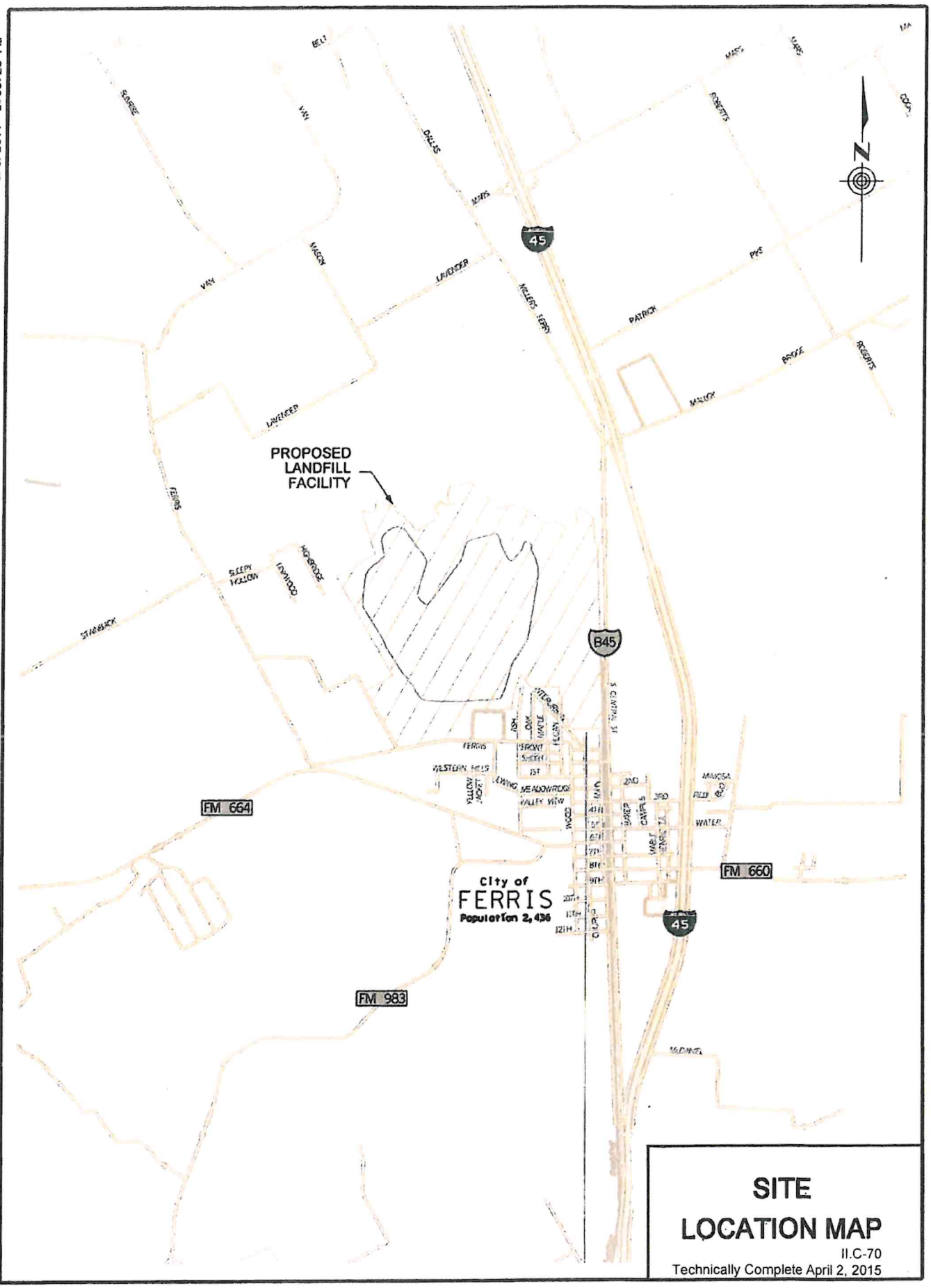
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



SITE LOCATION MAP

II.C-70

Technically Complete April 2, 2015

9/8/2011 2:05:28 PM

Z:\R-S\Skyline Landfill\Figures\01*AreaMap.dgn

October 10, 2011

Mr. Joe White, P.E.
County Engineer
Ellis County, Texas
109 S Jackson Street
Waxahachie, Texas 75165

Subject: Skyline Landfill, Ferris, Texas

Dear Mr. White:

Waste Management of Texas, Inc. is preparing a permit application for the proposed expansion of the Skyline Landfill located in Ferris, Texas. The purpose of this letter is to document coordination with Ellis County consistent with the requirements of the municipal solid waste regulations, 30 Texas Administrative Code Chapter 330 (30 TAC §330.61(i)(4)). Additionally we are requesting information regarding any traffic or location restrictions or proposed roadway improvements in the vicinity of the site.

The site entrance is located on BR 45 (N Central Street), approximately 3,100 feet south of Malloy Bridge Road. The primary access route to the Skyline Landfill facility is BR 45. Enclosed Figure 1 shows the location of the site prepared from Texas Department of Transportation maps.

Listed below are specific issues that we would like the County to confirm or address in written form:

- Traffic volume projections: Please provide an annual traffic volume growth rate for the following roadways in the vicinity of the site. This information will be used to compare the traffic anticipated to be generated by the Skyline Landfill with the County's traffic projections:
    1. FM 660
    2. FM 983
    3. FM 664
- Please provide the capacity determined by the County for the roadways listed above, if available.

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

- Please provide any information regarding planned maintenance or construction improvements in the vicinity of the site, specifically along the roadways listed above. Also please include any existing information regarding traffic volume counts and studies performed in the vicinity of the site.
- Please provide information on any load-zoned roadways in the vicinity of the site that have gross vehicle weight limits less than 80,000 pounds.
- Please provide any special design criteria that may be required for the operation of the landfill.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

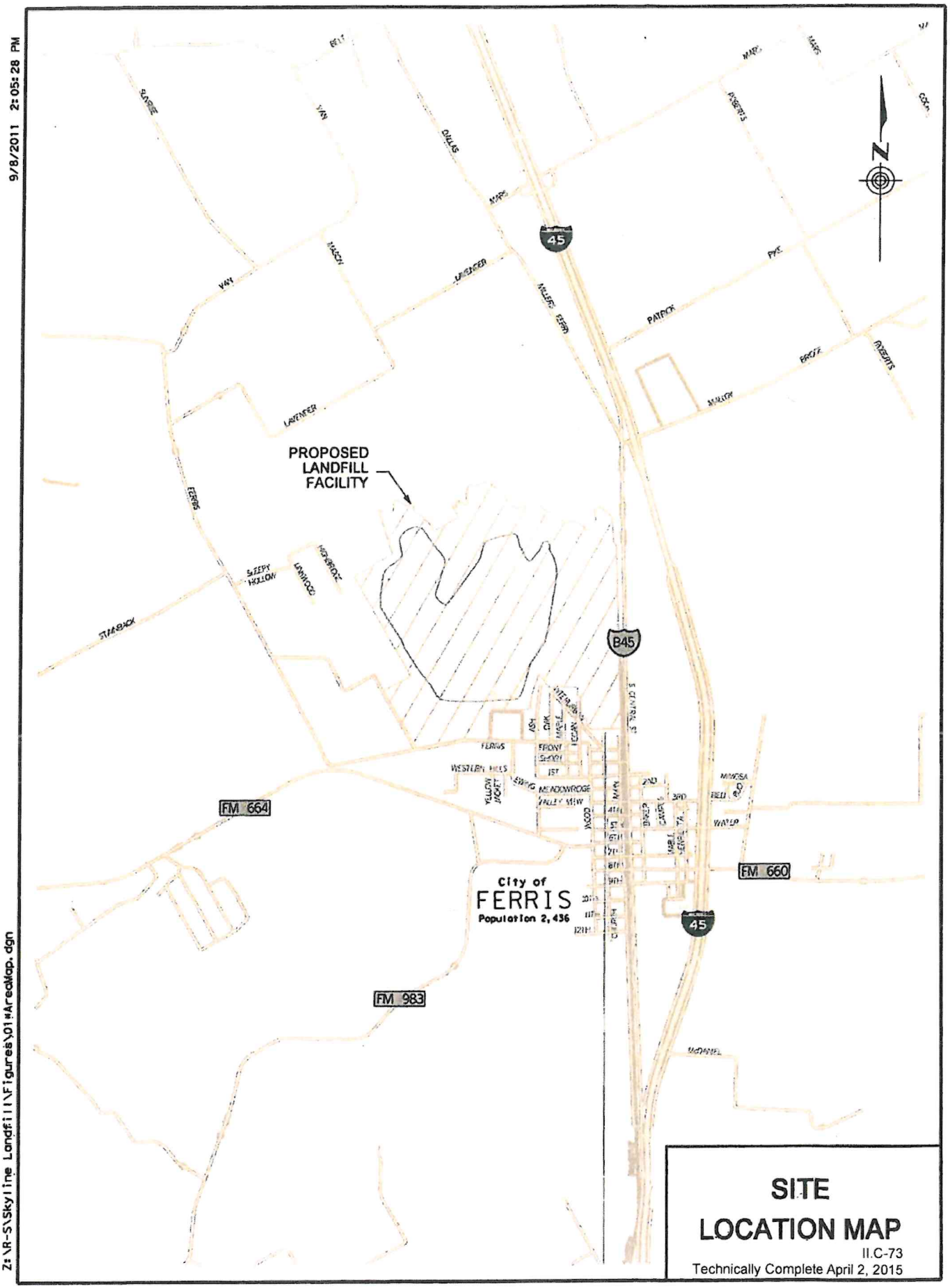
Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

Enclosure

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700



9/8/2011 2:05:28 PM

Z:\VR-S\Skyline Landfill\Figures\01\AreaMap.dgn

SITE LOCATION MAP

II.C-73

Technically Complete April 2, 2015

October 10, 2011

Ms. Dondi Markgraf
Director of Maintenance and Transportation
Ferris ISD
P.O. Box 459
Ferris, Texas 75125-0459

Subject: Ferris ISD School Bus Routes

Dear Ms. Markgraf:

HDR Engineering, Inc. is in the process of completing a transportation study for a development project within the Ferris Independent School District. It is required, as part of the study, to evaluate the impacts of site traffic on school bus routes in the area. Please provide any information you may have regarding bus routes on the following roadway segments within the district:

- Central Street, from IH 45 N to IH 45 S
- Malloy Bridge Road, from N Central Street to Roberts Road
- S Dallas Avenue, from Lavender Road to Malloy Bridge Road
- IH 45, from Mars Road to S Central Street
- 5th Street, from N Wood St to Birch Road
- E 6th Street, from S Central Street to S Baker Street
- FM 983, from S Central Street to Bluff Springs Road
- FM 664, from FM 983 to Tanner Farm Road
- W 8th Street, from S Wood Street to S Central Street
- FM 660, from S Central Street to Bear Creek Drive

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

HDR | ONE COMPANY | *Many Solutions*

October 10, 2011

Mr. Doug Becker
Director of Student Transportation
Dallas ISD
3700 Ross Avenue
Dallas, Texas 75204

Subject: Dallas ISD School Bus Routes

Dear Mr. Becker:

HDR Engineering, Inc. is in the process of completing a transportation study for a development project adjacent to the boundary of Dallas Independent School District, in Ferris, Texas. It is required, as part of the study, to evaluate the impacts of site traffic on school bus routes in the area. Please provide any information you may have regarding bus routes on the following roadway segments within the district:

- S Dallas Avenue, from Lavender Road to Malloy Bridge Road
- IH 45, from Mars Road to Malloy Bridge Road

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

HDR | ONE COMPANY | *Many Solutions*

October 10, 2011

Mr. James Thomas
Transportation Supervisor
Lancaster ISD
1003 N Dallas Avenue
Lancaster, Texas 75146

Subject: Lancaster ISD School Bus Routes

Dear Mr. Thomas:

HDR Engineering, Inc. is in the process of completing a transportation study for a development project adjacent to the boundary of Lancaster Independent School District, in Ferris, Texas. It is required, as part of the study, to evaluate the impacts of site traffic on school bus routes in the area. Please provide any information you may have regarding bus routes on S Dallas Avenue, between Lavender Road and Patrick Pike Road (near Ferris) within the district.

We appreciate your review of this information and your written response. Please feel free to contact Mike McInturff or me if you have any questions.

Sincerely,

Timothy Grimes, P.E., PTOE
Project Engineer

cc: Mike McInturff, P.E., PTOE, HDR
Kenneth Welch, P.E., Biggs & Matthews Environmental

504 Lavaca Street, #1175
Austin, Texas 78701
512-904-3700

Texas Department of Transportation

124 FM 876
Waxahachie, Texas 75167
(972) 938-1570
October 26, 2011

Timothy Grimes, P.E., PTOE
Project Engineer
HDR
504 Lavaca Street, #1175
Austin, Texas 78701

Re: Skyline Landfill, Ferris, Texas

Dear Mr. Grimes,

Please make reference to your letter dated October 10, 2011 requesting information pertinent to the expansion of the subject facility. I offer the following comments to your specific issues:

- Traffic volume projections - I direct HDR to the TxDOT website (http://www.txdot.gov/travel/) and the North Central Texas Council of Governments website (http://www.nctcog.org/trans/data/tcins/) where you may access available traffic data.
- Roadway Capacity - I direct HDR to the latest edition of TRB Highway Capacity Manual for determining this value.
- Load Zoned Roadways - I direct HDR to the TxDOT website (http://www.txdot.gov/travel/) where you may access available load zoning information.
- Typical Sections - I direct HDR to the Dallas District Library where the as-built constructions plans are kept on file. The physical address is:

  Dallas District Office
  TxDOT
  4777 E Highway 80
  Mesquite, TX 75150-6643

Sincerely,

William J. Pierce, P.E.
Area Engineer

WJP

ELLIS COUNTY ENGINEERING DEPARTMENT
109 South Jackson Street, Waxahachie, Texas 75165

November 21, 2011

Mr. Timothy Grimes, P.E., PTOE
HDR
504 Lavaca Street, #1175
Austin, Texas 78701

Subject: Ellis County Response Concerning Skyline Landfill Proposed Expansion

Dear Mr. Grimes:

Thank you for your October 10th letter concerning Waste Management of Texas wish to expand the Skyline Landfill. The bulk of the expansion appears to be within Dallas County with only minor adjustments within the City of Ferris municipal boundaries. Ellis County and the City of Ferris officials are of the opinion that the proposed expansion will have minimal impact within our jurisdiction.

We are providing a copy of our Solid Waste Facility Siting Ordinance adopted by the Ellis County Commissioners Court in August, 2007 (Minute Order #298.07).

Please be aware of the proposed Loop 9 corridor crossing the proposed expansion area. Additional information on this project can be found at loop9.org website.

FM 664 is currently part of a corridor study being conducted by TxDOT. The section of road in your area is anticipated to be realigned to the south in order to reduce pedestrian/vehicle conflicts in the downtown area.

Your request for traffic volume projections, maintenance, planned improvements, counts, load-zones and special design criteria for FM's and B45 is under the jurisdiction of TxDOT. You may contact Mr. Bill Pierce, Ellis County Area Office for the above information.

Our Thoroughfare Plan designates FM 664 & FM 660 as Principal Arterials (6-lane) roadways. FM 983 is designated as a Minor Arterial (4-lane). Capacity estimates will be based on the NCTCOG model estimates.

If I can be of additional help, please contact me at 214 793-5489.

Sincerely,

Barbra L. Leftwich
County Planner

cc Commissioner Dennis Robinson, Pct. 1
Joe White, County Engineer
Bill Pierce, TxDOT Area Engineer
Eric Strong, City of Ferris

F18 FROM 5-001-0614-0802 EQUIPMENT, 5-001-0614-0808 AUTO GAS/OIL, 5-001-0614-0809 AUTO REPAIR, 5-001-0614-0812 RADIO TO 5-001-0614-0803 FURNITURE/FIXTURES, 5-001-0614-0801 SUPPLIES, 5-001-0614-0703 TELEPHONE – STEVE MCKINNEY, CONSTABLE PCT. 4

SIMPLIFIED PLAT :

2.1 SIMPLIFIED PLAT – GARCIA'S PECAN GROVE ADDITION, 1 LOT, CLEMENTE AND RAQUEL GARCIA, PCT. 1.

2.2 SIMPLIFIED PLAT – TELICO NORTH ESTATES, 2 LOTS, ROBERT HERSCHMANN, JR., PCT. 2.

2.3 SIMPLIFIED PLAT – MARION PROPERTY, 1 LOT, MEDFORD MARION, PCT. 3.

2.4 SIMPLIFIED PLAT – MADDIE'S PLACE, 2 LOTS, CHRISTOPHER WATSON, PCT. 3

2.5 SIMPLIFIED PLAT – WILBER ESTATES, 2 LOTS, BARRY AND EVELYN WILBER, PCT. 3

MOTION TO APPROVE CONSENT AGENDA BY COMMISSIONER DODSON, SECOND BY COMMISSIONER SIMS CARRIES UNANIMOUSLY

ADMINISTRATIVE:

3.1 PRESENTATION OF CERTIFICATE TO COMMISSIONER DENNIS ROBINSON FOR ATTENDANCE AT THE 48TH ANNUAL COUNTY JUDGES & COMMISSIONERS' CONTINUING EDUCATION CONFERENCE BY THE V. G. YOUNG INSTITUTE OF COUNTY GOVERNMENT.

- MARK ARNOLD, ELLIS COUNTY CO-OP EXTENSION SERVICE

3.2 PRESENTATION AND INFORMATION UPDATE ON NASCO (NORTH AMERICA'S SUPER CORRIDOR COALITION, INC).

- RACHEL CONNELL AND TIFFANY MELVIN, NASCO

NO ACTION 3.3 CONSIDERATION AND ACTION TO APPROVE AN INTERLOCAL AGREEMENT BETWEEN THE CITY OF MANSFIELD, TEXAS AND ELLIS COUNTY, TEXAS, AND REINVESTMENT ZONE NUMBER ONE, CITY OF MANSFIELD, TEXAS FOR PARTICIPATION IN THE TAX INCREMENT ZONE FOR A PERIOD FROM JANUARY 1, 2006 THROUGH DECEMBER 31, 2030.

- BARBRA LEFTWICH, ELLIS COUNTY PLANNER

MINUTE ORDER NO 298.07 APPROVING AN ELLIS COUNTY SOLID WASTE FACILITY SITING ORDINANCE SPECIFYING AREAS IN UNINCORPORATED ELLIS COUNTY WHERE SOLID WASTE DISPOSAL IS NOT PROHIBITED, AS PREPARED BY R. W. BECK, INC., CHANGING REQUIREMENT OF 1 MILE TO ¼ MILE FROM TRIBUTARIES (ROSS DAVIS, ENGINEERING TECHNICIAN)

MOTION TO APPROVE BY COMMISSIONER ROBINSON, SECOND BY COMMISSIONER DODSON CARRIES 3/1, WITH COMMISSIONER SIMS OPPOSING—WOULD LIKE TO SEE BUFFER LARGER

Ellis County, Texas

County Solid Waste Facility Siting Ordinance

FINAL REPORT

July 18, 2007

Submitted By:
R. W. Beck, Inc.
5806 Mesa Drive, Suite 310
Austin, Texas 78731
(512) 450-0991

This study was funded through a solid waste management grant provided by the Texas Commission on Environmental Quality through the North Central Texas Council of Governments. The funding does not necessarily indicate endorsement or support of the study's findings and recommendations.

July 18, 2007

Ms. Barbra Leftwich
Ellis County Planner
101 West Main Street
Waxahachie, TX 75165

Subject: Ellis County Solid Waste Facility Siting Ordinance – Final Report

Dear Ms. Leftwich:

R. W. Beck, Inc. (R. W. Beck) is pleased to provide Ellis County (County) with a final copy of the "Ellis County Solid Waste Facility Siting Ordinance." R. W. Beck would like to thank County staff and officials who have provided input, data and coordination efforts for this project.

If there are any questions or comments concerning this report, please contact either Mr. Scott Pasternak or Ms. Katie Brown. Both can be reached at (512) 450-0991.

Very truly yours,

R. W. Beck, Inc.

R. W. Beck, Inc.

Enclosure

5806 Mesa Drive, Suite 310 Austin, TX 78731 Phone (512) 450-0991 Fax (512) 450-0515

ELLIS COUNTY, TEXAS
COUNTY SOLID WASTE FACILITY SITING ORDINANCE

Table of Contents

Letter of Transmittal
Table of Contents
List of Appendices

SECTION 1 ELLIS COUNTY, TEXAS
COUNTY SOLID WASTE FACILITY SITING ORDINANCE

1.1 General Description 1-1
1.2 Implementation Process 1-2
1.2.1 Preliminary Research 1-2
1.2.1.1 Exclusionary Criteria 1-2
1.2.1.2 Land Use Criteria 1-3
1.3 Meeting with County Staff and Officials 1-3
1.4 Facility Siting Analysis 1-4
1.4.1.1 Exclusionary Criteria 1-4
1.4.1.2 Land Use Criteria 1-6
1.4.1.3 Maps Identifying Suitable and Unsuitable Areas 1-10
1.5 Next Steps 1-10

List of Appendices

Appendix A – Maps
Appendix B - Ordinance

This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to R. W. Beck, Inc. (R. W. Beck) constitute the opinions of R. W. Beck. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, R. W. Beck has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. R. W. Beck makes no certification and gives no assurances except as explicitly set forth in this report.

Copyright 2007, R. W. Beck, Inc.
All rights reserved.

SECTION 1
ELLIS COUNTY, TEXAS
COUNTY SOLID WASTE FACILITY SITING ORDINANCE

1.1 General Description

North Central Texas Council of Governments (NCTCOG), under the direction of the Texas Commission on Environmental Quality (TCEQ), has developed a regional conformance evaluation process to address land use issues and local community concerns related to the siting of solid waste facilities within the region. As part of the regional conformance evaluation process, NCTCOG has determined that the adoption of county solid waste facility siting ordinances (consistent with §364.012 of the Texas Health and Safety Code) is currently the most viable option for integrating specific county land use into the regional solid waste planning and decision making process. Where counties within the region have adopted a local siting ordinance, NCTCOG will defer to the county ordinance concerning land use when making facility conformance recommendations to the TCEQ.

Ellis County, as part of the North Central Texas region, has taken initiative to develop and adopt such an ordinance with technical and financial assistance from NCTCOG[1]. The ordinance will give the county greater control over potential solid waste siting issues within its jurisdiction by allowing the county to prohibit the disposal of municipal or industrial solid waste within the county where disposal would represent a threat to public health, safety or welfare.

The county solid waste facility siting ordinance will designate particular areas of the county in which the disposal of municipal or industrial solid waste is not prohibited. To accomplish this, there is a need to identify areas that are either suitable or not suitable for the disposal of solid waste based on a variety of public health, safety and land use criteria. The ordinance cannot be used to prohibit the siting of solid waste facilities throughout the entire county and, therefore, will specifically designate one or more areas within the jurisdiction where municipal or industrial waste disposal is permissible.

To complete this analysis, Ellis County retained R. W. Beck, which has assisted the NCTCOG and other Texas counties in addressing their municipal solid waste facility issues.

[1] This study was funded through a solid waste management grant provided by the Texas Commission on Environmental Quality through the North Central Texas Council of Governments. The funding does not necessarily indicate endorsement or support of the study's findings and recommendations.

1.2 Implementation Process

R. W. Beck, in coordination with staff from NCTCOG and Ellis County, used the following process in the development and implementation of the Ellis County siting ordinance:

- Conducted preliminary research to identify potentially relevant siting issues for Ellis County including legal, public health and safety and land use concerns.
- Held a meeting with County staff and officials to review potential siting issues and discuss additional criteria for siting of solid waste facilities.
- Performed GIS land use analysis based on criteria of exclusionary areas, public health, safety, welfare, county land use patterns and expected future development.
- Produced maps based on the GIS analysis identifying areas of the county as either suitable or unsuitable for the development of solid waste facilities.

Following review and comment on the draft report, County staff and officials met with R. W. Beck to review findings and further develop recommendations for areas considered suitable for siting of solid waste facilities.

Ellis County will need to take the following steps to complete this project:

- Commissioners' Court will go through the process to adopt the ordinance (outlined in Section 1.5).

R. W. Beck has advised the Commissioners' Court as to the next steps that must be taken in order to adopt the ordinance and will be available to the County to answer any questions regarding that process.

1.2.1 Preliminary Research

In our preliminary research, R. W. Beck identified all Texas counties that currently have a solid waste facility siting ordinance. Each of these existing ordinances were reviewed to determine the particular criteria and standards utilized in their development. Based on the review of existing ordinances, our research into applicable federal and state laws and our knowledge of common land use planning practices, R. W. Beck identified the following categories of potential siting criteria to be addressed in the development of Ellis County's siting ordinance.

1.2.1.1 Exclusionary Criteria

The Texas Administrative Code (30 TAC §330, Subchapter M) outlines a number of conditions under which a site will be considered unsuitable for the disposal of municipal or industrial solid waste. These conditions are referred to as exclusionary siting criteria for the purposes of this analysis, and include the following considerations:

- Airport safety;
- Floodplains;

- Groundwater;
- Endangered or threatened species;
- Wetlands;
- Fault areas;
- Seismic impact zones; and
- Unstable areas.

The criteria outlined in 30 TAC §330, Subchapter M are closely linked to public health, safety and welfare and serve as a logical starting point for this analysis.

1.2.1.2 Land Use Criteria

It is also necessary to identify general areas of the county that are unsuitable for the disposal of solid waste based on local development and land use characteristics. Both current and future land use criteria should be utilized in this process to ensure that potential solid waste facilities are sited in locations compatible not only with current local development, but also with projected future development.

Current Land Use

Current land use criteria may include local characteristics such as: population density, residential development, the locations of existing solid waste facilities and industries, areas with a significant concentration of schools or churches, the locations of recreational sites, historical sites, major roads, pipelines and environmentally sensitive natural features. It should also include the delineation of areas in which the county does not have jurisdiction (e.g. within the boundaries of a city or its extraterritorial jurisdiction). These areas must be excluded from the siting analysis.

Future Land Use

Future land use criteria may include factors such as: compatibility with proposed or existing local development or open space plans, projected population growth rates and the general directions of current and future development within the county.

1.3 Meeting with County Staff and Officials

Prior to beginning the analysis, R. W. Beck met with Ellis County staff and officials to discuss the various federal exclusionary siting criteria and possible local land use issues to be considered. The meeting provided valuable information on specific local solid waste facility siting concerns that needed to be addressed in the development of the county's ordinance. It also allowed R. W. Beck to assess the availability of local data sources and obtain those sources that would be helpful in the siting analysis.

Based on this meeting, R. W. Beck identified the following local land use criteria to be key issues in the development of Ellis County's siting ordinance:

- Environmental protection of Bardwell Reservoir and surrounding areas;
- Protection of the Trinity River and major creeks; and

- Consideration of areas of projected future residential growth and development.

1.4 Facility Siting Analysis

R. W. Beck conducted the solid waste facility siting analysis for Ellis County utilizing primarily GIS data and software. Identification of suitable areas was achieved through a process of elimination in which certain areas of the county were systematically identified as being unsuitable based on exclusionary criteria, public health, safety, welfare, county land use patterns and expected future development. Each area found to be unsuitable based on a particular criteria was shown as a layer on a GIS map of the county. When all layers are simultaneously laid over the county basemap, the areas remaining represent areas of the county that are potentially suitable for the siting of a solid waste facility.

Some data for Ellis County was difficult to obtain, particularly in a GIS compatible format.[2] The scarcity of data presented certain challenges and limitations in our siting analysis. However, R. W. Beck was able to gather and use data from a wide variety of sources to conduct a planning-level GIS analysis that satisfactorily achieves the county's needs for the purposes of this siting ordinance.

1.4.1.1 Exclusionary Criteria

As mentioned previously, 30 TAC §330, Subchapter M outlines several conditions under which a site should be considered unsuitable for the disposal of municipal solid waste. These exclusionary conditions include:

- Airport safety;
- Floodplains;
- Groundwater;
- Endangered or threatened species;
- Wetlands;
- Fault areas;
- Seismic impact zones; and
- Unstable areas.

R. W. Beck researched each of these issues as they apply to Ellis County. Our research and conclusions are discussed in detail in the following sections.

Airports

Under the location restrictions outlined in 30 TAC §330.545, solid waste facilities should generally not be located within 10,000 feet of any airport that is utilized by jet aircraft or within 5,000 feet of any airport runway end used only by piston-type

[2] GIS data sets published by a variety of governmental entities are currently not as readily available for Ellis County as compared to many larger and more populous counties.

aircraft. This requirement was designed to improve airport safety by reducing the likelihood of bird hazards that may damage aircraft and cause injury to occupants.

Ellis County currently has two airports, Ennis Municipal Airport and Mid-Way Regional Airport, both of which receive jet aircraft. Ennis Municipal Airport is located within the southeastern portion of the County within the incorporated area of the City of Ennis. R. W. Beck has identified the Ennis Municipal Airport runway and a 10,000 foot buffer around the runway as unsuitable for the siting of a solid waste facility based on the standards outlined in 30 TAC §330.545.

Mid-Way Regional Airport is located within the northwestern portion of the County between the cities of Waxahachie and Midlothian. R. W. Beck has identified the Mid-Way Regional Airport runway and a 10,000 foot buffer around the runway as unsuitable for the siting of a solid waste facility based on the standards outlined in 30 TAC §330.545.

Figure A.2 identifies the locations of Ennis Municipal Airport and Mid-Way Regional Airport and their respective 10,000 foot buffers.

Floodplains

In order to protect human health and the environment, solid waste facilities should generally not be located within the 100-year floodplain. 30 TAC §330.547 outlines municipal solid waste location restrictions as they relate to floodplains.

Ellis County, being home to Bardwell Reservoir, Lake Waxahachie, a portion of Lake Joe Pool, and being bound on the east by the Trinity River, has a substantial amount of land lying within the 100-year floodplain.

The Federal Emergency Management Agency (FEMA) does not currently have floodplains information for Ellis County available in a GIS format. Due to this limitation, R. W. Beck consulted a printed FEMA map of floodplains. Based on a review of the floodplains map, R. W. Beck generated a reasonable approximation of Ellis County floodplains in GIS by placing appropriately sized buffers around major creeks, lakes and rivers within the county. This approximation was used in the siting analysis to simulate county floodplains. Figure A.3 identifies the location of floodplains within the county.

Groundwater

Restrictions on the location of municipal solid waste facilities as it relates to their potential impacts on groundwater (30 TAC §330.549), currently relate only to areas located over the recharge zone of the Edwards Aquifer. This particular location restriction is not applicable to Ellis County as no portion of the County is located within the Edwards Aquifer recharge zone.

Endangered or Threatened Species

Under the location restrictions outlined in 30 TAC §330.551, solid waste facilities should generally not be located where they would result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any such species.

While Ellis County is thought to be home to 26 types of endangered or threatened species, habitat location data for these species are currently unavailable in a digital format from the Texas Parks and Wildlife Department. While a lack of available data has neccssitated that endangered or threatened species not be examined in detail as part of the present analysis, the County may wish to revise this analysis to incorporate any digital data related to this topic should it become available in the future.

Wetlands

Under the location restrictions outlined in 30 TAC §330.553, solid waste facilities should generally not be located within wetlands. Official wetlands data for Ellis County are currently unavailable in a digital format from the U.S. Fish and Wildlife Service. However, Ellis County staff were able to provide R. W. Beck with GIS files of the U.S. Department of Agriculture (USDA) wetlands within the County for use in this analysis. Figure A.4 identifies the locations of all USDA wetlands within the County.

R. W. Beck would recommend that the County consider updating the ordinance to also reflect all U.S. Fish and Wildlife Service wetlands data, should it become available in a digital format in the future.

Fault Lines

30 TAC §330.555 stipulates that solid waste facilities should not be located within 200 feet of a fault that has experienced displacement within the last 10,000 years. Based on information from the Texas Bureau of Economic Geology, there are two fault lines, the Ouachita Tectonic Front and the Gulf Basin Margin, located within Ellis County. These fault lines were last active approximately 144-65 million years ago and 543-248 million years ago respectively. Therefore, these fault locations would not directly restrict the location of a solid waste facility within the county.

Seismic Impact Zones and Unstable Areas

R. W. Beck has determined based on maps and information from the U.S. Geological Survey (USGS) that Ellis County does not contain any seismic impact zones or unstable areas as defined under 30 TAC §330.557-559.

1.4.1.2 Land Use Criteria

R. W. Beck worked closely with Ellis County staff and officials to identify specific land use issues to be addressed in the solid waste facility siting analysis. Seven current land use criteria were identified as critical to the Ellis County suitability analysis. The following sections describe each of the selected suitability criteria and outline R. W. Beck's research and analysis of each issue. These criteria represent the siting issues that were most important for Ellis County based on specific local characteristics and concerns.

Current Land Use Criteria

Areas Not Under County Jurisdiction

The first step in the land use portion of the siting suitability analysis was to exclude from the suitable area those locations that do not fall under Ellis County's jurisdiction with respect to §364.012 of the Texas Health and Safety Code. The law states that a siting ordinance cannot apply to areas of the county located within a municipality or the extraterritorial jurisdiction (ETJ) of a municipality. Therefore, all municipalities and their current ETJs were eliminated from the suitability analysis due to the fact that the county ordinance is not legally applicable to facility siting decisions in those locations. Figure A.5 identifies the extent of all city limits and ETJs within the county.

Lake Joe Pool

Lake Joe Pool is located in the southern part of the Dallas/Fort Worth Metroplex and encompasses a portion of the northwest corner of Ellis County. The lake is operated by the Trinity River Authority for conservation, flood control, recreation, and municipal water supply. The lake is fed by Mountain Creek and Walnut Creek and drains north into Mountain Creek leading into Mountain Creek Lake. Lake Joe Pool and the surrounding areas are important features of Ellis County that warrant special public health and safety protections. The lake serves as a primary raw water source for the City of Midlothian, as well as several other local entities that have water interests in the lake. In addition, it also serves as a popular local recreational amenity.

In recognition of the importance of protecting Lake Joe Pool and the surrounding areas, R. W. Beck utilized GIS to generate a one mile buffer around the lake and eliminated this region from the suitable area. Figure A.6 identifies the unsuitable areas surrounding Lake Joe Pool.

Lake Waxahachie

Lake Waxahachie is another environmentally sensitive feature located within central Ellis County just south of Waxahachie. The lake is owned and operated by Ellis County Water Control and Improvement District Number One. The lake is used for municipal and industrial uses, including as a drinking water source, making its protection of particular importance to public health and safety. In addition, it is also a popular local recreational amenity.

In recognition of the importance of protecting Lake Waxahachie and the surrounding areas, the project team utilized GIS to generate a one mile buffer around the lake and removed the selected region from the suitable area. Figure A.6 identifies the unsuitable areas surrounding Lake Waxahachie.

Bardwell Reservoir

Bardwell Reservoir is another environmentally sensitive feature located in the Trinity River basin between Bardwell and Ennis in south central Ellis County. The reservoir is owned by the United States government and operated by the Trinity River Authority. Water from the reservoir serves as a source of drinking water for Waxahachie, Ennis,

and other surrounding communities, making its protection of particular importance to public health and safety. In addition, it is also a popular local recreational amenity.

In recognition of the importance of protecting Bardwell Reservoir and the surrounding areas, the project team utilized GIS to generate a one mile buffer around the lake and removed the selected region from the suitable area. Figure A.6 identifies the unsuitable areas surrounding Bardwell Reservoir.

Trinity River

The Trinity River, which runs along the eastern border of Ellis County, is also a significant environmental feature that warrants public health and safety protections due to the fact that it serves as a drinking water source for certain downstream customers. In recognition of the importance of protecting the quality of the Trinity River and those lands directly adjacent to it, the project team utilized GIS to generate a one mile buffer along the river and removed the selected region from the suitable area. Figure A.6 identifies the unsuitable areas surrounding the Trinity River.

Major Creeks

R. W. Beck generated a ¼ mile buffer around the following major creeks within the County:

- Big Onion Creek
- Chambers Creek
- Cottonwood Creek
- Grove Creek
- Little Onion Creek
- Mill Creek
- Mountain Creek
- Old Ten Mile Creek
- Red Oak Creek
- Richland Creek
- Waxahachie Creek

These areas were then eliminated from the suitable area. Each of the above creeks serve as a recreational and scenic resource for the citizens of Ellis County, and flow downstream to a variety of key water bodies within the region that serve as drinking water sources for the regional population. The buffer is designed to further protect the watershed of area lakes and rivers by managing the areas that drain into them. Figure A.7 identifies the unsuitable areas surrounding the county's major creeks.

Dedicated Parks and Open Space

R. W. Beck used GIS data provided by NCTCOG to identify dedicated parks and open space within Ellis County. These areas were then removed from the suitable area. In order to prevent potentially undesirable noise and odor issues that may be associated with municipal solid waste facilities, R. W. Beck also included a 500 foot buffer around all identified park and open space areas. Based on R. W. Beck's industry experience, 500 feet is generally a sufficient attenuation distance for noise and odor that may be associated with such facilities. Figure A.8 identifies these unsuitable areas.

Residential Land Use

R. W. Beck used 2005 GIS land use data, obtained from NCTCOG, to identify all areas currently defined as residential in nature. All areas identified as having residential land use within the County were eliminated from the suitable area. In addition, in order to provide existing residences with protection from possible noise and odor issues that may be associated with municipal solid waste facilities, R. W. Beck included a 500 foot buffer around all residential areas identified in this analysis. Based on R. W. Beck's industry experience, 500 feet is generally a sufficient attenuation distance for noise and odor that may be associated with such facilities. Figure A.9 identifies these unsuitable areas.

Population Density

R. W. Beck used GIS data to analyze population densities within Ellis County. Areas found to have higher population densities were considered to be unsuitable for the location of solid waste facilities.

To conduct the analysis, R. W. Beck used 2000 U.S. Census data to identify County Census tracts with population densities greater than 100 people per square mile. This particular figure was selected based on two primary factors: 1) the figure represents a natural break in the population density data for the county; and 2) areas of the county where population densities are currently greater than 100 people per square mile correspond closely with areas in which county officials project significant future growth and development will occur.

While R. W. Beck recognizes that 100 people per square mile is a relatively low population density, more than half of Ellis County has a density of less than that figure. These lower density areas are more suitable for solid waste facilities than those where growth has occurred and is expected to continue into the future.

Fifteen out of a total of 22 Census tracts located within Ellis County were eliminated from the suitable area based on this criterion. Most of the tracts that were eliminated are located the more developed northwestern portion of the County. A number of other tracts that encompass portions of the City of Ennis were also determined to be unsuitable based on this criterion. Figure A.10 identifies those tracts with population densities greater than 100 people per square mile.

Future Land Use Criteria

County Growth and Development Patterns

During the course of this project, County staff and officials elected not to provide R. W. Beck with any information related to the specific locations of projected future residential growth and development within the County. R. W. Beck would recommend that the County consider updating the ordinance with such information where appropriate in the future.

1.4.1.3 Maps Identifying Suitable and Unsuitable Areas

The final result of this process of elimination is a map detailing the suitable and unsuitable areas for the location of a solid waste facility in Ellis County. Figure A.11 identifies these suitable and unsuitable areas.

It is important to remember that this is a planning level analysis designed to assist the County in identifying areas that are expected to be most suitable as the location for a solid waste facility based on selected criteria for exclusionary areas, public health, safety, welfare, county land use patterns and expected future development. This map is not intended to imply that all locations within the suitable area will necessarily be appropriate as the site for a solid waste facility.

The map in Figure A.11 is designed to serve as the basis for Ellis County's solid waste facility siting ordinance. R. W. Beck believes that the methods employed in this analysis produce a comprehensive, objective and defensible basis for the development of county solid waste facility siting ordinance.

1.5 Next Steps

The next step for Ellis County is to develop and adopt an ordinance in accordance with §364.012 of the Texas Health and Safety Code based on the analysis included in this document. Additional information concerning how to develop and adopt an ordinance is also available in Section 3 of NCTCOG's *Regional and Local Review of Municipal Solid Waste Facility Permits and Registrations.* As outlined in §364.012 of the Texas Health and Safety Code, the County will need to take the following steps prior to adoption of an ordinance:

- An ordinance may be passed on first reading, but the proposed ordinance must be published in a newspaper of general circulation in the county for two consecutive weeks before the Commissioner's Court considers the proposed ordinance. The publication must contain:
  - A statement of the time, place, and date that the Commissioner's Court will consider the proposed ordinance; and
  - Notice that an interested citizen of the county may testify at the hearing.
- A public hearing must be held on a proposed ordinance before it is considered by the Commissioner's Court, and any interested citizen of the county shall be allowed to testify.

R. W. Beck has provided assistance to the County in the adoption process as outlined in the scope of work for this project. Specifically, R. W. Beck:

- Made a presentation to the Commissioners' Court regarding areas of the County that are suitable and unsuitable for siting of a municipal solid waste facility;
- Assisted in drafting the ordinance (see enclosed draft ordinance – Appendix B);
- Advised the Court concerning steps required to adopt the ordinance; and
- Will be available to answer any questions the County may have regarding the process for adoption of the ordinance.

Appendix A
Maps

Figure A.1: Ellis County Basemap

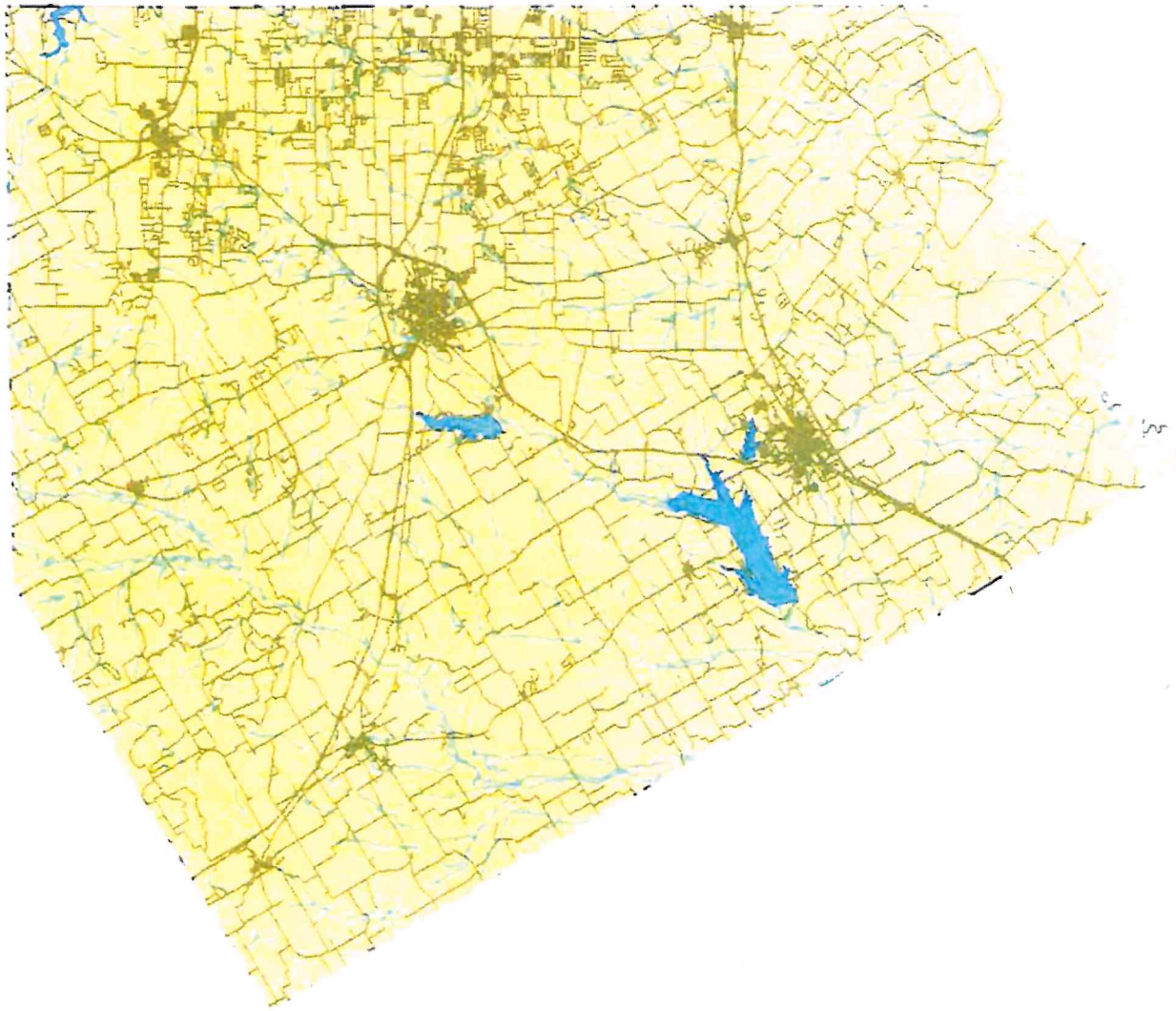


Figure A.2: Airports and 10,000 ft. Buffer

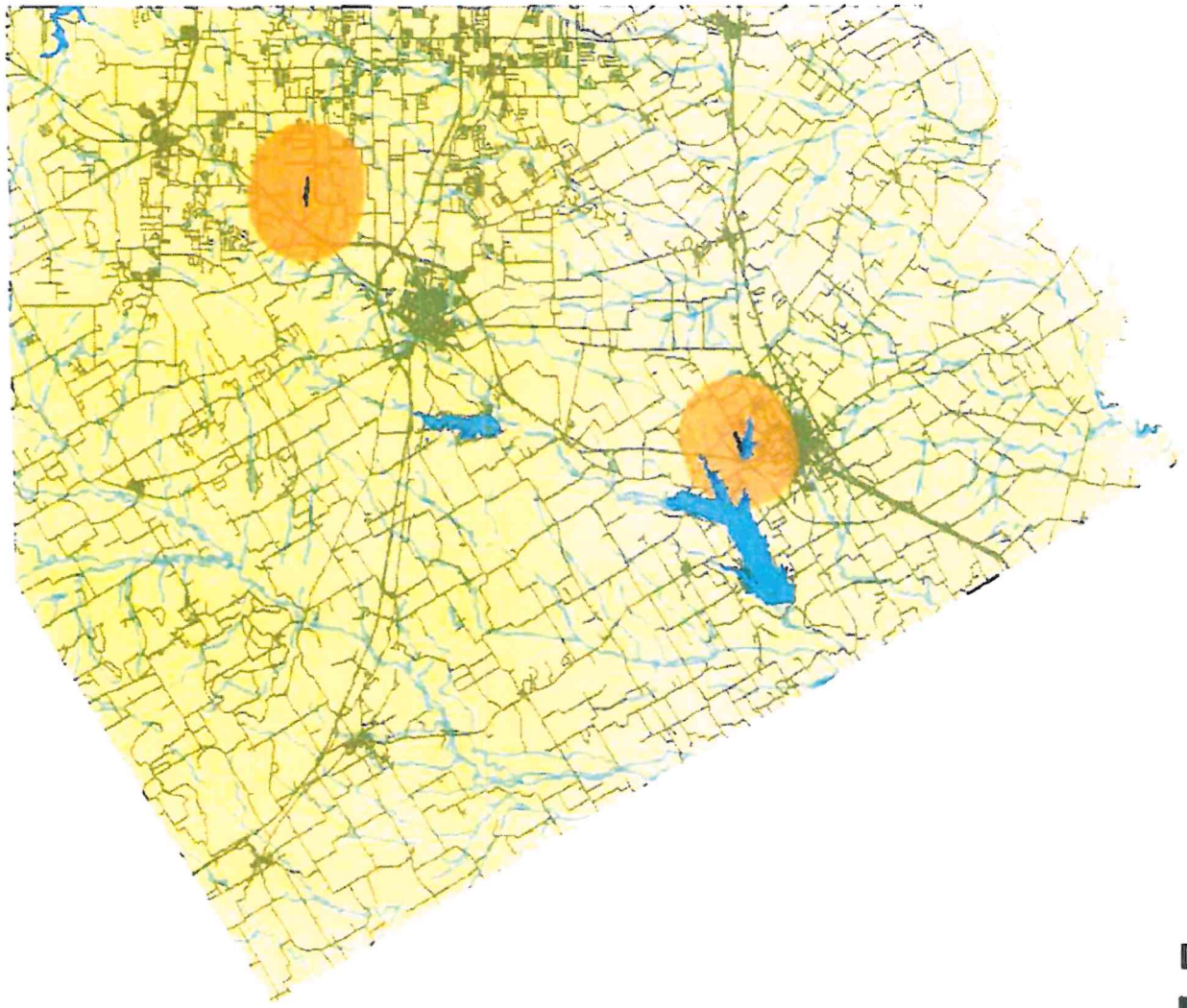
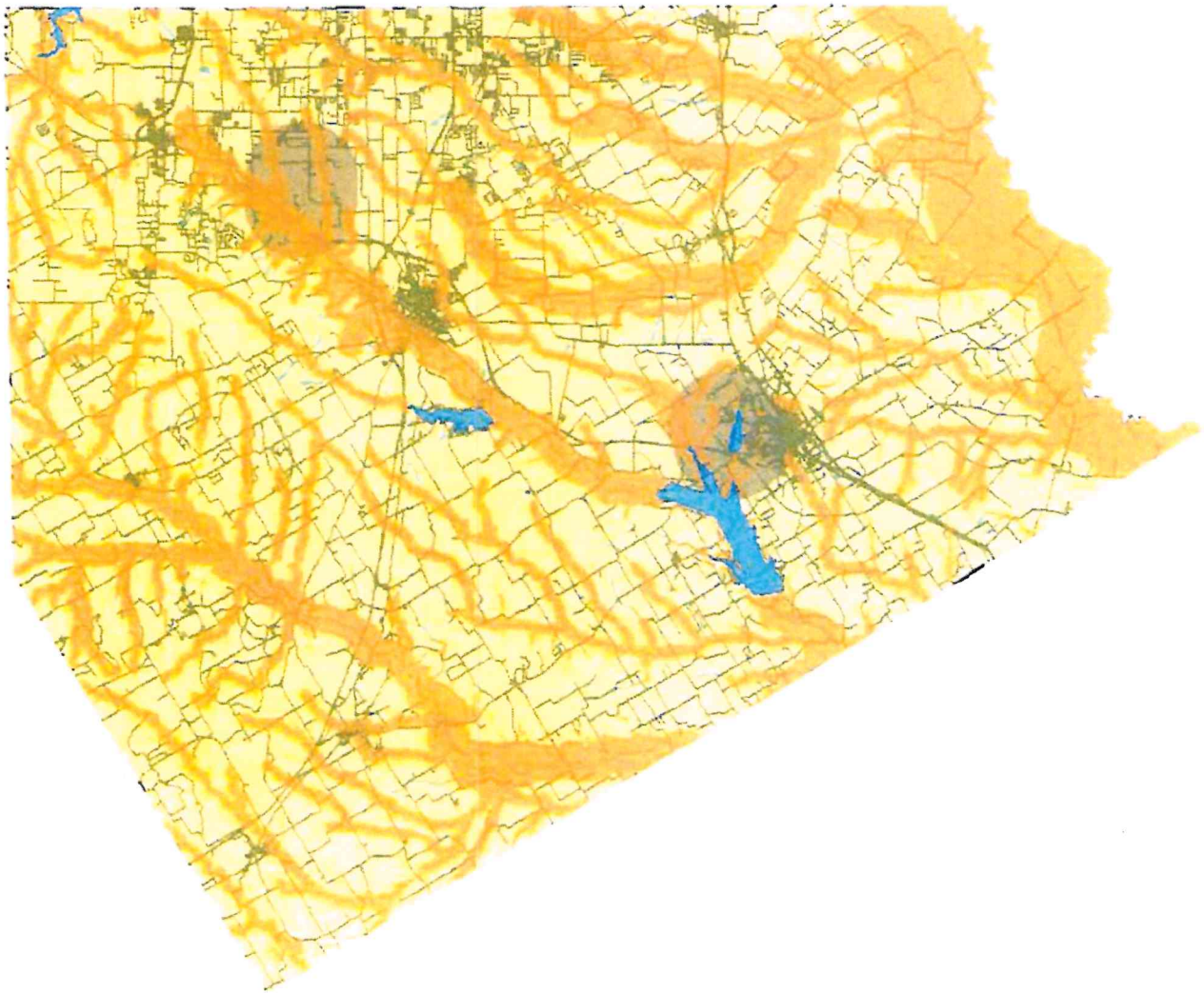


Figure A.3: 100-Year Floodplain Approximation



Legend

- Unsuitable Area
- Floodplain

N

Figure A.4: USDA Wetlands

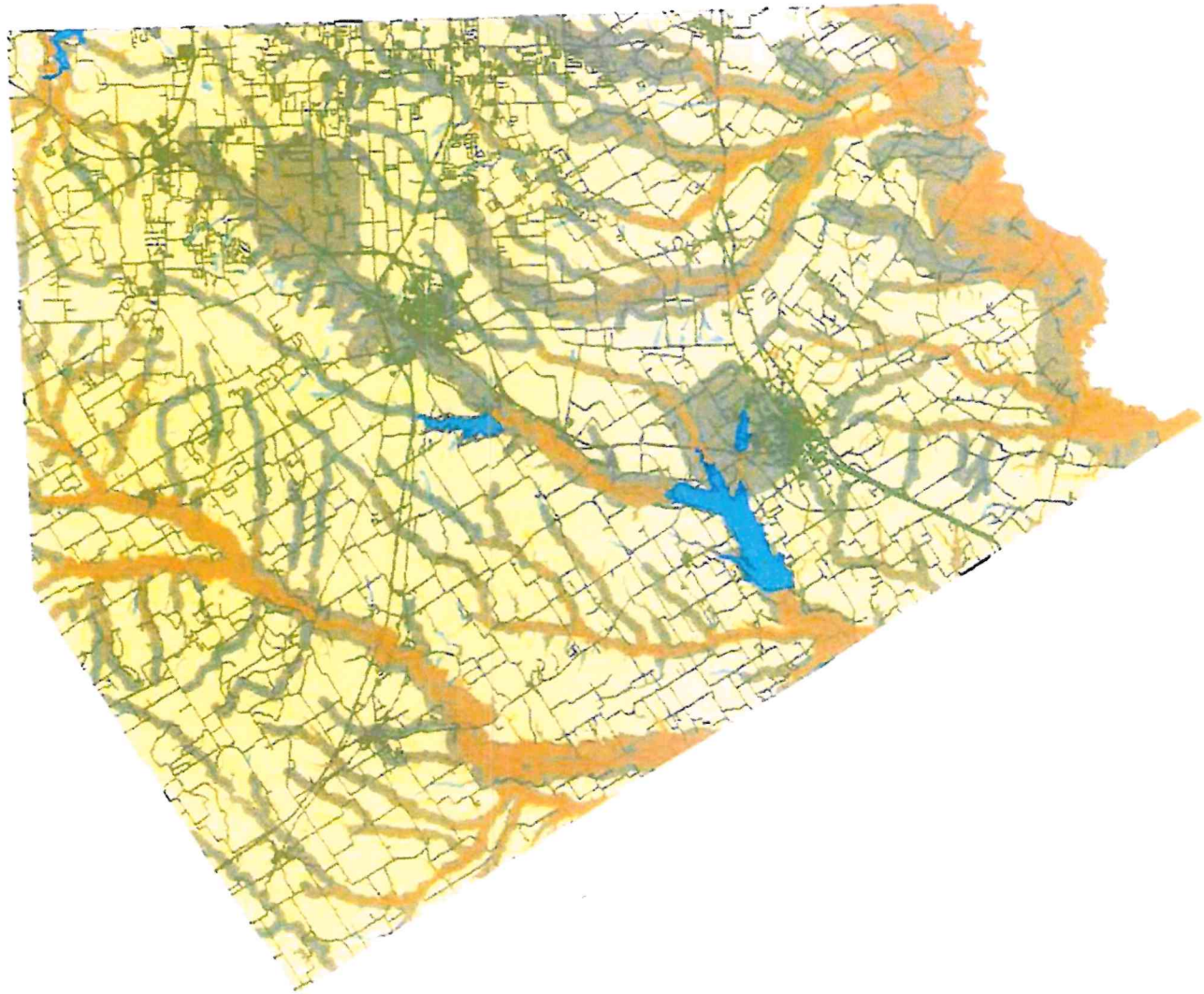


Figure A.5: Areas Outside of County Jurisdiction

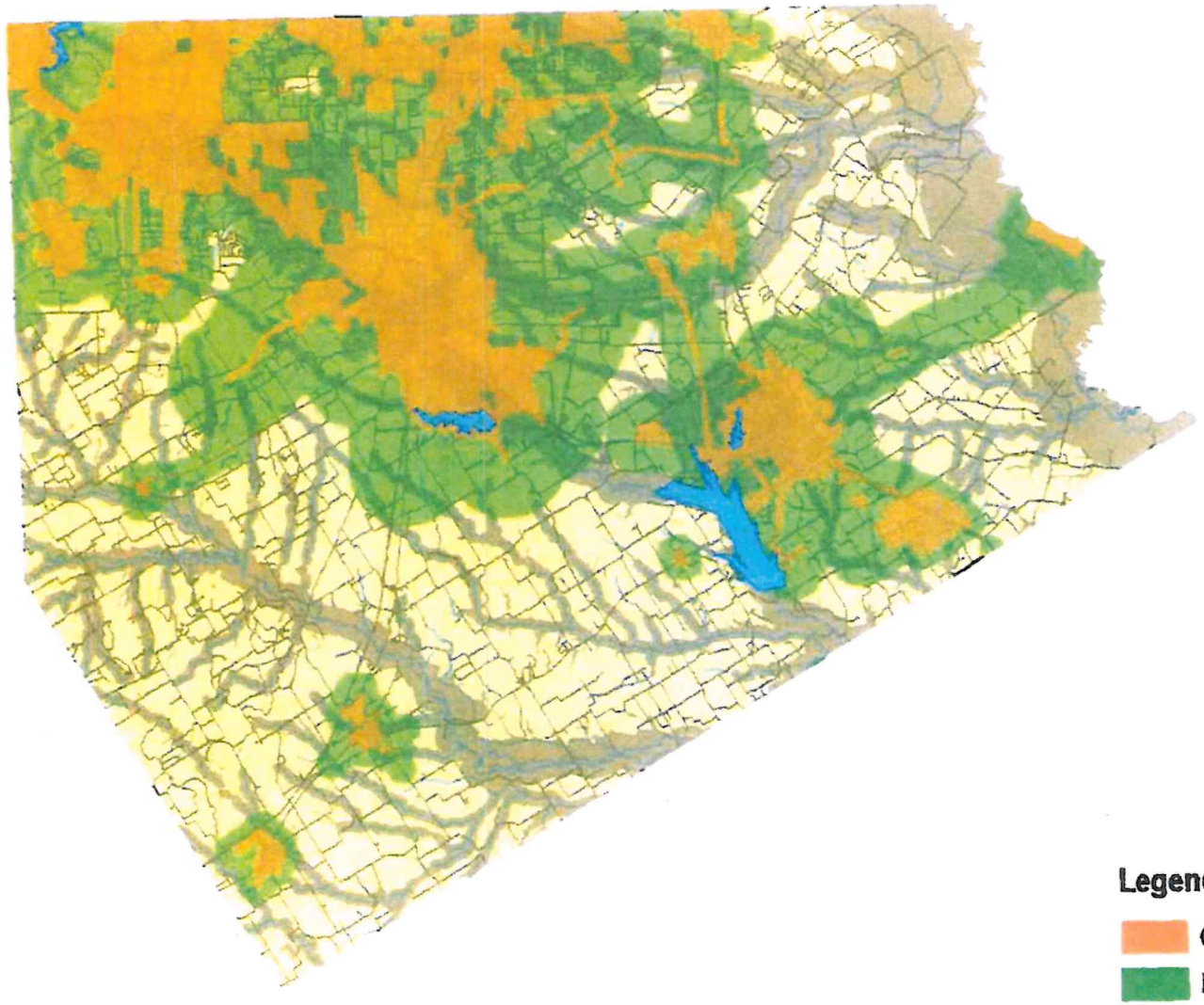
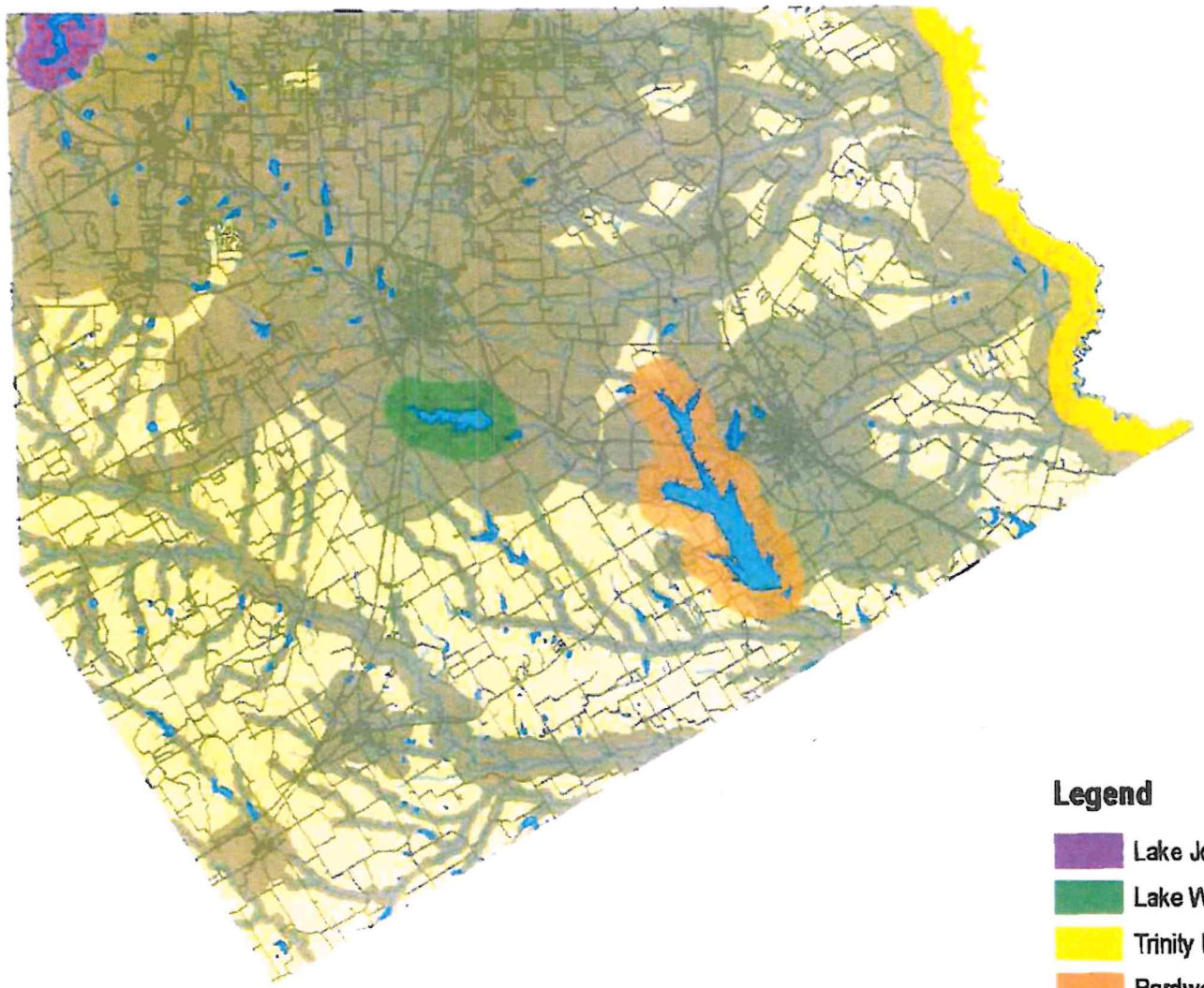


Figure A.6:
Lake Joe Pool, Lake Waxahachie, Bardwell Reservoir and Trinity River Buffers



Legend

- Lake Joe Pool Buffer (1 mile)
- Lake Waxahachie Buffer (1 mile)
- Trinity River Buffer (1 mile)
- Bardwell Reservoir Buffer (1 mile)
- Unsuitable Area

N

II.C-101
Technically Complete April 2, 2015

Figure A.7: Major Creeks Buffer

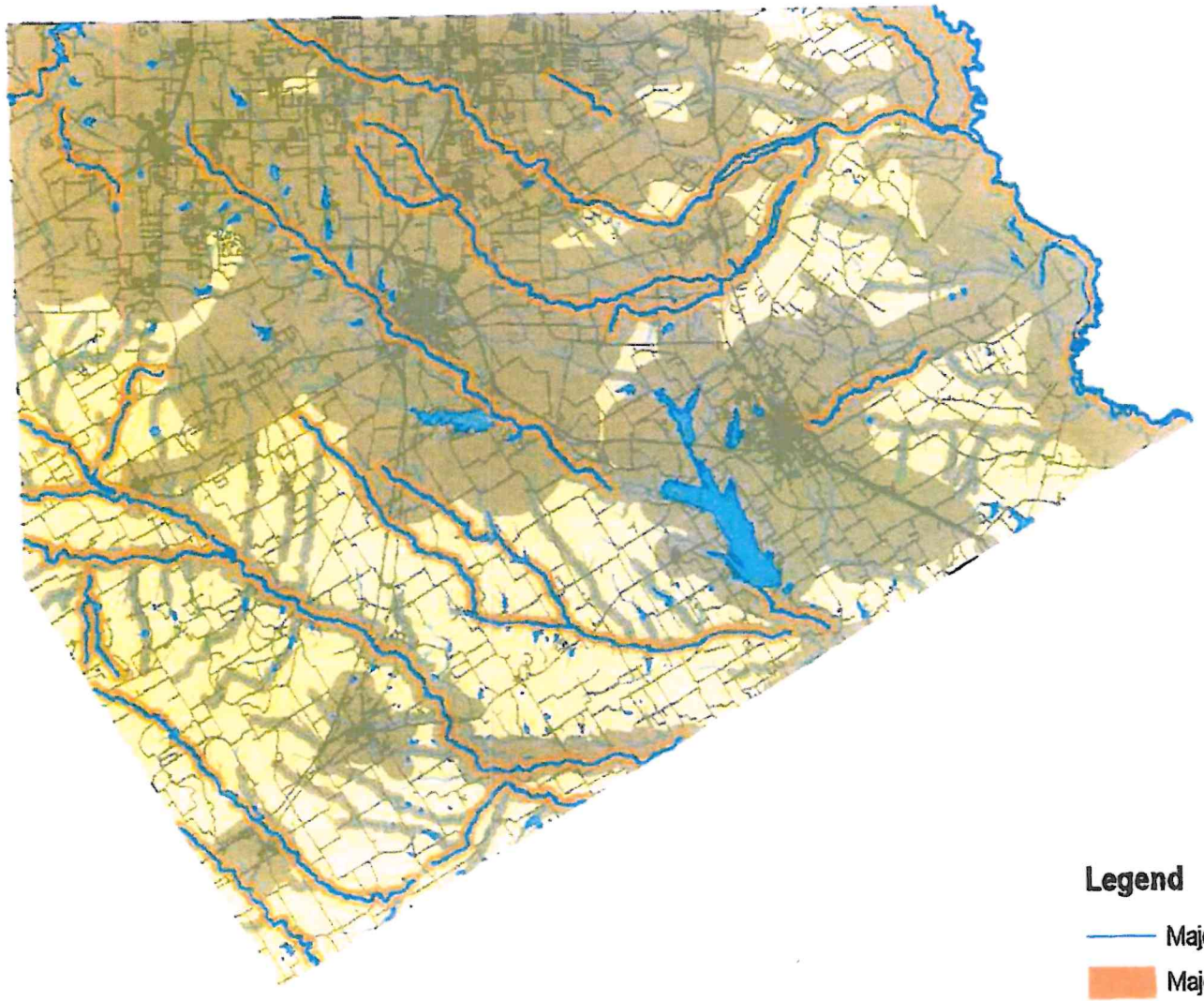


Figure A.8: Dedicated Parks and Open Space

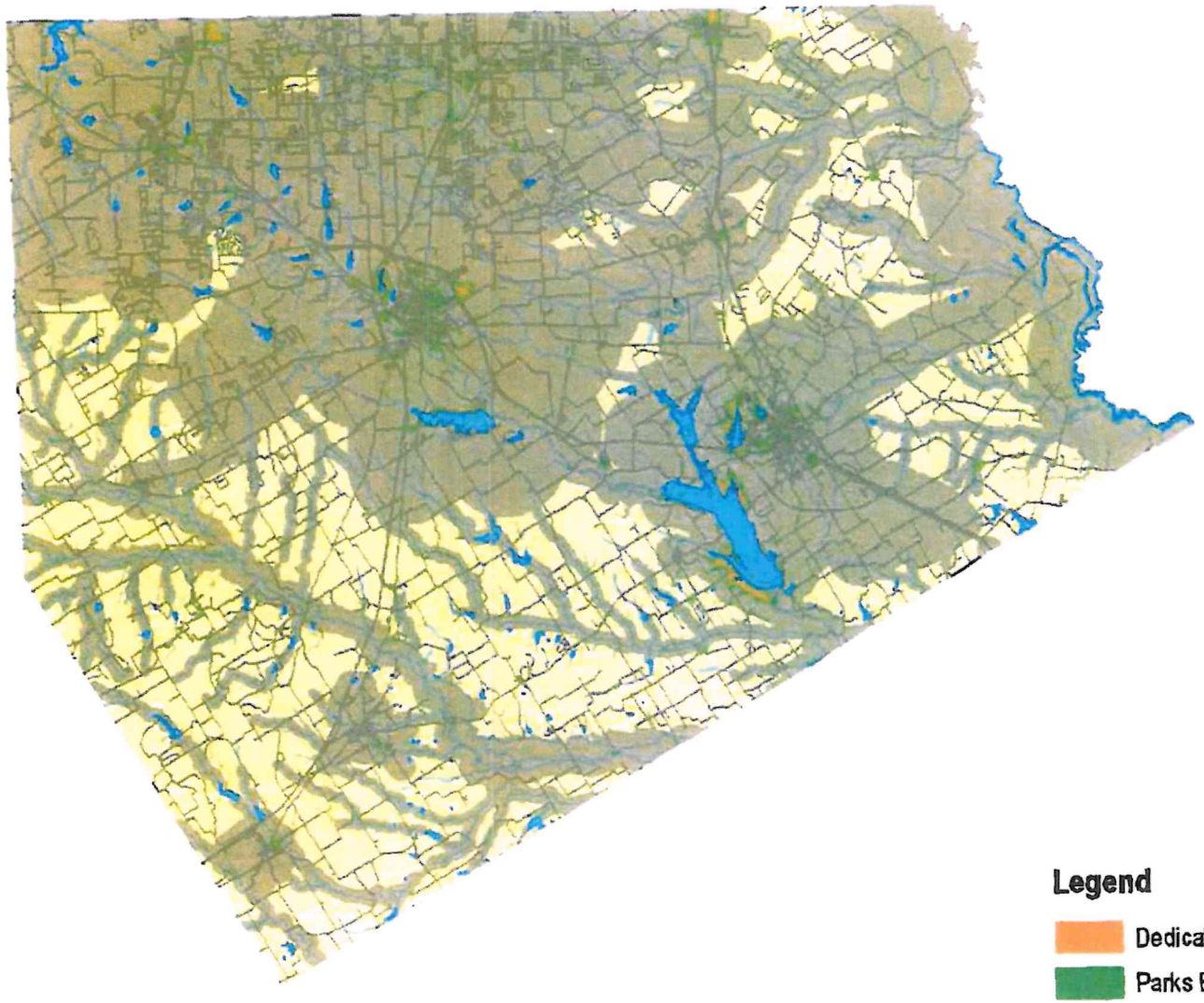


Figure A.9: 2005 Residential Land Use and 500 ft Buffer

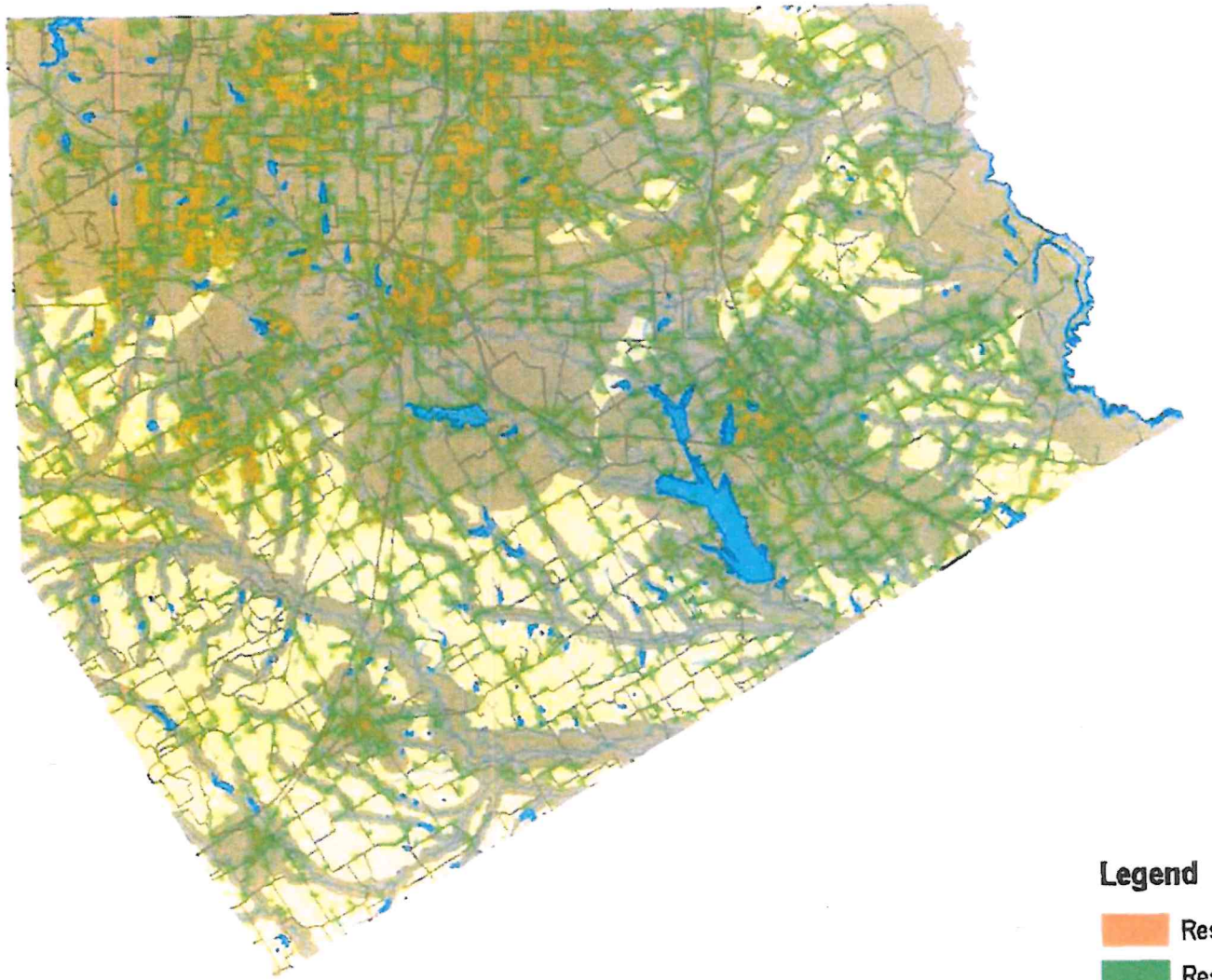


Figure A.10: Population Density Greater than 100 People per Sqaure Mile

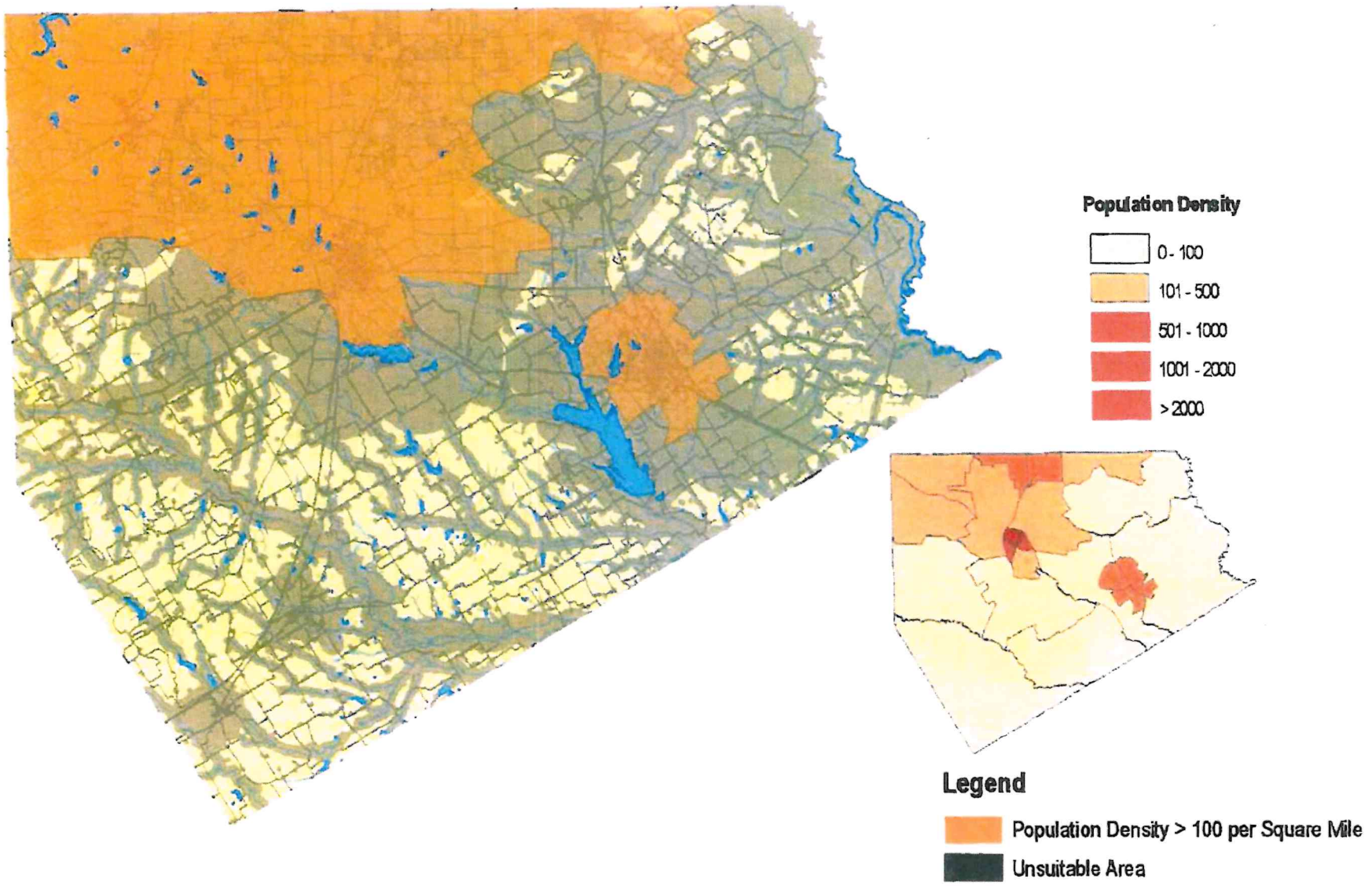
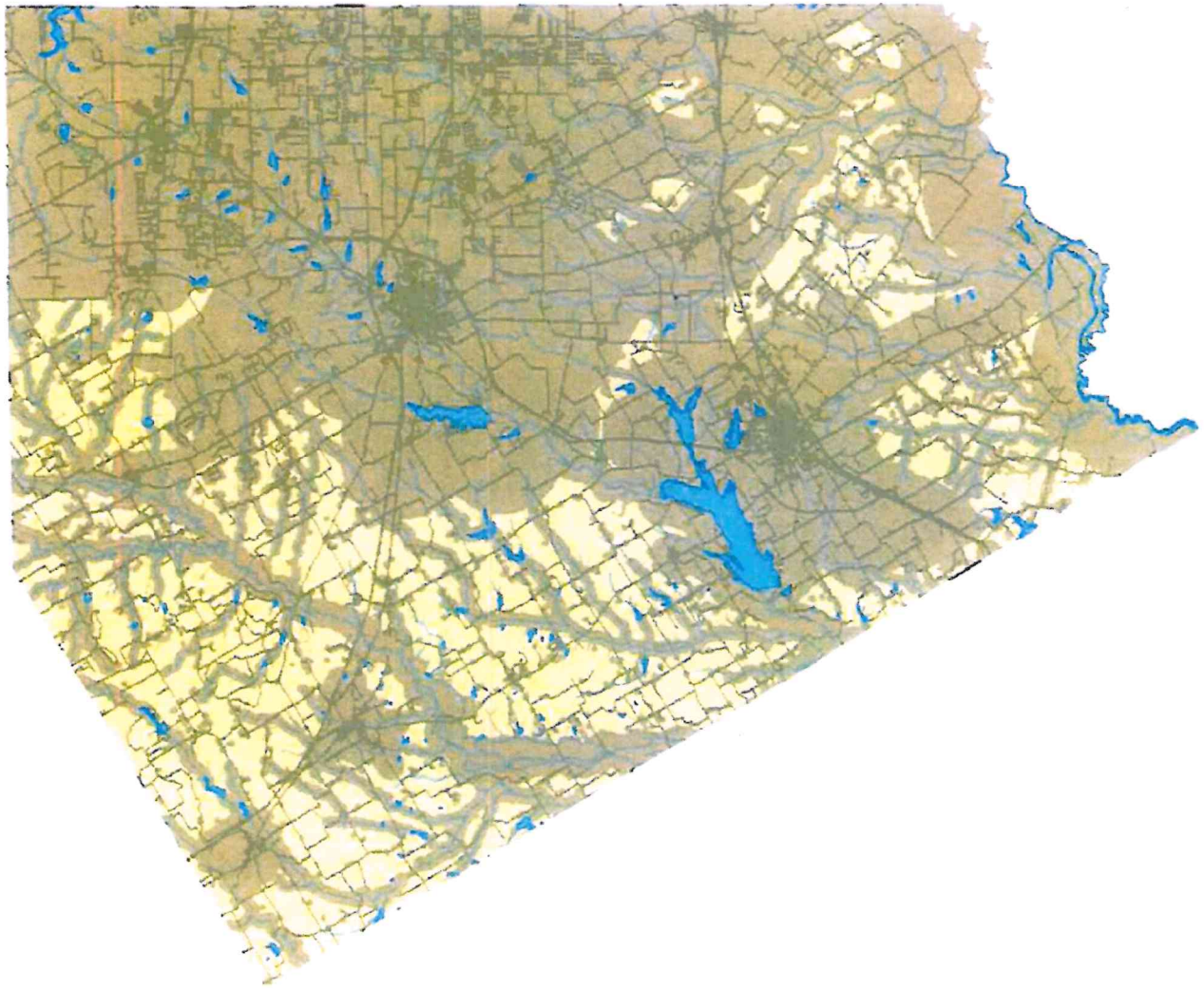


Figure A.11: Composite of All Unsuitable Areas



Legend

- Unsuitable Area
- Suitable Area

N

Appendix B
Ordinance

ORDER PROHIBITING SOLID WASTE DISPOSAL IN ELLIS COUNTY

SECTION 1

GENERAL PROVISIONS AND FINDINGS

WHEREAS, the Commissioners Court of Ellis County, Texas has both the responsibility and authority to protect the public health, safety and general welfare by prohibiting solid waste disposal in the unincorporated areas of Ellis County, except for those areas designated as solid waste disposal sites, pursuant to the authority of the Texas Health and Safety Code, 364.112; and,

WHEREAS, solid waste disposal, especially the disposal of solid waste in landfills, is an activity that has high potential to negatively impact the health, safety and welfare of any community; and,

WHEREAS, this court believes and hereby finds that further development or establishment of landfills in certain areas of the county would constitute an unacceptable risk and threat to public health, safety and welfare for the reasons stated below, among others, to wit;

The Court finds that the presence of solid waste disposal facilities in general may negatively influence property values; and

The Court further finds that solid waste disposal activities in the county could hamper economic development; and

The Court finally finds that substances contained within a landfill, especially in a hazardous or industrial landfill, could escape into the air or waterways, including subsurface waterways, significant threats to the public health, safety and welfare exist.

SECTION II

DEFINITIONS

The following words and terms, when used in this Court Order, shall have the following meanings, unless the contest clearly indicates otherwise.

INDUSTRIAL SOLID WASTE: Solid waste resulting from or incidental to a process of industry or manufacturing, mining, or agricultural operations.

MUNICIPAL SOLID WASTE: Solid waste resulting from or incidental to municipal, community, institutional, or recreational activities, and includes garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles and other solid waste other than industrial solid waste.

SOLID WASTE: Subject to the limitations of 42 U.S.C., 6903 (27) and 40 C.F.R. 261.4 (a), garbage, rubbish, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agriculture operations and from community and institutional activities. The term:

(A) Does not include:

(i) Solid or dissolved material in domestic sewage, or solid or dissolved material in irrigation return flows, or industrial discharges subject to regulation by permit issued under Chapter 26, Water Code;

(ii) Soil, dirt, rock, sand, and other natural or man-made inert solid materials used to fill land if the object of the fill is to make the land suitable for the construction of surface improvements; or

(iii) Waste materials that result from activities associated with the exploration, development, or production of oil or gas or geothermal resources and other substance or material regulated by the Railroad Commission of Texas, unless the waste, substance, or material results from activities associated with gasoline plants, natural gas liquids, processing plants, pressure maintenance plants, or re-pressurizing plants and is hazardous waste as defined by the EPA under the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act; and,

(B) Does include hazardous substances.

SOLID WASTE FACILITY: All contiguous land, including structures, appurtenances, and other improvements on the land, used for processing, storing, or disposing of solid waste. The term includes a publicly or privately owned solid waste facility consisting of processing, storage, transfer or disposal operational units such as one or more landfills, surface impoundment's or a combination of units.

SECTION III

APPROVED AREAS FOR DISPOSAL OF SOLID WASTE IN THE UNINCORPORATED AREAS OF ELLIS COUNTY

For the above reasons, and pursuant to the provisions of 364.112 of the Texas Health and Safety Code, the Commissioners Court of Ellis County hereby ORDAINS, RESOLVES, ORDERS AND ESTABLISHES the following COURT ORDER:

IT IS ORDAINED AND ORDERED that the disposal of solid waste within Ellis County, Texas is not prohibited in the following area:

See attached Map as described in the "County Solid Waste Facility Siting Ordinance" final report and recorded in Vol._____ Page_____of the minutes of the Ellis County Commissioners Court.

SECTION IV

CIVIL REMEDIES AND PENALTIES

The Commissioners Court of Ellis County, Texas may bring a legal action to enjoin violations of this court order and seek judgment for any civil penalties.

SECTION V

SEVERABILITY

If any portion of this order is deemed to be in violation of the statues or the constitution of this state or the United States by a court of competent jurisdiction, said portion shall be severed, and the remaining portions of this order shall remain in full force and effect.

On this the _____day of _____, 2007, the Commissioners Court of Ellis County, Texas executed this Order approving the Court Order Prohibiting Solid Waste Disposal in Ellis County.

_____
Judge Chad Adams

_____
Commissioner Dennis Robinson

_____
Commissioner Bill Dodson

_____
Commissioner Heath Sims

_____
Commissioner Ron Brown

ATTEST:

_____
Cindy Polley, County Clerk

This page intentionally left blank.

Prepared by: SAB
Date: 1/31/2012

Skyline Landfill
TRAFFIC PROJECTIONS

Checked by: KJW
Date: 1/31/2012

Required: Estimate the total traffic projection for the proposed configuration.

Assumptions:

1. The waste acceptance rate and incoming vehicles will increase at an annual rate of 1.4%.
2. Beginning Waste Accepted - Feb. 2010 to Feb. 2011 = 1,040,000 tons
3. The facility accepts waste 312 days per year (6 days a week).
4. Year 1 incoming landfill trucks based on average of 9.6 tons/vehicle from January 2010 to July 2011.

Solution:

2010 Waste: 1,040,000 tons
Days Operating 312

Landfill Waste Acceptance			Landfill Traffic				Hauling Facility Traffic				Total Traffic	
			Landfill Trucks		Landfill Staff/Others		Hauling Facility Trucks		Hauling Facility Staff/Others		Total Vehicles	
Year	Annual Waste (tons)	Daily Waste (tons/day)	Incoming Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day	Exiting Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day
1	1,040,000	3,333	347	694	35	70	60	60	90	180	472	1004
2	1,054,560	3,380	352	704	35	71	61	61	91	183	479	1019
3	1,069,324	3,427	357	714	36	72	62	62	93	185	486	1033
4	1,084,294	3,475	362	724	36	73	63	63	94	188	492	1047
5	1,099,474	3,524	367	734	37	74	63	63	95	190	499	1062
6	1,114,867	3,573	372	744	38	75	64	64	96	193	506	1077
7	1,130,475	3,623	377	755	38	76	65	65	98	196	513	1092
8	1,146,302	3,674	383	765	39	77	66	66	99	198	520	1107
9	1,162,350	3,725	388	776	39	78	67	67	101	201	528	1123
10	1,178,623	3,778	394	787	40	79	68	68	102	204	535	1138
11	1,195,124	3,831	399	798	40	80	69	69	103	207	543	1154
12	1,211,856	3,884	405	809	41	82	70	70	105	210	550	1170
13	1,228,821	3,939	410	821	41	83	71	71	106	213	558	1187
14	1,246,025	3,994	416	832	42	84	72	72	108	216	566	1203
15	1,263,469	4,050	422	844	43	85	73	73	109	219	574	1220
16	1,281,158	4,106	428	855	43	86	74	74	111	222	582	1237
17	1,299,094	4,164	434	867	44	87	75	75	112	225	590	1255
18	1,317,281	4,222	440	880	44	89	76	76	114	228	598	1272
19	1,335,723	4,281	446	892	45	90	77	77	116	231	606	1290
20	1,354,424	4,341	452	904	46	91	78	78	117	234	615	1308
21	1,373,385	4,402	459	917	46	92	79	79	119	238	624	1326
22	1,392,613	4,464	465	930	47	94	80	80	121	241	632	1345
23	1,412,109	4,526	471	943	48	95	81	81	122	244	641	1364
24	1,431,879	4,589	478	956	48	96	83	83	124	248	650	1383

Prepared by: SAB
Date: 1/31/2012

Skyline Landfill
TRAFFIC PROJECTIONS

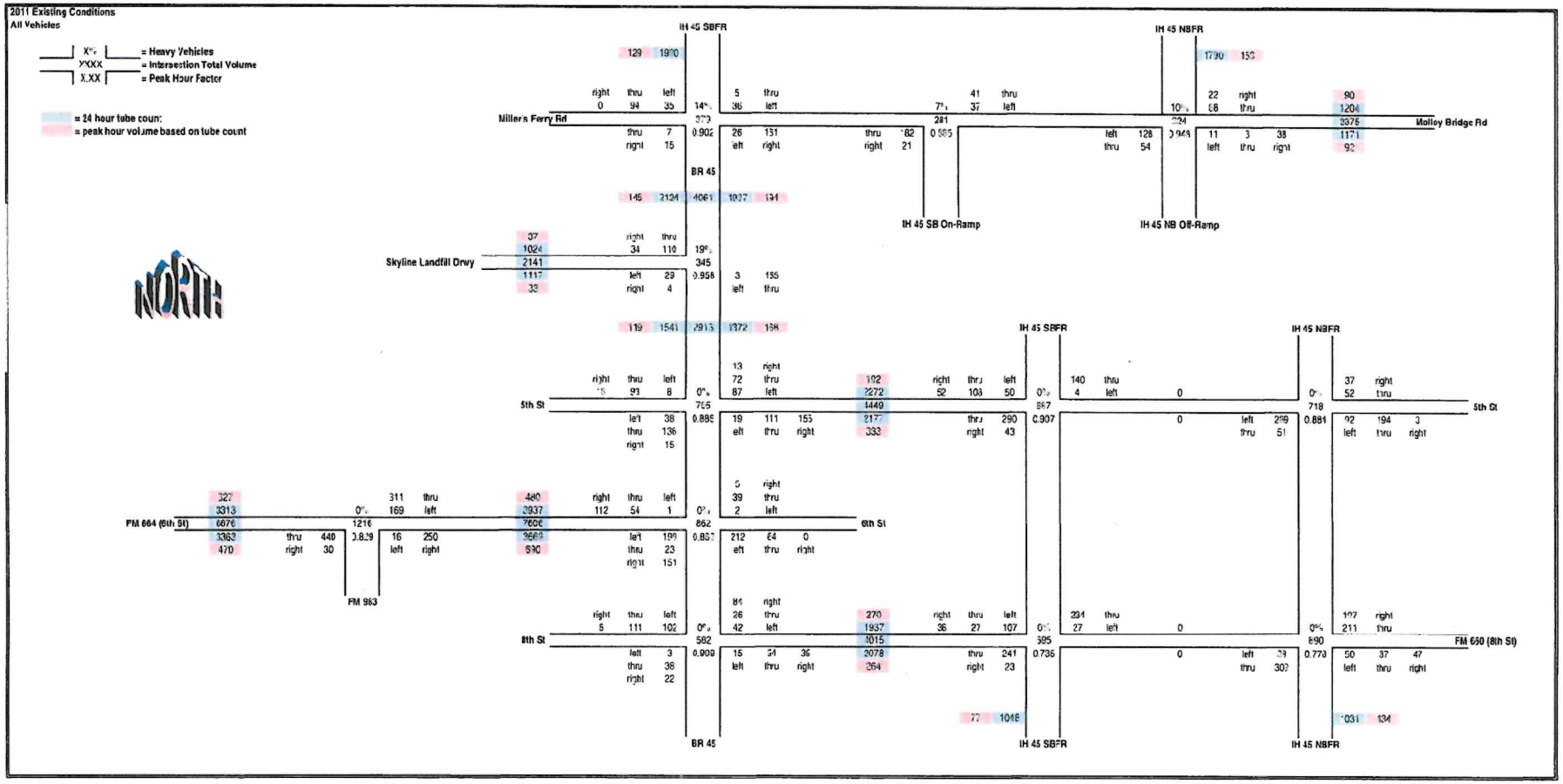
Checked by: KJW
Date: 1/31/2012

Landfill Waste Acceptance			Landfill Traffic				Hauling Facility Traffic				Total Traffic	
			Landfill Trucks		Landfill Staff/Others		Hauling Facility Trucks		Hauling Facility Staff/Others		Total Vehicles	
Year	Annual Waste (tons)	Daily Waste (tons/day)	Incoming Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day	Exiting Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day	Incoming Veh/Day	Total Veh Trips/Day
25	1,451,925	4,654	485	970	49	98	84	84	126	251	659	1402
26	1,472,252	4,719	492	983	50	99	85	85	127	255	668	1422
27	1,492,864	4,785	498	997	50	100	86	86	129	258	678	1442
28	1,513,764	4,852	505	1011	51	102	87	87	131	262	687	1462
29	1,534,957	4,920	512	1025	52	103	89	89	133	266	697	1482
30	1,556,446	4,989	520	1039	52	105	90	90	135	269	707	1503
31	1,578,236	5,058	527	1054	53	106	91	91	137	273	717	1524
32	1,600,331	5,129	534	1069	54	108	92	92	138	277	727	1546
33	1,622,736	5,201	542	1084	55	109	94	94	140	281	737	1567

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

AM Peak

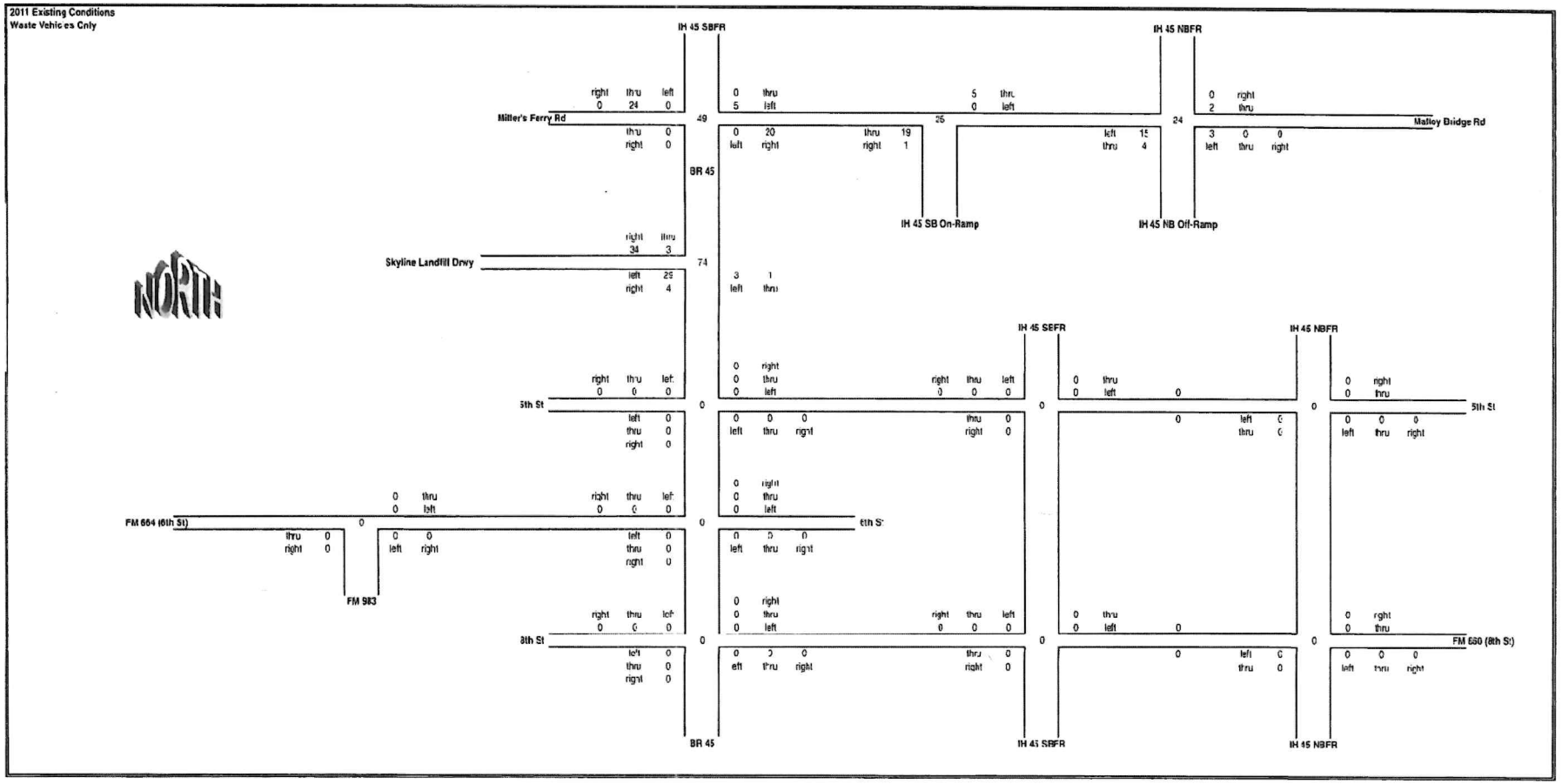


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

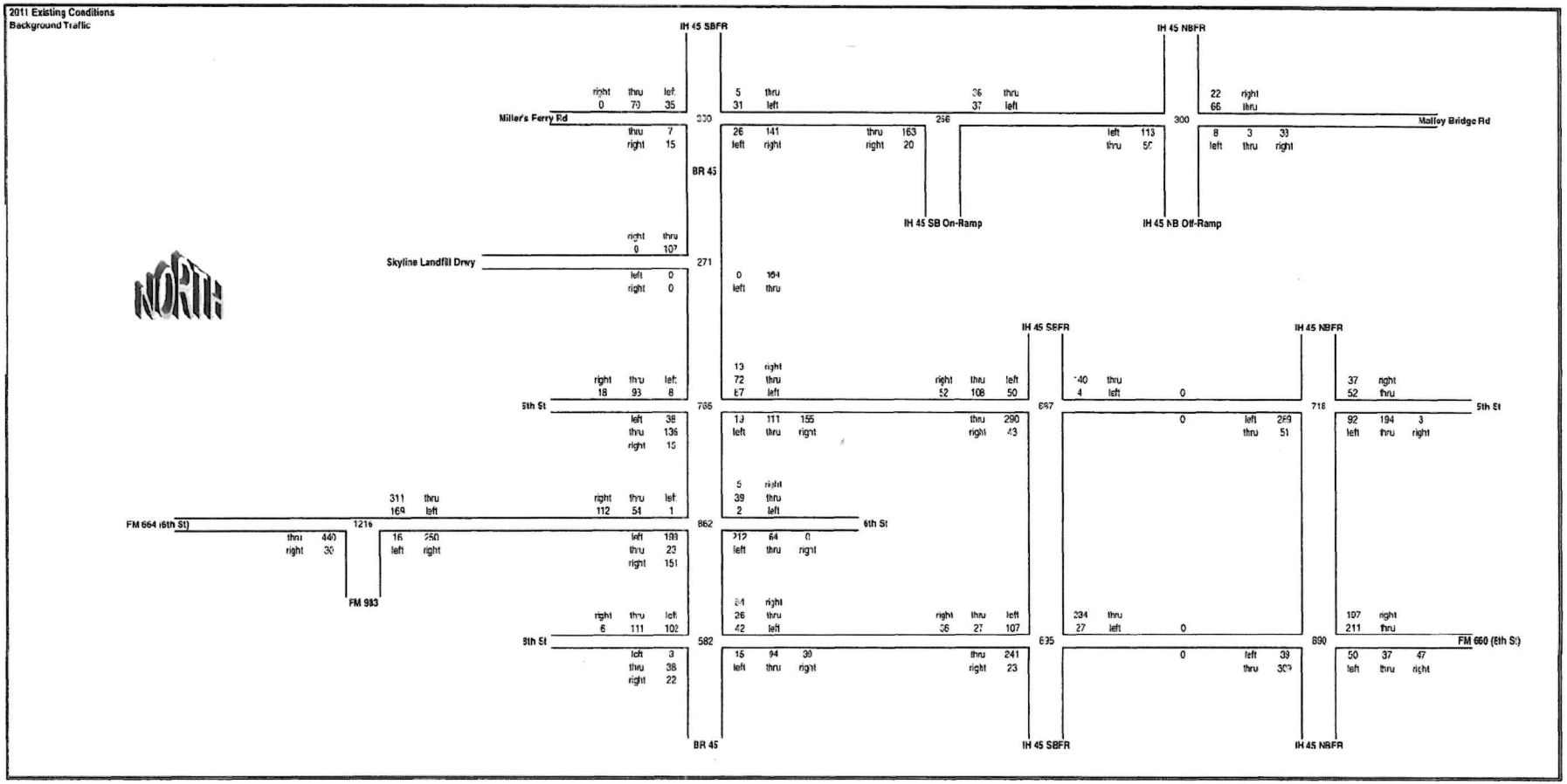
AM Peak



Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

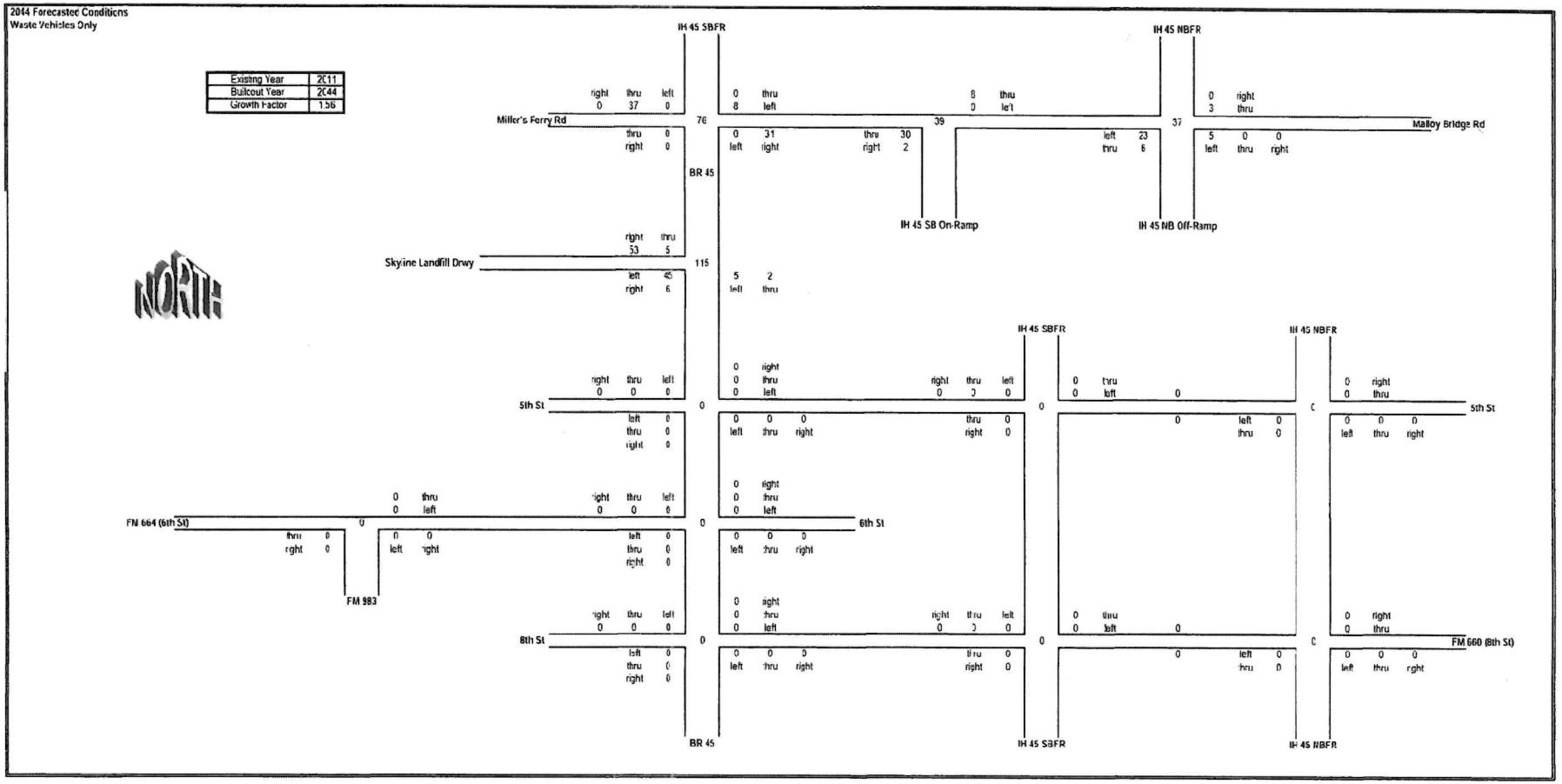
AM Peak



Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

AM Peak

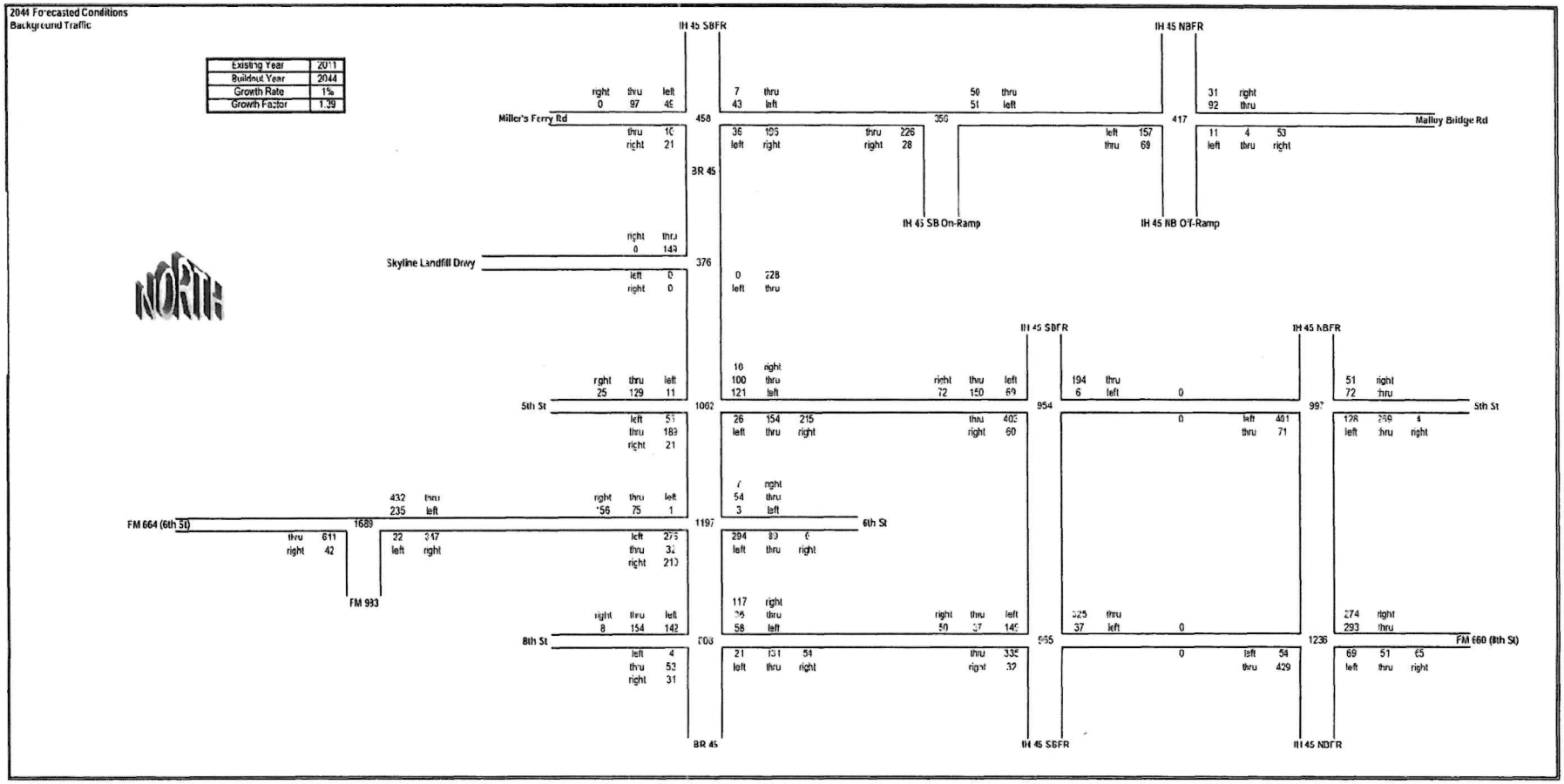


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

AM Peak

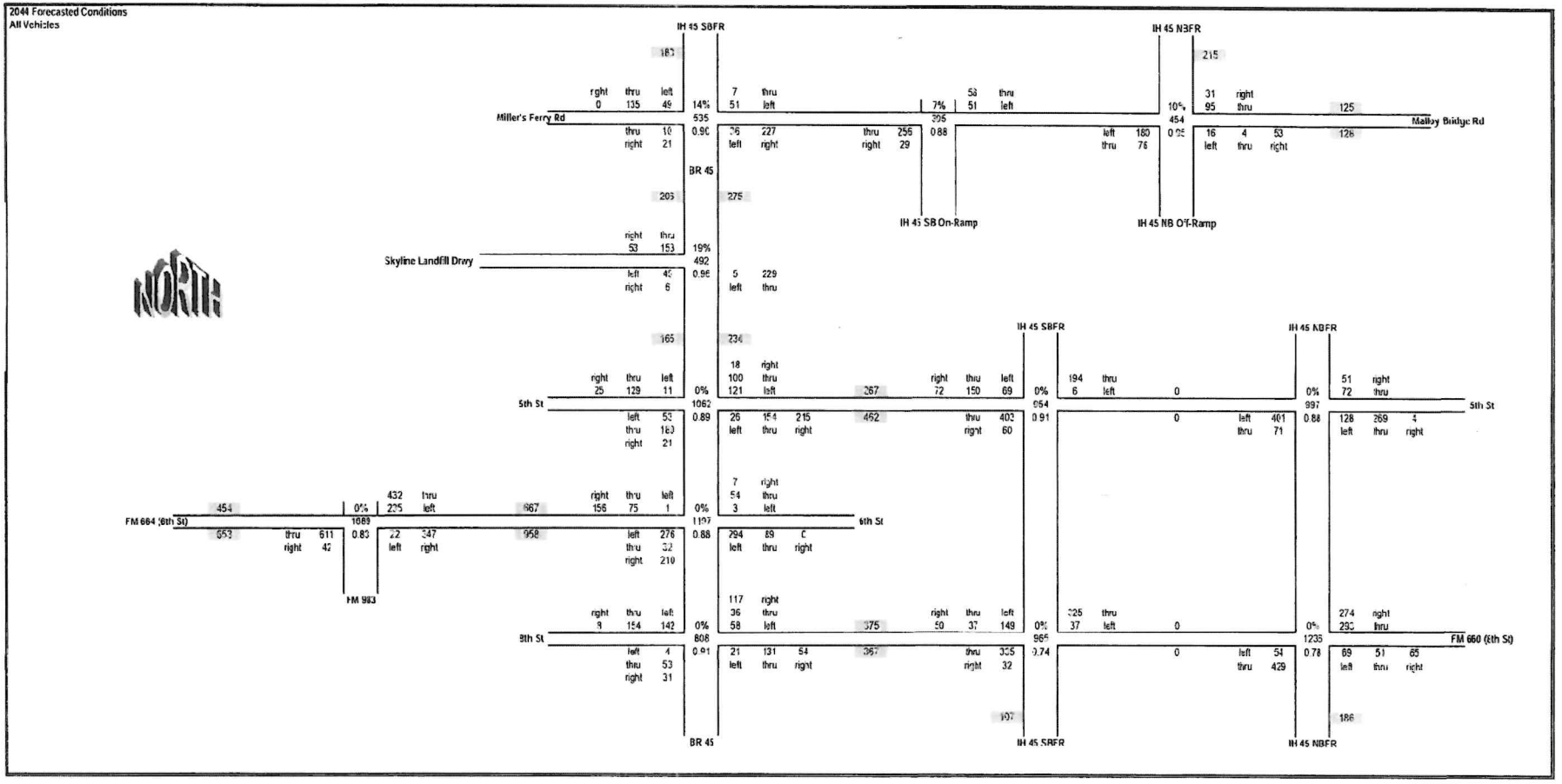


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

AM Peak

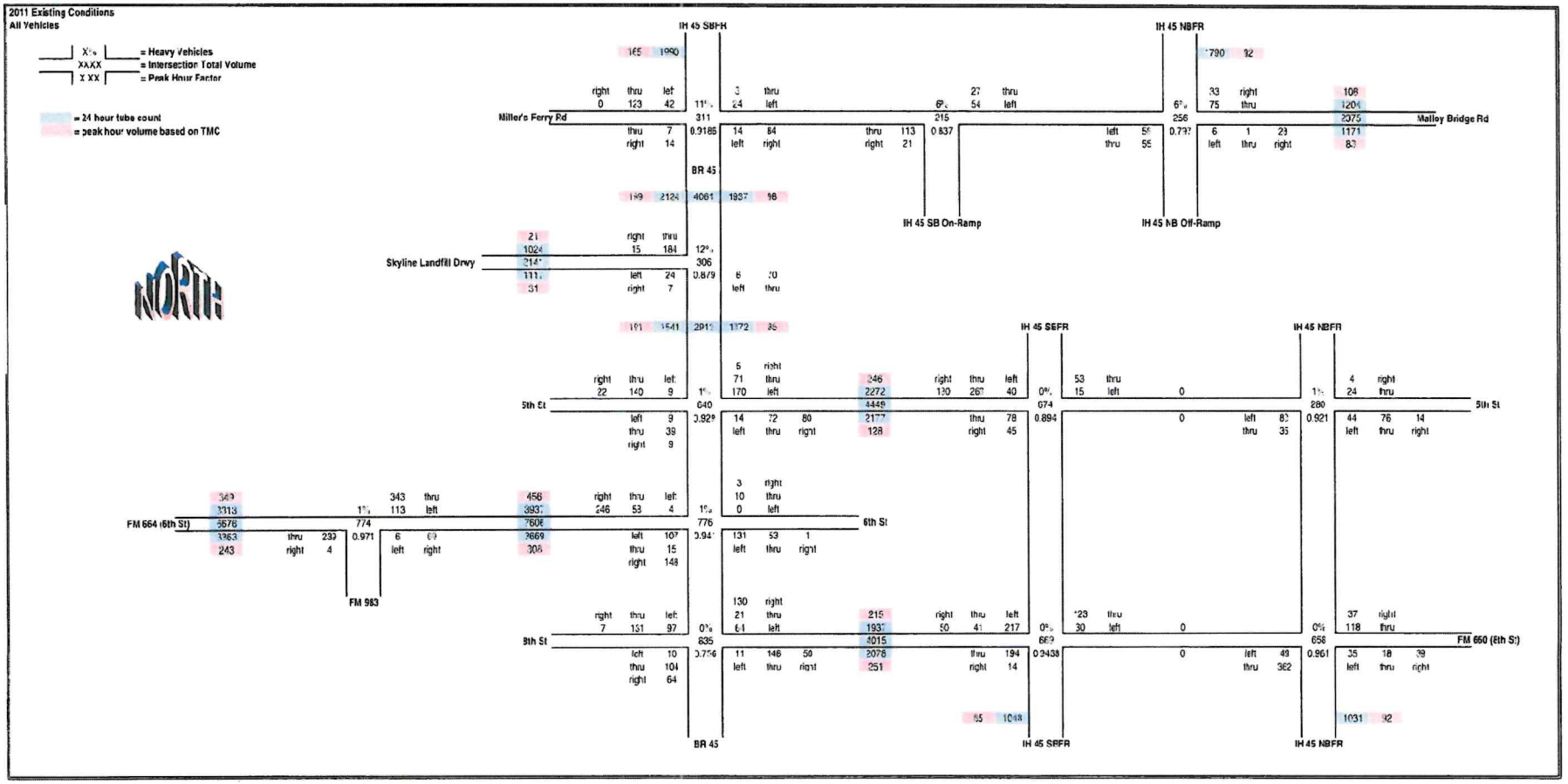


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SFREADSHEET

PM Peak

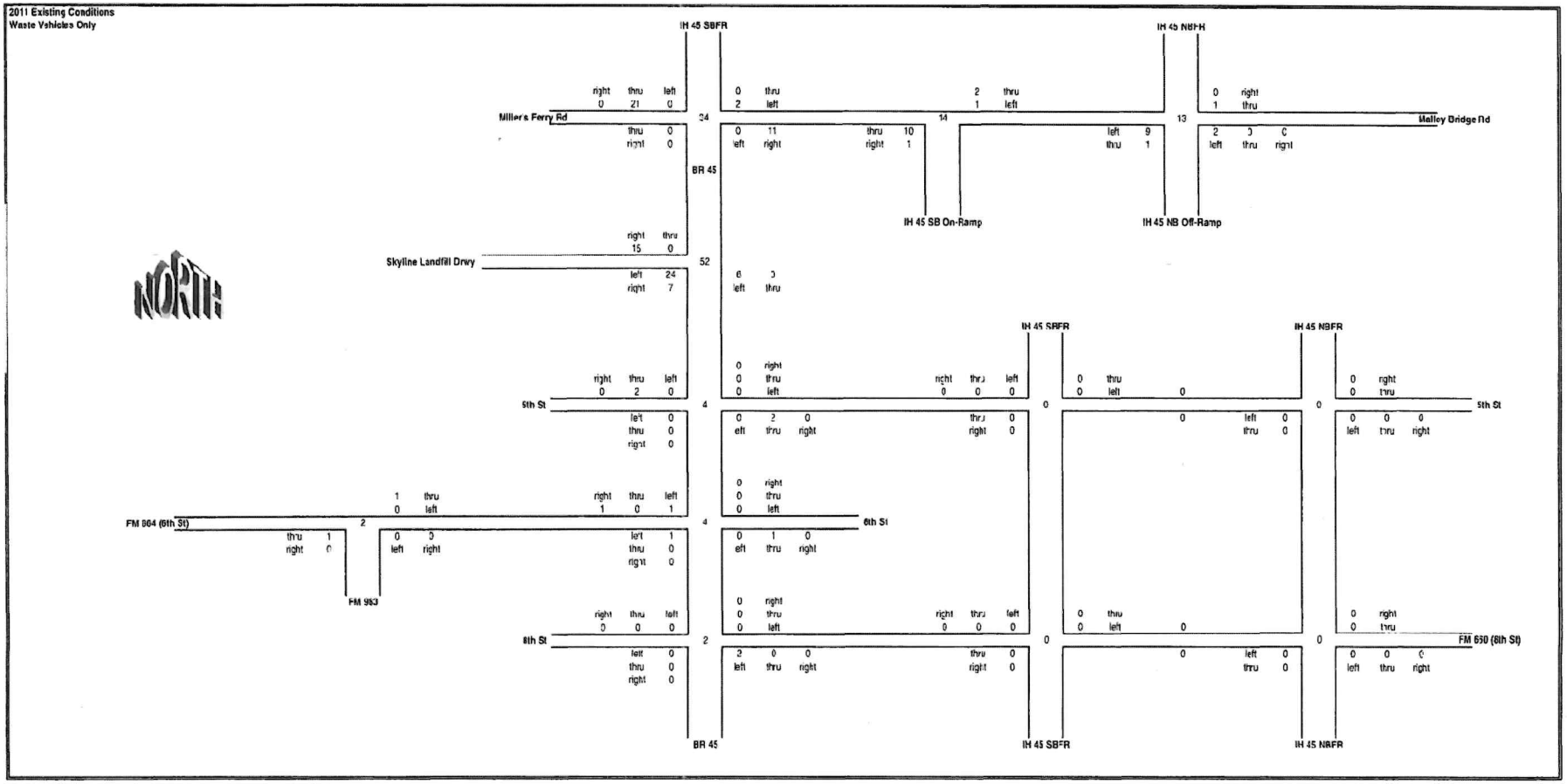


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

PM Peak

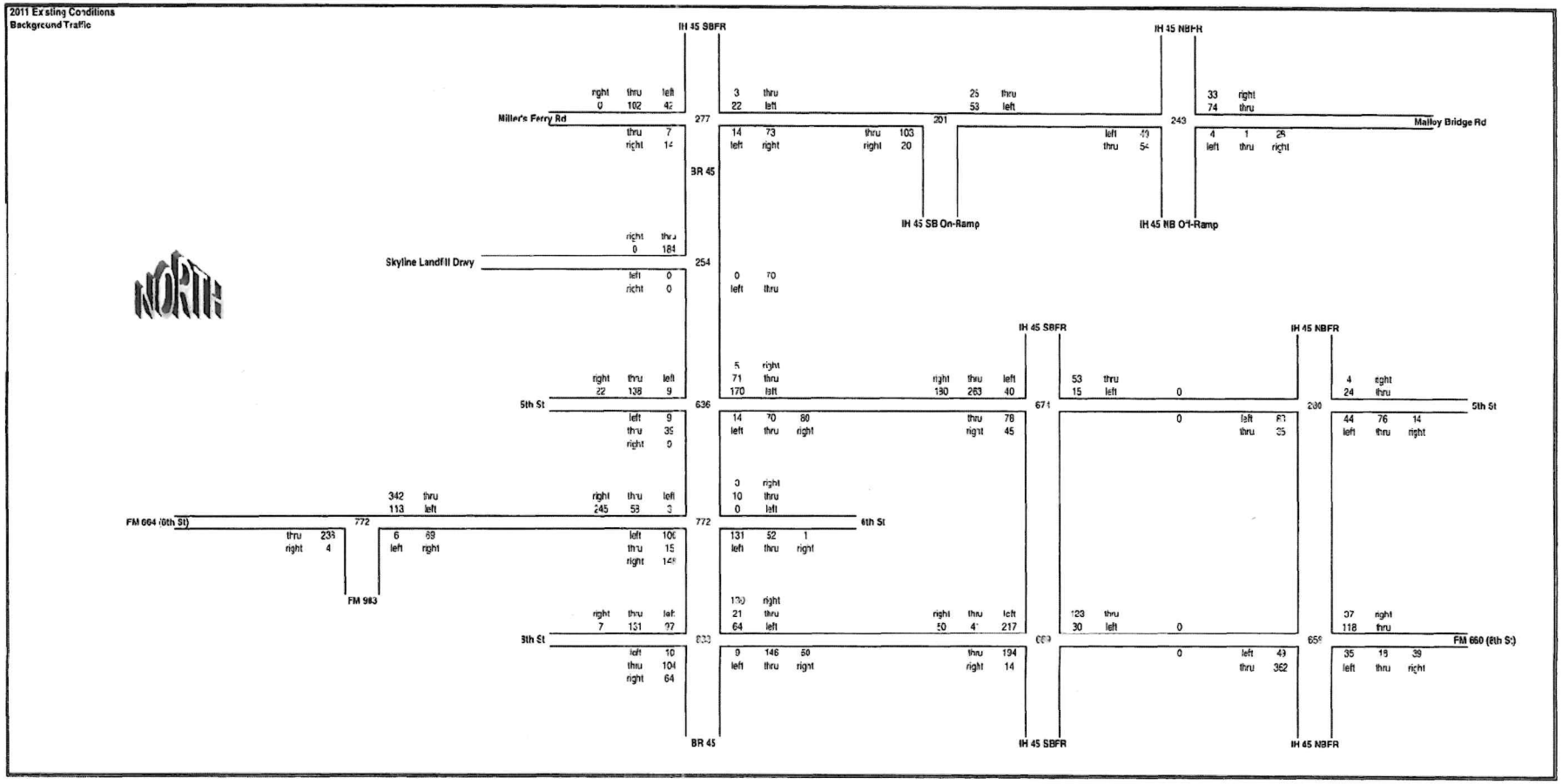


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

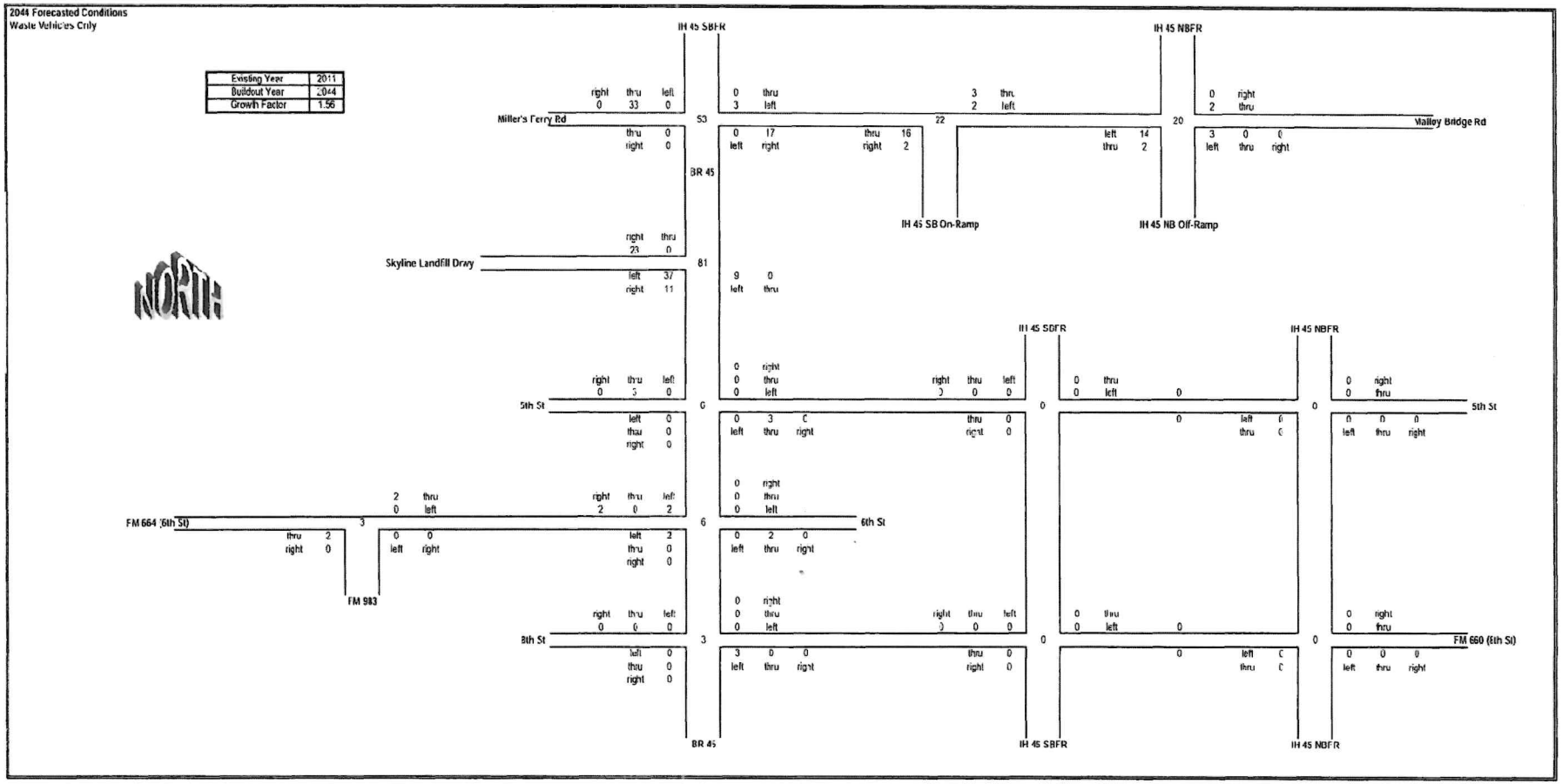
PM Peak



Skyline Ferris Traffic Study

DISTRIBUTION SFREADSHEET

PM Peak

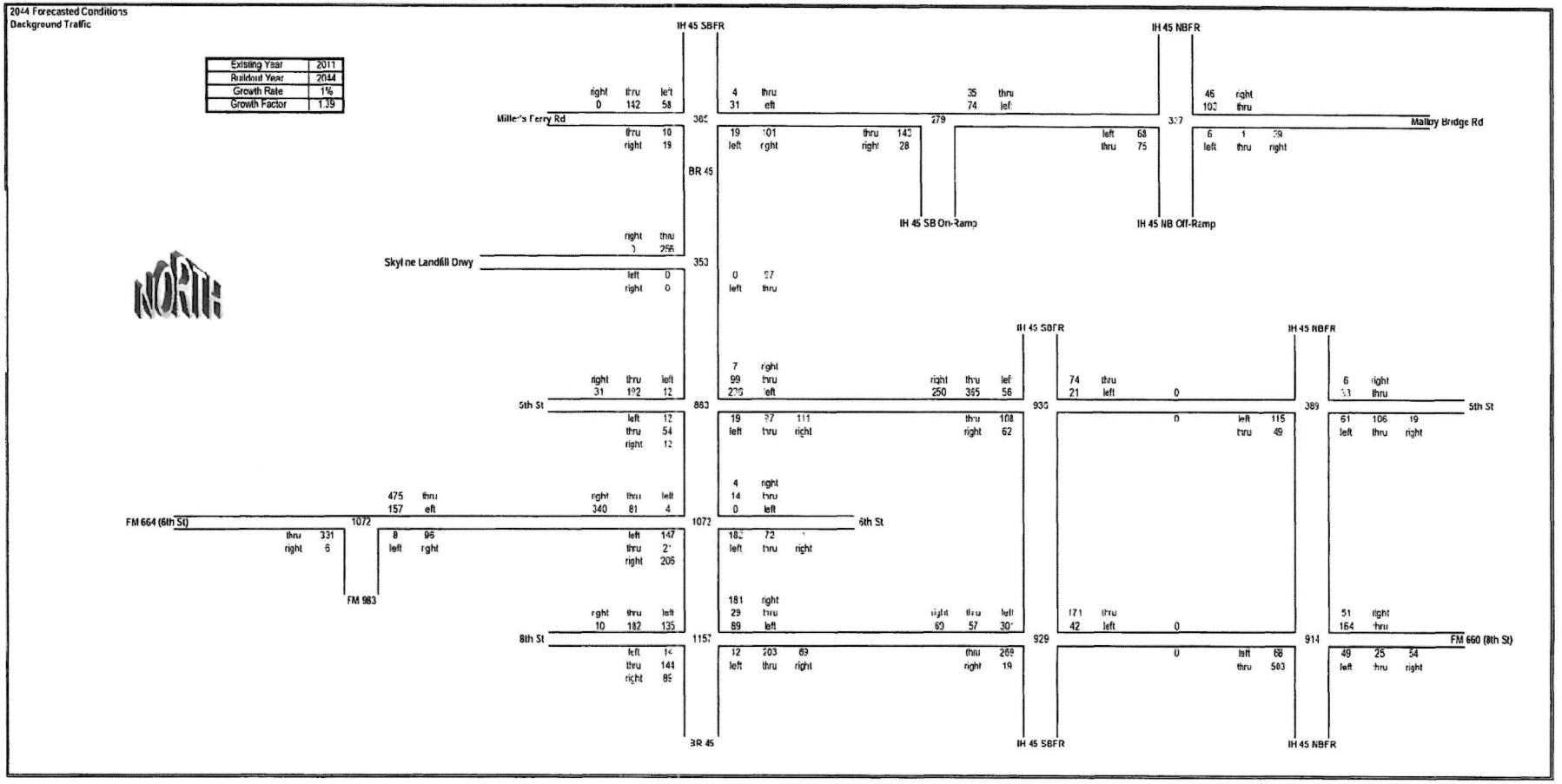


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

PM Peak

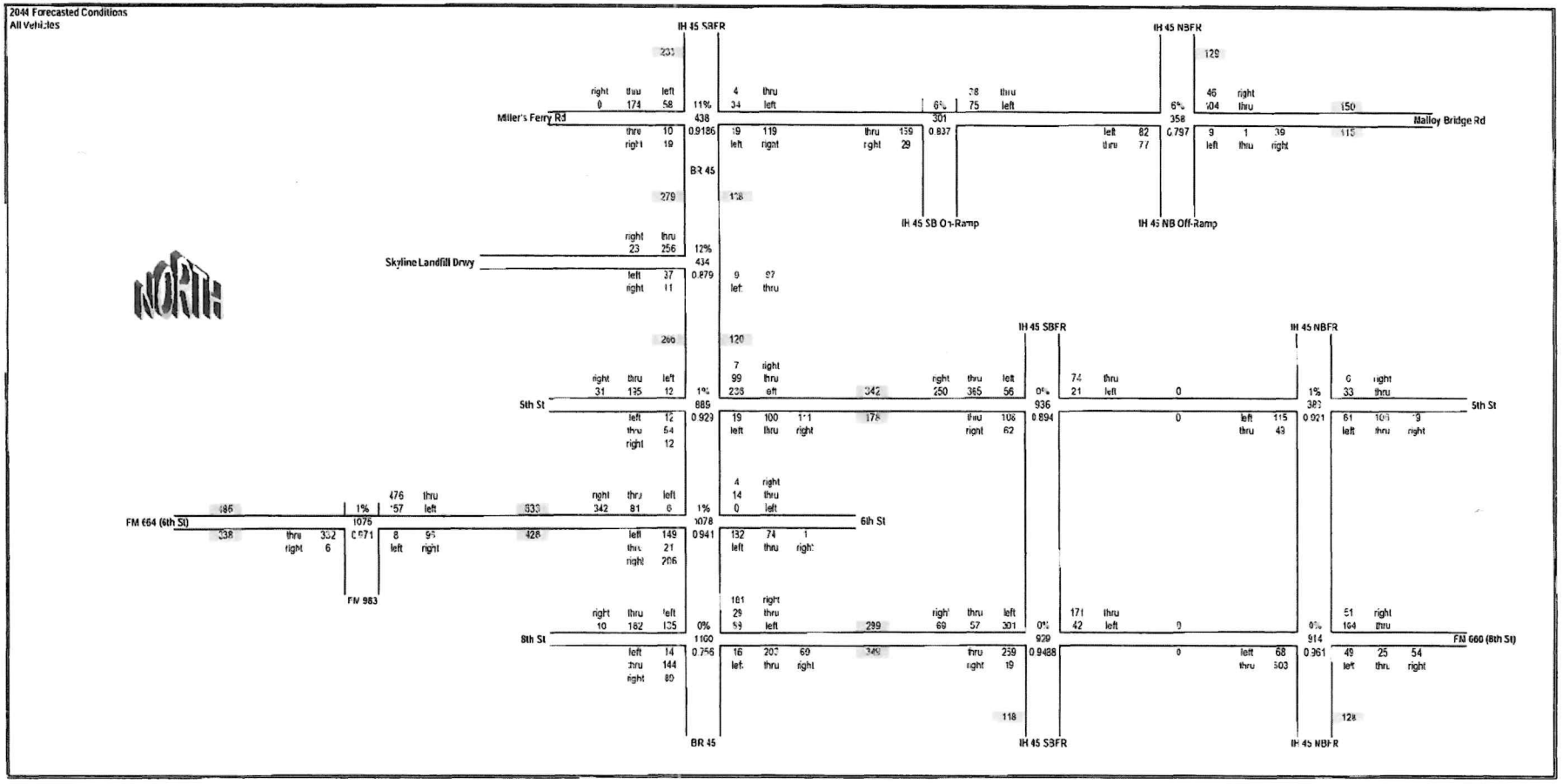


Technically Complete April 2, 2015

Skyline Ferris Traffic Study

DISTRIBUTION SPREADSHEET

PM Peak

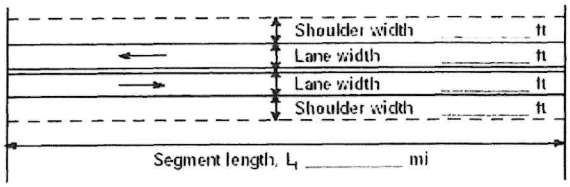


Technically Complete April 2, 2015

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	5th Street
Agency or Company	HDR	From/To	All
Date Performed	11/10/2011	Jurisdiction	City of Ferris
Analysis Time Period	AM Peak Hour	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	525 veh/h
Directional split	63 / 37
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	35

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.993
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	594
v_p * highest directional split proportion[2] (pc/h)	374

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	4.2 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f*f_{HV})$	32.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	8.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	32.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.9
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	23.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	590
v_p * highest directional split proportion[2] (pc/h)	372
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	40.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	20.8
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	61.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.19
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	106
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	378
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	4.5

Notes

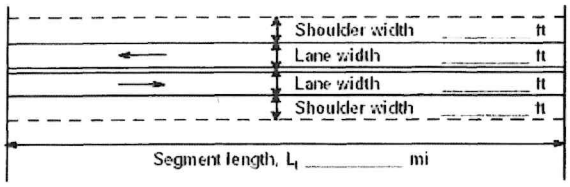
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	BR 45
Agency or Company	HDR	From/To	Malloy Bridge to Landfill Drwy
Date Performed	11/10/2011	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Hour	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	339 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.90
No-passing zone	100
% Trucks and Buses , P_T	19 %
% Recreational vehicles, P_R	0%
Access points/ mi	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.883
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	427
v_p * highest directional split proportion[2] (pc/h)	243

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.4 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	50.8 mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	50.8 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	4.4
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	43.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.981
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	384
v_p * highest directional split proportion[2] (pc/h)	219
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	28.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	23.0
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	51.6

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	B
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.13
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	57
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	203
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	1.3

Notes

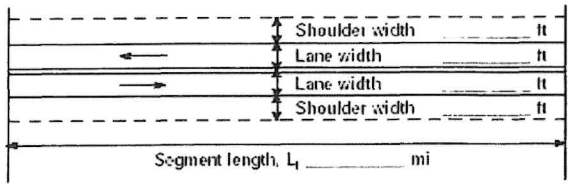
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	BR 45
Agency or Company	HDR	From/To	8th Street/Landfill Driveway
Date Performed	11/10/2011	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	287 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	19 %
% Recreational vehicles, P_R	0%
Access points/ mi	9

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.883
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	365
v_p * highest directional split proportion[2] (pc/h)	215

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.4 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	49.3 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.3 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	49.3 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	4.3
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	42.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.981
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	329
v_p * highest directional split proportion[2] (pc/h)	194
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	25.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	22.8
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	47.9

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	B
Volume to capacity ratio v/c $v/c=V_p/3{,}200$	0.11
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	81
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	287
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	1.9

Notes

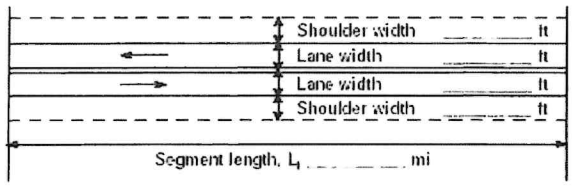
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	FM 660
Agency or Company	HDR	From/To	BR 45/Legendary Ln
Date Performed	11/10/2011	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	534 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.74
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	23

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.998
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	723
v_p * highest directional split proportion[2] (pc/h)	369

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	5.3 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	34.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	5.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	34.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.3
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	25.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	722
v_p * highest directional split proportion[2] (pc/h)	368
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	47.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	17.3
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	64.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio v/c $v/c=V_p/3{,}200$	0.23
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	180
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	534
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	7.2

Notes

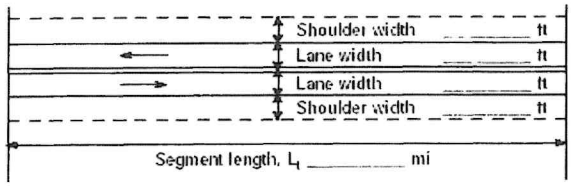
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	FM 664	Highway	FM 664
Agency or Company	HDR	From/To	Tanner Farm Rd/FM 983
Date Performed	11/10/2011	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	797 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.83
No-passing zone	87
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	8

Average Travel Speed

Grade adjustment factor, f_G (Exhiblt 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.998
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	962
v_p * highest directional split proportion[2] (pc/h)	568

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	50.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.0 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	50.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.4
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	40.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	961
v_p * highest directional split proportion[2] (pc/h)	567
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	57.0
Adj. for directional distribution and no-passing zone, $f_{d,np}$(%)(Exh. 20-12)	12.3
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	69.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhiblt 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.30
Peak 15-min veh-miles of travel,VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	423
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	1403
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	10.5

Notes

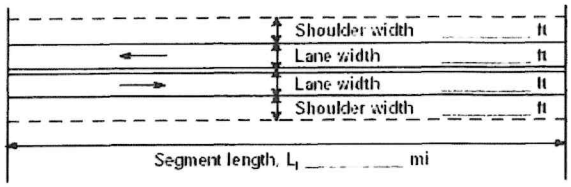
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	FM 983
Agency or Company	HDR	From/To	Bluff Springs Rd/BR 45
Date Performed	11/10/2011	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Hour	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	1170 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.83
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	26

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1411
v_p * highest directional split proportion[2] (pc/h)	832

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.7 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	36.8 mi/h	Adj. for access points, f_A (Exhibit 20-6)	6.5 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	36.8 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.7
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	24.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1410
v_p * highest directional split proportion[2] (pc/h)	832
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	71.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	8.0
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	79.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.44
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	352
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	1170
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	14.6

Notes

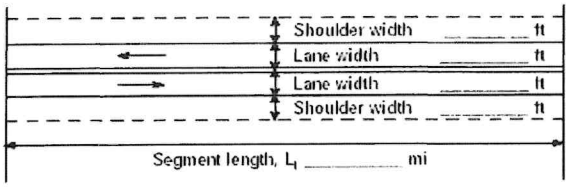
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	Malloy Bridge Road
Agency or Company	HDR	From/To	BR 45/Roberts Rd
Date Performed	11/10/2011	Jurisdiction	Dallas County
Analysis Time Period	PM Peak Hour	Analysis Year	2011

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	191 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.80
No-passing zone	21
% Trucks and Buses , P_T	6 %
% Recreational vehicles, P_R	0%
Access points/ mi	8

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	249
v_p * highest directional split proportion[2] (pc/h)	142

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	60.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	56.7 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.0 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	56.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	0.9
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	53.9

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.994
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	240
v_p * highest directional split proportion[2] (pc/h)	137
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	19.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.7
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	30.7

Level of Service and Other Performance Measures

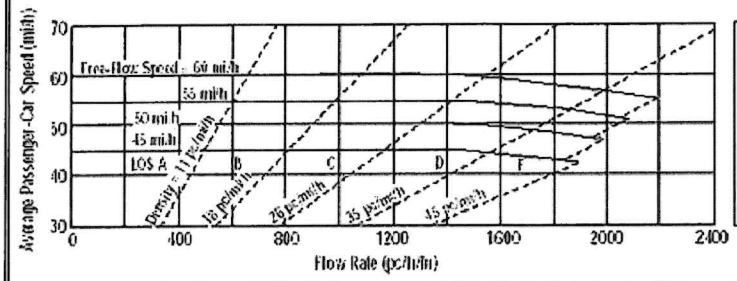
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio v/c $v/c=V_p/3,200$	0.08
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	60
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	191
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	1.1

Notes

1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	11/10/2011
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 NBFR
From/To	Malloy Bridge Rd/Mars Rd
Jurisdiction	TxDOT
Analysis Year	2011

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	153	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	10
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.952

Speed Inputs

Lane Width, LW (ft)	11.0
Total Lateral Clearence, LC (ft)	2.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	1.9
f_{LC} (mi/h)	3.6
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	52.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	84
Speed, S (mi/h)	52.8
D (pc/mi/ln)	1.6
LOS	A

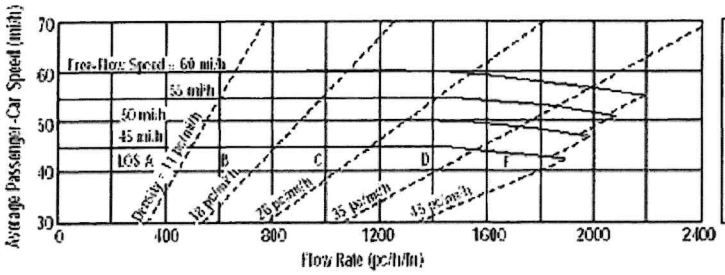
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	11/10/2011
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 NBFR
From/To	BR 45/FM 660
Jurisdiction	TxDOT
Analysis Year	2011

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	134	Peak-Hour Factor, PHF	0.78
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	0.0
Access Points, A (A/mi)	6
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	52.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	5.4
f_A (mi/h)	1.5
f_M (mi/h)	0.0
FFS (mi/h)	45.1

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	86
Speed, S (mi/h)	45.1
D (pc/mi/ln)	1.9
LOS	A

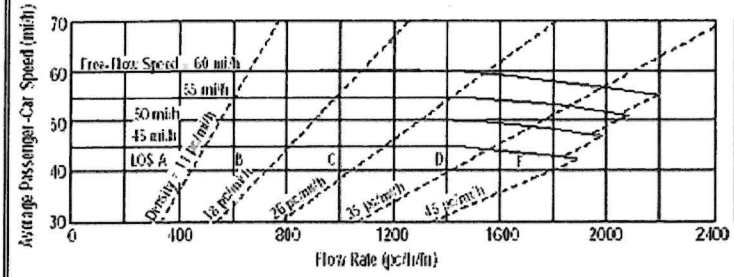
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	11/10/2011
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 SBFR
From/To	Mars Rd/Malloy Bridge Rd
Jurisdiction	TxDOT
Analysis Year	2011

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	165	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	11
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.948

Speed Inputs

Lane Width, LW (ft)	11.0
Total Lateral Clearence, LC (ft)	4.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	1.9
f_{LC} (mi/h)	1.8
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	54.5

Operations

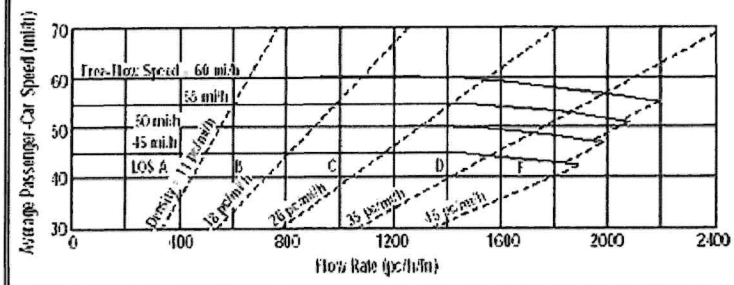
Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	94
Speed, S (mi/h)	54.5
D (pc/mi/ln)	1.7
LOS	A

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	11/10/2011
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 SBFR
From/To	FM 660/BR 45
Jurisdiction	TxDOT
Analysis Year	2011

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	85	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	0.0
Access Points, A (A/mi)	13
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	44
Speed, S (mi/h)	45.0
D (pc/mi/ln)	1.0
LOS	A

Design

Design (N)

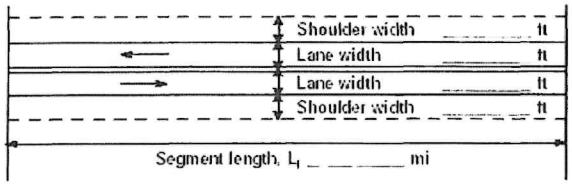
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	5th Street
Agency or Company	HDR	From/To	All
Date Performed	2/1/2012	Jurisdiction	City of Ferris
Analysis Time Period	AM Peak Hour	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	730 veh/h
Directional split	63 / 37
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	35

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.998
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	822
v_p * highest directional split proportion[2] (pc/h)	518

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	4.2 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	32.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	8.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	32.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	3.0
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	22.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	821
v_p * highest directional split proportion[2] (pc/h)	517
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	51.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	14.2
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	65.6

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.26
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	148
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	526
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	6.5

Notes

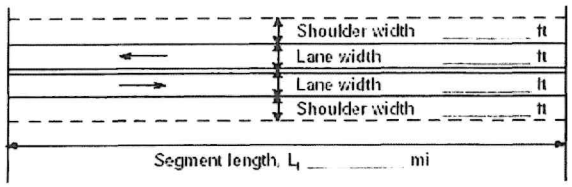
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	BR 45
Agency or Company	HDR	From/To	Malloy Bridge to Landfill Drwy
Date Performed	2/1/2012	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Hour	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	483 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.90
No-passing zone	100
% Trucks and Buses , P_T	19 %
% Recreational vehicles, P_R	0%
Access points/ mi	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.963
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	557
v_p * highest directional split proportion[2] (pc/h)	317

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.4 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	50.8 mi/h	Adj. for access points, f_A (Exhibit 20-6)	0.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	50.8 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	4.0
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	42.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.981
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	547
v_p * highest directional split proportion[2] (pc/h)	312
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	38.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	21.3
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	59.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.17
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	81
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	290
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	1.9

Notes

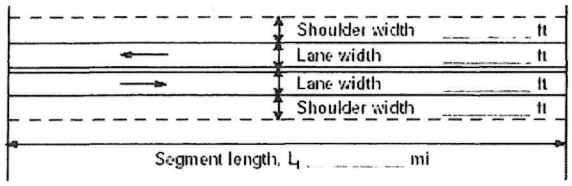
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	BR 45
Agency or Company	HDR	From/To	8th Street/Landfill Driveway
Date Performed	2/1/2012	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain	☐ Level ☐ Rolling
Two-way hourly volume	401 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	19 %
% Recreational vehicles, P_R	0%
Access points/ mi	9

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.883
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	510
v_p * highest directional split proportion[2] (pc/h)	301

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.4 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	49.3 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.3 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	49.3 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	4.2
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	41.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.981
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	459
v_p * highest directional split proportion[2] (pc/h)	271
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	33.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	21.9
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	55.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.16
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	113
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	401
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	2.7

Notes

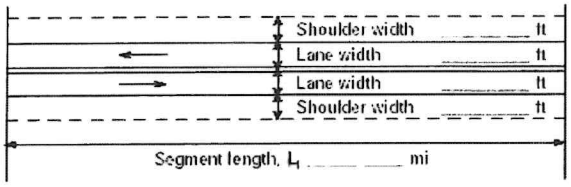
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	FM 660
Agency or Company	HDR	From/To	BR 45/Legendary Ln
Date Performed	2/1/2012	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	742 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.74
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	23

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.2
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.998
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1005
v_p * highest directional split proportion[2] (pc/h)	513

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	5.3 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	34.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	5.8 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	34.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	2.6
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	23.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1004
v_p * highest directional split proportion[2] (pc/h)	512
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	58.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.8
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	71.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio v/c $v/c=V_p/3{,}200$	0.31
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	251
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	742
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	10.7

Notes

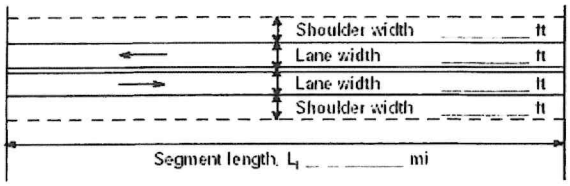
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	FM 664	Highway	FM 664
Agency or Company	HDR	From/To	Tanner Farm Rd/FM 983
Date Performed	2/1/2012	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Period	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☑ Level ☐ Rolling

Two-way hourly volume	1108 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.83
No-passing zone	87
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	8

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1336
v_p * highest directional split proportion[2] (pc/h)	788

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	52.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	50.0 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.0 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	50.0 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.7
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	38.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF * f_G * f_{HV})$	1335
v_p * highest directional split proportion[2] (pc/h)	788
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	69.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	8.4
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	77.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio v/c $v/c=V_p/3,200$	0.42
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	587
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	1950
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	15.5

Notes

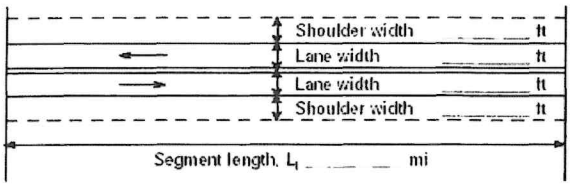
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	FM 983
Agency or Company	HDR	From/To	Bluff Springs Rd/BR 45
Date Performed	2/1/2012	Jurisdiction	TxDOT
Analysis Time Period	AM Peak Hour	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	1626 veh/h
Directional split	59 / 41
Peak-hour factor, PHF	0.83
No-passing zone	100
% Trucks and Buses , P_T	1 %
% Recreational vehicles, P_R	0%
Access points/ mi	26

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.999
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	1961
v_p * highest directional split proportion[2] (pc/h)	1157

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.7 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	36.8 mi/h	Adj. for access points, f_A (Exhibit 20-6)	6.5 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	36.8 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.1
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	20.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	1959
v_p * highest directional split proportion[2] (pc/h)	1156
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	82.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.6
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	86.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio v/c v/c=V_p/ 3,200	0.61
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	490
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	1626
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	24.0

Notes

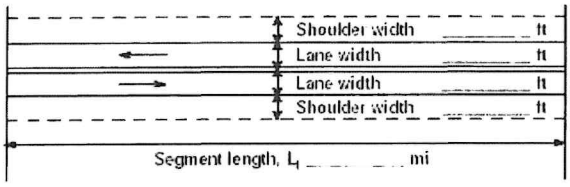
1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	TAG	Highway	Malloy Bridge Road
Agency or Company	HDR	From/To	BR 45/Roberts Rd
Date Performed	2/1/2012	Jurisdiction	Dallas County
Analysis Time Period	PM Peak Hour	Analysis Year	2044

Input Data





☐ Class I highway ☐ Class II highway

Terrain ☐ Level ☐ Rolling

Two-way hourly volume	266 veh/h
Directional split	57 / 43
Peak-hour factor, PHF	0.80
No-passing zone	21
% Trucks and Buses , P_T	6 %
% Recreational vehicles, P_R	0%
Access points/ mi	8

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.960
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	346
v_p * highest directional split proportion[2] (pc/h)	197

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	60.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	1.3 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	56.7 mi/h	Adj. for access points, f_A (Exhibit 20-6)	2.0 mi/h
		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	56.7 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.5
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	52.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.994
Two-way flow rate[1], v_p (pc/h) $v_p=V/(PHF*f_G*f_{HV})$	334
v_p * highest directional split proportion[2] (pc/h)	190
Base percent time-spent-following, BPTSF(%) $BPTSF=100(1-e^{-0.000879v_p})$	25.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.0
Percent time-spent-following, PTSF(%) $PTSF=BPTSF+f_{d/np}$	37.4

Level of Service and Other Performance Measures

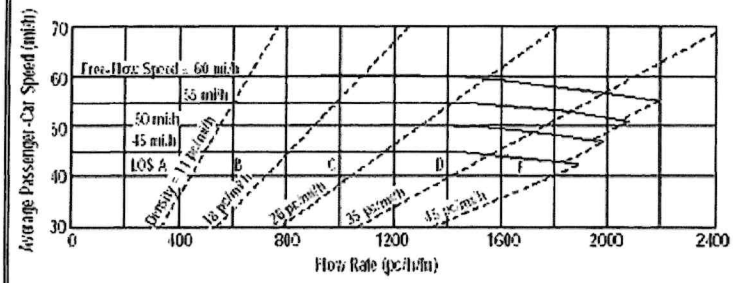
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio v/c $v/c=V_p/3{,}200$	0.11
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi) $VMT_{15}=0.25L_t(V/PHF)$	83
Peak-hour vehicle-miles of travel, VMT_{60} (veh- mi) $VMT_{60}=V*L_t$	266
Peak 15-min total travel time, TT_{15}(veh-h) $TT_{15}=VMT_{15}/ATS$	1.6

Notes

1. If v_p >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split v_p>= 1,700 pc/h, terminated anlysis-the LOS is F.

HCS2000™ Copyright © 2000 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	2/1/2012
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 NBFR
From/To	Malloy Bridge Rd/Mars Rd
Jurisdiction	TxDOT
Analysis Year	2044

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	215	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	10
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.952

Speed Inputs

Lane Width, LW (ft)	11.0
Total Lateral Clearance, LC (ft)	2.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	1.9
f_{LC} (mi/h)	3.6
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	52.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	118
Speed, S (mi/h)	52.8
D (pc/mi/ln)	2.2
LOS	A

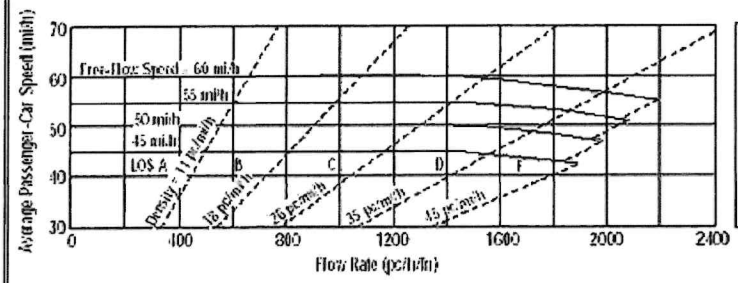
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	2/1/2012
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 NBFR
From/To	BR 45/FM 660
Jurisdiction	TxDOT
Analysis Year	2044

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	186	Peak-Hour Factor, PHF	0.78
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	0.0
Access Points, A (A/mi)	6
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	52.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	5.4
f_A (mi/h)	1.5
f_M (mi/h)	0.0
FFS (mi/h)	45.1

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	119
Speed, S (mi/h)	45.1
D (pc/mi/ln)	2.6
LOS	A

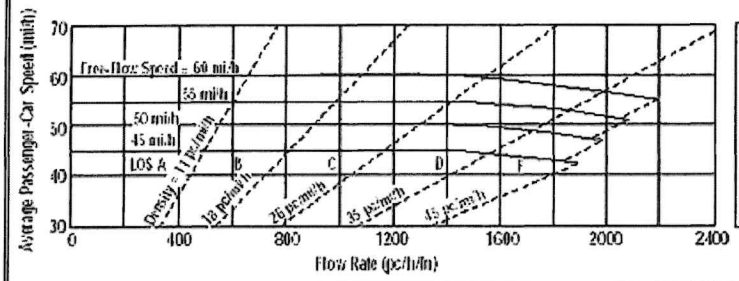
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	2/1/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 SBFR
From/To	Mars Rd/Malloy Bridge Rd
Jurisdiction	TxDOT
Analysis Year	2044

Project Description Skyline Landfill Ferris

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	233	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	11
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.948

Speed Inputs

Lane Width, LW (ft)	11.0
Total Lateral Clearence, LC (ft)	4.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	1.9
f_{LC} (mi/h)	1.8
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	54.5

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	133
Speed, S (mi/h)	54.5
D (pc/mi/ln)	2.4
LOS	A

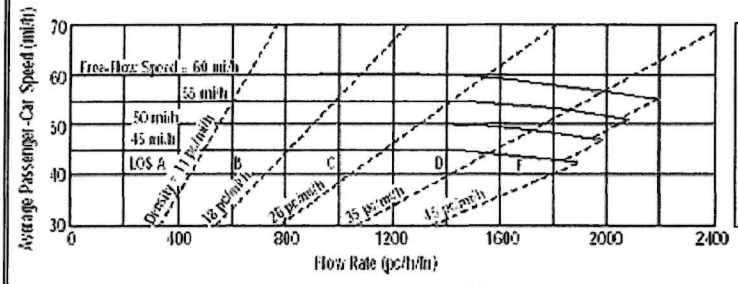
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	TAG
Agency or Company	HDR
Date Performed	2/1/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	IH 45 SBFR
From/To	FM 660/BR 45
Jurisdiction	TxDOT
Analysis Year	2044

Project Description Skyline Landfill Ferris

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	118	Peak-Hour Factor, PHF	0.95
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	0.0
Access Points, A (A/mi)	13
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	62
Speed, S (mi/h)	45.0
D (pc/mi/ln)	1.4
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

HCS2000™ Copyright © 2003 University of Florida, All Rights Reserved Version 4.1f

HCM Unsignalized Intersection Capacity Analysis
1: MILLER'S FERRY RD & IH 45 SBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	7	15	36	5	0	26	0	161	35	94	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	8	17	40	6	0	29	0	179	39	104	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	24	46	208	39	106
Volume Left (vph)	0	40	29	39	0
Volume Right (vph)	17	0	179	0	1
Hadj (s)	-0.17	0.41	-0.25	0.74	0.23
Departure Headway (s)	4.6	5.1	4.1	5.6	5.1
Degree Utilization, x	0.03	0.07	0.24	0.06	0.15
Capacity (veh/h)	717	648	855	627	692
Control Delay (s)	7.7	8.5	8.4	7.7	7.7
Approach Delay (s)	7.7	8.5	8.4	7.7	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	128	54	0	0	68	22	11	3	38	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.86	0.86	0.86
Hourly flow rate (vph)	135	57	0	0	72	23	12	3	40	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	192	95	55
Volume Left (vph)	135	0	12
Volume Right (vph)	0	23	40
Hadj (s)	0.31	0.02	-0.23
Departure Headway (s)	4.4	4.3	4.3
Degree Utilization, x	0.24	0.11	0.07
Capacity (veh/h)	797	827	776
Control Delay (s)	8.8	7.8	7.6
Approach Delay (s)	8.8	7.8	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	8.3		
HCM Level of Service	A		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	29	4	3	165	110	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	30	4	3	172	115	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	310	132	150			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	132	150			
tC, single (s)	6.6	6.4	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.4			
p0 queue free %	95	100	100			
cM capacity (veh/h)	647	874	1334			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	34	175	150
Volume Left	30	3	0
Volume Right	4	0	35
cSH	668	1334	1700
Volume to Capacity	0.05	0.00	0.09
Queue Length 95th (ft)	4	0	0
Control Delay (s)	10.7	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.7	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: 5TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	38	136	15	87	72	13	19	111	155	8	93	18
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	43	153	17	98	81	15	21	125	174	9	104	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	212	193	320	134
Volume Left (vph)	43	98	21	9
Volume Right (vph)	17	15	174	20
Hadj (s)	0.01	0.07	-0.30	-0.06
Departure Headway (s)	5.4	5.5	5.0	5.5
Degree Utilization, x	0.32	0.30	0.44	0.20
Capacity (veh/h)	604	593	671	585
Control Delay (s)	11.0	10.9	11.9	9.9
Approach Delay (s)	11.0	10.9	11.9	9.9
Approach LOS	B	B	B	A

Intersection Summary				
Delay	11.1			
HCM Level of Service	B			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	199	23	151	2	39	5	212	64	1	1	54	112
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	226	26	172	2	44	6	241	73	1	1	61	127

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	424	52	315	190
Volume Left (vph)	226	2	241	1
Volume Right (vph)	172	6	1	127
Hadj (s)	-0.12	-0.04	0.17	-0.38
Departure Headway (s)	5.3	6.1	5.7	5.4
Degree Utilization, x	0.63	0.09	0.50	0.29
Capacity (veh/h)	645	490	585	595
Control Delay (s)	16.8	9.7	14.4	10.6
Approach Delay (s)	16.8	9.7	14.4	10.6
Approach LOS	C	A	B	B

Intersection Summary			
Delay	14.4		
HCM Level of Service	B		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	440	30	169	311	16	250
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	530	36	204	375	19	301
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			566		1330	548
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			566		1330	548
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			80		86	44
cM capacity (veh/h)			1011		137	538

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	566	204	375	320
Volume Left	0	204	0	19
Volume Right	36	0	0	301
cSH	1700	1011	1700	457
Volume to Capacity	0.33	0.20	0.22	0.70
Queue Length 95th (ft)	0	19	0	134
Control Delay (s)	0.0	9.5	0.0	29.3
Lane LOS		A		D
Approach Delay (s)	0.0	3.3		29.3
Approach LOS				D

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	38	22	42	26	84	15	94	39	102	111	6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	42	24	46	29	92	16	103	43	112	122	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	69	167	163	241
Volume Left (vph)	3	46	16	112
Volume Right (vph)	24	92	43	7
Hadj (s)	-0.18	-0.26	-0.12	0.09
Departure Headway (s)	4.9	4.7	4.7	4.8
Degree Utilization, x	0.09	0.22	0.21	0.32
Capacity (veh/h)	653	698	722	711
Control Delay (s)	8.5	9.0	8.9	10.0
Approach Delay (s)	8.5	9.0	8.9	10.0
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.3		
HCM Level of Service	A		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	290	43	4	140	0	0	0	0	50	108	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	319	47	4	154	0	0	0	0	55	119	57

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	366	158	114	116
Volume Left (vph)	0	4	55	0
Volume Right (vph)	47	0	0	57
Hadj (s)	-0.06	0.02	0.26	-0.33
Departure Headway (s)	4.7	5.0	6.0	5.4
Degree Utilization, x	0.48	0.22	0.19	0.18
Capacity (veh/h)	738	677	560	616
Control Delay (s)	11.9	9.4	9.2	8.4
Approach Delay (s)	11.9	9.4	8.8	
Approach LOS	B	A	A	

Intersection Summary				
Delay		10.4		
HCM Level of Service		B		
Intersection Capacity Utilization		30.6%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
10: 5TH ST & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	289	51	0	0	52	37	92	194	3	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	328	58	0	0	59	42	105	220	3	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	386	101	215	114
Volume Left (vph)	328	0	105	0
Volume Right (vph)	0	42	0	3
Hadj (s)	0.19	-0.23	0.26	0.00
Departure Headway (s)	5.1	5.1	6.0	5.8
Degree Utilization, x	0.55	0.14	0.36	0.18
Capacity (veh/h)	676	650	568	590
Control Delay (s)	14.2	9.0	11.2	8.8
Approach Delay (s)	14.2	9.0	10.4	
Approach LOS	B	A	B	

Intersection Summary			
Delay	12.0		
HCM Level of Service	B		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	241	23	27	234	0	0	0	0	107	27	36
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	326	31	36	316	0	0	0	0	145	36	49

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	357	353	163	67
Volume Left (vph)	0	36	145	0
Volume Right (vph)	31	0	0	49
Hadj (s)	-0.04	0.04	0.46	-0.49
Departure Headway (s)	5.1	5.2	6.7	5.8
Degree Utilization, x	0.51	0.51	0.31	0.11
Capacity (veh/h)	678	672	488	572
Control Delay (s)	13.2	13.3	11.5	8.3
Approach Delay (s)	13.2	13.3	10.6	
Approach LOS	B	B	B	

Intersection Summary			
Delay	12.6		
HCM Level of Service	B		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
12: FM 660 (8TH ST) & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	39	309	0	0	211	197	50	37	47	0	0	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	50	396	0	0	271	253	64	47	60	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	446	523	64	108
Volume Left (vph)	50	0	64	0
Volume Right (vph)	0	253	0	60
Hadj (s)	0.04	-0.27	0.52	-0.37
Departure Headway (s)	5.2	4.8	7.3	6.4
Degree Utilization, x	0.64	0.70	0.13	0.19
Capacity (veh/h)	673	733	437	503
Control Delay (s)	17.0	18.2	10.2	9.7
Approach Delay (s)	17.0	18.2	9.9	
Approach LOS	C	C	A	

Intersection Summary			
Delay	16.5		
HCM Level of Service	C		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: MILLER'S FERRY RD & IH 45 SBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	7	14	24	3	0	14	0	84	42	123	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	15	26	3	0	15	0	91	46	134	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	23	29	107	46	135
Volume Left (vph)	0	26	15	46	0
Volume Right (vph)	15	0	91	0	1
Hadj (s)	-0.21	0.36	-0.30	0.69	0.18
Departure Headway (s)	4.4	4.9	4.0	5.4	4.9
Degree Utilization, x	0.03	0.04	0.12	0.07	0.18
Capacity (veh/h)	760	679	869	650	721
Control Delay (s)	7.5	8.2	7.6	7.6	7.8
Approach Delay (s)	7.5	8.2	7.6	7.7	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	7.7			
HCM Level of Service	A			
Intersection Capacity Utilization	30.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	58	55	0	0	75	33	6	1	28	0	0	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	72	69	0	0	94	41	8	1	35	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	141	135	44
Volume Left (vph)	73	0	8
Volume Right (vph)	0	41	35
Hadj (s)	0.20	-0.08	-0.34
Departure Headway (s)	4.3	4.1	4.2
Degree Utilization, x	0.17	0.15	0.05
Capacity (veh/h)	815	869	806
Control Delay (s)	8.2	7.8	7.4
Approach Delay (s)	8.2	7.8	7.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	7	6	70	184	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	27	8	7	80	209	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	311	218	226			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311	218	226			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	96	99	99			
cM capacity (veh/h)	658	798	1285			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	35	86	226
Volume Left	27	7	0
Volume Right	8	0	17
cSH	685	1285	1700
Volume to Capacity	0.05	0.01	0.13
Queue Length 95th (ft)	4	0	0
Control Delay (s)	10.5	0.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	0.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: 5TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	9	39	9	170	71	5	14	72	80	9	140	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	42	10	183	76	5	15	77	86	10	151	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	61	265	178	184
Volume Left (vph)	10	183	15	10
Volume Right (vph)	10	5	86	24
Hadj (s)	-0.05	0.14	-0.26	-0.05
Departure Headway (s)	5.2	5.0	4.8	4.9
Degree Utilization, x	0.09	0.37	0.24	0.25
Capacity (veh/h)	624	671	700	673
Control Delay (s)	8.6	11.0	9.2	9.6
Approach Delay (s)	8.6	11.0	9.2	9.6
Approach LOS	A	B	A	A

Intersection Summary			
Delay	9.9		
HCM Level of Service	A		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: FM 983 (6TH ST) & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	107	15	148	1	10	3	131	53	1	4	58	246
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	114	16	157	1	11	3	139	56	1	4	62	262

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	287	15	197	328
Volume Left (vph)	114	1	139	4
Volume Right (vph)	157	3	1	262
Hadj (s)	-0.23	-0.10	0.16	-0.46
Departure Headway (s)	5.0	5.6	5.3	4.5
Degree Utilization, x	0.40	0.02	0.29	0.41
Capacity (veh/h)	673	548	638	750
Control Delay (s)	11.2	8.7	10.4	10.7
Approach Delay (s)	11.2	8.7	10.4	10.7
Approach LOS	B	A	B	B

Intersection Summary			
Delay	10.8		
HCM Level of Service	B		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	239	4	113	343	6	69
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	246	4	116	354	6	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			251		835	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		835	248
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	91
cM capacity (veh/h)			1321		309	793

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	251	116	354	77
Volume Left	0	116	0	6
Volume Right	4	0	0	71
cSH	1700	1321	1700	705
Volume to Capacity	0.15	0.09	0.21	0.11
Queue Length 95th (ft)	0	7	0	9
Control Delay (s)	0.0	8.0	0.0	10.7
Lane LOS		A		B
Approach Delay (s)	0.0	2.0		10.7
Approach LOS				B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: 8TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	104	64	64	21	130	11	146	50	97	131	7
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	13	137	84	84	28	171	14	192	66	128	172	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	234	283	272	309
Volume Left (vph)	13	84	14	128
Volume Right (vph)	84	171	66	9
Hadj (s)	-0.19	-0.29	-0.12	0.08
Departure Headway (s)	6.1	5.9	6.1	6.2
Degree Utilization, x	0.40	0.47	0.46	0.53
Capacity (veh/h)	514	548	538	532
Control Delay (s)	13.2	14.0	14.1	15.9
Approach Delay (s)	13.2	14.0	14.1	15.9
Approach LOS	B	B	B	C

Intersection Summary			
Delay	14.4		
HCM Level of Service	B		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	78	45	15	53	0	0	0	0	40	263	180
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	88	51	17	60	0	0	0	0	45	296	202

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	138	76	193	350
Volume Left (vph)	0	17	45	0
Volume Right (vph)	51	0	0	202
Hadj (s)	-0.20	0.06	0.13	-0.39
Departure Headway (s)	5.0	5.3	5.2	4.7
Degree Utilization, x	0.19	0.11	0.28	0.45
Capacity (veh/h)	675	626	675	751
Control Delay (s)	9.1	9.0	9.0	10.3
Approach Delay (s)	9.1	9.0	9.9	
Approach LOS	A	A	A	

Intersection Summary			
Delay	9.6		
HCM Level of Service	A		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	83	35	0	0	24	4	44	76	14	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	38	0	0	26	4	48	83	15	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	128	30	89	57
Volume Left (vph)	90	0	48	0
Volume Right (vph)	0	4	0	15
Hadj (s)	0.16	-0.07	0.29	-0.17
Departure Headway (s)	4.5	4.3	5.2	4.7
Degree Utilization, x	0.16	0.04	0.13	0.07
Capacity (veh/h)	784	796	674	737
Control Delay (s)	8.3	7.5	7.7	6.9
Approach Delay (s)	8.3	7.5	7.4	
Approach LOS	A	A	A	

Intersection Summary			
Delay	7.8		
HCM Level of Service	A		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
11: FM 660 (8TH ST) & IH 45 SBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	194	14	30	123	0	0	0	0	217	41	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	204	15	32	129	0	0	0	0	228	43	53

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	219	161	250	74
Volume Left (vph)	0	32	228	0
Volume Right (vph)	15	0	0	53
Hadj (s)	-0.02	0.06	0.47	-0.48
Departure Headway (s)	5.0	5.2	6.0	5.0
Degree Utilization, x	0.30	0.23	0.41	0.10
Capacity (veh/h)	678	653	581	683
Control Delay (s)	10.2	9.7	11.9	7.4
Approach Delay (s)	10.2	9.7	10.9	
Approach LOS	B	A	B	

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
12: FM 660 (8TH ST) & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	49	362	0	0	118	37	35	18	39	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	51	377	0	0	123	39	36	19	41	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	428	161	36	59
Volume Left (vph)	51	0	36	0
Volume Right (vph)	0	39	0	41
Hadj (s)	0.04	-0.13	0.52	-0.46
Departure Headway (s)	4.4	4.5	6.3	5.4
Degree Utilization, x	0.52	0.20	0.06	0.09
Capacity (veh/h)	804	761	520	607
Control Delay (s)	12.1	8.7	8.6	7.7
Approach Delay (s)	12.1	8.7	8.0	
Approach LOS	B	A	A	

Intersection Summary			
Delay	10.7		
HCM Level of Service	B		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: MILLER'S FERRY RD & IH 45 SBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	10	21	51	7	0	36	0	227	49	135	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	11	23	57	8	0	40	0	252	54	150	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	34	64	292	54	151
Volume Left (vph)	0	57	40	54	0
Volume Right (vph)	23	0	252	0	1
Hadj (s)	-0.17	0.41	-0.25	0.74	0.23
Departure Headway (s)	5.0	5.5	4.3	5.7	5.2
Degree Utilization, x	0.05	0.10	0.35	0.09	0.22
Capacity (veh/h)	646	594	818	605	666
Control Delay (s)	8.2	9.1	9.5	8.1	8.5
Approach Delay (s)	8.2	9.1	9.5	8.4	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	9.0			
HCM Level of Service	A			
Intersection Capacity Utilization	43.0%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
3: MALLOY BRIDGE RD & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	180	76	0	0	95	31	16	4	53	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	189	80	0	0	100	33	17	4	56	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	269	133	77
Volume Left (vph)	189	0	17
Volume Right (vph)	0	33	56
Hadj (s)	0.31	0.02	-0.22
Departure Headway (s)	4.5	4.4	4.6
Degree Utilization, x	0.34	0.16	0.10
Capacity (veh/h)	776	783	719
Control Delay (s)	9.9	8.3	8.1
Approach Delay (s)	9.9	8.3	8.1
Approach LOS	A	A	A

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	45	6	5	229	153	53
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	47	6	5	239	159	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	436	187	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436	187	215			
tC, single (s)	6.6	6.4	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.4			
p0 queue free %	91	99	100			
cM capacity (veh/h)	545	813	1261			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	53	244	215
Volume Left	47	5	0
Volume Right	6	0	55
cSH	567	1261	1700
Volume to Capacity	0.09	0.00	0.13
Queue Length 95th (ft)	8	0	0
Control Delay (s)	12.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	12.0	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: 5TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	53	189	21	121	100	18	26	154	215	11	129	25
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	60	212	24	136	112	20	29	173	242	12	145	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	296	269	444	185
Volume Left (vph)	60	136	29	12
Volume Right (vph)	24	20	242	28
Hadj (s)	0.01	0.07	-0.30	-0.06
Departure Headway (s)	6.6	6.7	6.0	6.8
Degree Utilization, x	0.54	0.50	0.73	0.35
Capacity (veh/h)	489	479	576	449
Control Delay (s)	17.1	16.3	23.6	13.4
Approach Delay (s)	17.1	16.3	23.6	13.4
Approach LOS	C	C	C	B

Intersection Summary			
Delay	18.7		
HCM Level of Service	C		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: FM 983 (6TH ST) & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	276	32	210	3	54	7	294	89	1	1	75	156
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	314	36	239	3	61	8	334	101	1	1	85	177

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	589	73	436	264
Volume Left (vph)	314	3	334	1
Volume Right (vph)	239	8	1	177
Hadj (s)	-0.12	-0.04	0.17	-0.39
Departure Headway (s)	6.4	7.8	6.8	6.8
Degree Utilization, x	1.04	0.16	0.83	0.49
Capacity (veh/h)	557	403	519	514
Control Delay (s)	73.2	12.3	34.8	16.2
Approach Delay (s)	73.2	12.3	34.8	16.2
Approach LOS	F	B	D	C

Intersection Summary			
Delay	46.6		
HCM Level of Service	E		
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	611	42	235	432	22	347
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	736	51	283	520	27	418
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			787		1848	761
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			787		1848	761
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		51	0
cM capacity (veh/h)			837		55	407

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	787	283	520	445
Volume Left	0	283	0	27
Volume Right	51	0	0	418
cSH	1700	837	1700	294
Volume to Capacity	0.46	0.34	0.31	1.51
Queue Length 95th (ft)	0	38	0	636
Control Delay (s)	0.0	11.5	0.0	280.3
Lane LOS		B		F
Approach Delay (s)	0.0	4.0		280.3
Approach LOS				F

Intersection Summary			
Average Delay	62.8		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: 8TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	53	31	58	36	117	21	131	54	142	154	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	58	34	64	40	129	23	144	59	156	169	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	97	232	226	334
Volume Left (vph)	4	64	23	156
Volume Right (vph)	34	129	59	9
Hadj (s)	-0.19	-0.26	-0.12	0.09
Departure Headway (s)	5.6	5.3	5.2	5.3
Degree Utilization, x	0.15	0.34	0.33	0.49
Capacity (veh/h)	552	617	630	647
Control Delay (s)	9.6	11.0	10.8	13.2
Approach Delay (s)	9.6	11.0	10.8	13.2
Approach LOS	A	B	B	B

Intersection Summary				
Delay	11.6			
HCM Level of Service	B			
Intersection Capacity Utilization	56.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	403	60	6	194	0	0	0	0	69	150	72
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	443	66	7	213	0	0	0	0	76	165	79

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	509	220	158	162
Volume Left (vph)	0	7	76	0
Volume Right (vph)	66	0	0	79
Hadj (s)	-0.06	0.02	0.26	-0.33
Departure Headway (s)	5.1	5.6	6.7	6.1
Degree Utilization, x	0.72	0.34	0.29	0.27
Capacity (veh/h)	686	609	498	554
Control Delay (s)	20.3	11.5	11.2	10.1
Approach Delay (s)	20.3	11.5	10.6	
Approach LOS	C	B	B	

Intersection Summary			
Delay	15.5		
HCM Level of Service	C		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
10: 5TH ST & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	401	71	0	0	72	51	128	269	4	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	456	81	0	0	82	58	145	306	5	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	536	140	298	157
Volume Left (vph)	456	0	145	0
Volume Right (vph)	0	58	0	5
Hadj (s)	0.19	-0.23	0.26	0.00
Departure Headway (s)	5.6	5.9	6.7	6.4
Degree Utilization, x	0.84	0.23	0.55	0.28
Capacity (veh/h)	629	564	513	537
Control Delay (s)	31.3	10.7	16.5	10.7
Approach Delay (s)	31.3	10.7	14.5	
Approach LOS	D	B	B	

Intersection Summary			
Delay	22.0		
HCM Level of Service	C		
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	335	32	37	325	0	0	0	0	149	37	50
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	453	43	50	439	0	0	0	0	201	50	68

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	496	489	226	93
Volume Left (vph)	0	50	201	0
Volume Right (vph)	43	0	0	68
Hadj (s)	-0.04	0.04	0.46	-0.49
Departure Headway (s)	5.8	5.9	7.6	6.7
Degree Utilization, x	0.80	0.80	0.48	0.17
Capacity (veh/h)	605	595	439	501
Control Delay (s)	28.0	28.2	16.3	9.8
Approach Delay (s)	28.0	28.2	14.4	
Approach LOS	D	D	B	

Intersection Summary			
Delay	24.8		
HCM Level of Service	C		
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
12: FM 660 (8TH ST) & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	54	429	0	0	293	274	69	51	65	0	0	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	69	550	0	0	376	351	88	65	83	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	619	727	88	149
Volume Left (vph)	69	0	88	0
Volume Right (vph)	0	351	0	83
Hadj (s)	0.04	-0.27	0.52	-0.38
Departure Headway (s)	5.7	5.5	8.1	7.2
Degree Utilization, x	0.98	1.11	0.20	0.30
Capacity (veh/h)	624	660	439	494
Control Delay (s)	55.8	89.6	11.9	12.0
Approach Delay (s)	55.8	89.6	12.0	
Approach LOS	F	F	B	

Intersection Summary			
Delay	64.8		
HCM Level of Service	F		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: MILLER'S FERRY RD & IH 45 SBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	10	19	34	4	0	19	0	119	58	174	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	21	37	4	0	21	0	129	63	189	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	32	41	150	63	190
Volume Left (vph)	0	37	21	63	0
Volume Right (vph)	21	0	129	0	1
Hadj (s)	-0.21	0.37	-0.30	0.69	0.18
Departure Headway (s)	4.7	5.2	4.2	5.5	5.0
Degree Utilization, x	0.04	0.06	0.17	0.10	0.26
Capacity (veh/h)	702	634	836	637	706
Control Delay (s)	7.9	8.6	8.0	7.9	8.6
Approach Delay (s)	7.9	8.6	8.0	8.4	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	8.3		
HCM Level of Service	A		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: MALLOY BRIDGE RD & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	82	77	0	0	104	46	9	1	39	0	0	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	102	96	0	0	130	58	11	1	49	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	199	188	61
Volume Left (vph)	103	0	11
Volume Right (vph)	0	58	49
Hadj (s)	0.21	-0.08	-0.34
Departure Headway (s)	4.4	4.2	4.4
Degree Utilization, x	0.25	0.22	0.08
Capacity (veh/h)	793	843	749
Control Delay (s)	8.9	8.3	7.8
Approach Delay (s)	8.9	8.3	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	8.5		
HCM Level of Service	A		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	37	11	9	97	256	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	42	12	10	110	291	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	435	304	317			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	435	304	317			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	92	98	99			
cM capacity (veh/h)	555	713	1189			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	55	120	317
Volume Left	42	10	0
Volume Right	12	0	26
cSH	585	1189	1700
Volume to Capacity	0.09	0.01	0.19
Queue Length 95th (ft)	8	1	0
Control Delay (s)	11.8	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: 5TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	12	54	12	236	99	7	19	100	111	12	195	31
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	13	58	13	254	106	8	20	108	119	13	210	33

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	84	368	247	256
Volume Left (vph)	13	254	20	13
Volume Right (vph)	13	8	119	33
Hadj (s)	-0.04	0.14	-0.26	-0.05
Departure Headway (s)	6.0	5.6	5.4	5.6
Degree Utilization, x	0.14	0.57	0.37	0.40
Capacity (veh/h)	501	606	603	590
Control Delay (s)	10.0	15.9	11.6	12.3
Approach Delay (s)	10.0	15.9	11.6	12.3
Approach LOS	A	C	B	B

Intersection Summary				
Delay		13.3		
HCM Level of Service		B		
Intersection Capacity Utilization		51.1%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
6: FM 983 (6TH ST) & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	149	21	206	1	14	4	182	74	1	6	81	342
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	159	22	219	1	15	4	194	79	1	6	86	364

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	400	20	273	456
Volume Left (vph)	159	1	194	6
Volume Right (vph)	219	4	1	364
Hadj (s)	-0.23	-0.10	0.16	-0.46
Departure Headway (s)	5.7	6.8	6.1	5.2
Degree Utilization, x	0.63	0.04	0.46	0.66
Capacity (veh/h)	591	414	547	659
Control Delay (s)	18.0	10.1	14.3	18.0
Approach Delay (s)	18.0	10.1	14.3	18.0
Approach LOS	C	B	B	C

Intersection Summary			
Delay	17.0		
HCM Level of Service	C		
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	332	6	157	476	8	96
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	342	6	162	491	8	99
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			348		1160	345
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			348		1160	345
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		96	86
cM capacity (veh/h)			1216		188	700

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	348	162	491	107
Volume Left	0	162	0	8
Volume Right	6	0	0	99
cSH	1700	1216	1700	579
Volume to Capacity	0.20	0.13	0.29	0.19
Queue Length 95th (ft)	0	11	0	17
Control Delay (s)	0.0	8.4	0.0	12.6
Lane LOS		A		B
Approach Delay (s)	0.0	2.1		12.6
Approach LOS				B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: 8TH ST & BR 45

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	144	89	89	29	181	15	203	69	135	182	10
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	18	189	117	117	38	238	20	267	91	178	239	13

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	325	393	378	430
Volume Left (vph)	18	117	20	178
Volume Right (vph)	117	238	91	13
Hadj (s)	-0.19	-0.29	-0.12	0.08
Departure Headway (s)	9.0	8.6	8.8	9.0
Degree Utilization, x	0.82	0.94	0.93	1.08
Capacity (veh/h)	376	393	400	397
Control Delay (s)	41.6	60.6	58.5	99.0
Approach Delay (s)	41.6	60.6	58.5	99.0
Approach LOS	E	F	F	F

Intersection Summary			
Delay	66.9		
HCM Level of Service	F		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	108	62	21	74	0	0	0	0	56	365	250
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	121	70	24	83	0	0	0	0	63	410	281

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	191	107	268	486
Volume Left (vph)	0	24	63	0
Volume Right (vph)	70	0	0	281
Hadj (s)	-0.20	0.06	0.13	-0.39
Departure Headway (s)	5.4	5.8	5.5	5.0
Degree Utilization, x	0.29	0.17	0.41	0.67
Capacity (veh/h)	625	574	644	704
Control Delay (s)	10.6	10.0	11.0	16.2
Approach Delay (s)	10.6	10.0	14.3	
Approach LOS	B	B	B	

Intersection Summary			
Delay	13.2		
HCM Level of Service	B		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
10: 5TH ST & IH 45 NBFR

10/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	115	49	0	0	33	6	61	106	19	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	53	0	0	36	7	66	115	21	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	178	42	124	78
Volume Left (vph)	125	0	66	0
Volume Right (vph)	0	7	0	21
Hadj (s)	0.16	-0.08	0.28	-0.17
Departure Headway (s)	4.6	4.6	5.3	4.9
Degree Utilization, x	0.23	0.05	0.18	0.11
Capacity (veh/h)	743	743	651	708
Control Delay (s)	9.0	7.8	8.3	7.2
Approach Delay (s)	9.0	7.8	7.9	
Approach LOS	A	A	A	

Intersection Summary				
Delay	8.3			
HCM Level of Service	A			
Intersection Capacity Utilization	27.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	269	19	42	171	0	0	0	0	301	57	69
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	283	20	44	180	0	0	0	0	317	60	73

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	303	224	347	103
Volume Left (vph)	0	44	317	0
Volume Right (vph)	20	0	0	73
Hadj (s)	-0.02	0.06	0.47	-0.48
Departure Headway (s)	5.6	5.8	6.5	5.5
Degree Utilization, x	0.47	0.36	0.62	0.16
Capacity (veh/h)	613	585	535	627
Control Delay (s)	13.5	12.0	18.3	8.3
Approach Delay (s)	13.5	12.0	16.1	
Approach LOS	B	B	C	

Intersection Summary			
Delay	14.3		
HCM Level of Service	B		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	68	503	0	0	164	51	49	25	54	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	71	524	0	0	171	53	51	26	56	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	595	224	51	82
Volume Left (vph)	71	0	51	0
Volume Right (vph)	0	53	0	56
Hadj (s)	0.04	-0.13	0.52	-0.46
Departure Headway (s)	4.6	4.9	6.9	6.0
Degree Utilization, x	0.77	0.31	0.10	0.14
Capacity (veh/h)	759	700	481	553
Control Delay (s)	21.2	10.1	9.5	8.7
Approach Delay (s)	21.2	10.1	9.0	
Approach LOS	C	B	A	

Intersection Summary			
Delay	16.9		
HCM Level of Service	C		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

SKYLINE LANDFILL

APPENDIX IID

WETLANDS DOCUMENTATION

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET NW
WASHINGTON DC 20314

04/09/2026

Regulatory Fort Worth District

Gregory W Adams
1700 Robert Rd
Suite 100
Mansfield, TX 76063
Via Email: gadams@biggsandmathews.com

Dear Mr. Adams:

This is an automated response from the U.S. Army Corps of Engineers' Regulatory Request System to your request for confirmation that a Department of the Army (DA) permit is not required for your proposed project. The project/review area is located at Lancaster, TX 75146. The project has been assigned a Regulatory Request System Tracking Number 43320. This number should be referenced in all communication concerning this project.

Based on the information you have provided, your work as proposed is not a regulated activity pursuant to Section 10 of the Rivers and Harbors Act of 1899 (RHA) and/or Section 404 of the Clean Water Act (CWA), and therefore, does not require a Department of the Army permit unless new information (including changes to project plans) warrants revision.

This letter does not obviate the requirement to obtain permits from other Federal, State, or local authorities that may be necessary for your project. Additionally, if your project is located in the vicinity of a federal project, approval from the U.S. Army Corps of Engineers (USACE) may be required under Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 408, "Section 408") to alter or occupy a USACE federally authorized project. It is your responsibility to contact the appropriate District to determine whether Section 408 authorization is required. Additional information about Section 408 can be found at https://www.usace.army.mil/Missions/Civil-Works/Section408/.

This letter does not address or include any consideration of geographic jurisdiction of aquatic resources and may not be interpreted as such. Should you desire an official USACE determination that jurisdictional "waters of the United States," or "navigable waters of the United States" are either present or absent on the project site, you may

submit a Request for Jurisdictional Determination / Aquatic Resource Delineation through the Regulatory Request System at: https://rrs.usace.army.mil/rrs.

This determination is based solely on the information you provided as of 04/09/2026 and has not been verified by the USACE. It is your responsibility to ensure no unauthorized work in “navigable waters of the United States” or discharges of dredged or fill material into “waters of the United States” occur as part of the proposed project. Performing such an action without obtaining the requisite authorization may be considered a violation of the Rivers and Harbors Act of 1899 and/or the Clean Water Act and may result in enforcement action. Your electronic request and associated responses will be retained by the Corps and may be used for enforcement purposes.

If you have any questions concerning this correspondence, please contact the Fort Worth District at 817-886-1731 or you may visit the District’s website at http://www.swf.usace.army.mil/Missions/Regulatory.aspx for additional information concerning the regulatory program. Please reference this Tracking Number 43320 in all comments and/or inquiries relating to this project.

cc: Karisa Fenton, Integrated Environmental Solutions, LLC via kfenton@intenvsol.com

20 November 2025

Mr. Gregg Adams
Biggs & Matthews Environmental, Inc.
1700 Robert Road, Suite 100
Mansfield, Texas 76063

Re: Skyline Landfill Expansion - Waters of the United States Delineation
Approximately 227 acres associated with the proposed expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road 664 in the City of Ferris, Dallas and Ellis Counties, Texas

Dear Mr. Adams,

Integrated Environmental Solutions, LLC (IES) performed a site survey to identify any aquatic features that meet a definition of a water of the United States on approximately 227 acres associated with the proposed expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road (FM) 664 in the City of Ferris, Dallas and Ellis Counties, Texas (**Attachment A, Figure 1**). This report will ultimately assess and delineate potentially jurisdictional aquatic features to ensure compliance with Clean Water Act (CWA) Sections 401 and 404.

INTRODUCTION

Waters of the United States are protected under guidelines outlined in CWA Sections 401 and 404, in Executive Order (EO) 11990 (Protection of Wetlands), and by the review process of the Texas Commission on Environmental Quality (TCEQ). Agencies that regulate impacts to the nation's water resources within Texas include the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), and the TCEQ. The USACE has the primary regulatory authority for enforcing CWA Section 404 requirements for waters of the United States.

The decision for whether a CWA Section 404 permit is required on a property is determined if there are waters of the United States present and the extent of losses of those features. The USACE and USEPA have gone through rulemaking to define what is a water of the United States, independently and jointly, several times since the initial CWA. The longest standing definitions of waters of the United States were those published in 1986; however, these definitions were challenged in 2001, 2007, and 2023 U.S. Supreme Court (SCOTUS) decisions. In addition to this, the Obama, Trump, and Biden administrations completed rulemaking to modify the definitions of waters of the United States. The 2023 SCOTUS decision defined a water of the United States as "a relatively permanent body of water connected to traditional interstate navigable waters." The SCOTUS also included wetlands that have a continuous surface connection with that water, in the definition of a water of the United States. This wetland connection was described as the boundary where it was difficult to determine where the 'water' ends, and the 'wetland' begins.

This 2023 SCOTUS decision is consistent with the relatively permanent water (RPW) standard identified in the previous 2007 SCOTUS decision. Until further guidance is published from the USACE or USEPA, the 2007 USACE and USEPA guidance defining a "relatively permanent water" will be used. According to this guidance, RPW are non-navigable tributaries of traditional navigable waters (TNW) that flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). In addition to this, the guidance also stipulated regulation over wetlands that directly abut such tributaries.

DEFINTIONS USED WITHIN THIS REPORT

Seasonal (intermittent) streams – The USEPA (https://www.epa.gov/cwa-404/learn-about-streams) has defined seasonal or intermittent streams as those that flow during certain times of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall or other precipitation supplements the flow of seasonal stream. During dry periods, seasonal streams may not have flowing surface water. Larger seasonal streams are more common in dry areas.

Rain-dependent (ephemeral) streams – the USEPA defines rain-dependent streams as those that flow only after precipitation. Runoff from rainfall is the primary source of water for these streams. Like seasonal streams, they can be found anywhere but are most prevalent in arid areas.

Year-round (perennial) streams – the USEPA defines year-round streams as those that typically have water flowing in them year-round. Most of the water comes from smaller upstream waters or groundwater while runoff from rainfall or other precipitation is supplemental.

Pre-2015 Regulatory Framework under 33 CFR 328.3 (01 July 2014) (https://www.govinfo.gov/content/pkg/CFR-2014-title33-vol3/pdf/CFR-2014-title33-vol3-sec328-3.pdf).

(a)(1) Traditional Navigable Waters (TNW) – Waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

(a)(2) Interstate Waters including wetlands

(a)(3) Other Waters – All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii)Which are used or could be used for industrial purpose by industries in interstate commerce;"

(a)(4) Impoundments – impoundments of waters otherwise identified as waters of the United States.

(a)(5) Tributaries – tributaries of waters identified in paragraphs (a)(1) through (a)(4)

(a)(6) Territorial Seas

(a)(7) Adjacent Wetlands – wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6).

USEPA Updates for Tribes and States on "Waters of the United States" 15 November 2023 – Pre-2015 Regulatory Regime Terminology (https://www.epa.gov/system/files/documents/2023-11/wotus-overview_tribes-and-states_11-15-23_508.pdf).

Relatively Permanent Waters – include tributaries that typically have flowing or standing water year-round or flowing water continuously at least seasonally (e.g., typically 3 months). The duration of seasonal flowing or standing water may vary regionally, but the tributary must have predictable flowing water seasonally.

Non-Relatively Permanent Waters – include tributaries that have flowing or standing water only in response to precipitation or that do not have continuously flowing or standing water at least seasonally.

Continuous Surface Connection

Under the *Rapanos* guidance (https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll5/id/1411), a continuous surface connection per the plurality opinion required a physical connection. In the case of wetlands, a continuous surface connection would exist between a RPW tributary and a wetland that directly abuts, that being not separated by uplands, a berm, dike, or other similar features. It is noted that per 33 CFR 328.3 (b), wetlands are defined as those areas that are inundated or saturated by surface or groundwater 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, which does not require surface water to be continuously present between the wetland and the tributary.

The Sixth Circuit U.S. Court of Appeals in United States v. Cundiff (05-5469, 05-5905, 07-5630, 04 February 2009) (https://caselaw.findlaw.com/court/us-6th-circuit/1098928.html) determined that, "Although the term continuous surface connection clearly requires surface flow, it does not mean that only perpetually flowing creeks satisfy the (Rapanos) plurality test." Given that wetlands, by definition are inundated or saturated soils that can support under normal circumstances a prevalence of vegetation typically adapted to those soil conditions, then the "… connection requires some kind of dampness such that polluting a wetland would have a proportionate effect on the traditional waterway." Additionally, Cundiff created a continuous surface connection through the excavation of ditches with "largely uninterrupted permanent surface water flow" that rerouted flow away from the wetland directly into the adjacent creeks. The Court found that there was no difference whether the channel that provides the relatively permanent flow was man-made or naturally formed.

Sackett (https://www.supremecourt.gov/opinions/22pdf/21-454_4g15.pdf) reinforced this definition by clearly indicating that a continuous surface connection must be established at the point where it is difficult to determine where the 'water' (RPW) and 'wetland' begins. The Fifth Circuit U.S. Court of Appeals in Lewis vs. United States (21-30163, 18 December 2023) (https://cases.justia.com/federal/appellate-courts/ca5/21-30163/21-30163-2023-12-18.pdf?ts=1702945817) further identified that a continuous surface connection from wetlands to a RPW tributary could not be established through non-waters of the United States with a distant and speculative connection to a RPW, then a TNW, following the Sackett definition that the CWA "extends to only those wetlands with a continuous surface connection to bodies that are waters of the United States in their own right, so that they are indistinguishable from those waters."

METHODOLOGY

Prior to conducting fieldwork, the U.S. Geological Survey (USGS) topographic map (**Attachment A, Figures 2A** and **2B**), the *Soil Surveys of Dallas and Ellis Counties, Texas*, and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) digital soil databases for Dallas and Ellis Counties (**Attachment A, Figure 3**), the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (**Attachment A, Figure 4**), and recent and historic aerial photographs of the proposed survey area were studied to identify possible aquatic features that could meet the definition of waters of the United States and areas prone to wetland development. Holly Wilson and Emma Munyandi of IES conducted the delineation in the field in accordance with the USACE procedures on 23 October 2025.

Wetland determinations and delineations were performed on location using the methodology outlined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineer Wetland Delineation Manual: Great Plains Region (Version 2.0). The presence of a wetland is determined by the positive indication of three criteria (i.e., hydrophytic vegetation, hydrology, and hydric soils). Potential jurisdictional boundaries for other water features (i.e., non-wetland) were delineated in the field at the ordinary high-water mark (OHWM). The 33 CFR 328.3 (c)(7) defines OHWM as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a 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.

Water feature boundaries were recorded on a Juniper Systems Geode GNS3S Global Positioning System (GPS) unit capable of sub-meter accuracy. Photographs were also taken at representative points within the survey area (**Attachment B**). Routine wetland determination data forms are provided in **Attachment C**. Tributary flow evaluation data forms are included in **Attachment D.**

RESULTS

Background Review

Topographic Setting

The USGS topographic map (Ferris 7.5' Quadrangle 1959, revised 1969) illustrates two blue line features and six ponds. The first blue line feature, identified as Tenmile Creek, is illustrated meandering along the northeastern boundary, oriented northwest-to-southeast. The second blue line feature is illustrated originating centrally from a pond and flowing southwest-to-northeast through an impoundment before exiting the eastern boundary. The second blue line feature reenters the survey area in the northeast and flows along the eastern boundary before ultimately converging with Tenmile Creek. The first pond is illustrated at the headwaters of the second blue line feature. The second pond is illustrated as photographically revised and is on-channel to the second blue line feature. The third and fourth ponds are illustrated as isolated, north-centrally, and along the northwestern boundary, respectively. The fifth pond is illustrated as isolated, west-centrally. The sixth pond is illustrated as isolated and enters the survey area in the southeast across the eastern boundary (*see* **Attachment A, Figure 2A**). The 2022 Ferris 7.5' Quadrangle map illustrates the two blue line features in a similar alignment; however, only four ponds are illustrated. The second pond is now illustrated as the headwaters of the second blue line feature; the first pond and channel upstream of the impoundment are no longer illustrated. The third, fourth, and sixth ponds are no longer illustrated. Two additional isolated ponds are now illustrated west-centrally and in the southeast (**Attachment A, Figure 2B**). The overall site topography was illustrated with slopes oriented generally southwest-to-northeast, with west-central slopes illustrated northeast-to-southwest. The maximum site elevation was approximately 500 feet above mean sea level (amsl) with a minimum site elevation of approximately 400 feet amsl. The watershed area is approximately 43,000 acres.

Soils

The USDA NRCS Web Soil Survey identified nine soil map units within the survey area: Ferris-Heiden complex, 5 to 12 percent slopes (43.8 percent coverage); Frio silty clay, 0 to 1 percent slopes, frequently flooded; Heiden clay, 1 to 3 percent slopes; Heiden clay, 2 to 5 percent slopes, moderately eroded; Houston Black clay, 1 to 3 percent slopes; Houston Black clay, 1 to 3 percent slopes; Heiden clay, 3 to 5 percent slopes, eroded; Heiden clay, 5 to 8 percent slopes, eroded; and Ferris clay, 5 to 12 percent slopes, eroded. The Ferris-Heiden complex occurs throughout the largest portion of the survey area. This series consists of well drained, very slowly permeable clays, with very rapid runoff and moderate water availability capacity. Frio silty clay, 0 to 1 percent slopes, frequently flooded, was listed as a hydric soil within floodplains on the Hydric Soils of Texas list prepared by the National Technical Committee for Hydric Soils (accessed 08 October 2025, Dallas and Ellis Counties, Texas) (*see* **Attachment A, Figure 3**). Hydric soils are described as soils that are sufficiently saturated in the upper part to develop anaerobic conditions during the growing season.

FEMA FIRM

The FEMA FIRM (Dallas and Ellis Counties; Map Panels 48139C0100F; effective 03 June 2013; 48113C0670KJ and 48113C0665K; effective 07 July 2014) shows a corridor along Tenmile Creek in the north to be within Floodway Zone AE and Zone AE (Special Flood Hazard Areas subject to inundation by the 1 percent annual chance flood; Base flood elevations determined). A small portion along the southern edge of this region is within Shaded Zone X (Areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance flood). The remainder of the survey area is within Zone X (Areas determined to be outside the 0.2 percent annual chance floodplain) (*see* **Attachment A, Figure 4**).

Weather History

The weather history for Wunderground.com Hickory Pats House weather station (KTXFERRI24) recorded 0.11 inch precipitation during the 7-day period and a total of 0.55 inch during the 30-day period, prior to the site visit (**Attachment E**). An analysis of the data indicates a single-day rain event and a multiple-day rain event within the past 30 days (0.44 inch on 24 and 25 September and 0.11 inch on 19 October). The Antecedent Precipitation Tool (APT) observed 0.52 inch of precipitation in the 30-day period prior and indicated that the conditions on-site at the

time of the evaluation were considered hydrologically "drier than normal" within the wet season based on the 30-year climactic average (32.54972N, -96.68774W) (*see* **Attachment E**).

Field Investigation

The survey area was characterized by three distinct vegetation communities: **disturbed area, forest,** and **grassland**.

The **disturbed area** was associated with landfill activities in the south. This vegetation community was dominated by bare ground with sparse herbaceous species observed including Bermudagrass (*Cynodon dactylon*), common sunflower (*Helianthus annuus*), and Johnsongrass (*Sorghum halepense*).

The **forest** was in portions of the northern and central survey areas and was dominated by woody species including American elm (*Ulmus americana*), bur oak (*Quercus macrocarpa*), cedar elm (*Ulmus crassifolia*), eastern redcedar (*Juniperus virginiana*), gum bumelia (*Sideroxylon lanuginosum*), honey locust (*Gleditsia triacanthos*), Osage-orange (*Maclura pomifera*), and sugarberry (*Celtis laevigata*). Shrub species observed within the forest community included Chinese privet (*Ligustrum sinense*). The understory included herbaceous species such as eastern poison ivy (*Toxicodendron radicans*), giant ragweed (*Ambrosia trifida*), and Virginia wildrye (*Elymus virginiana*). Vine species observed included saw greenbrier (*Smilax bona-nox*).

The **grassland** dominated the remainder of the survey area. This community was characterized by grasses and forbs including American basketflower (*Centaurea americana*), Bermudagrass, bushy bluestem (*Andropogon glomeratus*), common sunflower, giant ragweed, Japanese brome (*Bromus japonicus*), Johnsongrass, lemon beebalm (*Monarda citriodora*), perennial ryegrass (*Lolium perenne*), prairie broomweed (*Amphiachyris dracunculoides*), prairie tea (*Croton monanthogynu*), rough cocklebur (*Xanthium strumarium*), silver bluestem (*Bothriochloa laguroides*), southern dewberry (*Rubus trivialis*), spreading hedge parsley (*Torilis arvensis*), sumpweed (*Iva annua*), tall goldenrod (*Solidago altissima*), western ragweed (*Ambrosia psilostachya*), and yellow bluestem (*Bothriochloa ischaemum*). Woody species scattered throughout the grassland and along fence lines included cedar elm, eastern redcedar, honest locust, and honey mesquite (*Prosopis glandulosa*).

Water from the survey area flows northeast and east through unnamed tributaries and Tenmile Creek. The unnamed tributaries flow into Tenmile Creek. Tenmile Creek flows into the Trinity River, a TNW. **Tables 1** through **3** and the following paragraphs detail the aquatic features identified within the survey area at the time of evaluation (**Attachment A, Figure 5**).

POTENTIAL JURISDICTIONAL ASSESSMENT

The 2023 SCOTUS decision defined a water of the United States as "a relatively permanent body of water connected to traditional interstate navigable waters." The SCOTUS also included wetlands that have a continuous surface connection with that water, in the definition of a water of the United States. This wetland connection was described as the boundary where it was difficult to determine where the 'water' ends, and the 'wetland' begins.

This 2023 SCOTUS decision is consistent with the RPW standard identified in the previous 2007 SCOTUS decision. Until further guidance is published from the USACE or USEPA, the 05 June 2007 USACE and USEPA guidance defining a "relatively permanent water" will be used. According to this guidance, RPW are non-navigable tributaries of TNW that flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). In addition to this, the guidance also stipulated regulation over wetlands that directly abut such tributaries.

All terms, definitions, and conclusions regarding the jurisdictional nature of the aquatic features used within this report are derived directly, as they are practiced, from the 2007 USACE and USEPA guidance. The following outlines the applicable interpretations of the guidance appropriate for this situation. **Table 1** provides an overview of the jurisdictional assessment of the aquatic features under the 2023 SCOTUS decision and the applicable 2007 USACE and USEPA guidance (*see* **Attachment A, Figure 6**).

Jurisdictional Features – Tenmile Creek and Wetland 1

Tenmile Creek was identified with perennial flow. As such, this feature would be considered a RPW and would meet a definition of a water of the United States. Wetland 1 was identified with an off-site, continuous surface connection to Tenmile Creek, a RPW. As such, Wetland 1 would also meet a definition of a water of the United States. Therefore, these features would be regulated under CWA Section 404.

Non-Jurisdictional Features – Tributaries 2 through 6, Wetlands 2 through 15, and Ponds 1 through 3

Tributaries 2 through 6 were identified as ephemeral tributaries due to the lack of evidence of frequent or continuous water flow (*see* **Attachment D**). As such, these features would be considered non-RPWs and would not meet a definition of a water of the United States. Wetlands 2 through 15 were identified as wetlands with no continuous surface connection to a RPW. Ponds 1 and 2 were identified as isolated, artificial, upland ponds and Pond 3 was identified as an impoundment of a non-RPW with no connection to interstate commerce. As such, Wetlands 2 through 15 and Ponds 1 through 3 would not meet a definition of a water of the United States. Therefore, these features would not be regulated under CWA Section 404.

CONCLUSIONS

To summarize the delineation, six tributaries, 15 wetlands, and three ponds were identified and delineated within the survey area. **Tenmile Creek** would be considered jurisdictional as a RPW. **Wetland 1** would be considered jurisdictional as a wetland with a continuous surface connection to a RPW. As such, these features would be regulated under CWA Section 404. **Tributaries 2** through **6** would not be considered jurisdictional as non-RPWs. **Wetland 2** through **15** would not be considered jurisdictional as wetlands with no continuous surface connection to a RPW. **Ponds 1** and **2** would not be considered jurisdictional as isolated, artificial, upland ponds and **Pond 3** would not be considered jurisdictional as an impoundment of a non-RPW with no connection to interstate commerce. As such, these features would not be regulated under CWA Section 404.

This delineation is based on professional experience in the approved methodology and from experience with the USACE Fort Worth District regulators; however, this delineation does not constitute a jurisdictional determination of waters of the United States. This delineation has been based on the professional experience of IES staff and our interpretation of the 2023 SCOTUS decision, USACE regulations at 33 CFR 328.3, the joint USACE/USEPA guidance relating to the definition of an RPW and the Regulatory Guidance Letter (RGL) 08-02. While IES believes our delineation to be accurate, the final authority to interpret the regulations lies solely with the USACE and USEPA. The USACE Headquarters in association with the USEPA often issue guidance that changes the interpretation of published regulations. USACE/USEPA guidance issued after the date of this report has the potential to invalidate the report conclusions and/or recommendations, which may create the need to reevaluate the report conclusions. IES has no regulatory authority, and as such, proceeding based solely upon this report does not protect the Client from potential sanction or fines from the USACE/USEPA. The Client acknowledges that they can submit this report to the USACE for a preliminary jurisdictional determination for concurrence prior to proceeding with any work within aquatic features located on the survey area. If the Client elects not to do so, then the Client proceeds at their sole risk.

IES appreciates the opportunity to work with you and Biggs & Matthews Environmental, Inc. on this project, and we hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact myself or Rudi Reinecke at 972-562-7672 (emunyandi@intenvsol.com or rreinecke@intenvsol.com).

Sincerely,

Integrated Environmental Solutions, LLC.



Mrs. Emma Munyandi
Biologist

Attachments

File ref: 04.393.033

Table 1. Tributaries Identified within the Survey Area

Water Feature Identification	Water of the United States	Water Classification	Hydrology[1] Characteristics	OHWM[2] Characteristics	Avg. OHWM Width (Feet)	Avg. Incision in Bank (Feet)	Area (Acre)	Length (Linear Feet)
Tenmile Creek	Yes	RPW	Perennial	1, 2, 3, 4, 5, 7, 8	36-65	6-12	1.53	1,410
Tributary 2	No	Non-RPW	Ephemeral	1, 5	3-12	<1-5	0.14	1,314
Tributary 3	No	Non-RPW	Ephemeral	1, 5	3-5	3-5	0.02	280
Tributary 4	No	Non-RPW	Ephemeral	1, 5	3-6	<1-3	0.03	332
Tributary 5	No	Non-RPW	Ephemeral	1, 3, 5	1-4	<1-3	0.01	377
Tributary 6	No	Non-RPW	Ephemeral	1, 5	<1-1	<1	0.01*	31

**Actual acreage less than 0.01 acre*

1. Ephemeral - An ephemeral stream has flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
2. Intermittent - An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
3. Perennial - A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

All delineated aquatic features were observed with some of the following OHWM characteristics:

1. Bed and bank
2. Clear, natural line impressed in bank
3. Presence of litter and debris
4. Sediment sorting
5. Destruction of terrestrial vegetation
6. Wracking
7. Water line
8. Change in soil characteristics

Table 2. Wetlands Identified within the Survey Area

Water Feature Identification	Water of the United States	Water Classification	Hydrology[1] Characteristics	OHWM[2] Characteristics	Area (Acre)	Wetland Vegetation Type
Wetland 1	Yes	Continuous Surface Connection to a RPW	Seasonally Saturated	8	2.89	Forested
Wetland 2	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	1.65	Forested
Wetland 3	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	0.26	Emergent
Wetland 4	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.01	Emergent
Wetland 5	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.08	Emergent
Wetland 6	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	0.03	Emergent
Wetland 7	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.19	Emergent
Wetland 8	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	7, 8	1.08	Emergent
Wetland 9	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.13	Emergent
Wetland 10	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	0.30	Emergent
Wetland 11	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.02	Emergent
Wetland 12	No	No Continuous Surface Connection to a RPW	Seasonally Inundated	8	0.31	Emergent
Wetland 13	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	0.04	Emergent
Wetland 14	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	1.59	Emergent
Wetland 15	No	No Continuous Surface Connection to a RPW	Seasonally Saturated	8	0.85	Emergent

1. Seasonally Saturated – Areas that experience soil saturation during seasonal rain and water flow events. These areas may remain dry on the surface and in the soil column through part or most of the year outside rain events.
2. Permanently Saturated – Areas that experience soil saturation year-round.
3. Seasonally Inundated – Areas that experience surface pooling and soil inundation due to ponding on the surface from rain events. These areas may remain dry on the surface and in the soil column through part or most of the year.

All delineated aquatic features were observed with some of the following OHWM characteristics:

1. Bed and bank
2. Clear, natural line impressed in bank
3. Presence of litter and debris
4. Sediment sorting
5. Destruction of terrestrial vegetation
6. Wracking
7. Water line
8. Change in soil characteristics

Table 3. Ponds Identified within the Survey Area

Water Feature Identification	Water of the United States	Water Classification	Hydrology[1] Characteristics	OHWM[2] Characteristics	Area (Acre)
Pond 1	No	Isolated, Artificial, Upland Pond	Semi-Permanently Inundated	2, 5, 7	0.40
Pond 2	No	Isolated, Artificial, Upland Pond	Semi-Permanently Inundated	2, 5, 6, 7	2.25
Pond 3	No	Impoundment of Non-RPW with No Connection to Interstate Commerce	Semi-Permanently Inundated	2, 5, 7	0.52

1. Seasonally Inundated – Areas that experience surface pooling and soil inundation due to ponding on the surface from rain events. These areas may remain dry on the surface and in the soil column through part or most of the year.
2. Semi-Permanently Inundated – Areas that maintain some inundation year-round with seasonal fluctuations in water surface elevation.
3. Permanently Inundated – Areas that remain inundated year-round.

All delineated aquatic features were observed with some of the following OHWM characteristics:

1. Bed and bank
2. Clear, natural line impressed in bank
3. Presence of litter and debris
4. Sediment sorting
5. Destruction of terrestrial vegetation
6. Wracking
7. Water line
8. Change in soil characteristics

ATTACHMENT A
Figures



Figure 1.
General Location Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

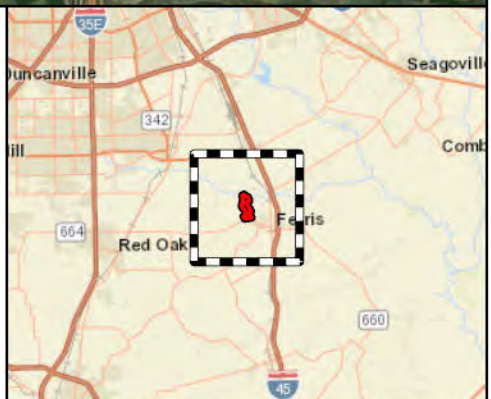
1 in = 3,500 ft

Feet
0 3,500

N
W E
S

File Ref. 04.393.003
Date: 10/29/2025

Survey Area



Area of Detail

Scale: 1 inch equals 10 miles

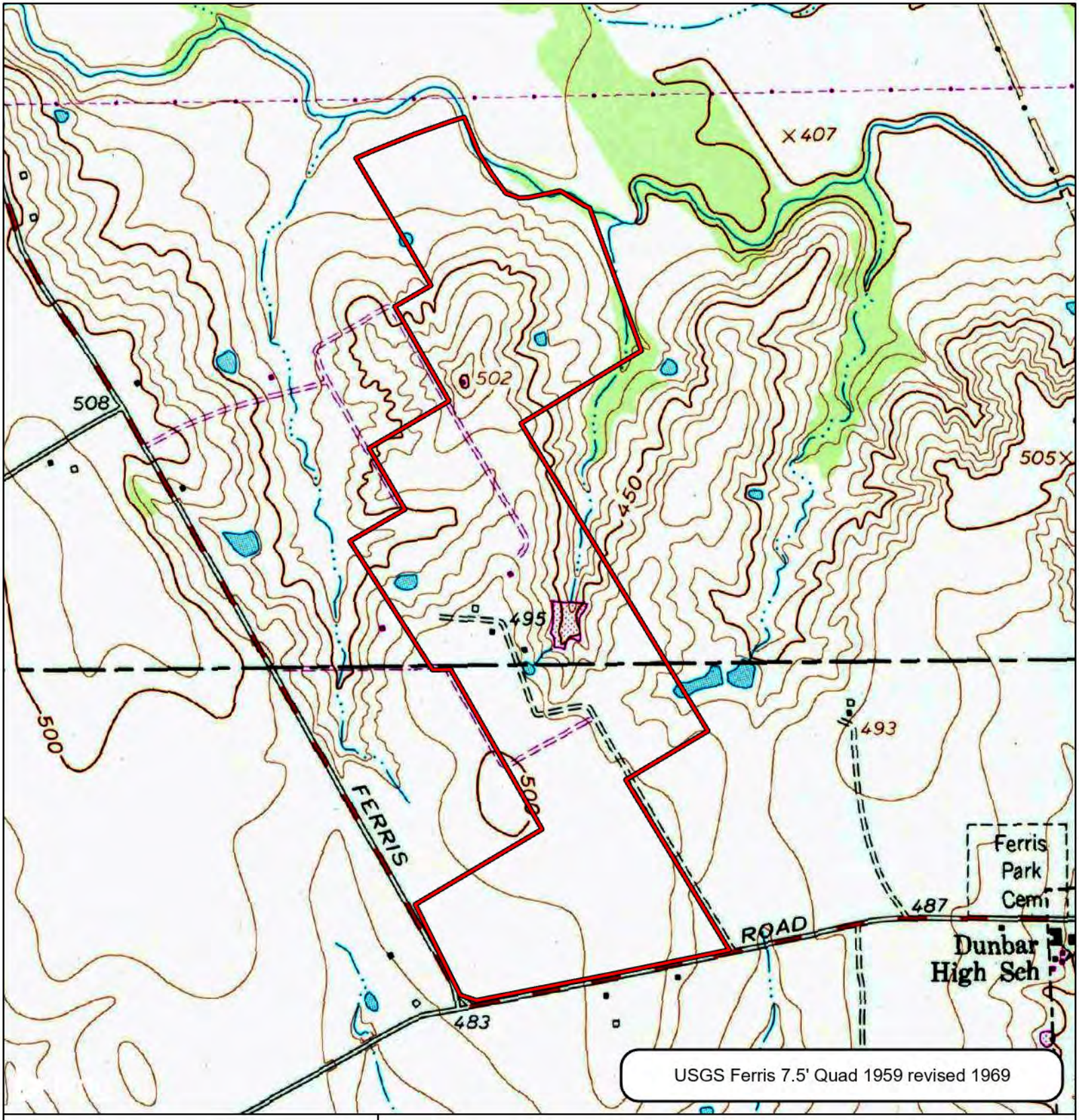


Figure 2A.
Topographic Setting

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,000 ft

Feet
0 1,000

N
W E
S

File Ref. 04.393.003
Date: 11/4/2025

Survey Area

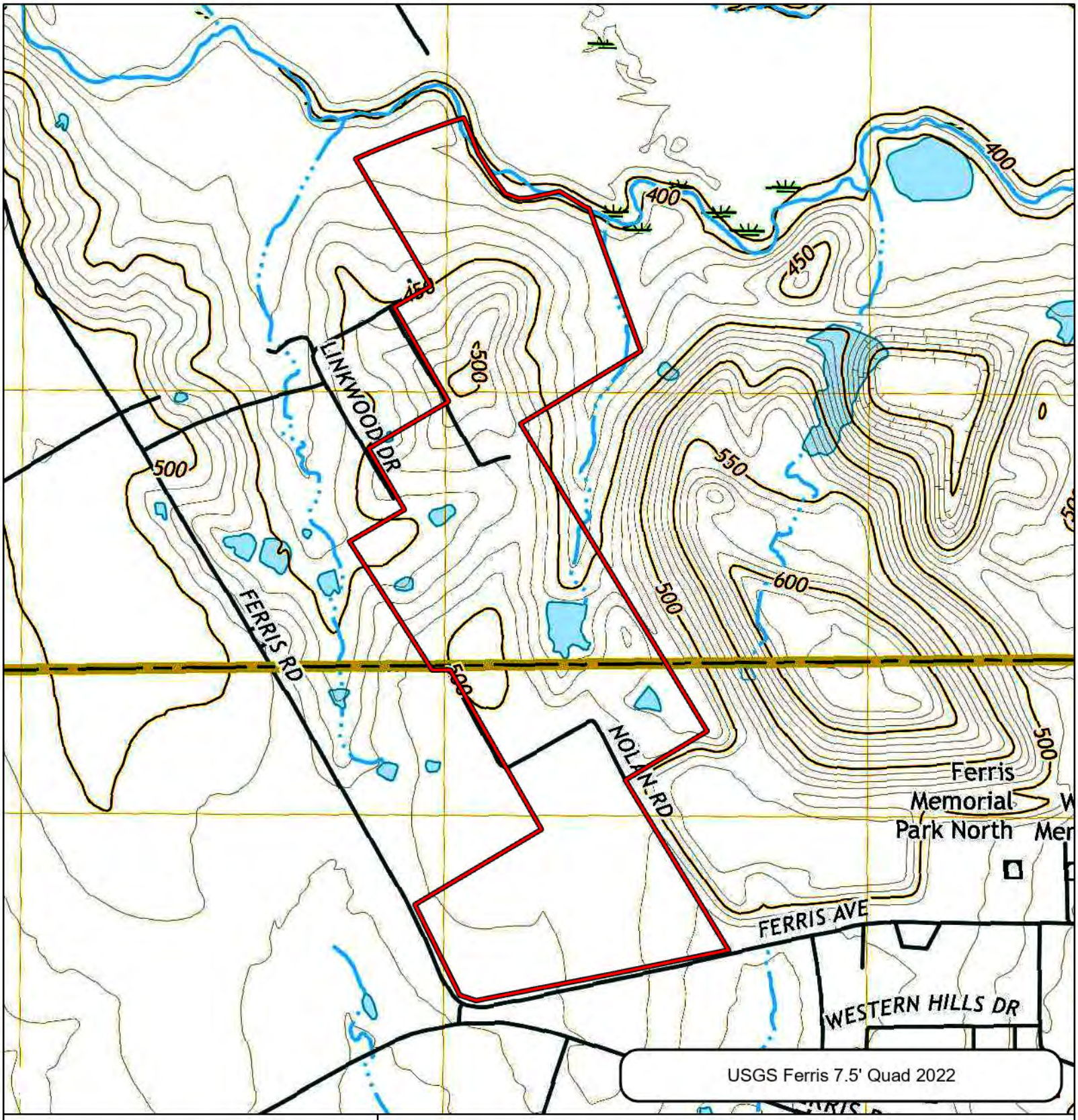


Figure 2B.
Topographic Setting

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,000 ft

Feet
0 1,000

N
W E
S

File Ref. 04.393.003
Date: 10/29/2025

Survey Area

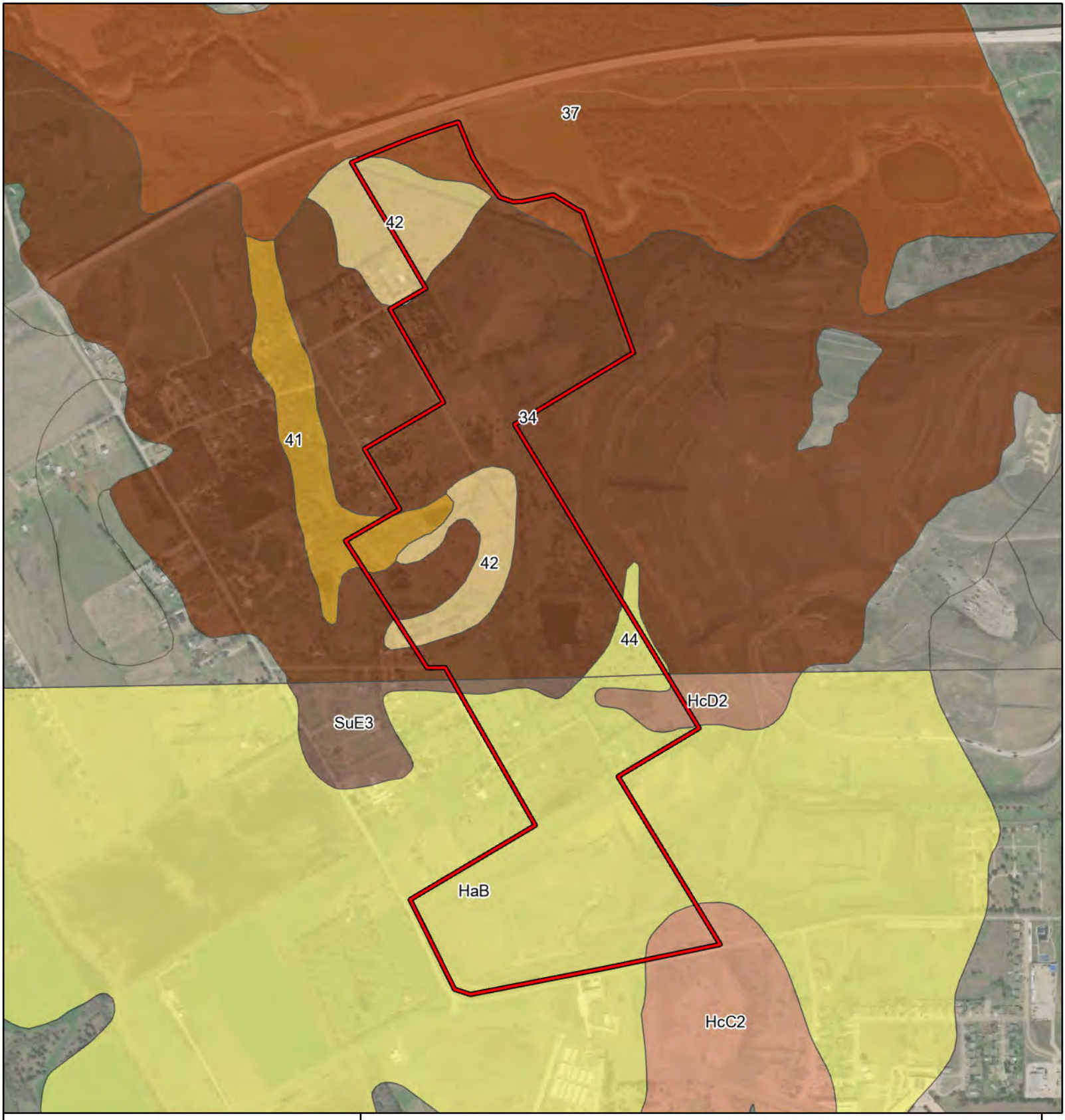


Figure 3.
Soils Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,000 ft

Feet
0 1,000

N
W E
S

File Ref. 04.393.003
Date: 10/29/2025

Survey Area

Soil Map Units within Dallas County

- 34 - Ferris-Heiden complex, 5 to 12 percent slopes
- 37 - Frio silty clay, 0 to 1 percent slopes, frequently flooded
- 41 - Heiden clay, 1 to 3 percent slopes
- 42 - Heiden clay, 2 to 5 percent slopes, moderately eroded
- 44 - Houston Black clay, 1 to 3 percent slopes

Soil Map Units within Ellis County

- HaB - Houston Black clay, 1 to 3 percent slopes
- HcC2 - Heiden clay, 3 to 5 percent slopes, eroded
- HcD2 - Heiden clay, 5 to 8 percent slopes, eroded
- SuE3 - Ferris clay, 5 to 12 percent slopes, eroded
- Soil Map Units Outside the Survey Area



Figure 4.
Federal Emergency Management Agency Flood Insurance Rate Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,000 ft

Feet
0 1,000

N
W E
S

File Ref. 04.393.003
Date: 10/29/2025

Survey Area

FEMA FIRM Zone Descriptions

Zone X - Areas determined to be outside the 0.2% annual chance floodplain

Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood

Zone A - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; No base flood elevations determined

Zone AE - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; Base flood elevations determined

Zone AE - Floodway areas in Zone AE



Figure 5.
Aquatic Features Identified within the Survey Area

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 850 ft

Feet
0
850

N
W
E
S

File Ref. 04.393.033
Date: 11/4/2025

- Survey Area
- Wetland Determination Data Form
- Culvert

Aquatic Features

- Tributary - Perennial
- Tributary - Ephemeral
- Wetland
- Pond



Figure 6.
Jurisdictional Assessment

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 850 ft

Feet
0 850

N
W E
S

File Ref. 04.393.003
Date: 11/20/2025

- Survey Area
- Wetland Determination Data Form
- Culvert

Aquatic Features that Meet a Definition of a Water of the United States

- RPW
- Wetland - Continuous Surface Connection to a RPW

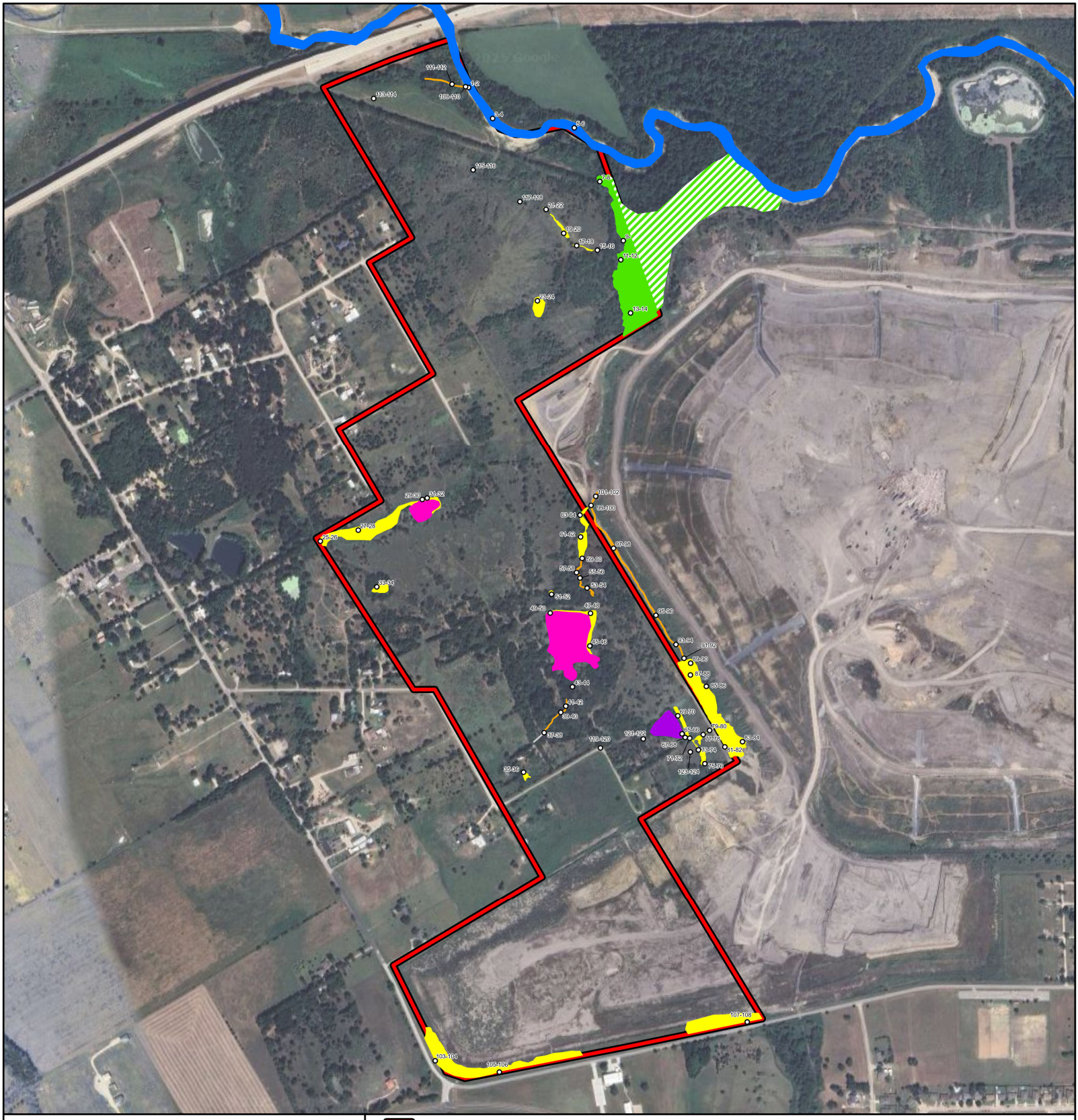
Aquatic Features that Do Not Meet a Definition of a Water of the United States

- Non-RPW
- Wetland - No Continuous Surface Connection to a RPW
- Isolated, Artificial, Upland Pond
- Impoundment of a Non-RPW with No Connection to Interstate Commerce

Aquatic Features Mapped Using Aerial Imagery and Lidar

- Wetland - Continuous surface connection to a RPW

ATTACHMENT B
Site Photographs



Photograph Location Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 850 ft

Feet
0 850

N
W E
S

File Ref. 04.393.033
Date: 11/20/2025

- Survey Area
- Photograph Location
- Culvert

Aquatic Features that Meet a Definition of a Water of the United States

- RPW
- Wetland - Continuous Surface Connection to a RPW

Aquatic Features that Do Not Meet a Definition of a Water of the United States

- Non-RPW
- Wetland - No Continuous Surface Connection to a RPW
- Isolated, Artificial, Upland Pond
- Impoundment of a Non-RPW with No Connection to Interstate Commerce

Aquatic Features Mapped Using Aerial Imagery and Lidar

- Wetland - Continuous surface connection to a RPW



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22



Photograph 23



Photograph 24



Photograph 25



Photograph 26



Photograph 27



Photograph 28



Photograph 29



Photograph 30



Photograph 31



Photograph 32



Photograph 33



Photograph 34



Photograph 35



Photograph 36



Photograph 37



Photograph 38



Photograph 39



Photograph 40



Photograph 41



Photograph 42



Photograph 43



Photograph 44



Photograph 45



Photograph 46



Photograph 47



Photograph 48



Photograph 49



Photograph 50



Photograph 51



Photograph 52



Photograph 53



Photograph 54



Photograph 55



Photograph 56



Photograph 57



Photograph 58



Photograph 59



Photograph 60



Photograph 61



Photograph 62



Photograph 63



Photograph 64



Photograph 65



Photograph 66



Photograph 67



Photograph 68



Photograph 69



Photograph 70



Photograph 71



Photograph 72



Photograph 73



Photograph 74



Photograph 75



Photograph 76



Photograph 77



Photograph 78



Photograph 79



Photograph 80



Photograph 81



Photograph 82



Photograph 83



Photograph 84



Photograph 85



Photograph 86



Photograph 87



Photograph 88



Photograph 89



Photograph 90



Photograph 91



Photograph 92



Photograph 93



Photograph 94



Photograph 95



Photograph 96



Photograph 97



Photograph 98



Photograph 99



Photograph 100



Photograph 101



Photograph 102



Photograph 103



Photograph 104



Photograph 105



Photograph 106



Photograph 107



Photograph 108



Photograph 109



Photograph 110



Photograph 111



Photograph 112



Photograph 113



Photograph 114



Photograph 115



Photograph 116



Photograph 117



Photograph 118



Photograph 119



Photograph 120



Photograph 121



Photograph 122



Photograph 123



Photograph 124

ATTACHMENT C
Routine Wetland Determination Data Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 1

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.55416096 | Long: -96.68542589 | Datum: NAD 1983

Soil Map Unit Name: Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Emergent wetland channel. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	20	Yes	FAC
2. *Ulmus crassifolia*	10	Yes	FAC
3. *Juniperus virginiana*	5	No	UPL
4.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Ulmus crassifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Panicum virgatum*	75	Yes	FAC
2. *Iva annua*	40	Yes	FAC
3. *Symphyotrichum divaricatum*	15	No	OBL
4. *Samolus ebracteatus*	10	No	FACW
5. *Ambrosia psilostachya*	5	No	FACU
6. *Xanthium strumarium*	5	No	FAC
7.			
8.			
9.			
10.			
	150	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	95	7.5YR 5/8	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 2

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.55388519 | Long: -96.68464307 | Datum: NAD 1983

Soil Map Unit Name: Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Forrested wetlland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	40	Yes	FAC
2. *Ulmus crassifolia*	25	Yes	FAC
3. *Celtis laevigata*	5	No	FAC
4.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Celtis laevigata*	7	Yes	FAC
2. *Ulmus crassifolia*	5	Yes	FAC
3. *Fraxinus pennsylvanica*	5	Yes	FAC
4. *Ligustrum sinense*	2	No	
5. *Juniperus virginiana*	1	No	UPL
	20	=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Potamogeton nodosus*	35	Yes	OBL
2. *Iva annua*	25	Yes	FAC
3. *Symphyotrichum divaricatum*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR 5/2	97	10YR 6/8	3	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)
- X Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 3

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.55436942 | Long: -96.68591161 | Datum: NAD 1983

Soil Map Unit Name: Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Grassland plain between two wetlands. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Maclura pomifera*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Rubus trivialis*	35	Yes	FACU
2. *Panicum virgatum*	25	Yes	FAC
3. *Cirsium altissimum*	5	No	UPL
4. *Monarda citriodora*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	45	x 4 =	180
UPL species	10	x 5 =	50
Column Totals:	80 (A)		305 (B)
Prevalence Index = B/A =			3.81

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/2	98	10YR 6/8	2	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 4

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.55442217 | Long: -96.68596231 | Datum: NAD 1983

Soil Map Unit Name: Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Inundated depressional wetland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	7	Yes	FAC
2.			
3.			
4.			
	7	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Juncus torreyi*	40	Yes	FACW
2. *Xanthium strumarium*	20	Yes	FAC
3. *Symphyotrichum divaricatum*	7	No	OBL
4. *Panicum virgatum*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	72	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 28

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR 5/2	85	10YR 6/8	15	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X Inundation Visible on Aerial Imagery (B7)
- X 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)

- X 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 5

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54955217 | Long: -96.68875084 | Datum: NAD 1983

Soil Map Unit Name: Heiden clay, 2 to 5 percent slopes, moderately eroded | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Fringe wetland around pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Eleocharis palustris*	30	Yes	OBL
2. *Symphyotrichum divaricatum*	20	Yes	OBL
3. *Typha latifolia*	10	No	OBL
4. *Xanthium strumarium*	7	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	67	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 33

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR 4/2	80	10YR 6/6	20	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 4
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 6

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54949601 | Long: -96.68867408 | Datum: NAD 1983

Soil Map Unit Name: Heiden clay, 2 to 5 percent slopes, moderately eroded | NWI classification: N/A

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland adjacent to pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Setaria parviflora*	90	Yes	FAC
2. *Lolium perenne*	60	Yes	FACU
3. *Chaerophyllum tainturieri*	15	No	
4. *Torilis arvensis*	12	No	UPL
5. *Polytaenia texana*	10	No	UPL
6.			
7.			
8.			
9.			
10.			
	187	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	60	x 4 =	240
UPL species	22	x 5 =	110
Column Totals:	172 (A)		620 (B)
Prevalence Index = B/A =			3.60

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 7

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%):

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54805944 | Long: -96.69023505 | Datum: NAD 1983

Soil Map Unit Name: Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Fringe wetland around pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	30	Yes	FACW
2. *Celtis laevigata*	15	Yes	FAC
3.			
4.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Cardiospermum halicacabum*	60	Yes	FAC
2. *Iva annua*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)
Prevalence Index = B/A =	____

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	95	7.5YR 5/8	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 8

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54562808 | Long: -96.68366099 | Datum: NAD 1983

Soil Map Unit Name: Houston Black clay, 1 to 3 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Emergent wetland near pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis laevigata*	10	Yes	FAC
2. *Juniperus virginiana*	5	Yes	UPL
3.			
4.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Celtis laevigata*	12	Yes	FAC
2. *Maclura pomifera*	10	Yes	FACU
3.			
4.			
5.			
	22	=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Eleocharis palustris*	45	Yes	OBL
2. *Iva annua*	20	Yes	FAC
3. *Symphyotrichum divaricatum*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR 4/2	88	7.5YR 6/6	12	C	PL/M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 9

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54547157 | Long: -96.68294214 | Datum: NAD 1983

Soil Map Unit Name: Heiden clay, 5 to 8 percent slopes, eroded | NWI classification: N/A

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Depressional wetland channel. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Salix nigra*	20	Yes	FACW
2.			
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Typha latifolia*	80	Yes	OBL
2. *Symphyotrichum divaricatum*	7	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	87 =Total Cover		
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 13

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	5Y 6/3	60					Loamy/Clayey	
	10YR 4/1	40					Loamy/Clayey	
8-16	10YR 4/1	88	7.5YR 6/8	12	C	PL/M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)
- X Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 10

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%):

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54467094 | Long: -96.6870229 | Datum: NAD 1983

Soil Map Unit Name: Houston Black clay, 1 to 3 percent slopes | NWI classification: N/A

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Isolated emergent wetland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Hydrocotyle ranunculoides*	80	Yes	OBL
2. *Xanthium strumarium*	20	No	FAC
3. *Rumex crispus*	3	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	103 =Total Cover		
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	98	7.5YR 5/6	2	C	PL/M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 11

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.53992582 | Long: -96.68904963 | Datum: NAD 1983

Soil Map Unit Name: Houston Black clay, 1 to 3 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Depressional emergent wetland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	____	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	____	=Total Cover	

Herb Stratum (Plot size: 5' Radius)			
1. *Typha latifolia*	30	Yes	OBL
2. *Symphyotrichum divaricatum*	20	Yes	OBL
3. *Juncus torreyi*	15	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	65	=Total Cover	

Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	____	=Total Cover	

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	65	7.5YR 6/8	5	C	PL/M	Loamy/Clayey	
16-17	5Y 6/3	30					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)**
- X Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 12

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 5-10

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54530883 | Long: -96.68325883 | Datum: NAD 1983

Soil Map Unit Name: HcD2 - Heiden clay, 5 to 8 percent slopes, eroded | NWI classification: N/A

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Iva annua*	85	Yes	FAC
2. *Lolium perenne*	3	No	FACU
3. *Amphiachyris dracunculoides*	2	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	88	7.5YR 6/6	12	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 13

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54539469 | Long: -96.68326774 | Datum: NAD 1983

Soil Map Unit Name: HcD2 - Heiden clay, 5 to 8 percent slopes, eroded | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Grassland plain upslope of wetland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Prosopis glandulosa*	20	Yes	FACU
2.			
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Ambrosia psilostachya*	45	Yes	FACU
2. *Bromus japonicus*	10	Yes	FACU
3. *Ambrosia trifida*	10	Yes	FAC
4. *Amphiachyris dracunculoides*	10	Yes	UPL
5. *Centaurea americana*	8	No	UPL
6. *Helianthus giganteus*	5	No	FAC
7. *Iva annua*	5	No	FAC
8.			
9.			
10.			
	93 =Total Cover		
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	75	x 4 =	300
UPL species	18	x 5 =	90
Column Totals:	113 (A)		450 (B)
Prevalence Index = B/A =			3.98

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 14

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-3

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54797936 | Long: -96.68641377 | Datum: NAD 1983

Soil Map Unit Name: 34 - Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Isolated depressional wetland. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	15	Yes	FACW
2.			
3.			
4.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Cardiospermum halicacabum*	35	Yes	FAC
2. *Amaranthus tuberculatus*	15	Yes	FAC
3. *Xanthium strumarium*	7	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	57	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 45

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	80	7.5YR 6/8	20	C	PL/M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)
- X 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)

- X 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 15

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-5

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54753524 | Long: -96.68548185 | Datum: NAD 1983

Soil Map Unit Name: 34 - Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Emergent wetland fringe around pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. *Eleocharis compressa*	40	Yes	FACW
2. *Cyperus odoratus*	15	Yes	FACW
3. *Lolium perenne*	10	No	FACU
4. *Cardiospermum halicacabum*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

X 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/2	85	7.5YR 4/6	15	C	PL	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X 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)
- X 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Skyline Landfill Expansion | City/County: Ferris / Ellis | Sampling Date: 23 Oct 2025

Applicant/Owner: Biggs & Mathews Environmental, Inc | State: TX | Sampling Point: 16

Investigator(s): Emma Munyandi, Holly Wilson | Section, Township, Range: NA

Landform (hillside, terrace, etc.): Berm | Local relief (concave, convex, none): Convex | Slope (%): 3-8

Subregion (LRR/MLRA): LRR J, MLRA 85A | Lat: 32.54771628 | Long: -96.68612177 | Datum: NAD 1983

Soil Map Unit Name: 34 - Ferris-Heiden complex, 5 to 12 percent slopes | NWI classification: N/A

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Berm upslope from pond. APT indicated that conditions on site were hydrologically "drier than normal".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Maclura pomifera*	35	Yes	FACU
2. *Ulmus crassifolia*	15	Yes	FAC
3.			
4.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Maclura pomifera*	10	Yes	FACU
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5' Radius)			
1. *Croton monanthogynus*	40	Yes	UPL
2. *Iva annua*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	45	x 4 =	180
UPL species	40	x 5 =	200
Column Totals:	105 (A)		440 (B)
Prevalence Index = B/A =			4.19

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky 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 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

ATTACHMENT D
Tributary Flow Evaluation Data Forms

Tributary Evaluation Data Form

Project: Skyline Landfill Expansion	Date: 23 Oct 2025
Feature ID: Tenmile Creek	Investigator(s): Emma Munyandi and Holly Wilson

Antecedent Precipitation Tool (APT)

Season:	Wet ☒ Dry ☐	Precipitation in the last 30 days (Inches): 0.52
Results:	Wetter than Normal ☐ Normal ☐ Drier than Normal ☒	

Observed Flow:	Yes ☒ No ☐
Observed Pools:	Yes ☐ No ☒

Stream Order: 4th

Soil Adjacent to Tributary (Web Soil Survey): 37 - Frio silty clay, 0 to 1 percent slopes, frequently flooded

Hydric Soil:	Yes ☒ No ☐	Depth to Water Table (Inches): >80

Channel Geometry

OHWM Width (Feet): 36-65	OHWM Depth (Feet): 3-5
Bank Width (Feet): 40-70	Bank Depth (Feet): 6-12

Ordinary High Water Mark Characteristics

Bed and Bank ☒ Change in Soil Characteristics ☒ Deposition ☒ Destruction of Terrestrial Vegetation ☒
Natural Line Impressed in Bank ☐ Presence of Litter and Debris ☒ Scours ☒ Sediment Sorting ☒
Vegetation Matted Down along Bank ☐ Water Staining ☒

Substrate

Bedrock ☒ Boulder ☐ Cobble ☒ Gravel ☒ Sand ☒ Fines (Silt, Clay, Muck) ☒

Redox or Depleted Characteristics in Stream Bed Soil Profile:	Yes ☐ No☐

Seeps:	Near or along Runs ☐ Near or along Pools ☐ None Observed ☒

Adjacent Vegetation Community

Cultivated Field ☐ Forest ☒ Grassland ☐ Scrub / Shrub ☐ Urban ☐

Hydrophytic Vegetation (FACW or OBL) along Banks:	Runs ☐ Pools ☐ None Observed ☒
Algae:	On Water Surface ☐ Algal Crust on Rocks / Stream Substrate ☒ None Observed ☐

Wildlife / Biota: None observed.

Conclusion:	**RPW** ☒ **Non-RPW** ☐

Notes: Tenmile Creek was identified as a large, fourth order stream meandering along the northern boundary. The channel contained OHWM characteristics indicating frequent or continuous flow, such as sediment sorting and water staining, and contained flowing water at the time of evaluation despite drier than normal conditions in the wet season. Given its large size, large watershed, fourth order Strahler stream order categorization, presence of flowing water at the time of evaluation, and evidence of continuous flow, it is IES's professional opinion that Tenmile Creek would be considered to have perennial flow, and is a RPW.

Tributary Evaluation Data Form

Project: Skyline Landfill Expansion			Date: 23 Oct 2025
Feature ID: Tributaries 2-6			Investigator(s): Emma Munyandi and Holly Wilson
Antecedent Precipitation Tool (APT)			
Season:	Wet ☒ Dry ☐	Precipitation in the last 30 days (Inches): 0.52	
Results:	Wetter than Normal ☐ Normal ☐ Drier than Normal ☒		
Observed Flow:	Yes ☐ No ☒		
Observed Pools:	Yes ☐ No ☒		
Stream Order: 1st			
Soil Adjacent to Tributary (Web Soil Survey): 34 - Ferris-Heiden complex, 5 to 12 percent slopes / 44 - Houston Black clay, 1 to 3 percent slopes / 37 - Frio silty clay, 0 to 1 percent slopes, frequently flooded (Hydric) / SuE3 - Ferris clay, 5 to 12 percent slopes, eroded / HaB - Houston Black clay, 1 to 3 percent slopes / HcD2 - Heiden clay, 5 to 8 percent slopes, eroded			
Hydric Soil:	Yes ☒ No ☒	Depth to Water Table (Inches): <80 / >80 / >80 / >80 / >80 / >80	
Channel Geometry			
OHWM Width (Feet): <1-12		OHWM Depth (Feet): <1	
Bank Width (Feet): 1-14		Bank Depth (Feet): <1-5	
Ordinary High Water Mark Characteristics Bed and Bank ☒ Change in Soil Characteristics ☐ Deposition ☐ Destruction of Terrestrial Vegetation ☒ Natural Line Impressed in Bank ☐ Presence of Litter and Debris ☒ Scours ☐ Sediment Sorting ☐ Vegetation Matted Down along Bank ☐ Water Staining ☐			
Substrate Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☐ Fines (Silt, Clay, Muck) ☒			
Redox or Depleted Characteristics in Stream Bed Soil Profile:		Yes ☐ No☐	
Seeps:	Near or along Runs ☐ Near or along Pools ☐ None Observed ☒		
Adjacent Vegetation Community Cultivated Field ☐ Forest ☒ Grassland ☒ Scrub / Shrub ☐ Urban ☐			
Hydrophytic Vegetation (FACW or OBL) along Banks:	Runs ☐ Pools ☐ None Observed ☒		
Algae:	On Water Surface ☐ Algal Crust on Rocks / Stream Substrate ☐ None Observed ☒		
Wildlife / Biota: None observed.			
Conclusion:	**RPW** ☐ **Non-RPW** ☒		

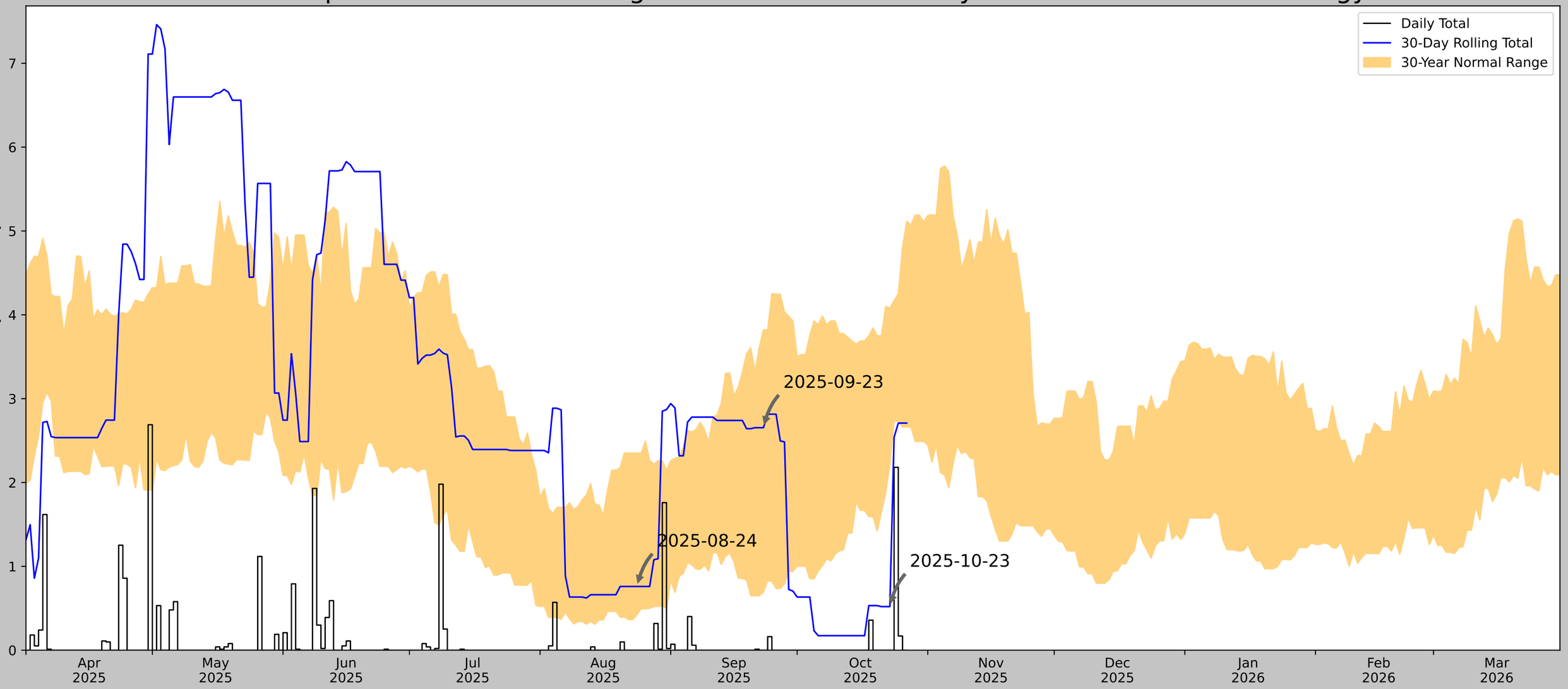
Notes: Tributaries 2 through 6 were identified as relatively small first order channels located throughout the survey area. The tributaries were weakly defined in portions and dry at the time of evaluation. OHWM characteristics indicating frequent flow, such as sediment sorting, were not observed. Given their size, small watershed, first order Strahler stream order categorization, and lack of evidence of frequent flow, it is IES's professional opinion that Tributaries 2 through 6 would be considered rain-dependent, ephemeral features, and therefore, non-RPWs.

ATTACHMENT E
Climatological Data

Pats House Weather Station (KTXFERRI24)
30-Day Precipitation Data
City of Ferris, Texas

Date	Precipitation (Inches)
9/17/2025	**0.00** in
9/18/2025	**0.00** in
9/19/2025	**0.00** in
9/20/2025	**0.00** in
9/21/2025	**0.00** in
9/22/2025	**0.00** in
9/23/2025	**0.00** in
9/24/2025	**0.22** in
9/25/2025	**0.22** in
9/26/2025	**0.00** in
9/27/2025	**0.00** in
9/28/2025	**0.00** in
9/29/2025	**0.00** in
9/30/2025	**0.00** in
10/1/2025	**0.00** in
10/2/2025	**0.00** in
10/3/2025	**0.00** in
10/4/2025	**0.00** in
10/5/2025	**0.00** in
10/6/2025	**0.00** in
10/8/2025	**0.00** in
10/9/2025	**0.00** in
10/10/2025	**0.00** in
10/11/2025	**0.00** in
10/13/2025	**0.00** in
10/14/2025	**0.00** in
10/19/2025	**0.11** in
10/20/2025	**0.00** in
10/21/2025	**0.00** in
10/22/2025	**0.00** in

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	32.54972, -96.68774
Observation Date	2025-10-23
Elevation (ft)	464.629
Drought Index (PDSI)	Not available (2025-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-23	2.22126	4.079921	0.519685	Dry	1	3	3
2025-09-23	0.690551	3.822047	2.653543	Normal	2	2	4
2025-08-24	0.425591	2.351575	0.759843	Normal	2	1	2
Result							Drier than Normal - 9

Figures and tables made by the Antecedent Precipitation Tool Version 3.0

US Army Corps of Engineers.

ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
DALLAS REDBIRD AP	32.6781, -96.8678	658.137	13.729	193.508	8.835	10013	89
DALLAS 7.2 SW	32.7091, -96.8383	584.974	2.744	73.163	1.436	17	1
DUNCANVILLE 1.7 NNW	32.6698, -96.9216	704.068	3.181	45.931	1.578	1	0
JOE POOL LAKE	32.6406, -96.9747	590.879	6.737	67.258	3.485	1216	0
DALLAS HENSLEY FLD NAS	32.7333, -96.9667	492.126	6.9	166.011	4.25	40	0
ARLINGTON MUNI AP	32.6583, -97.095	589.895	13.285	68.242	6.885	2	0
DALLAS FAA AP	32.8383, -96.8358	483.924	11.224	174.213	7.006	24	0
ARLINGTON SIX FLAGS	32.7572, -97.0736	536.089	13.153	122.048	7.524	40	0

SKYLINE LANDFILL

APPENDIX IIE

ENDANGERED OR THREATENED SPECIES DOCUMENTATION

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

Alan Cain
Director of Wildlife
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Re: Waste Management Skyline Landfill Permit Amendment
TCEQ Permit No. MSW 42E
Dallas and Ellis Counties, Texas
Documentation of Coordination

Dear Mr. Cain:

On behalf of Waste Management of Texas, Inc., Biggs & Mathews Environmental, Inc. (BME) is preparing to submit a Texas Commission on Environmental Quality (TCEQ) permit amendment application for the Waste Management Skyline Landfill (Skyline Landfill), located in Dallas and Ellis Counties, Texas. As shown on the attached habitat assessment, the facility site entrance is located approximately one mile south of the Malloy Bridge Road and IH-45 Business South/N Central Street intersection.

The purpose of this letter is to document coordination with the Texas Park and Wildlife Department (TPWD) consistent with the Texas Commission on Environmental Quality's municipal solid waste regulations, 30 Administrative Code Chapter 330 (30TAC §330.61(n)(2).

Please call or e-mail me at 817-563-1144 or gadams@biggsandmathews.com if you have any questions.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ♦ TBPG No. 50222

Gregory W. Adams, P.E.
Principal

Attachments: Protected Species Habitat Assessment

cc: Mr. James Smith, Area Director, Disposal Operations, Waste Management of Texas, Inc.

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

Catherine Yeargan
Project Leader
U.S. Fish and Wildlife Service
3233 Curtis Drive
Fort Worth, Texas 76116

Re: Waste Management Skyline Landfill Permit Amendment
TCEQ Permit No. MSW 42E
Dallas and Ellis Counties, Texas
Documentation of Coordination

Dear Ms. Yeargan:

On behalf of Waste Management of Texas, Inc., Biggs & Mathews Environmental, Inc. (BME) is preparing to submit a Texas Commission on Environmental Quality (TCEQ) permit amendment application for the Waste Management Skyline Landfill (Skyline Landfill), located in Dallas and Ellis Counties, Texas. As shown on the attached habitat assessment, the facility site entrance is located approximately one mile south of the Malloy Bridge Road and IH-45 Business South/N Central Street intersection.

The purpose of this letter is to document coordination with the Texas Park and Wildlife Department (TPWD) consistent with the Texas Commission on Environmental Quality's municipal solid waste regulations, 30 Administrative Code Chapter 330 (30TAC §330.61(n)(2).

Please call or e-mail me at 817-563-1144 or gadams@biggsandmathews.com if you have any questions.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ♦ TBPG No. 50222

Gregory W. Adams, P.E.
Principal

Attachments: Protected Species Habitat Assessment

cc: Mr. James Smith, Area Director, Disposal Operations, Waste Management of Texas, Inc.

16 January 2026

Mr. Gregg Adams, P.E.
Biggs & Mathews Environmental, Inc.
1700 Robert Road, Suite 100
Mansfield, Texas 76063

Re: Skyline Landfill Expansion - Protected Species Habitat Assessment
Approximately 858.7 acres associated with the expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road 664 northwest of Ferris, Dallas and Ellis Counties, Texas.

Dear Mr. Adams,

Integrated Environmental Solutions, LLC (IES) performed a protected species habitat assessment on approximately 858.7 acres associated with the expansion of the Skyline Landfill located on the northeastern corner of Ferris Road and Farm-to-Market Road (FM) 664 northwest of the City of Ferris, Dallas and Ellis Counties, Texas (**Attachment A, Figure 1**) to satisfy Endangered Species Act (ESA) requirements. The following report includes a list of the federally and state protected species for Dallas and Ellis Counties, their preferred vegetation assemblages, a summary of vegetation communities identified on the site, an evaluation of whether the vegetation communities present on the site could support a protected species, and whether future proposed actions would affect listed species.

INTRODUCTION

Federally Protected Species

Endangered Species Act

The ESA of 1973 (Public Law [P.L.] 93-205) and amendments of 1988 (P.L. 100-578) were enacted to provide a program of preservation for endangered and threatened species and to provide protection for ecosystems upon which these species depend for their survival. The ESA requires all federal agencies to implement protection programs for designated species and to use their authorities to further the purposes of the Act. Responsibility for the listing of an endangered or threatened species and for the development of recovery plans lies with the Secretary of Interior and Secretary of Commerce. The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the ESA within the United States.

An endangered species is defined as a species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as a species likely to become endangered within the near future throughout all or a significant portion of its range. Proposed species are defined as those that have been formally submitted to Congress for official listing as endangered or threatened.

The USFWS has identified species that are candidates for possible addition to the list of Endangered and Threatened Wildlife and Plants (50 Code of Federal Regulations [CFR] 17.11 and 17.12) under the ESA. The USFWS maintains a candidate list to: (1) provide advance knowledge of potential listings that could affect land planning decisions, (2) solicit input to identify candidate species that may require protection under the ESA, and (3) solicit information needed to prioritize the order in which species will be proposed for listing. Candidate species have no legal protection under the ESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act's policies and regulations. The USFWS maintains a list of migratory birds (50 CFR 10.13), which includes, as of the date of this report, over 1,000 species. Under Director's Order 225 (05 October 2021), the USFWS interprets the MBTA to prohibit the incidental take of migratory bird and will enforce the statute accordingly, which went into effect 03 December 2021. In this order incidental take means, "the taking or killing of migratory birds that results from, but is not the purpose of, an activity." The USFWS acknowledges that a wide range of activities may result in incidental take of migratory birds, as such, they have developed a priority list for those actions that would require enforcement activities.

a) The following types of conduct are not a priority for enforcement.
   (1) A member of the general public conducting otherwise legal activities that incidentally take migratory birds;
   (2) A federal agency conducting activities in accordance with a signed memorandum of understanding with the USFWS developed under Executive Order (EO) 13186 for conservation of migratory birds; or
   (3) A public or private sector entity conducting activities in accordance with applicable beneficial practices for avoiding and minimizing incidental take.
b) The USFWS prioritizes the following types of conduct for enforcement.
   (1) Incidental take that is the result of an otherwise illegal activity; or
   (2) Incidental take that:
      a. Results from activities by a public or private sector entity that are otherwise legal;
      b. Is foreseeable; and
      c. Occurs where known general or activity-specific beneficial practices were not implemented.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S. Code [USC] 668-668d) prohibits anyone, without a permit issued by the Secretary of the Interior, from "talking" bald or golden eagles, including their parts (including feathers), nests, or eggs. Under the BGEPA, there are criminal penalties for persons who, "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part (including feathers), nests, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." Disturb is further defined as, "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) decrease its productivity, by substantially interfering with normal breeding, feeding, or sheltering behaviors, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behaviors" (50 CFR 22.6). In addition to immediate actions, the BGEPA definition also covers the effects from human-induced alterations around previously used nest sites during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment. Revisions to the BGEPA went into effect on 12 April 2024, that included new specific and general permits for unavoidable nest taking for species protection and incidental take permits associated with disturbance, wind energy, and power lines. Additionally, mitigation credits for incidental eagle takings have been created and could be required for certain incidental take permits (e.g., wind energy).

State Protected Species

The Texas Parks and Wildlife Department (TPWD) Wildlife Diversity Program (WDP) maintains a list of threatened and endangered species by county. The State of Texas does not list threatened and endangered species using the same criteria as the federal government. When the USFWS lists a plant species, the State of Texas then lists that plant. Thus, the list of threatened and endangered plants in Texas directly reflects the federal list. However, the state has separate laws governing the listing of wildlife species as threatened or endangered. In Texas, wildlife species are designated as threatened or endangered according to Chapters 67 and 68 of the Texas Parks and Wildlife Code and Section 65.171 - 65.184 of Title 31 of the Texas Administrative Code. Species that are not currently listed by the Federal government may be listed as threatened or endangered by the TPWD.

METHODOLOGY

Prior to conducting fieldwork, the list of Endangered and Threatened Wildlife and Plants under the ESA was obtained through the USFWS Information, Planning, and Conservation System (IPaC), the TPWD WDP, and the Texas Natural Diversity Database (TXNDD). Information on the vegetation communities used by each wildlife species is detailed below. During the field survey, vegetation composition within and adjacent to the project site was noted to determine whether there was potential for protected species habitat. This survey was not designed to identify the presence of protected species; however, if species were observed, they were recorded. Photographs were taken at representative points, illustrating common vegetation communities within the survey area (**Attachment B**).

RESULTS

Literature Review

According to the USFWS, four species; Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Whooping Crane (*Grus americana*) and Texas fawnsfoot (*Truncilla macrodon*) are listed as federally protected (i.e., threatened or endangered) with the potential to occur within Dallas and Ellis Counties. Two of these species are conditionally listed as threatened within Dallas and Ellis Counties on the basis that the proposed project is for wind energy production, Red Knot and Piping Plover. The tricolored bat (*Perimyotis subflavus*) and Texas heelsplitter (*Potamilus amphichaenus*) are listed as proposed endangered. The alligator snapping turtle (*Macrochelys temminckii*) and monarch butterfly (*Danaus plexippus*) are listed as proposed threatened. No federally listed critical habitat for these species is located within the vicinity of the survey area.

The TPWD lists 15 state protected species that could occur within Dallas and Ellis Counties, five of which are also federally listed avian species. The TPWD lists the following protected species for Dallas and Ellis Counties, Black Rail (*Laterallus jamaicensis*), Golden Cheeked Warbler (*Setophaga chrysoparia*), Interior Least Tern (*Sternula antillarum athalassos*), Piping Plover, Red Knot, White-faced Ibis (*Plegadis chihi*), Whooping Crane, Wood Stork (*Mycteria americana*) alligator snapping turtle, Texas horned lizard (*Phrynosoma cornutum*), Louisiana pigtoe (*Pleurobema riddellii*), sandbank pocketbook (*Lampsilis satura*), Texas fawnsfoot, Texas heelsplitter, and Trinity pigtoe (*Fusconaia chunii*). The review of the TXNDD files did not indicate any unique vegetation communities, parks, or natural managed areas within the survey area.

Attachment C identifies the state and federally protected species that could potentially occur within Dallas and Ellis Counties from the IPaC and Rare and Threatened Endangered Species of Texas (RTEST) lists.

Site Survey

Holly Wilson and Emma Munyandi of IES evaluated the survey area on 23 October 2025. This survey was designed to provide a habitat evaluation of the overall survey area with the primary focus on the vegetation communities.

The survey area was characterized by five distinct vegetation communities, **mixed hardwood forest**, **scrub-shrub upland, forested upland**, **grassland**, and **urban matrix** (**Attachment A, Figure 2**). The **mixed hardwood forest** was comprised of woody species including cedar elm (*Ulmus crassifolia*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), Shumard oak (*Quercus shumardii*), winged elm (*Ulmus alata*), sugarberry (*Celtis laevigata*), Osage-orange (*Maclura pomifera*), and Hercules' club (*Zanthoxylum clava-herculis*) with an understory comprised of Chinese privet (*Ligustrum sinense*), rough leaf dogwood (*Cornus florida*), coralberry (*Symphoricarpos orbiculatus*), Japanese honeysuckle (*Lonicera japonica*), and poison ivy (*Toxicodendron radicans*). The **scrub-shrub upland** was comprised of shrub species including Chinese privet, eastern red cedar (*Juniperus virginiana*), Bradford pear (*Pyrus calleryana*), rough leaf dogwood, cedar elm, honey locust (*Gleditsia triacanthos*), sugarberry, and honey mesquite (*Prosopis glandulosa*). The **forested upland** was dominated by eastern red cedar with an herbaceous understory. The **grassland** was dominated by grasses and forbs including Texas thistle (*Cirsium texanum*), hairy fruit chervil (*Chaerophyllum tainturieri*), lemon beebalm (*Monarda citriodora*), southern dewberry (*Rubus trivialis*), common sunflower (*Helianthus annuus*), western ragweed (*Ambrosia psilostachya*), povertyweed (*Baccharis neglecta*), white heath aster (*Symphyotrichum ericoides*), little bluestem (*Schizacarium scoparium*), switchgrass (*Panicum virgatum*), prairie broomweed (*Amphiachyris dracunculoides*), prairie Indian plantain (*Arnoglossum plantagineum*), smooth sumac (*Rhus glabra*), giant ragweed (*Ambrosia trifida*), Texas prairie parsley (*Polytaenia texana*), prickly pear (*Opuntia basilaris*), henbit deadnettle (*Lamium amplexicaule*), annual bastard cabbage (*Rapistrum rugosum*),

Carolina horse nettle (*Solanum carolinense*), Illinois bundleflower (*Desmanthus illinoensis*), and knot-root bristlegrass (*Setaria parviflora*). The **urban matrix** community was identified in the southern region and scattered herbaceous vegetation was beginning to reestablish.

CONCLUSIONS

Preferred Habitat for Federally Protected Species

Table 1 provides a summary of the federally and state listed species that could potentially occur within Dallas and Ellis Counties, as well as a brief description of their habitat, if their habitat is present within the survey area, and whether the proposed project would potentially affect the listed species.

- Piping Plover and Red Knot are protected conditionally on the basis that a proposed project involves the production of wind energy. Because this project does not meet that condition, no further consideration was required for these species.
- Whooping Cranes occur only in North America with the only known habitats in three locations, Wood Buffalo National Park, Canada; Aransas National Wildlife Refuge, Texas; and a non-migratory population in central Florida. Whooping Cranes utilize estuaries, prairie marshes, savannah, grasslands, croplands, pastures; they also use large wetland areas associated with lakes for roosting and feeding. The site does not contain adequate structure for this species. USFWS has determined that Whooping Cranes generally prefer croplands and grassland interspersed with wetlands that are generally shallow (less than 20 inches). As such, it is not likely that Whooping Cranes would occupy the site as the conditions present do not meet the parameters of their habitat.
- The tricolored bat in the Southern United States, hibernates in caves, mines, and potentially in culverts, tree cavities, and abandoned water wells, where caves or mines are scare. In the Spring, Summer, and Fall, the bat is usually found in forests, primarily roosting among deciduous hardwood tree leaves, but also has been found in Spanish moss (*Tillandsia usneoides*), pines, eastern red cedar, and occasionally artificial roosts like barns, beneath porch roofs, bridges, and concrete bunkers. The forested vegetation communities could provide roosting habitat for this species. However, the tricolored bat maintains the status of proposed endangered. It is not currently afforded protection under the ESA, at the time of this report, and no further consideration is required for this species.
- The Texas fawnsfoot, Texas heelsplitter, and alligator snapping turtle occur in small streams and large rivers. A perennial tributary was identified along the north boundary, however appears to remain mostly outside of the site. An intermittent tributary was identified along the eastern boundary, the drainage is man-made and periodically maintained to convey flow downslope from the landfill. The remaining tributaries identified within the survey area were ephemeral. The perennial tributary could provide suitable habitat for the Texas fawnsfoot, Texas heelsplitter, and alligator snapping turtle. However, the Texas heelsplitter and alligator snapping turtle remains the status of proposed endangered or threatened and are not currently afforded protection under the ESA, at the time of this report.
- Monarch butterflies are found in a variety of habitats including native prairies, pastures, open woodlands and savannas, desert scrub, roadsides, and other habitats with abundant nectar plants, including urbanized areas. The grassland and urban matrix communities identified within the site may comprise a suitable habitat for this species. However, the monarch butterfly is a candidate species. It is not currently afforded protection under the ESA, at the time of this report, and no further consideration is required for this species.

The habitats present within the survey area were suitable for the tricolored bat, Texas fawnsfoot, Texas heelsplitter, alligator snapping turtle, and monarch butterfly. The habitats were not suitable for any of the remaining federally listed threatened or endangered species. Nor were the habitats suitable for nesting, feeding, or stopover migration habitat for the remaining species.

Preferred Habitat for State Protected Species

There were 15 threatened and endangered species listed for Dallas and Ellis Counties, including five federally listed avian species.

Table 1. Federally and State listed Threatened and Endangered Species Occurring or Potentially Occurring in Dallas and Ellis Counties, Texas

Species	Federal Status	State Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
MAMMALS					
Tricolored Bat (*Perimyotis subflavus*)	PE	---	Forest, woodland, and riparian areas are important. Caves are very important to this species.	**Yes**	**
BIRDS					
Black Rail (*Laterallus jamaicensis*	LT	T	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia.	**No**	**No**
Interior Least Tern (*Sternula antillarum athalassos*)	---	E	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	**No**	**No**
Golden-cheeked Warbler (*Setophaga chrysoparia*)	LE	E	Ashe juniper in mixed stands with various oaks (*Quercus spp.*). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	**No**	**No**
Piping Plover (*Charadrius melodus*)	LT	T	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.	**No**	**No**
Red Knot (*Calidris canutus rufa*)	LT	T	Red Knots migrate long distances in flocks northward through the contiguous U.S. mainly April-June, southward July-October. Prefers shorelines of coast and bays, uses mudflats during rare inland encounters. Primary habitats include seacoasts on tidal flats and shores, beaches, and herbaceous wetland.	**No**	**No**
White-Faced Ibis (*Plegadis chihi*)	---	T	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	**No**	**No**
Whooping Crane (*Grus americana*)	LE	E	Potential migrants via plains throughout most of the state to the coast. Winters in coastal marshes of Aransas, Calhoun, and Refugio counties. Utilizes small ponds, marshes, and flooded grain fields for roosting and foraging.	**No**	**No**
Wood Stork (*Mycteria americana*)	---	T	Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	**No**	**No**

Species	Federal Status	State Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
REPTILES					
Alligator Snapping Turtle (*Macrochelys temminckii*)	PT	T	Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the water's edge.	**Yes**	**
Texas Horned Lizard (*Phrynosoma cornutum*)	---	T	Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	**No**	**No**
INSECTS					
Monarch Butterfly (*Danaus plexippus*)	PT	---	Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after 2 to 5 days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately 2 to 5 weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live 6 to 9 months. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites.	**Yes**	**
MOLLUSKS					
Louisiana Pigtoe (*Pleurobema riddellii*)	PT	T	Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019]	**Yes**	**
Sandbank Pocketbook (*Lampsilis satura*)	---	T	Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019]	**Yes**	**
Texas Fawnsfoot (*Truncilla macrodon*)	PT	T	Occurs in large rivers but may also be found in medium-sized streams. Is found in protected near shore areas such as banks and backwaters but also riffles and point bar habitats with low to moderate water velocities. Typically occurs in substrates of mud, sandy mud, gravel and cobble. Considered intolerant of reservoirs (Randklev et al. 2010; Howells 2010o; Randklev et al. 2014b,c; Randklev et al. 2017a,b). [Mussels of Texas 2019]	**Yes**	**Yes**
Texas Heelsplitter (*Potamilus amphichaenus*)	PE	T	Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019]	**Yes**	**
Trinity Pigtoe (*Fusconaia chunii*)	---	T	Found in a variety of habitats but most common in riffles. Inhabits various substrates though most often sand, gravel, and cobble (species was recently split from Texas Pigtoe and occurs in similar habitats; Howells 2010a; Randklev et al. 2013b; Randklev et al. 2014a; Troia et al 2015). [Mussels of Texas 2020]	**Yes**	**

LE – Federally Listed Endangered, LT – Federally Listed Threatened, PE – Federally Proposed Endangered, PT – Federally Proposed Threatened, C – Federally Listed Candidate, E – State Listed Endangered, T – State Listed Threatened

** - This species is not currently afforded federal protection as of the date of this report

[1]*Habitat Present – Does the habitat located within the survey corridor match the habitat requirements for that particular protected species?*

[2]*Species Effect – Will the proposed project potentially affect a protected species?*

Data Sources: USFWS IpaC (published and accessed 06 October 2023), TPWD (published and accessed 06 October 2023), and field survey of the project site

- Any occurrence of the Piping Plover, Red Knot, White-faced Ibis, and Whooping Crane would be in relation to stopover during migration; however, no suitable stopover habitat was observed within the survey area.
- Black Rails utilize freshwater marshes and grassy swamps with dense emergent vegetation. Freshwater emergent wetlands were observed within the mixed forest habitat. However, given the absence of dense emergent vegetation within the wetlands, and the proximity to surrounding landfill operations and urban development, the likelihood of Black Rail presence is considered low.
- Golden-cheeked warblers' habit ashe juniper in mixed stands with various oaks which is not present on this site.
- Interior least tern habit sand beaches, flats, bays, inlets, lagoons, islands. Nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures. None of the preferred habitat was found within the site.
- White-faced ibis prefers freshwater marshes, sloughs, and irrigated rice fields which is not present on this site.
- Wood Storks nest in large tracts of bald cypress and forage in prairie ponds, flooded pastures, or fields, which were not present on this site.
- Louisiana pigtoe, sandbank pocketbook, Texas fawnsfoot, Texas heelsplitter, Trinity pigtoe, and alligator snapping turtle occur in small streams and large rivers. A perennial tributary was identified along the north boundary, however, appears to remain mostly outside of the site. An intermittent tributary was identified along the eastern boundary. The drainage is man-made and periodically maintained to convey flow downslope from the landfill. The remaining tributaries identified within the survey area were ephemeral. The perennial tributary could provide suitable habitat for the Louisiana pigtoe, sandbank pocketbook, Texas fawnsfoot, Texas heelsplitter, Trinity pigtoe, and alligator snapping turtle.
- The Texas horned lizard prefers bare ground with scattered clumps of vegetation which does not occur within the survey area.

Migratory Birds

Migratory birds are located throughout Dallas and Ellis Counties in a variety of preferred and non-preferred habitats. The USFWS has developed a basic set of nationwide standard conservation measures to reduce impacts to migratory birds and their habitats. These conservation measures can reduce the potential for incidental take of migratory birds. USFWS does not currently have an incidental take permitting process for migratory birds. As such, conservation measures should be utilized, if practicable, to reduce the potential for incidental take.

There are three general areas of conservation measures – (1) General, (2) Habitat Protection, and (3) Stressor Management.

1) General Measures
   a) Educate all employees, contractors, and site visitors of relevant rules and regulations that protect wildlife in the State of Texas.
   b) Prior to removal of an inactive nest, ensure that the nest is not protected under the ESA or BGEPA.
   c) Do not collect birds, their parts, or nests without a valid permit.
   d) Provide enclosed solid waste receptacles at all project areas. Non-hazardous and solid wastes should be collected and deposited in on-site receptacles, which is then disposed of in accordance with all local regulations.
2) Habitat Protection
   a) Minimize project creep by clearly delineating and maintaining project boundaries.
   b) Maintain appropriate buffer distance between development activities and any wetlands or waterways protected under Clean Water Act Sections 401 and 404.
   c) Maximize the use of disturbed land for all project activities.
   d) Implement standard soil erosion and dust control measures.

3) Stressor Management
   a) Avoid direct take of adults, chicks, or eggs by scheduling vegetation removal, trimming, and grading outside of peak bird breeding season to the maximum extent practicable. If activities cannot be conducted outside of breeding season, a nest survey should be undertaken to identify active nests and remove fully documented inactive/abandoned nests. Nest removal should follow USFWS guidance, Destruction and Relocation of Migratory Bird Nest Contents (14 June 2018). Active nests should be buffered from construction activities with species-specific conditions.
   b) Avoid the introduction of invasive plants.
   c) Prevent increased lighting of native habitats during bird breeding season. Limit construction activities to the maximum extent practicable between dawn and dusk to avoid illuminating adjacent habitat areas. Avoid the use of bright white lights.
   d) Minimize prolonged human presence near nesting birds during construction and maintenance activities.
   e) Minimize collision risk with project infrastructure and vehicles.
   f) Prevent birds from becoming trapped in project structures or perching and nesting in project areas that may endanger them.
   g) Prevent the increase in noise above ambient levels during the nesting bird breeding season.
   h) Prevent the introduction of chemical contaminants into the environment.
   i) Minimize fire potential from project-related activities.

Bald and Golden Eagles

The project area showed no indication of use by Bald or Golden Eagles. The TxNDD Elements of Occurrence Records did not indicate past use or knowledge of occurrence of these species in the project vicinity. The likelihood of these species occurring in the project vicinity would be considered low.

VEGETATION COMMUNITIES

None of the vegetation observed within the survey area would be considered unique or compose a unique vegetation type for the region. The vegetation communities described were composed of species that are common to grassland and forested areas, as well as the Blackland Prairie ecoregion of North Central Texas. It is IES's professional opinion that the proposed project will not have an effect on any unique vegetation, vegetation communities, or habitat types.

POTENTIAL TO AFFECT PROTECTED SPECIES

As previously noted, habitat meeting the characteristics of the tricolored bat, Texas fawnsfoot, Texas heelsplitter, Louisiana pigtoe, sandbank pocketbook, Trinity pigtoe alligator snapping turtle, and monarch butterfly were identified within the survey area. Based on current designs, the proposed landfill expansion will result in clearing across the central and southern regions. As the landfill expansion includes forest and grassland clearing, the tricolored bat, and monarch butterfly may be affected. As these species are federally listed as proposed endangered and proposed threatened, respectively, they are not currently afforded protection under the ESA. If either species is listed prior to or during construction, coordination should be conducted with the USFWS to determine ESA requirements and best management practices moving forward. Based on current designs, perennial tributaries will be avoided, and therefore, the Texas fawnsfoot, Texas heelsplitter, Louisiana pigtoe, sandbank pocketbook, Trinity pigtoe, and alligator snapping turtle will not be affected. No preferred habitat for any of the other federally or state-listed species was present within the survey area.

IES appreciates the opportunity to work with you and Biggs & Mathews Environmental, Inc. on this project and hopes we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact me at (972) 562-7672 or kfenton@intenvsol.com, or Executive Vice President Rudi Reinecke at rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.

Karisa Fenton

Ms. Karisa Fenton

Biologist

File ref: 04.393.003

ATTACHMENT A
Figures

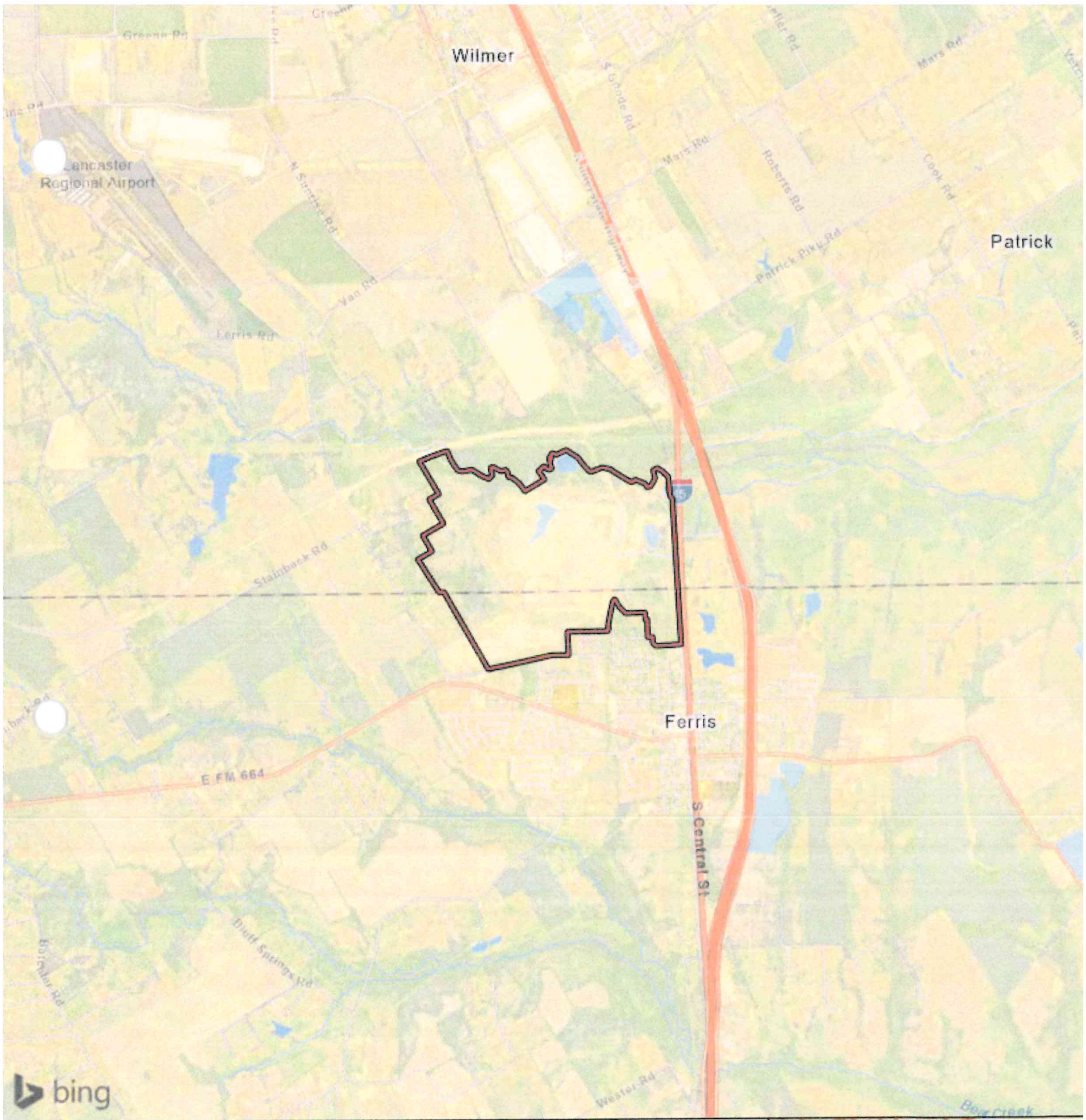
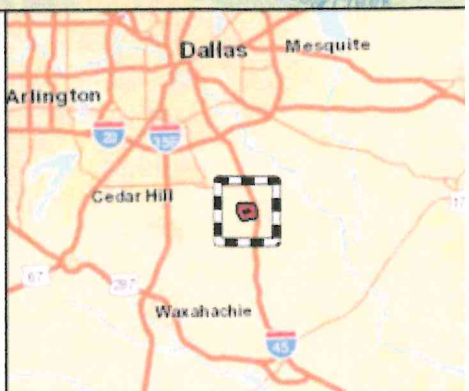


Figure 1.
General Location Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

Survey Area



1 in = 4,000 ft

Feet
0 4,000

N
W E
S

File Ref 04.393.003
Date 12/10/2025

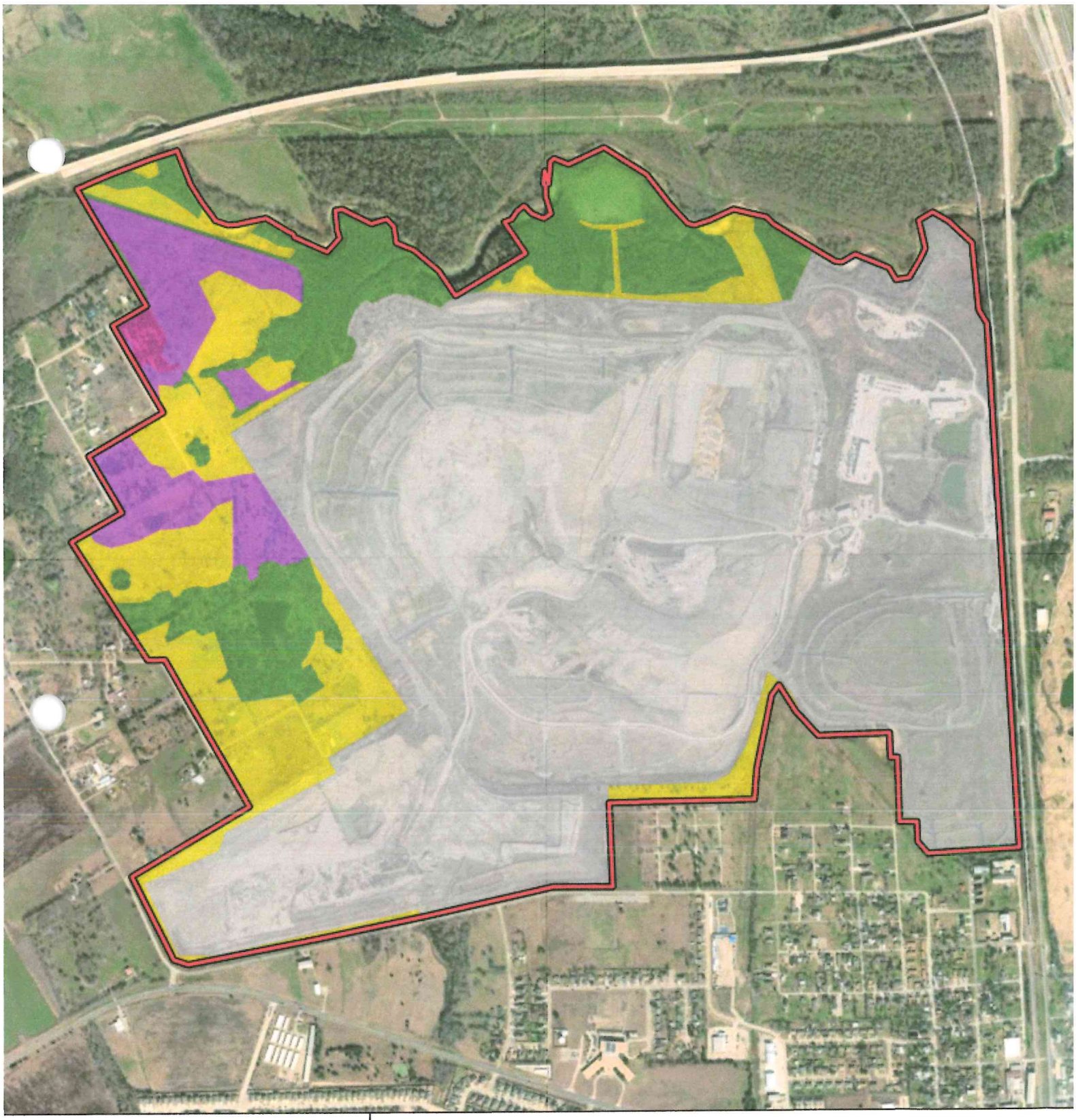


Figure 2.
Vegetation Communities

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,100 ft

Feet
0 1,100

N
W E
S

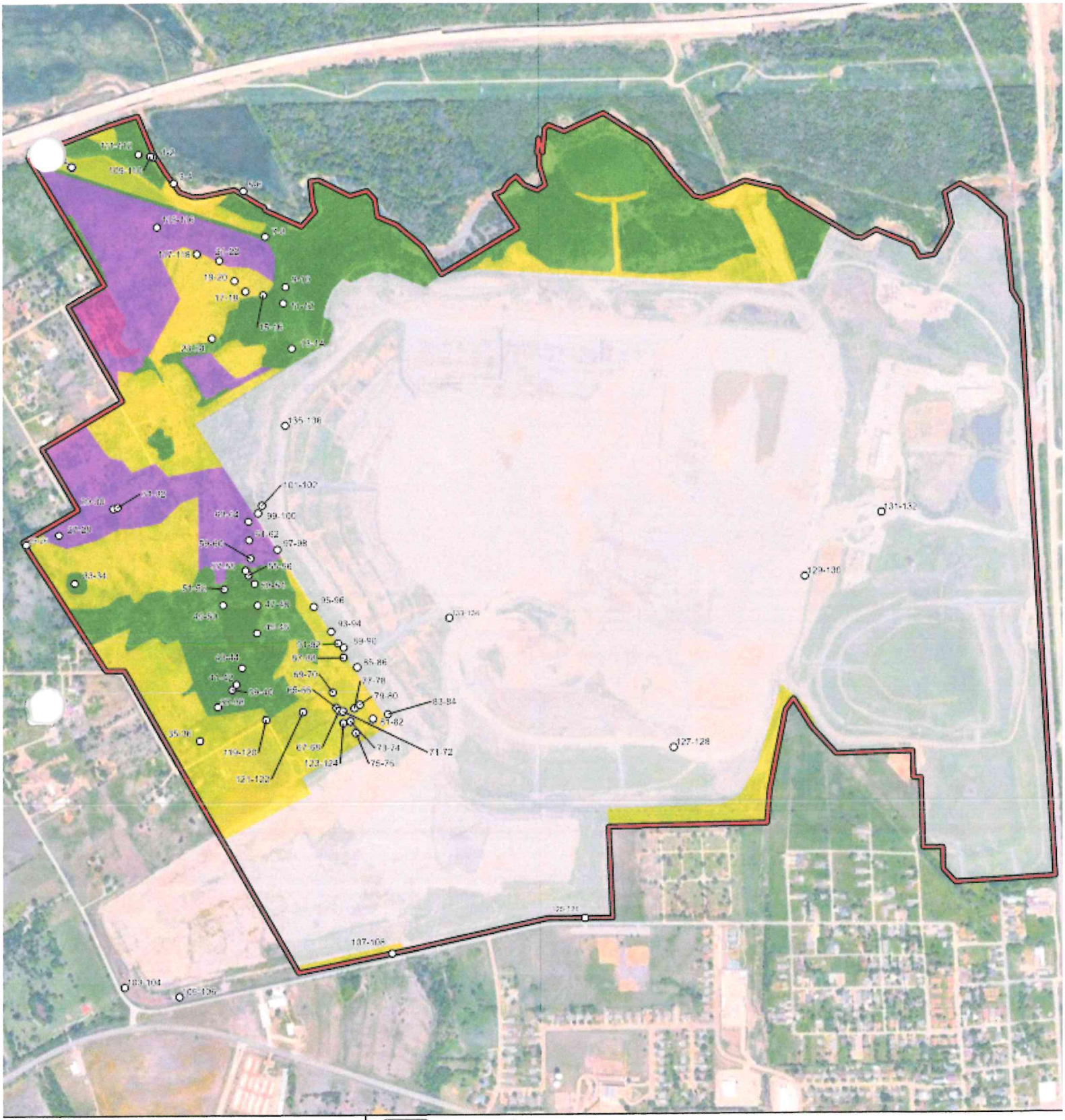
File Ref: 04.393.003
Date: 1/15/2026

Survey Area

Vegetation Communities

- Mixed Hardwood Forest
- Forested Upland
- Grassland
- Scrub-Shrub Upland
- Urban Matrix

ATTACHMENT B
Site Photographs



Photograph Location Map

Skyline Landfill Expansion
City of Ferris
Dallas and Ellis Counties, Texas

1 in = 1,000 ft

Feet
0
1,000

N
W
E
S

File Ref. 04.393.033
Date: 1/16/2026

- Survey Area
- Photograph Location

Vegetation Communities

- Mixed Hardwood Forest
- Forested Upland
- Grassland
- Scrub-Shrub Upland
- Urban Matrix



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



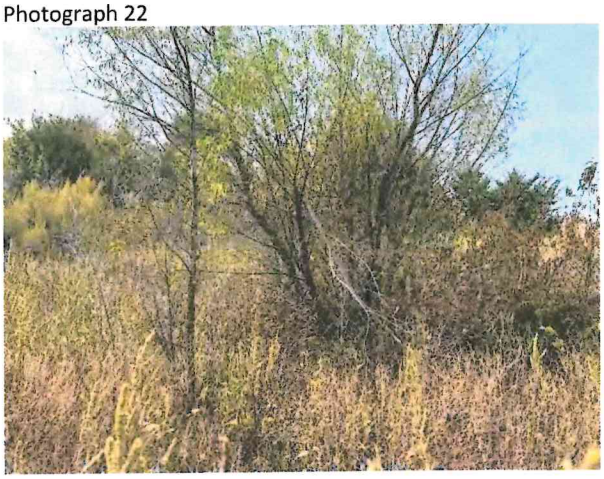
Photograph 21



Photograph 22



Photograph 23



Photograph 24



Photograph 25



Photograph 26



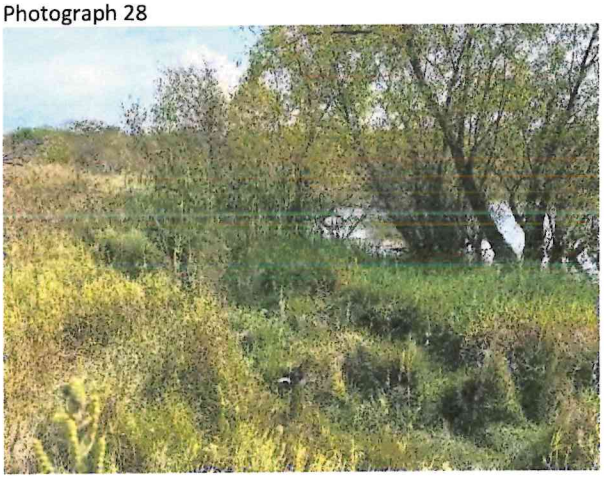
Photograph 27



Photograph 28



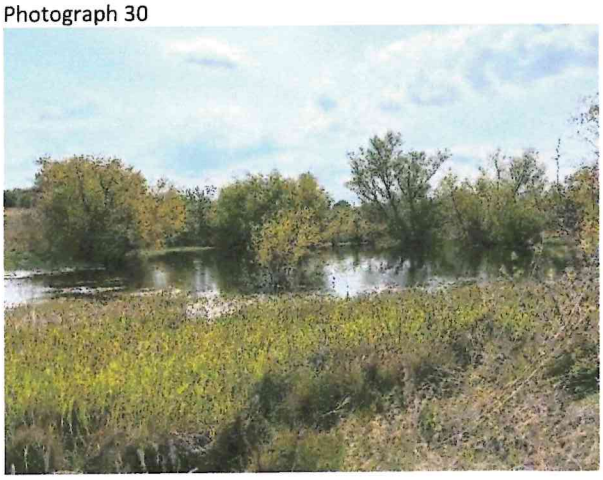
Photograph 29



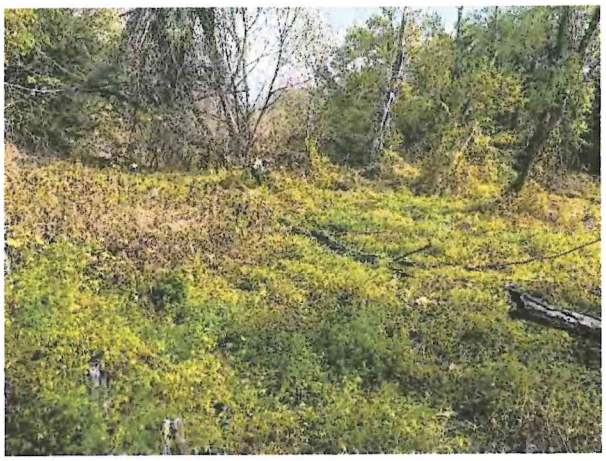
Photograph 30



Photograph 31



Photograph 32



Photograph 33



Photograph 34



Photograph 35



Photograph 36



Photograph 37



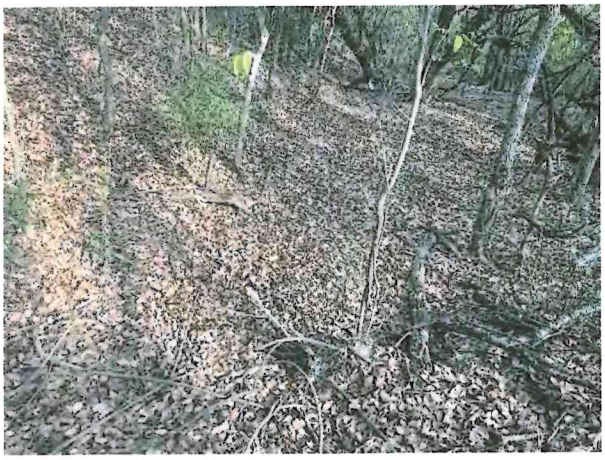
Photograph 38



Photograph 39



Photograph 40



Photograph 41



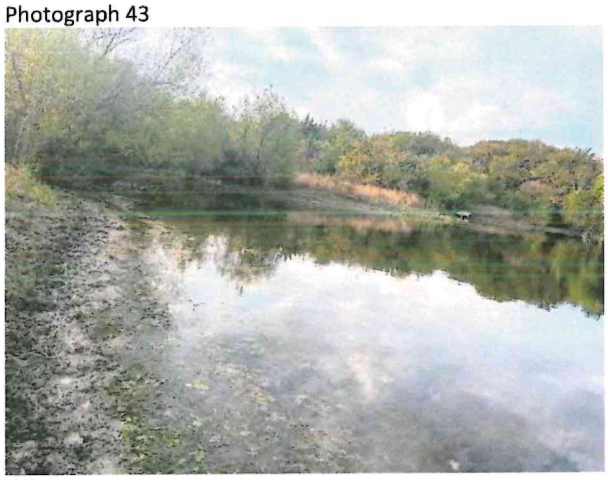
Photograph 42



Photograph 43



Photograph 44



Photograph 45



Photograph 46



Photograph 47



Photograph 48



Photograph 49



Photograph 50



Photograph 51



Photograph 52



Photograph 53



Photograph 54



Photograph 55



Photograph 56



Photograph 57



Photograph 58



Photograph 59



Photograph 60



Photograph 61



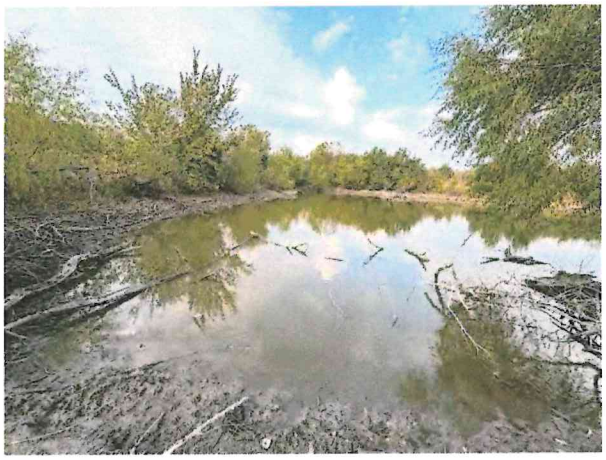
Photograph 62



Photograph 63



Photograph 64



Photograph 65



Photograph 66



Photograph 67



Photograph 68



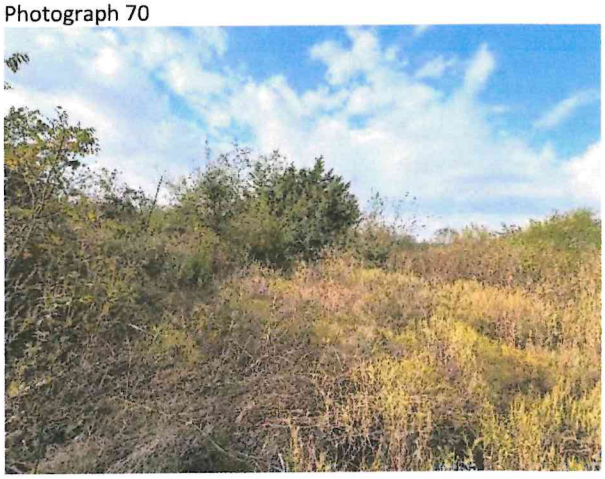
Photograph 69



Photograph 70



Photograph 71



Photograph 72



Photograph 73



Photograph 74



Photograph 75



Photograph 76



Photograph 77



Photograph 78



Photograph 79



Photograph 80



Photograph 81



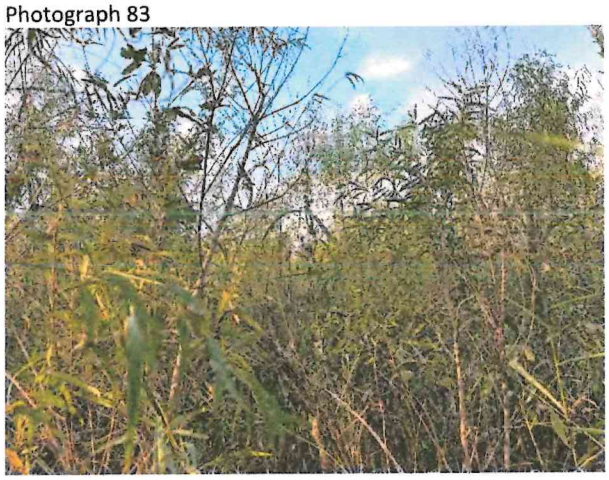
Photograph 82



Photograph 83



Photograph 84



Photograph 85



Photograph 86



Photograph 87



Photograph 88



Photograph 89



Photograph 90



Photograph 91



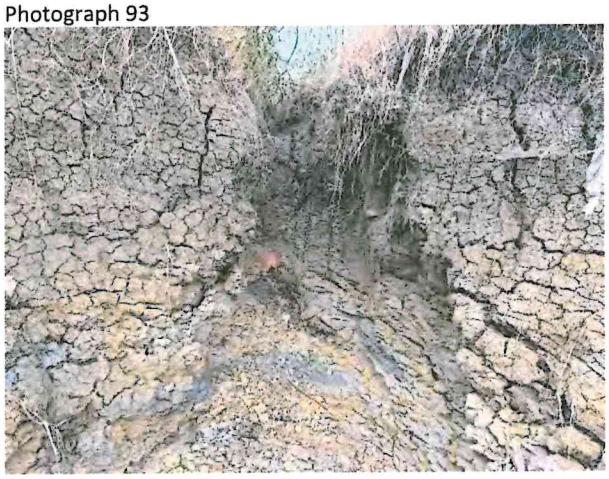
Photograph 92



Photograph 93



Photograph 94



Photograph 95



Photograph 96



Photograph 97



Photograph 98



Photograph 99



Photograph 100



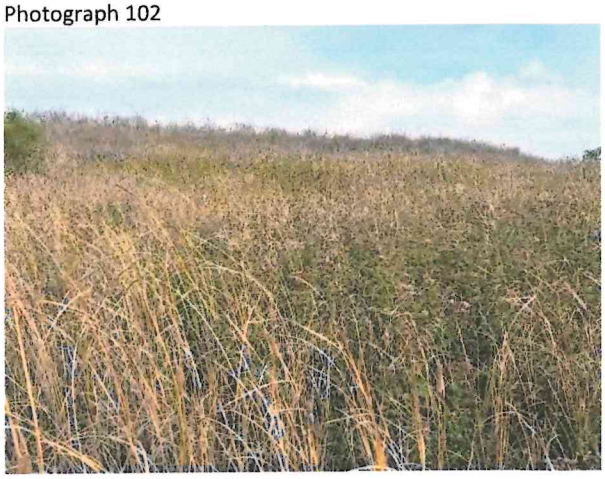
Photograph 101



Photograph 102



Photograph 103



Photograph 104



Photograph 105



Photograph 106



Photograph 107



Photograph 108



Photograph 109



Photograph 110



Photograph 111



Photograph 112



Photograph 113



Photograph 114



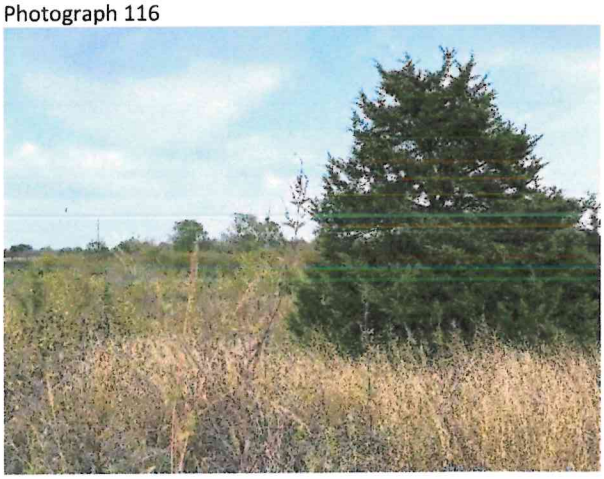
Photograph 115



Photograph 116



Photograph 117



Photograph 118



Photograph 119



Photograph 120



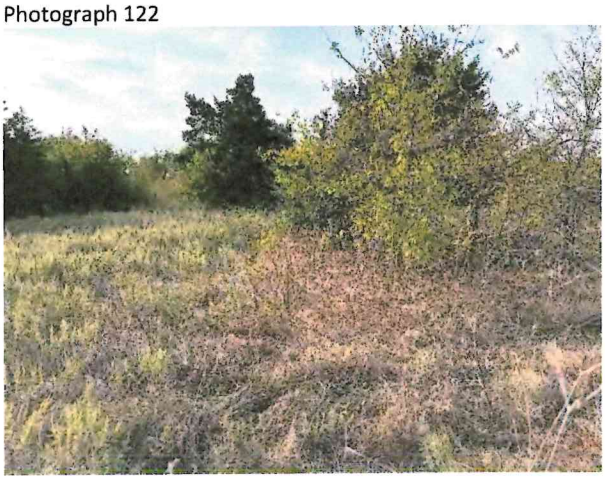
Photograph 121



Photograph 122



Photograph 123



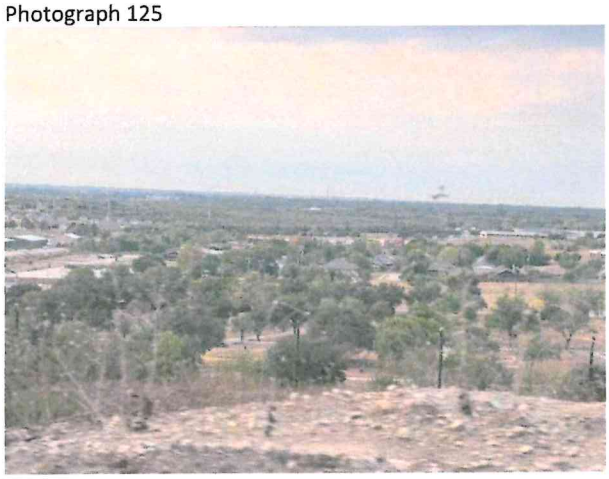
Photograph 124



Photograph 125



Photograph 126



Photograph 127



Photograph 128



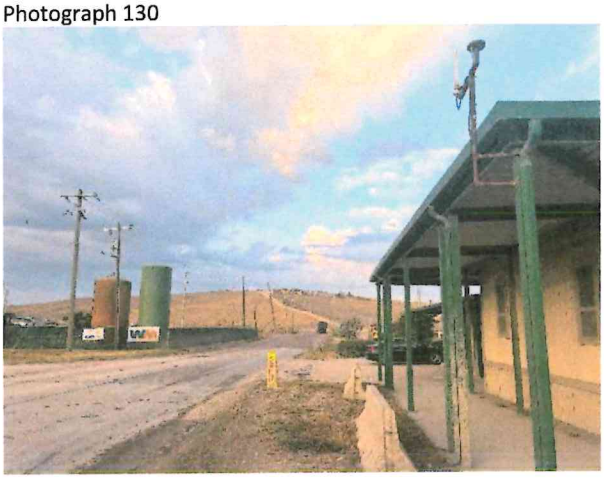
Photograph 129



Photograph 130



Photograph 131



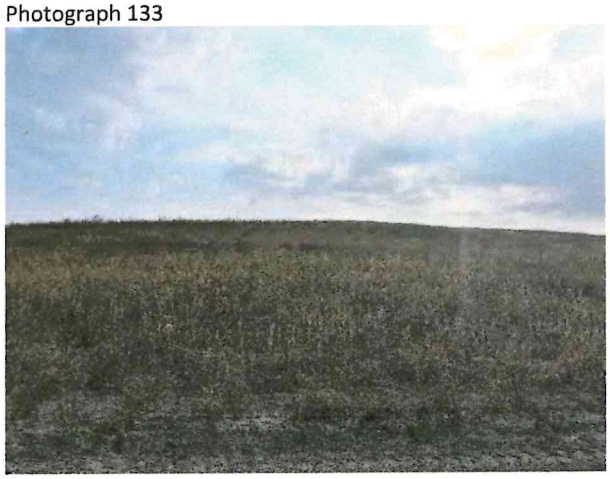
Photograph 132



Photograph 133



Photograph 134



Photograph 135



Photograph 136

ATTACHMENT C
Protected Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To: 09/30/2025 13:59:46 UTC
Project Code: 2025-0156389
Project Name: 04.393.003 - Skyline Landfill Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, which may occur within the boundary of your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and

the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: https://www.fws.gov/service/section-7-consultations

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/library/collections/bald-and-golden-eagle-management). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/media/land-based-wind-energy-guidelines) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation. The Federal Aviation Administration (FAA) released specifications for and made mandatory flashing L-810 lights on new towers 150-350 feet AGL, and the elimination of L-810 steady-burning side lights on towers above 350 feet AGL. While the FAA made these changes to reduce the number of migratory bird collisions (by as much as 70%), extinguishing steady-burning side lights also reduces maintenance costs to tower owners. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in

the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(817) 277-1100

PROJECT SUMMARY

Project Code: 2025-0156389
Project Name: 04.393.003 - Skyline Landfill Expansion
Project Type: Landfill - Solid Waste
Project Description: Dallas and Ellis Counties, Texas
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.54862125,-96.678598632356,14z



Counties: Dallas and Ellis counties, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

CLAMS

NAME	STATUS
Texas Fawnsfoot *Truncilla macrodon* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8965	Threatened
Texas Heelsplitter *Potamilus amphichaenus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/299	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Jayce Durham
Address: 301 Eldorado Pkwy STE 101
City: McKinney
State: TX
Zip: 75069
Email jdurham@intenvsol.com
Phone: 9364043498

Last Update: 1/15/2025

DALLAS COUNTY

BIRDS

black rail *Laterallus jamaicensis*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: T | State Status: T | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S2

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: E | State Status: E | SGCN: Y
Endemic: N | Global Rank: G2 | State Rank: S2S3B

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Federal Status: | State Status: E | SGCN: N
Endemic: N | Global Rank: G4T3Q | State Rank: S1B

piping plover *Charadrius melodus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: T | State Status: T | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S2N

rufa red knot *Calidris canutus rufa*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.

Federal Status: T | State Status: T | SGCN: Y
Endemic: N | Global Rank: G4T2 | State Rank: S2N

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: E	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1S2N

wood stork *Mycteria americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S3N

MOLLUSKS

Louisiana pigtoe *Pleurobema riddellii*

Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S1

sandbank pocketbook *Lampsilis satura*

Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2?	State Rank: S1

Texas fawnsfoot *Truncilla macrodon*

Occurs in large rivers but may also be found in medium-sized streams. Is found in protected near shore areas such as banks and backwaters but also riffles and point bar habitats with low to moderate water velocities. Typically occurs in substrates of mud, sandy mud, gravel and cobble. Considered intolerant of reservoirs (Randklev et al. 2010; Howells 2010o; Randklev et al. 2014b,c; Randklev et al. 2017a,b). [Mussels of Texas 2019]

Federal Status: T	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

Texas heelsplitter *Potamilus amphichaenus*

Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019]

Federal Status: PE	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G3	State Rank: S1

Trinity pigtoe *Fusconaia chunii*

Found in a variety of habitats but most common in riffles. Inhabits various substrates though most often sand, gravel, and cobble (species was recently split from Texas Pigtoe and occurs in similar habitats; Howells 2010a; Randklev et al. 2013b; Randklev et al. 2014a; Troia et al 2015). [Mussels of Texas 2020]

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S1

REPTILES

alligator snapping turtle *Macrochelys temminckii*

Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the waters edge.

Federal Status: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

Last Update: 1/15/2025

ELLIS COUNTY

BIRDS

black rail *Laterallus jamaicensis*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Federal Status:	State Status: E	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

piping plover *Charadrius melodus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

rufa red knot *Calidris canutus rufa*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: S2N

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: E	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1S2N

wood stork *Mycteria americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S3N

MOLLUSKS

Louisiana pigtoe *Pleurobema riddellii*

Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S1

sandbank pocketbook *Lampsilis satura*

Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2?	State Rank: S1

Texas heelsplitter *Potamilus amphichaenus*

Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019]

Federal Status: PE	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G3	State Rank: S1

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

Trinity pigtoe *Fusconaia chunii*

Found in a variety of habitats but most common in riffles. Inhabits various substrates though most often sand, gravel, and cobble (species was recently split from Texas Pigtoe and occurs in similar habitats; Howells 2010a; Randklev et al. 2013b; Randklev et al. 2014a; Troia et al 2015). [Mussels of Texas 2020]

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S1

REPTILES

alligator snapping turtle *Macrochelys temminckii*

Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the waters edge.

Federal Status: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

DISCLAIMER
The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the

SKYLINE LANDFILL

APPENDIX IIF

ARCHAEOLOGICAL SURVEY

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

Texas Historical Commission
Archeology Division
P.O. Box 12276
Austin, Texas 78711

Re: Waste Management Skyline Landfill Permit Amendment Application
Dallas and Ellis Counties, Texas
Documentation of Coordination

Dear Sir or Madam:

On behalf of Waste Management of Texas, Inc., Biggs & Mathews Environmental, Inc. is preparing to submit a Texas Commission on Environmental Quality permit amendment application for the Waste Management Skyline Landfill (Skyline Landfill), located in Dallas and Ellis Counties, Texas. As shown on the attached cultural resources assessment, the facility site entrance is located approximately one mile south of the Malloy Bridge Road and IH-45 Business South/N Central Street intersection. The purpose of this letter is to request a review letter from the Texas Historical Commission (THC) documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code, consistent with the Texas Commission on Environmental Quality's municipal solid waste regulations, 30 Administrative Code Chapter 330 30 TAC §330.61(o).

Integrated Environmental Solutions, LLC. (IES) has conducted a Cultural Resources Desktop Analysis (CRDA) (copy attached) for the Skyline Landfill and concluded that based on the extensively disturbed setting the area of potential effects is negligible to low potential for shallowly or deeply buried archeological deposits. Additionally, the landfill is located on private property, privately sponsored and funded, will not be located on or impact any site or structure that has been designated by the THC as a state archeological landmark, and therefore, will not be subject to National Historic Preservation Act Section 106.

We request that you provide a concurrence that the project may proceed.

Please call or e-mail me at 817-563-1144 or gadams@biggsandmathews.com if you have any questions.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ◆ TBPG No. 50222

Gregory W. Adams, P.E.
Principal

Attachments: Cultural Resources Desktop Analysis

cc: Mr. Rudi Reinecke, Executive Vice President, Integrated Environmental Solutions, LLC
Mr. James Smith, Area Director, Disposal Operations, Waste Management of Texas, Inc.

CULTURAL RESOURCES REPORT



Cultural Resources Survey for the Skyline Landfill Expansion Project, Dallas and Ellis Counties, Texas

Prepared for:
Biggs & Mathews Environmental

Prepared by:
Integrated Environmental Solutions, LLC

February 2026

This page intentionally left blank

Cultural Resources Survey for the Skyline Landfill Expansion Project, Dallas and Ellis Counties, Texas

by

Anne Gibson, MA, RPA
Principal Investigator,

Daniel Norwid, MPS
Architectural Historian

Stephanie Taylor, MS
GIS Analyst II, Staff Archeologist

&

Kevin Stone, MA, RPA
Cultural Resources Director

Submitted to:

Biggs & Mathews Environmental
1700 Robert Road, Suite 100
Mansfield, Texas 76063

Prepared by:

Integrated Environmental Solutions, LLC
301 W. Eldorado Parkway, Suite 101
McKinney, Texas 75069

Cultural Resources Report
February 2026

This page intentionally left blank

ABSTRACT

This report presents the substantive findings of a cultural resources survey for the Skyline Landfill Expansion Project located in the City of Ferris, Dallas, and Ellis Counties, Texas. The cultural resource survey was conducted by Integrated Environmental Solutions, LLC (IES) under contract to Biggs and Mathews Environmental. The project was initially anticipated to require compliance with Section 106 of the National Historic Preservation Act (NHPA); however, it was determined that the project would not impact jurisdictional Waters of the United States (WOUS). As such, the project does not require Section 106 compliance. The survey report is submitted here as part of a due diligence effort to document that potential historic resources were addressed appropriately in anticipation of these impacts.

The survey goal was to locate, identify, and document any cultural resources, which include architectural features and archeological sites, that could be adversely affected by the proposed development and to evaluate such resources for their potential eligibility for inclusion in the National Register of Historic Places (NRHP). These investigations consisted of a records review to identify previously conducted archeological surveys and cultural resources documented in the area, a pedestrian reconnaissance survey, and an intensive archeological survey via shovel testing. The cultural resource survey was conducted by Principal Investigator Anne Gibson, Project Archeologists Eric Gilmore and Trey Lyon, and Staff Archeologist Jacob Flynn on 19 through 23 February 2024. Additional survey was conducted by Staff Archeologist Jacob Flynn on 19 December 2025.

During the intensive cultural resource survey, investigators encountered eight new historic-age archeological sites (41DL598, 41DL599, 41DL600, 41DL601, 41DL602, 41EL306, 41EL307, and 41EL308; **Table 0.1**). In addition, six above-ground resources (R-1 through R-6) were identified within the Area of Potential Effects (APE) (*see* **Table 0.1**). These cultural resources were associated with former rural residences and farmsteads that generally dated to the mid-twentieth century. Based on the lack of association with a significant historical event(s) or person(s), lack of remarkable architectural or structural elements or features, and the low potential to yield significant archeological data, the eight archeological sites and six above-ground resources are recommended not eligible for listing in the NRHP under Criteria A, B, C, or D.

Based on the findings of this due diligence cultural resources survey, IES recommends the project be allowed to proceed as planned. If any human remains are encountered during construction, the operators should immediately cease work in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to evaluate the findings to provide management and consultation guidance prior to resuming construction activities. All records generated by this project will be permanently stored at the IES office in McKinney, Texas.

Table 0.1: Encountered Resources

Resource ID	NRHP Eligibility Recommendations
41DL598	Not eligible
41DL599	Not eligible
41DL600	Not eligible
41DL601	Not eligible
41DL602	Not eligible
41EL306	Not eligible
41EL307	Not eligible
41EL308	Not eligible
R-1	Not eligible
R-2	Not eligible
R-3	Not eligible
R-4	Not eligible
R-5	Not eligible
R-6	Not eligible

TABLE OF CONTENTS

Abstract 1

Chapter 1: Introduction 1

1.1 Professional Standards 1

1.2 Reporting Conventions 1

1.3 Area of Potential Effects 1

1.4 Administrative Information 3

Chapter 2: Environmental Background 5

2.1 Climate 5

2.2 Topographic Setting 5

2.3 Geology and Soils 5

Chapter 3: Cultural Background 11

3.1 Previous Investigations 11

3.2 Historic Context 13

3.3 Cultural Resources Potential 13

3.3.1 - Disturbance Analysis 13

3.3.2 - Cultural Resources Potential 13

Chapter 4: Methodology 15

4.1 Archeological Survey Methods 15

4.1.1 - Pedestrian Survey 15

4.1.2 - Intensive Survey 15

4.2 Site Recording 16

4.3 Artifact Collection and Analysis 16

4.4 Above-Ground Resources Survey 16

4.5 Archival Research 17

4.6 Resource Evaluation Criteria 17

4.6.1 - National Register Evaluation Criteria 17

4.7 Records Retention 18

Chapter 5: Results 19

5.1 Cultural Resources Survey 19

5.1.1 - Pedestrian Survey Observations 19

5.1.2 - Intensive Survey Observations 19

5.2 Archeological Resources 27

5.2.1 - 41DL598 27

5.2.2 - 41DL599 29

5.2.3 - 41DL600 35

5.2.4 - 41DL601 39

5.2.5 - 41DL602 41
5.2.6 - 41EL306 44
5.2.7 - 41EL307 46
5.2.8 - 41EL308 51
5.3 Above-Ground Resources 54
5.3.1 - R-1 54
5.3.2 - R-2 56
5.3.3 - R-3 57
5.3.4 - R-4 59
5.3.5 - R-5 60
5.3.6 - R-6 61
Chapter 6: Summary, Recommendations, and conclusions 63
6.1 Summary and Recommendations 63
6.2 Conclusions 65
Chapter 7: References Cited 67

LIST OF FIGURES

Figure 1.1: General Location Map 2
Figure 2.1: Topographic Setting 7
Figure 2.2: Geologic Setting 8
Figure 2.3: Soil Map Units Located Within and Adjacent to the APE 9
Figure 3.1: Previous Investigations Within 1 Mile of the APE 12
Figure 5.1: General Overview, View to the North 20
Figure 5.2: Landfill Expansion into Project Area, View to the West 20
Figure 5.3: Survey Results 21
Figure 5.4: Survey Results 22
Figure 5.5: Survey Results 23
Figure 5.6: Survey Results 24
Figure 5.7: Survey Results 25
Figure 5.8: Survey Results 26
Figure 5.9: Site 41DL598 Plan Map 28
Figure 5.10: Site 41DL598, Feature 1, View to the East 30
Figure 5.11: Site 41DL598, Feature 2, View to the South 30
Figure 5.12: Site 41DL598, Feature 3, View to the West 31
Figure 5.13: Site 41DL598, Feature 4, View to the Northeast 31
Figure 5.14: Site 41DL599 Plan Map 32
Figure 5.15: Site 41DL599, Feature 1, View to the South 34
Figure 5.16: Site 41DL599, Feature 2, View to the East 34

Figure 5.17: Site 41DL599, Feature 3, View to the South 35
Figure 5.18: Site 41DL600 Plan Map 36
Figure 5.19: Site 41DL600, Feature 1, View to the East 38
Figure 5.20: Site 41DL600, Feature 2, View to the North 38
Figure 5.21: Site 41DL600, Feature 3, View to the East 39
Figure 5.22: Site 41DL601 Plan Map 40
Figure 5.23: Site 41DL601, Feature 1 41
Figure 5.24: Site 41DL602 Plan Map 42
Figure 5.25: Site 41DL602, Feature 1, View to the South 43
Figure 5.26: Site 41EL306 Site Plan 45
Figure 5.27: Site 41EL306, Feature 1, View to the North 46
Figure 5.28: Site 41EL307 Plan Map 47
Figure 5.29: Site 41EL307, Feature 1, View to the South 49
Figure 5.30: Site 41EL307, Feature 2, View to the Northwest 49
Figure 5.31: Site 41EL307, Feature 3, View to the Southwest 50
Figure 5.32: Site 41EL307, Feature 4, View to the North 50
Figure 5.33: Site 41EL307, Feature 5, View to the East 51
Figure 5.34: Site 41EL308 Plan Map 52
Figure 5.35: Site 41EL308, Feature 1, View to the Northeast 53
Figure 5.36: Above-Ground Resources 55

LIST OF TABLES

Table 0.1: Encountered Resources 2
Table 2.1: Soils Located within the APE 6
Table 3.1: Previously Conducted Archeological Surveys within 1 Mile 11
Table 3.2: Previously Recorded Archeological Sites within 1 Mile 11
Table 5.1: Chain of Title for 41DL598 29
Table 5.2: Chain-of-Title for 41DL599 33
Table 5.3: Chain of Title for 41DL600 37
Table 5.4: Chain of Title for 41DL602 44
Table 5.5: Chain of Title for 41EL306 46
Table 5.6: R-1 56
Table 5.7: R-2 57
Table 5.8: R-3 58
Table 5.9: R-4 60
Table 5.10: R-5 61
Table 5.11: R-6 62

Table 6.1: Summary of NRHP Eligibility Recommendations 63

APPENDICES

Appendix A – General Photograph Location Map and Photographs

Appendix B – Site Photograph Location Map and Photographs

Appendix C – Above-Ground Resource Photograph Location Map and Photographs

Appendix D – Shovel Test Log

Appendix E – Site Location Map

CHAPTER 1: INTRODUCTION

This report presents the results of a cultural resources survey conducted by Integrated Environmental Solutions, LLC (IES) for the proposed Skyline Landfill Expansion Project located in the City of Ferris, Dallas and Ellis Counties, Texas (**Figure 1.1**). The cultural resources survey was conducted by Integrated Environmental Solutions, LLC (IES) under contract to Biggs & Mathews Environmental. The project was initially anticipated to require compliance with Section 106 of the National Historic Preservation Act (NHPA); however, it was determined that the project would not impact jurisdictional Waters of the United States (WOUS). As such, the project does not require Section 106 compliance through coordination with the United States Army Corps of Engineers (USACE). The survey report is submitted here as part of a due diligence effort to document that potential historic resources were addressed appropriately in anticipation of these impacts. A brief description of the proposed project, environmental context, field and analytical methods, results of the investigations, and recommendations are provided in this document.

1.1 Professional Standards

The investigation purpose was to conduct a cultural resources inventory (as defined by Code of Federal Regulations, Title 36, Section 800.4 [36 CFR 800.4]) within the proposed APE and to evaluate the eligibility of the identified resources for inclusion in the National Register of Historic Places (NRHP), as per NHPA Section 106 (36 CFR 800). Identification, evaluation, and documentation of archeological sites were completed in accordance with the provisions of the Secretary of the Interior's regulatory standards, which are implemented by the Texas Historical Commission (THC). This report was prepared in accordance with the Council of Texas Archeologists (CTA 2024) guidelines and satisfies the proposed project's NHPA Section 106 requirements.

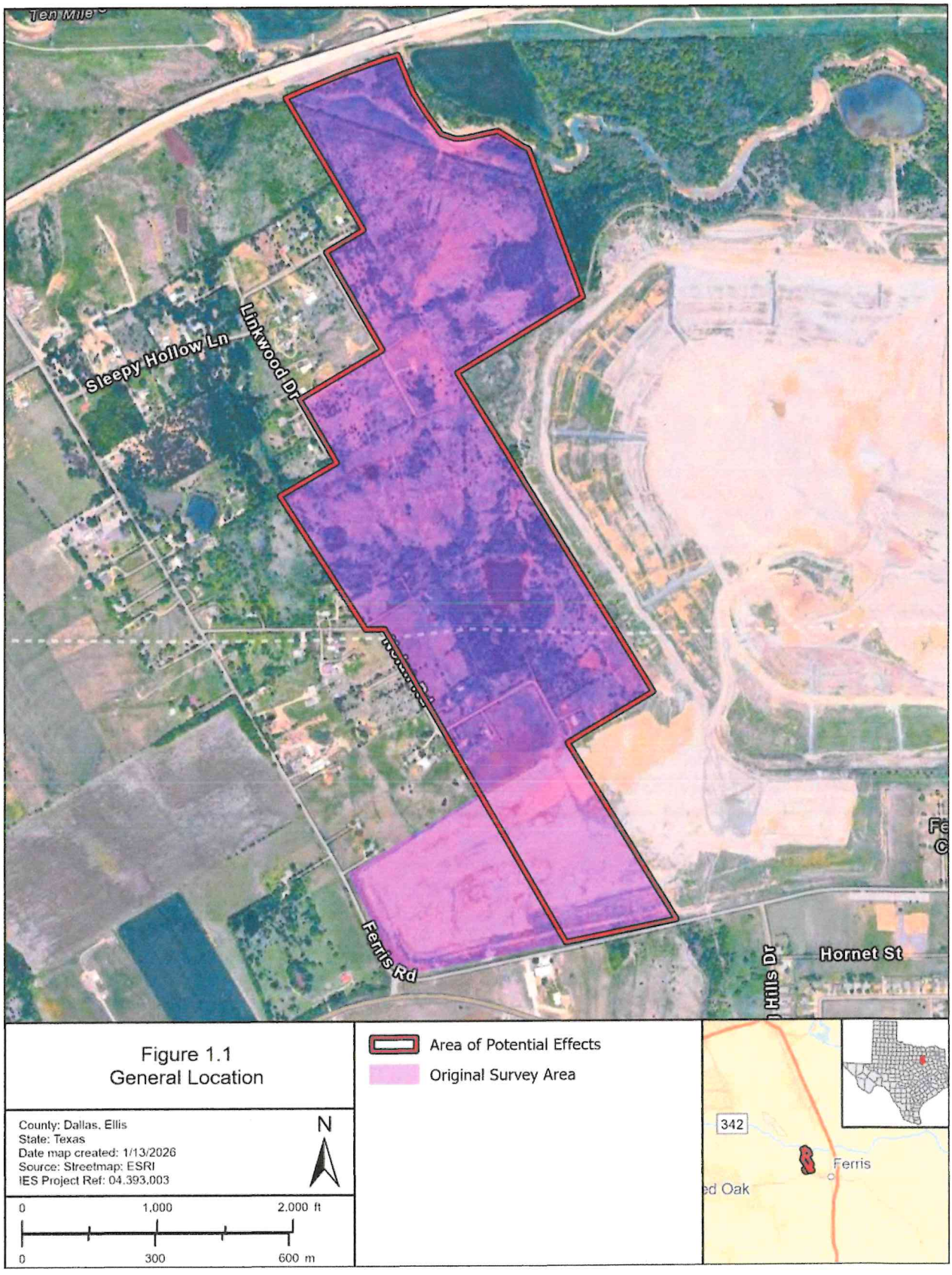
1.2 Reporting Conventions

Standards for archeological methods require that measurements be recorded in metric units. For this reason, while general distances and engineering specifications are described in imperial units (e.g., inch [in], foot [ft], mile [mi]) within this report, archeological measurements and observations are listed in metric units (e.g., centimeter [cm], meter [m], kilometer [km]), unless historic-period artifact or architectural elements are more appropriately recorded in imperial units.

1.3 Area of Potential Effects

The Area of Potential Effects (APE) encompasses approximately 198 acres (ac) located within Dallas and Ellis Counties. The APE is located directly northeast of Ferris Road, east of High Ridge Drive, and east of Nolan Road. As the project is still early in the design phase, detailed plans were not available at the time of this report. Potential subsurface impacts within the APE are anticipated to include standard construction procedures associated with landfill development, such as vegetation removal, general land clearing, grading, and utility and transportation development. While subsurface impacts will occur because of these activities, the depth of the impacts is unknown at this time. As such, field investigations will assess to the depth of soils capable of containing archeological deposits.

Original design plans for the project included a 29 ac area west of the southwest corner of the APE. This area was surveyed during the winter 2024 mobilization.


Ten Mile
Sleepy Hollow Ln
Linkwood Dr
Ferris Rd
Hornet St
Area of Potential Effects
Original Survey Area
342
Ferris
Figure 1.1
General Location
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
1,000
2,000 ft
0
300
600 m

1.4 Administrative Information

Sponsor(s): Biggs and Mathews Environmental
Principal Investigator: Anne Gibson, MA, RPA
Survey Members: Anne Gibson, Eric Gilmore, Jacob Flynn, and Trey Lyon
IES Project Number(s): 04.393.003
Date(s) of Field Work: 19 through 23 February 2024; 19 December 2025
Area Surveyed: 227 ac
Archeological Sites Recommended Eligible for NRHP Under Criteria in 36 CFR 60.4: None
Archeological Sites Recommended Not Eligible for NRHP Under Criteria in 36 CFR 60.4: 41DL598, 41DL599, 41DL600, 41DL601, 41DL602, 41EL306, 41EL307, 41EL308
Above-Ground Resources Recommended Eligible for NRHP under 36 CFR 60.4: None
Above-Ground Resources Recommended Not Eligible for NRHP under 36 CFR 60.4: R-1 through R-6
Records Retention: No artifacts were collected. Field data and project records will be permanently stored at the IES office in McKinney, Texas.

This page intentionally left blank

CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Climate

Dallas and Ellis Counties are located within North Central Texas. This region features a humid subtropical climate with an annual rainfall average ranging from approximately 35 to 40 in. Most precipitation occurs as rain between April and May, with July and August being the two driest months of the year. This subtropical region tends to have a relatively mild year-round temperature with occasional exceedingly hot and cold periods (Estaville and Earl 2008).

2.2 Topographic Setting

The Ferris 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle map illustrates that the APE is primarily located on the summit and slopes of an east-west-trending ridgeline (**Figure 2.1**). Ten Mile Creek is located due north of the APE and intersects the APE only in the northeastern corner. Ten Mile Creek generally flows in a southeastern direction towards Trinity River. Elevations within the APE range from 405 to 500 ft (123 to 152 m) above modern sea level (amsl).

2.3 Geology and Soils

The APE lies within the Northern Blackland Prairie in the Texas Blackland Prairie ecoregion. This area is distinguished from surrounding regions by gently rolling hills, fine-textured, black clay soils, and prairie vegetation (Griffith et al. 2007). Most of the native prairie has been converted to cropland, non-native pasture, and expanding urban uses. Historical vegetation included little bluestem, big bluestem, yellow Indiangrass, and tall dropseed. Vertisols dominate the Blackland Prairie ecoregion and consist of high clay content soils that have significant shrink and swell potential.

The survey area is underlain by the Cretaceous-age Ozan (Ko) formations and is mantled by Quaternary-age alluvium deposits (Qal) along the floodplain of Ten Mile Creek (**Figure 2.2**). The Ozan Formation is composed of sandy, chalky, or glauconitic marl. Alluvium deposits are primarily comprised of sand, silt, clay, and gravel (McGowen et al. 1987; USGS 2024).

As shown by the *Soil Survey of Dallas County, Texas*, and the *Soil Survey of Ellis County, TX,* there are nine soil map units within the APE (Brooks et al. 1964; Coffee et al. 1980; **Figure 2.3; Table 2.1**). Approximately 0.6 percent of the soils within the APE pertain to the occasionally flooded alluvial soils of the Ten Mile Creek floodplain. The remaining 99.4 percent of the survey area contains soils typical of upland settings within the Northern Blackland Prairies region. Soil data was viewed from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2024).

Table 2.1: Soils Located within the APE

Soil Map Unit Description	Approximate Percentage of the APE
Dallas County	
34 - Ferris-Heiden complex, 5 to 12 percent slopes - This component is described as clay located on ridges. Typical Bk subsoil horizon depth is 3 to 12 inches (in; 8 to 30 centimeters [cm]). The depth to bedrock is 40 to 60 in (101 to 152 cm). The natural drainage class is well drained.	45.7
37 - Frio silty clay, 0 to 1 percent slopes, occasionally flooded - This component is described as silty clay that is located on flood plains. Typical Bk subsoil horizon depth is 20 to 60 in (51 to 152 cm). The depth to bedrock is more than 80 in (203 cm). The natural drainage class is well drained.	0.6
41 - Heiden clay, 1 to 3 percent slopes - This component is described as clay located on ridges. Typical Bkss1 subsoil horizon depth is 10 to 30 in (25 to 76 cm). The depth to bedrock is 40 to 80 in (100 to 203 cm). The natural drainage class is well drained.	2.1
42 - Heiden clay, 2 to 5 percent slopes, eroded - This component is described as a clay located on upland ridges. Typical Bkss1 subsoil horizon depth is 10 to 30 in (25 to 76 cm). The depth to bedrock is 40 to 80 in (100 to 203 cm). The natural drainage class is well drained.	6.7
44 - Houston Black clay, 1 to 3 percent slopes - This component is described as clay located on upland ridges. Typical Bw subsoil horizon depth is 6 to 12 in (15 to 31 cm). The depth to bedrock is more than 80 in (203 cm). The natural drainage class is moderately well drained.	2.2
Ellis County	
HaB - Houston Black clay, 1 to 3 percent slopes - This component is described as clay located on ridges. Typical Bss subsoil horizon depth is 17 to 37 in (43 to 94 cm). The depth to a root restrictive layer or bedrock is more than 80 in (203 cm). The natural drainage class is moderately well drained.	37.4
HcC2 - Heiden clay, 3 to 5 percent slopes, eroded - This component is described as clay located on ridges. Typical Bss subsoil horizon depth is 13 to 22 in (33 to 56 cm). The depth to a root restrictive layer or bedrock is 40 to 65 in (16 to 26 cm). The natural drainage class is well drained.	1.8
HcD2 - Heiden clay, 5 to 8 percent slopes, eroded - This component is described as clay located on ridges. Typical Bss subsoil horizon depth is 22 to 44 in (56 to 112 cm). The depth to a root restrictive layer or bedrock is 40 to 65 in (16 to 26 cm). The natural drainage class is well drained.	2.3
SuE3-Ferris clay, 5 to 12 percent slopes, eroded - This component is described as clay located on ridges. Typical Bkss1 subsoil horizon depth is 5 to 30 in (15 to 76 cm). The depth to a root restrictive layer or bedrock is 39 to 60 in (15 to 24 cm). The natural drainage class is well drained.	1.2

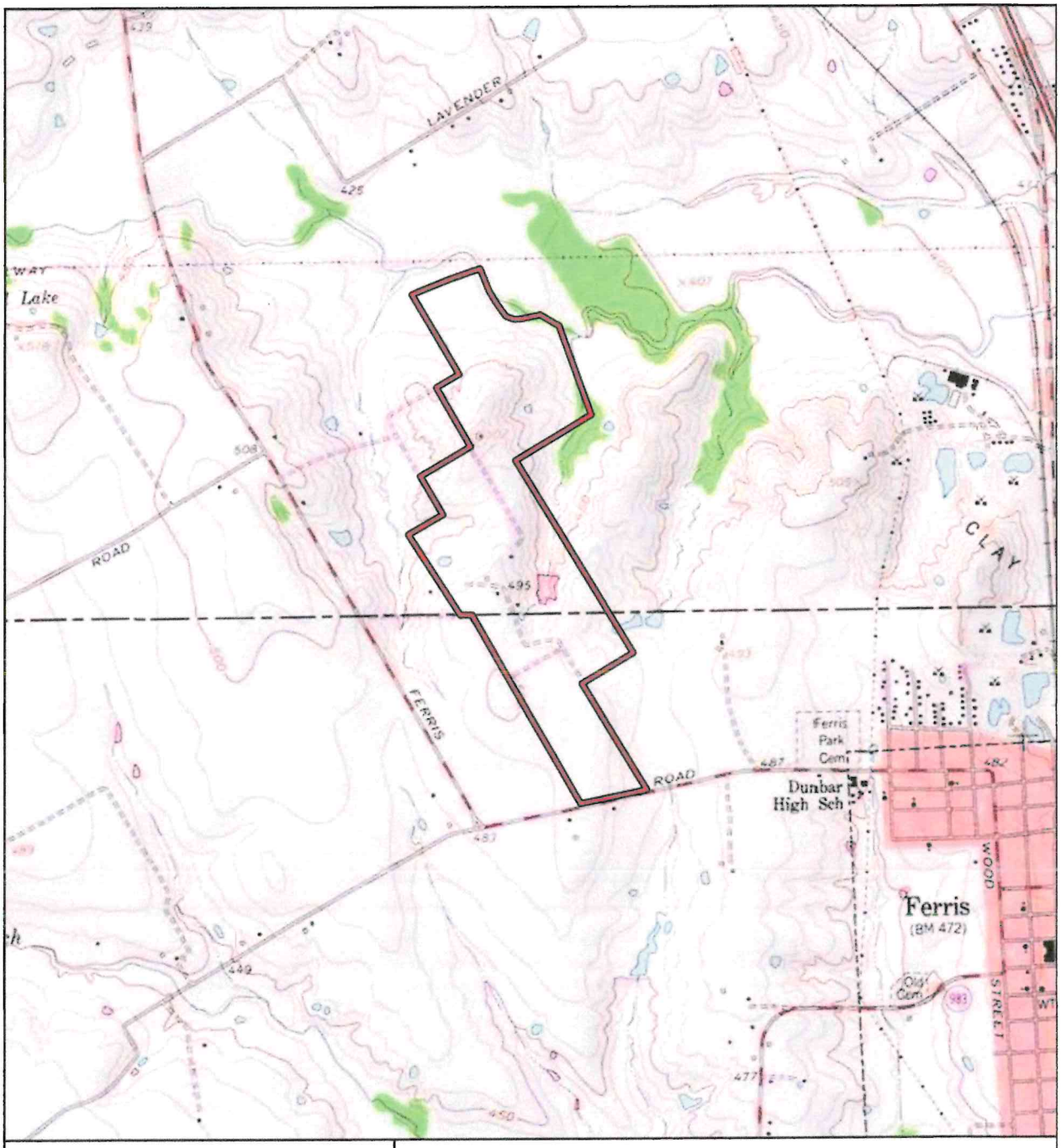


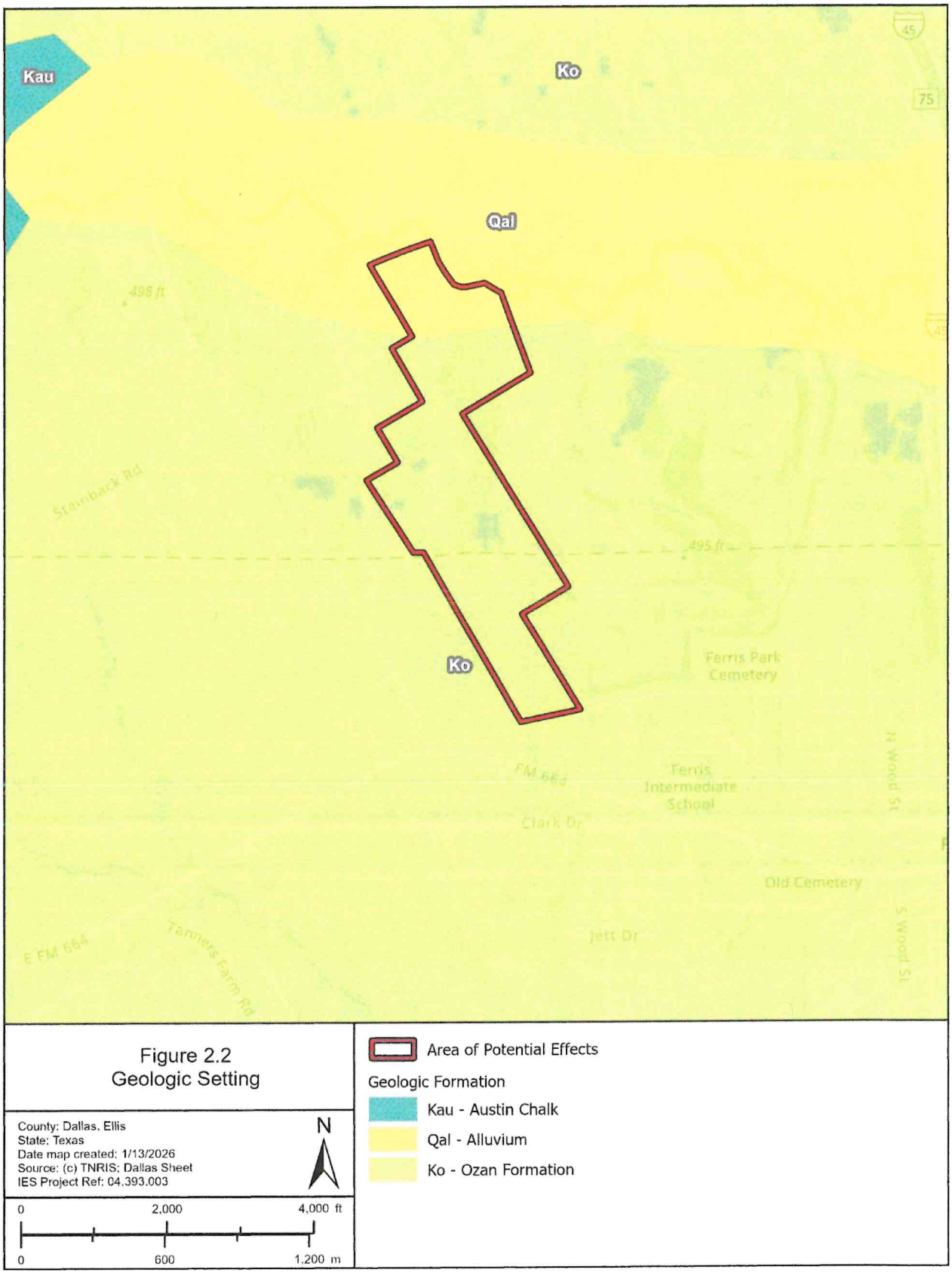
Figure 2.1
Topographic Setting

Area of Potential Effects

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: (c) USGS 7.5' Quad, Ferris
IES Project Ref: 04.393.003

N

0 2,000 4,000 ft
0 600 1,200 m


Kau
Ko
Qal
Ko
498 ft
495 ft
Starnback Rd
Ferris Park Cemetery
Ferris Intermediate School
FM 664
Clark Dr
Old Cemetery
Jett Dr
E FM 664
Tanners Farm Rd
N Wood St
S Wood St
45
75
Figure 2.2
Geologic Setting
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: (c) TNRIS; Dallas Sheet
IES Project Ref: 04.393.003
N
0
2,000
4,000 ft
0
600
1,200 m
Area of Potential Effects
Geologic Formation
Kau - Austin Chalk
Qal - Alluvium
Ko - Ozan Formation

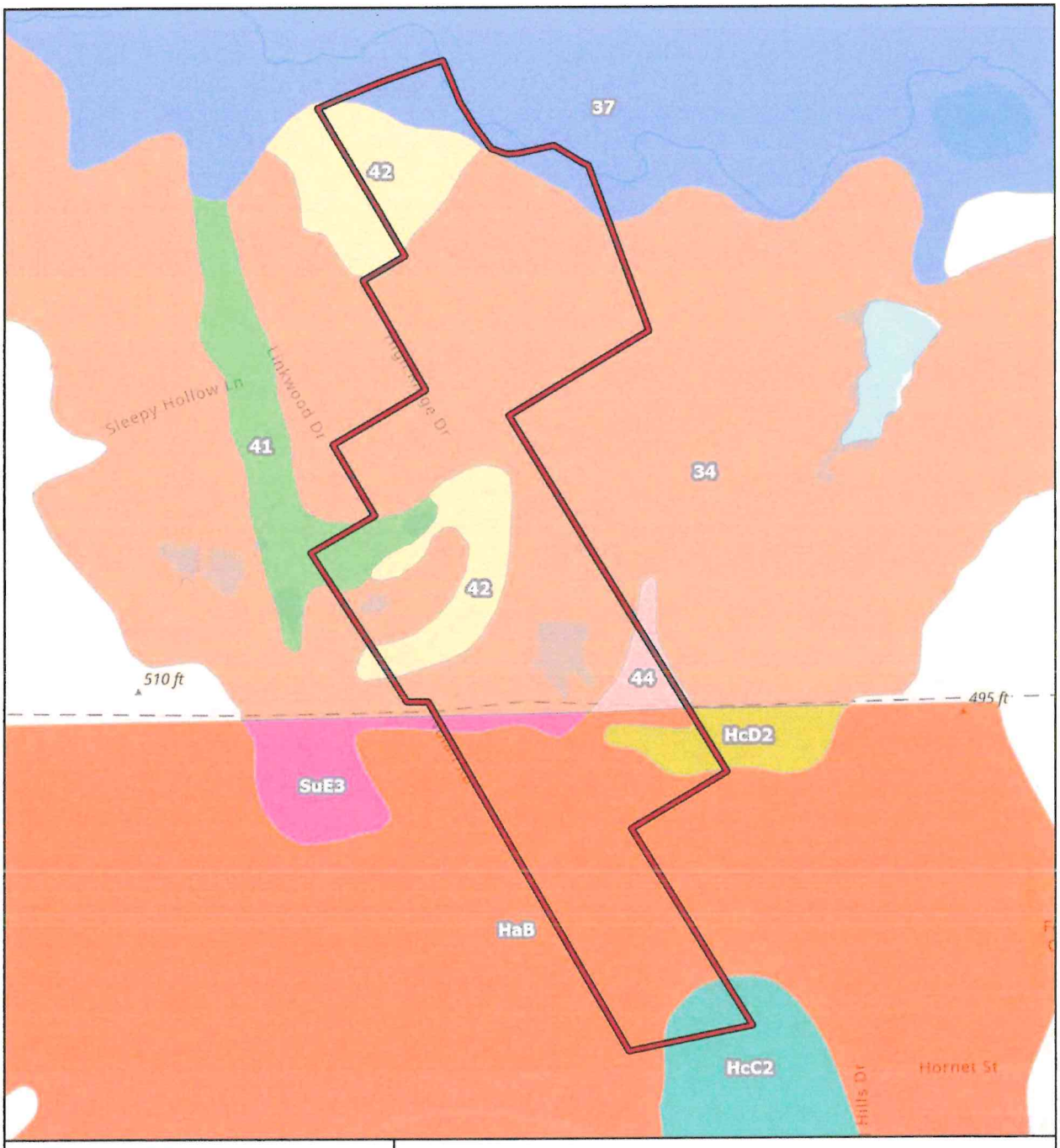


Figure 2.3
Soils within and Adjacent to the APE

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: (c) 2007 USDA NRCS
IES Project Ref: 04.393.003

N

0 1,000 2,000 ft
0 300 600 m

Area of Potential Effects

Soil Map Unit (see Table 2.1)

Dallas County
- 34
- 37
- 41
- 42
- 44

Ellis County
- HaB
- HcC2
- HcD2
- SuE3

This page intentionally left blank

CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

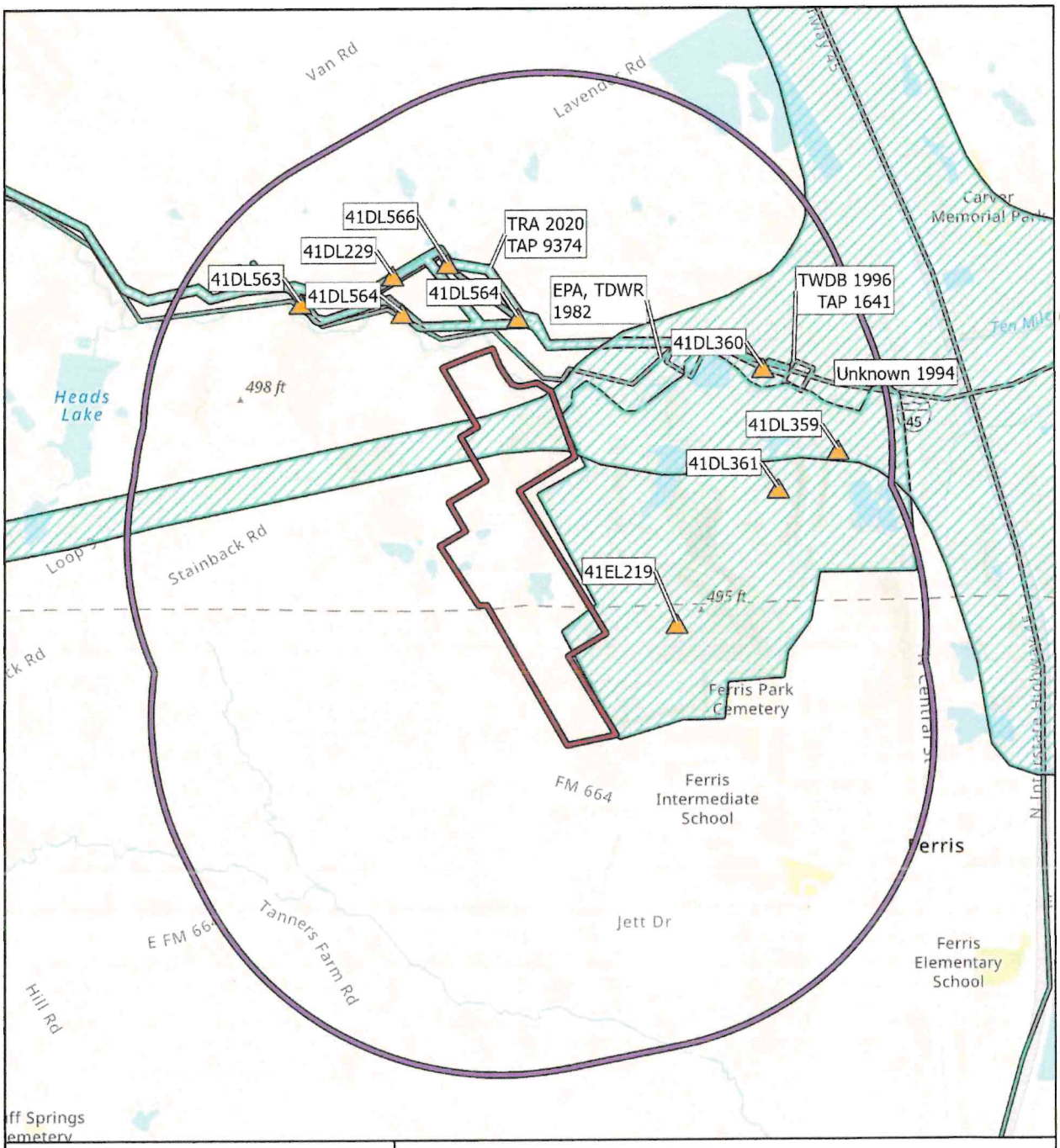
A file search within the Texas Archeological Site Atlas (TASA) and the Texas Historic Site Atlas (THSA) databases, maintained by the THC and Texas Archeological Research Laboratory (TARL), indicates there are no previously recorded archeological sites, National Register properties, historical markers, or cemeteries located within the APE (TASA 2024; THSA 2024). The TASA database depicts four previously conducted archeological surveys within 1 mi (1.6 km; **Table 3.1; Figure 3.1**). One of these surveys was conducted for the neighboring landfill and overlapped a small portion of the project. In addition, six previously recorded archeological sites have been identified within the Ten Mile Creek valley within 1 mi of the APE.

Table 3.1: Previously Conducted Archeological Surveys within 1 Mile

Agency	TAP No.	Firm/Institution	Date	Survey Type	Location (Approximate)
Environmental Protection Agency (EPA); Texas Department of Water Resources (TDWR)	N/A	TDWR	1982	Linear	0.03 mi north
USACE	No data	Hicks and Company	1994	Area	Partially overlaps APE
Texas Water Development Board (TWDB)	1641	TWDB	1996	Linear	0.38 mi northeast
TxDOT	4410	Geo-Marine, Inc.	2007	Area	Partially overlaps APE
Trinity River Authority (TRA)	9374	Integrated Environmental Solutions (IES)	2020	Area	0.13 mi north

Table 3.2: Previously Recorded Archeological Sites within 1 Mile

Site Trinomial	Time Period	Site Type	Site Size	Depth Extent	Cultural Materials	Topographic Setting	Location (Approximate)
41DL229	Prehistoric	Open campsite	No data	No data	Ceramics, stone tools	Terrace	0.53 mi north
41DL359	Historic	Farmstead	No data	No data	No data	Lowland knoll	0.79 mi east
41DL360	Historic	Railroad	No data	No data	Railroad berm and bridge abutment	Floodplain	0.7 mi east
41DL361	Historic	Railroad	No data	No data	Livestock pen or corral	Upland ridge	0.61 mi east
41DL563	Prehistoric	Short-term habitation	219 x 100 ft	2.68 m	Bone, charcoal, lithic debitage	Floodplain	0.66 mi northwest
41DL564	Prehistoric	Short-term habitation	293 x 100 ft	2.55 m	Charcoal, burned bone, mussel shell	Floodplain	0.42 mi north
41DL565	Prehistoric	Short-term habitation	163 x 100 ft	2.65 m	Charcoal	Floodplain	0.24 mi north
41DL566	Historic	Artifact Scatter	126 x 100 ft	20 cm	Nails, domestic container glass, window glass, sheet metal fragments, brick	Floodplain	0.56 mi north
41EL219	Historic	Unknown	No data	No data	No data	Upland terrace	0.2 mi east


Van Rd
Lavendale Rd
41DL566
TRA 2020
TAP 9374
41DL229
41DL563
41DL564
41DL564
EPA, TDWR
1982
TWDB 1996
TAP 1641
41DL360
Unknown 1994
Heads
Lake
498 ft
41DL359
41DL361
Stainback Rd
41EL219
495 ft
Ferris Park
Cemetery
FM 664
Ferris
Intermediate
School
Ferris
Jett Dr
Tanners Farm Rd
Ferris
Elementary
School
Hill Rd
Carver
Memorial Park
Ten Mile
45
Figure 3.1
Previous Investigations within
1 Mile of the APE
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: (c) 2007 USDA NRCS
IES Project Ref: 04.393.003
N
0
2,700
5,400 ft
0
800
1,600 m
Area of Potential Effects
Area of Potential Effects - 1 Mile Buffer
Previous Archeological Survey - Area
Previous Archeological Survey - Linear
Archeological Site
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site
location information

3.2 Historic Context

The City of Ferris was established in 1874 along the Houston and Texas Central Railway line. The town initially contained a post office, general store, and train station. By 1900, the town was home to hundreds of residents and supported numerous gristmills and cotton gins, hotels, churches, and schools. The economy of the greater region was predominantly supported by agriculture. Cotton was the primary crop of the area, followed by wheat and oats. Livestock, including pigs, cattle, and horses, also played a major role in the height of agriculture around the turn of the century (Haaser 2020; Hart 2023; Maxwell 2021).

The population of the town continued to grow during the early twentieth century when multiple brick manufacturing companies began operation in the area that would become Skyline Landfill and the Old Brickyard Golf Club. These brick companies included the Atlas Press Brick Works, Diamond Press Brick Company, Globe Press Brick Company, Kooken Press Brick Company, Lone Star Press Brick Company, and the Texas Press Brick Company. These companies merged in the 1920s to become the Ferris Brick Company, which operated until the 1970s or 1980s (Graves 2012; Hart 2023).

Although the area experienced declines during the Great Depression and World War II (WWII), Ferris's population rebounded during the post-war period, expanding from approximately 1,400 residents to over 1,700. The population would steadily increase, reaching over 2,700 by the present day (Hart 2023; USCB 2024).

3.3 Cultural Resources Potential

3.3.1 - *Disturbance Analysis*

During the background review, it was determined that the survey area was primarily used for agricultural or ranching purposes as early as the 1950s, and presumably since the late nineteenth and early twentieth centuries. Historic maps and aerial photographs indicate portions of Nolan Road in the southern half of the study area date to the early twentieth century. In the 1960s or 1970s, it appears much of the land was purchased within and west of the APE to create a rural subdivision. Several older farmsteads were demolished around this time, and new stock ponds were constructed across the landscape. By 2001, Skyline Landfill was operating to the east in an area that encompassed many of the old brickyards and associated clay pits. In 2019 or 2020, the landfill expanded into the field in the southern third of the APE.

3.3.2 - *Cultural Resources Potential*

3.3.2.1 - *Prehistoric Resource Potential*

Previous archeological surveys across North Central Texas have indicated that most prehistoric sites are located along major rivers, perennial streams, or springs. The TASA review identified four previously recorded prehistoric open camp sites within the floodplain of Ten Mile Creek, within 1 mi of the APE. These sites contained lithics, ceramics, bone, shell, and charcoal. Regionally, isolated prehistoric sites are present along the crests of valley walls overlooking major creek valleys.

The Texas Department of Transportation (TxDOT) Potential Archeological Liability Map (PALM) for Dallas and Ellis Counties indicates that most of the APE features a low to moderate potential for containing shallow buried archeological resources and a moderate potential for deeply buried archeological resources within areas that have retained a reasonable degree of contextual integrity. The portion within the floodplain of Ten Mile Creek features a moderate to high potential for deeply buried prehistoric deposits. Through background review, it was determined that the APE has experienced disturbance through past long-term agricultural practices, residential development, and landfill expansion. Based on the results of the PALM and soils data, the potential for encountering prehistoric archeological sites in shallow subsurface contexts is considered low to moderate across the APE. The northernmost area, located in Ten Mile Creek's floodplain, has retained a moderate to high potential for deeply buried resources.

The TxDOT PALM examines "the character and classification of the soils and assesses the shallow and deep geoarcheological potential or the likelihood that soil could contain buried cultural materials in reasonable context (i.e., historic/recent disturbances, landscape setting, and soils data) for each soil series" (Abbott 2011:161). The TxDOT PALM model identifies where sites are likely to be preserved in a reasonable context versus indicating where sites are likely to exist (Abbott 2001:154, 2011:179). As the resolution of the PALM is appropriate to the scale of landform mapping (approximately 1:24,000), any analysis of the data beyond the scale of mapping can result in a misunderstanding of the detail of mapping (Abbott 2011:175). Due to the more detailed evaluation required to accurately evaluate the potential for presence of cultural resources and the development of appropriate field methodology (typically at the 1:7,000 scale or less), the cultural resources potential evaluation presented in this scope includes an assessment of the PALM results at a more detailed level to determine if the APE has retained a reasonable degree of contextual integrity as assumed by the PALM model. A reasonable context is evaluated through a review of historical and modern aerial photographs to ascertain the level of previous ground disturbance that has transpired within a given area.

3.3.2.2 - *Historic-Period Resource Potential*

Historic-period resources within North Central Texas are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-nineteenth to the mid-twentieth centuries. Typically, these types of resources are located along old roadways, but can also be located along railroads, streams, and within open pastures. Although determining the presence of the earliest buildings and structures in the region is problematic, maps depicting the former locations of those features are available post-1900.

Historical maps and aerial photographs indicate the APE was located in a predominantly rural agricultural area. The 1900 Sam Street's Map of Dallas County indicates there were no buildings within the part of the APE in Dallas County. The 1920 USDA Soils Map of Dallas County illustrates four buildings in the APE, two of which were located along Nolan Road. An aerial photograph dating to 1956 shows four farmsteads along an unpaved roadway (Nolan Road) north of the county line. By 1968, all buildings associated with three of the farms had been removed. During the 1960s and 1970s, new homes and farm buildings were constructed on subdivided rural lots throughout the APE. Most of these buildings were demolished in the late 1990s or early 2000s. The foundations for some of these buildings are visible on modern aerial photographs. In addition, several standing historic-age structures were identified within the APE in modern aerial photographs. As such, the APE is considered to have a high potential for containing historic-period cultural resources.

CHAPTER 4: METHODOLOGY

Prior to fieldwork, IES staff conducted a historical and archeological records review to determine the locations of previously recorded cultural resources within the APE and within a 1-mi radius (*see* **Section 3.1**). IES staff also reviewed ecological, geologic, and soils data, as well as historical and modern topographic maps and aerial photography. The methods utilized during this survey meet the minimum professional archeological survey standards for field investigations recommended by the CTA (CTA 2020), as approved by the THC.

4.1 Archeological Survey Methods

4.1.1 - *Pedestrian Survey*

The pedestrian reconnaissance survey consisted of visual examination of the ground surface and existing subsurface exposures for evidence of archeological sites and historic-age architectural resources within the Cultural Resources Permit Area (CRPA). The pedestrian survey consisted of a multiple-transect scheme spaced at 30-m intervals implemented across the APE. The pedestrian survey also confirmed the locations of previous disturbances initially identified during the background review. Areas displaying significant disturbance were confirmed through intensive survey methods and photographed to document the lack of potential for containing intact archeological deposits. Other documentation methods included narrative notes and annotated maps.

4.1.2 - *Intensive Survey*

All shovel tests were excavated to a depth of at least 80 cm below surface (cmbs), or to the extent of soils capable of containing archeological deposits (typically the Bk and Bs subsoil horizons in this area). Each shovel test was at least 30 cm in diameter and was manually excavated in arbitrary levels not exceeding 20 cm in thickness. Excavated soil was screened using 0.25-in (0.64-cm) hardware cloth to facilitate artifact recovery. If clay content was high and could not be efficiently screened, the excavated soil was manually troweled and inspected for cultural materials. Additionally, the physical properties of each natural soil stratum were recorded. All shovel test locations were recorded using handheld Global Positioning System (GPS) units with a minimum 3-m (10-ft) accuracy. Investigators documented the results of each shovel test on standardized forms.

According to CTA archeological survey standards, approximately 102 shovel tests were required within the 287-ac APE (CTA 2020). However, the number of shovel tests varied based on the amount of disturbance, exposed culturally sterile subsoil, and when archeological sites were encountered.

Although the majority of shovel tests were excavated in systematic intervals along plotted transects, shovel test placement density was increased in areas featuring a higher potential for encountering prehistoric or historic-age archeological resources. Shovel test placement was determined by multiple resources, including TxDOT's PALM maps for Dallas and Ellis County, historical maps, and historical and modern aerial photographs.

As discussed in **Chapter 3**, PALM data suggests a low to moderate potential for shallow-buried prehistoric deposits throughout much of the APE. The highest potential was located in the northeast corner of the APE near Ten Mile Creek. Given this potential, shovel testing density increased preferentially in accordance with higher likelihood areas. Although small portions of the APE have retained a moderate to high potential for intact deeply buried prehistoric resources, shovel testing results from this investigation indicated that the part of the APE near Ten Mile Creek was located outside of the floodplain on a ridge toe slope. This area contained shallow clay soils typically found in upland settings. As such, backhoe trenching is not required for this project.

Historic-period buildings and structures were identified in historic maps and aerial imagery. The remnants of some of these resources were still visible in modern aerial photographs. As such, increased shovel testing

for these areas was necessary and supported by selective placement. Shovel tests were placed near the remnants or footprints of former buildings identified during background research.

Significantly disturbed areas generally resulted in lower likelihood of archeological potential, as such testing frequency in these areas was less dense but maintained a relatively equal spatial distribution.

4.2 Site Recording

An archeological site is typically considered to be a spatially discrete area containing cultural resources. The recognition of a "site" is therefore contingent on the basis of content and extent. Content may refer to artifacts or cultural features encountered in surface or subsurface contexts, architectural elements, or other manifestations of past human activity. The extent of a site is based on the vertical and horizontal spatial arrangement of these cultural remains. For surficial materials, a site is defined as five or more artifacts of at least two different materials or functional classes located within the same vicinity (typically a 400 square m [m^2; 0.1-ac] area) or at least one cultural feature. The extent of the surface artifacts and cultural features is then defined as the site boundary. When artifacts or features are encountered in buried contexts, a site is defined within the extent of the culturally positive excavations. In cases where an excavated survey sampling location (i.e., shovel test) yields cultural materials, additional delineation excavations are conducted to define the boundary of the site. The spatial extent of the site is defined within the extent of positive excavations. Archeological sites may also be defined within the extent of surface artifacts or features and culturally positive excavations when both are present. During intensive survey, archeological sites were delineated through the excavation of additional shovel tests conducted in 10 or 15-m intervals, to assess the horizontal extent and characterize the depth and artifact content of the archeological deposits. Delineation shovel tests were conducted within the APE until two negative shovel tests, the APE limits, or a topographic boundary were encountered in each cardinal direction. Negative excavations, the distribution of surficial artifacts/features, distinct topographic features, and/or the extent of the APE were used to delimit the boundary of each site.

Cultural remains, meeting these criteria, are designated as a site, recorded on a Texas Archeological Site Data Form, and submitted TARL to be included in the TASA database. Conversely, discoveries of cultural materials that do not meet these criteria are considered isolated occurrences of past human activity and are simply documented by location and content. Modern materials and features (i.e., less than 50 years old) are not considered sites, with only location and content documented. Depending on depositional integrity and cultural content, archeological sites can be eligible for inclusion in the NRHP. Cultural isolates and modern features are not eligible for inclusion in the NRHP because of their failure to meet the site definition and their inability to contribute important information to the understanding of history or prehistory.

4.3 Artifact Collection and Analysis

This survey employed a non-collection, in-field artifact analysis strategy. Artifacts encountered during fieldwork were identified to the most specific type and/or functional class possible, tabulated, and recorded by provenience, then returned to the context from which they were recovered. All artifacts recovered from subsurface contexts and all temporally diagnostic artifacts were photographed. In addition, representative non-diagnostic artifact samples were photographed. Surface artifact concentrations were characterized by content and relative frequency during field survey. The locations and extents of all surface artifact concentrations were mapped and plotted on site maps. Artifact inventory information is presented in tabular format within the report, and artifact photographs are presented in the report appendix.

4.4 Above-Ground Resources Survey

The purpose of the above-ground resources survey was:

a. to locate both previously identified and unidentified above-ground resources in the CRPA;

b. to identify the characteristics that the properties must possess to be eligible for NRHP listing;
c. to evaluate the historic significance of resources for a determination of eligibility for NRHP listing;
d. to determine whether the properties retain sufficient integrity to qualify for NRHP listing;
e. to determine if a resource has potential to yield significant historical data; and
f. to determine if any historic properties are affected by the project.

Typical methods accepted for identification and evaluation by the THC place the cut-off date for historic-age resources as those determined to be 50 years old or greater, which, for this project, was 1974. Resources 50 years in age or older were visited to observe and briefly document location, type, age, material, and integrity, which was primarily accomplished through photographs and field notes. The existing conditions and architectural elements of each resource were evaluated for NRHP eligibility and potential adverse effects.

4.5 Archival Research

Prior to field investigations, a suite of archival sources, including historical maps and aerial photographs, was reviewed to determine former land use patterns. Deed and chain-of-title research was conducted at the Dallas County Clerk's Office (DCCO) and Ellis County Clerk's Office (ECCO) for all historic-period resources encountered to determine associations with historically significant individuals or historical events for evaluation of these resources under NRHP Criteria A and B (**Section 4.6.1**).

4.6 Resource Evaluation Criteria

4.6.1 - *National Register Evaluation Criteria*

The assessment of significance of a cultural resource is based on federal regulations and guidelines. The regulatory criteria for evaluating resources for inclusion in the National Register are codified under the authority of the NHPA as amended (36 CFR 60.4 [a–d]), and the Advisory Council on Historic Preservation (ACHP) has also set forth guidelines to use in determining site eligibility. Federal regulations indicate that "[t]he term 'eligible for inclusion in the National Register' includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria" (36 CFR 800.2[e]). Based on ACHP guidelines, any cultural resource that is included in or eligible for inclusion in the NRHP is a historic property.

After the identification of relevant historical themes and related research questions, four eligibility criteria are applied. The regulations provide that the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and:

Criterion A: that are associated with events that have made a significant contribution to the broad patterns of our history; or
Criterion B: that are associated with the lives of persons significant in our past; or
Criterion C: that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
Criterion D: that have yielded, or may be likely to yield, information important in prehistory or history [36 CFR 60.4(a–d)].

The principal objective is to determine whether a cultural resource possesses the potential to contribute to one or more of the above-defined criteria. Adequate information regarding site function, context, and chronological placement from both archeological and, if appropriate, historical perspectives is essential for

cultural resources investigations. Because research questions vary because of geography, temporal period, and project design, determination of site context and chronological placement of cultural resources is a particularly important objective during the inventory and evaluation processes. Criteria A, B, and C typically reflect association with historic-era resources, rarely with prehistoric sites. Criterion D is generally associated with prehistoric, but also historic-era, archeological sites. The objective of the current project was to locate and define both the horizontal and vertical extents of any cultural resources, document and describe those resources, and then, when adequate data were present, evaluate each for NRHP eligibility.

4.7 Records Retention

This survey employed a non-collection, in-field analysis strategy. Artifacts observed on the ground surface and recovered within excavations were identified, inventoried, and tabulated in the field. Representative and temporally or functionally diagnostic artifacts were photographed. Artifacts were then returned to the provenience from which they were observed. Records, files, field notes, forms, and other project documentation will be organized and permanently stored at the IES office in McKinney, Texas.

CHAPTER 5: RESULTS

The cultural resources survey for the Skyline Landfill Expansion Project was conducted on 19 through 23 February 2024 by IES Principal Investigator Anne Gibson, Project Archeologists Eric Gilmore and Trey Lyon, and Staff Archeologist Jacob Flynn. Additional survey was performed by Staff Archeologist Jacob Flynn on 19 December 2025. Background research conducted in preparation for this survey indicated that the APE features moderate to high potential for containing archeological resources in areas that have avoided significant ground disturbances. During this survey, the APE was subjected to reconnaissance survey transects and a systematic intensive survey of 169 shovel tests. Eight archeological sites and six above-ground resources were identified during the survey.

5.1 Cultural Resources Survey

5.1.1 - *Pedestrian Survey Observations*

Pedestrian reconnaissance survey was conducted to identify any surficial archeological or above-ground resources and assess areas of previous ground disturbances outlined in **Chapter 3**. The APE ranged slightly in setting and vegetation. Generally, the entire APE was located in rolling prairie featuring tall grass, forbs, shrubs, and occasional trees (**Figure 5.1; Appendix A, Photographs 1** through **30**). Areas with high concentrations of tree growth were typically found along current or former fence lines and water features.

Ground surface visibility was generally negligible across the APE due to grass cover. Areas of high visibility were found in recently cleared two-track road corridors spanning the APE and landfill expansion in the southern portion of the APE and part of the original survey area (**Figure 5.2**; **Appendix A, Photographs 31** through **42**). Pedestrian and intensive survey was limited around the landfill portion. Landfill deposits were observed across most of the southern property and were approximately 8 to 15 ft in height. Only a narrow strip of land could be surveyed between the landfill and a fence line to the north. Much of this area was inundated at the time of survey. Other disturbances encountered in the APE included subsurface and overhead utility lines, newly installed monitoring wells, multiple human-made water retention ponds, and brush removal. Modern trash was found along roads and near occupied residential properties.

In addition to multiple archeological sites and above-ground resources, IES investigators encountered several standing buildings and house foundations that were determined to be modern in age (**Appendix A, Photographs 43** through **52**). This determination was made through analysis of historic and modern aerial photographs as well as data obtained through the Dallas Central Appraisal District (DCAD) and Ellis County Appraisal District (ECAD). These modern resources were associated with farmstead buildings and individual house lots.

5.1.2 - *Intensive Survey Observations*

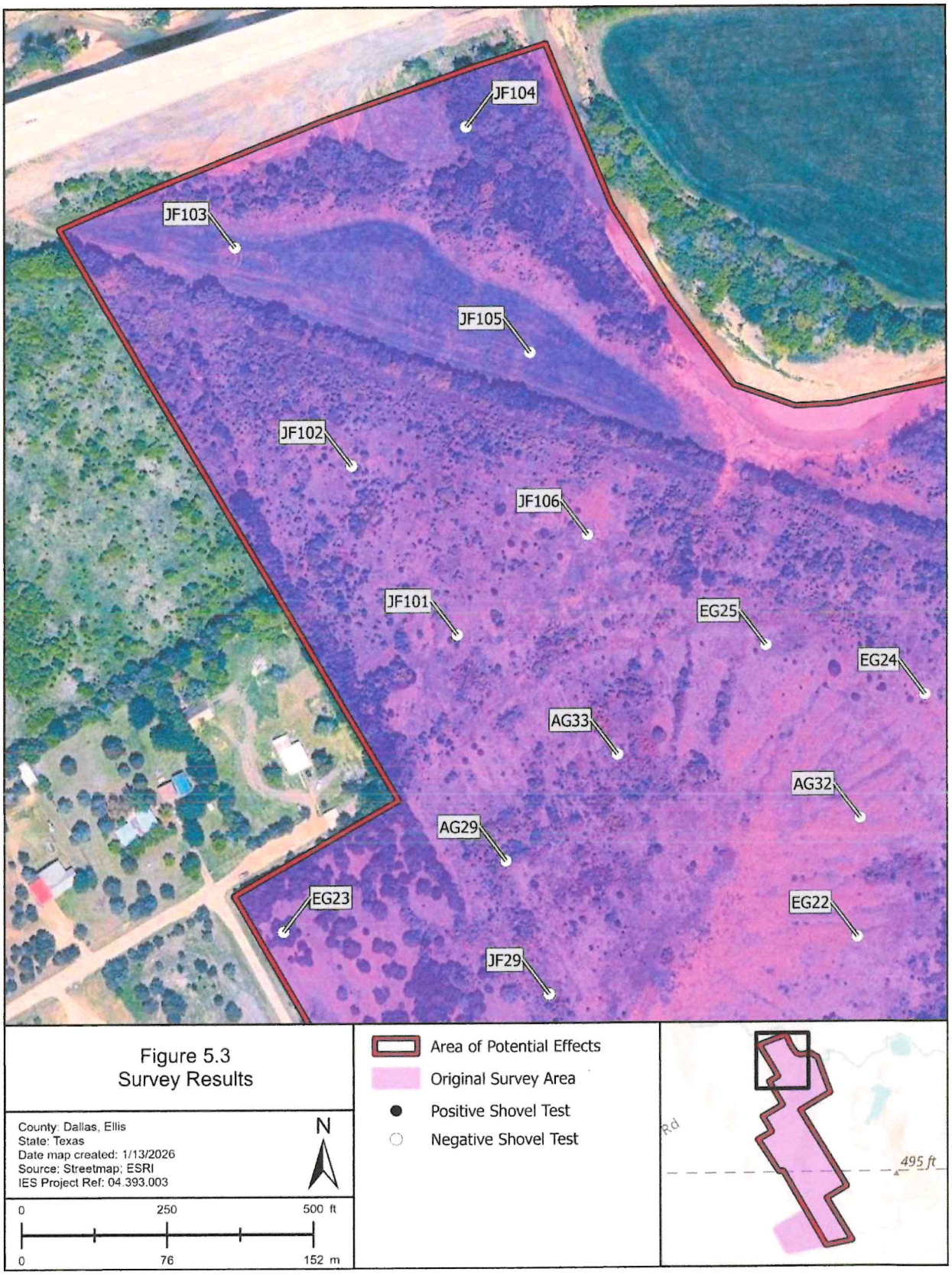
Shovel tests were systematically excavated within the APE to assess for the presence of shallow archeological deposits within approximately 80 cm of the ground surface. Shovel test sampling was generally conducted along survey transects spaced a maximum of 30 m apart. Disturbed areas were verified through shovel testing and visual observations. Significantly disturbed areas were photographed. During the survey, 169 shovel tests were excavated within the APE, exceeding CTA standards (**Figures 5.3** through **5.8**; **Appendix D**). Of these shovel tests, 66 were used to locate and delineate archeological sites. Eight additional delineation tests were excavated around a collapsed shed in the northern half of the APE; however, post-field analysis using historical and modern aerial photographs indicated the shed was modern and had replaced an older auxiliary building on a farmstead. One shovel test was excavated in an approximately 29 ac area initially part of the APE (*see* Original Survey Area in **Figure 5.8**) and later removed after project designs changed.

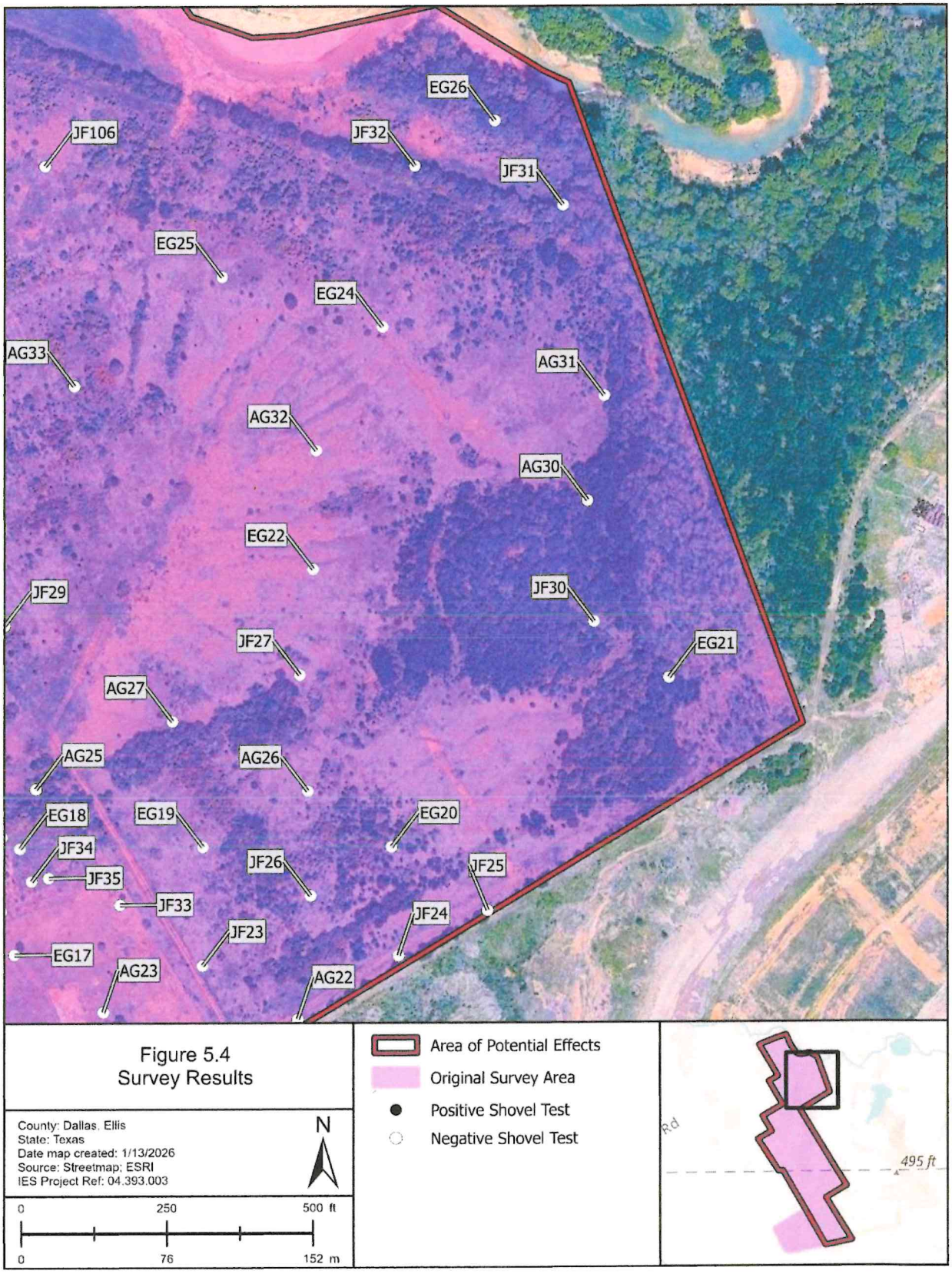


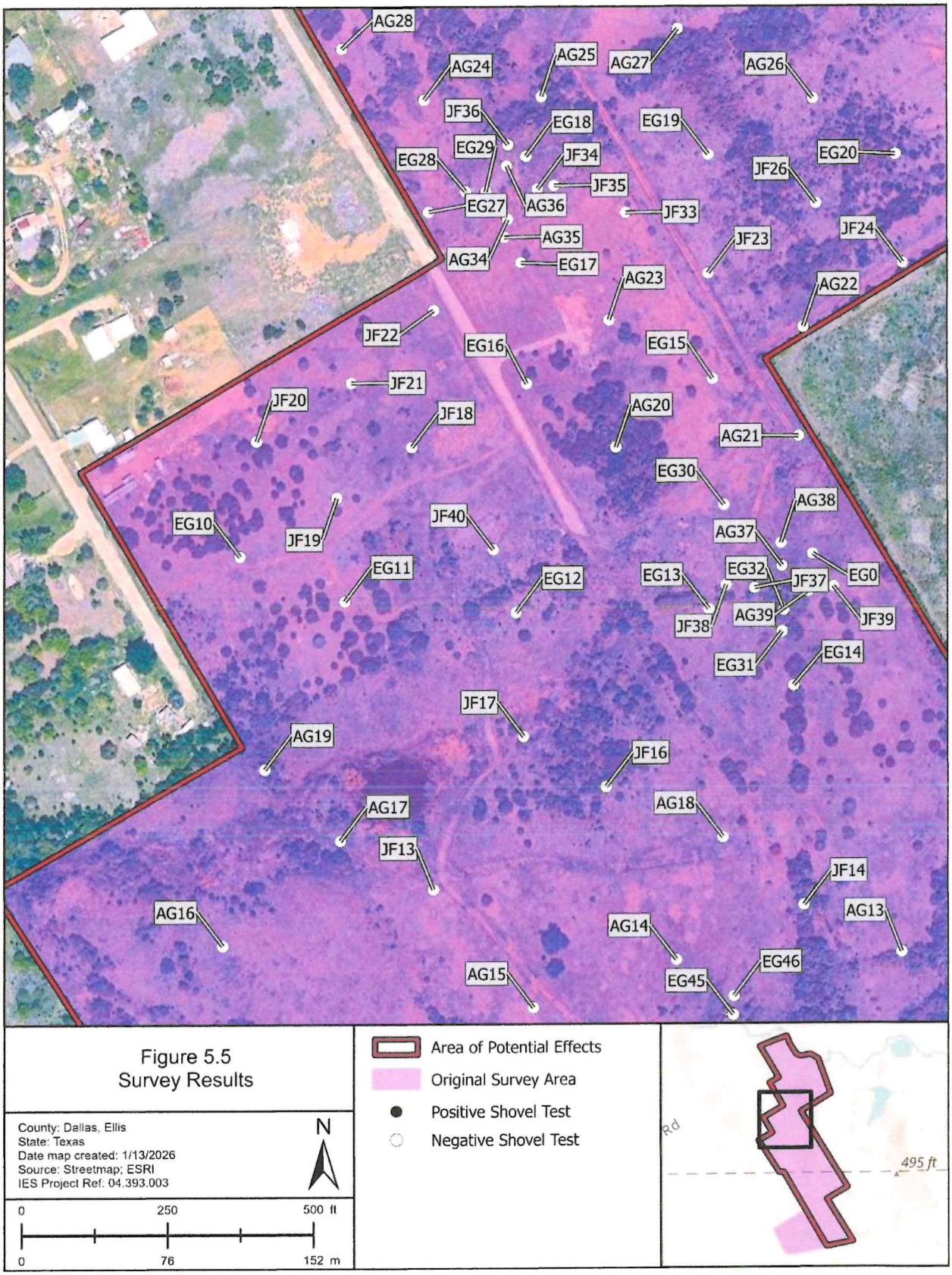
Figure 5.1: General Overview, View to the North

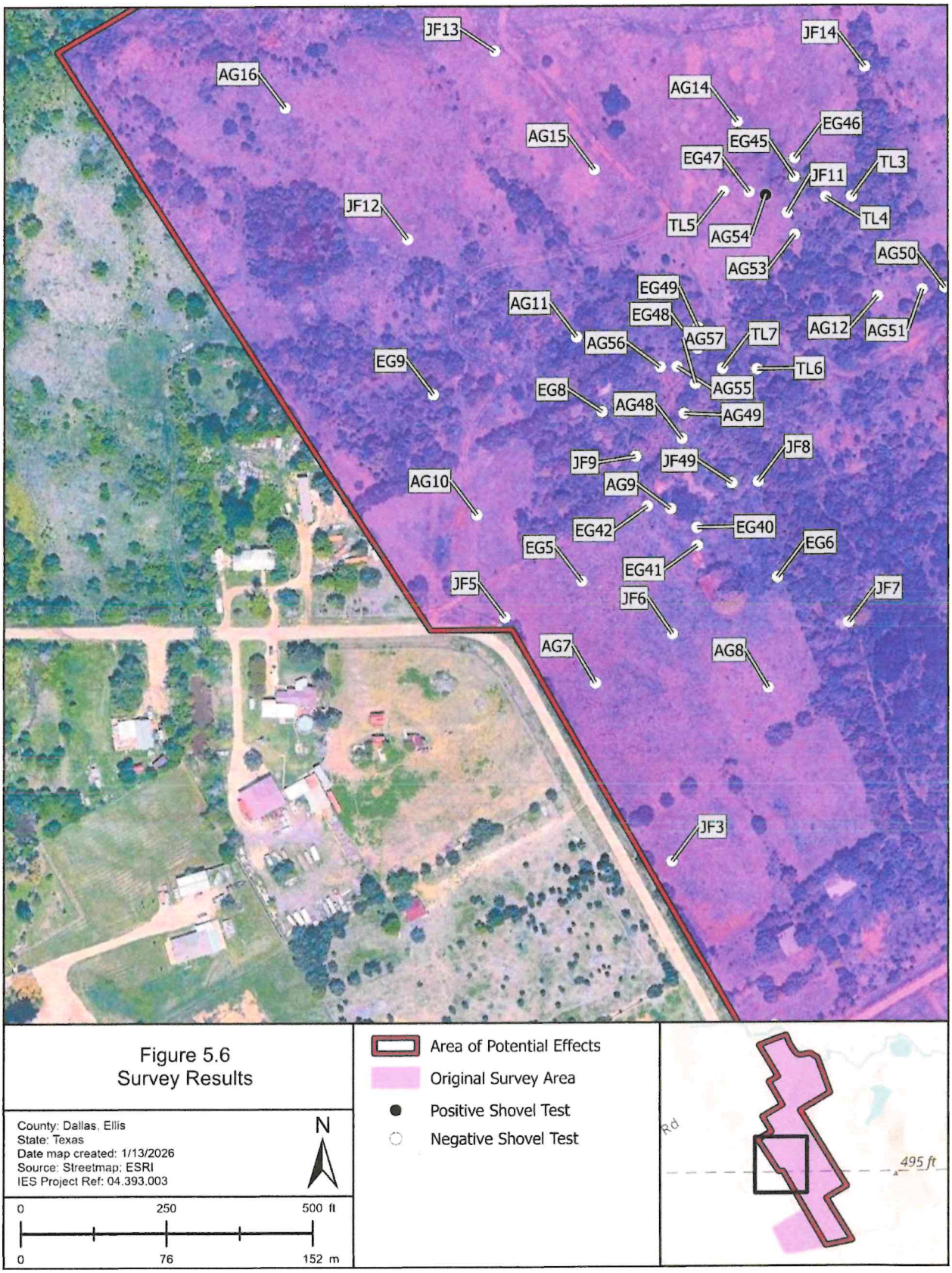


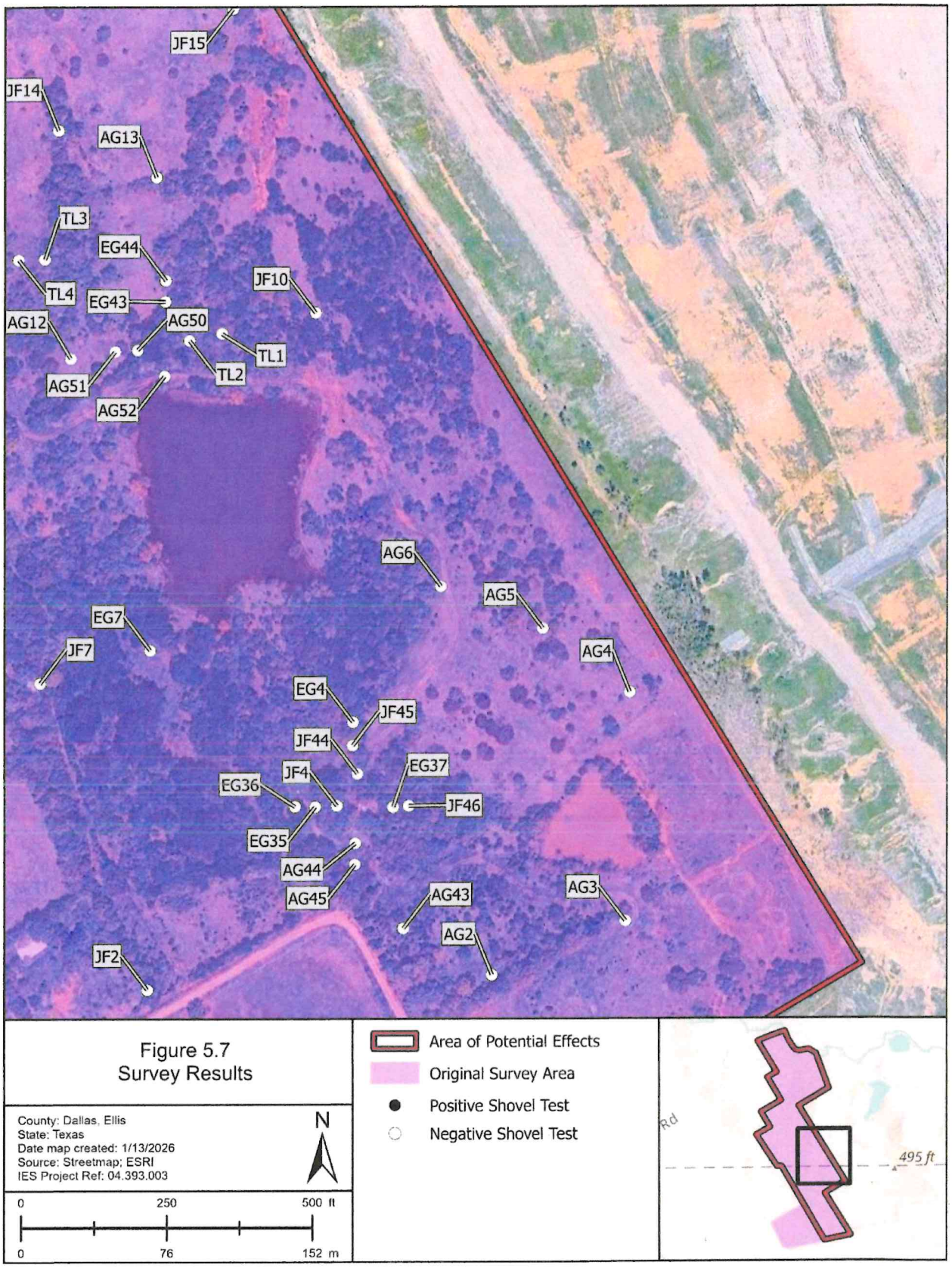
Figure 5.2: Landfill Expansion into Project Area, View to the West

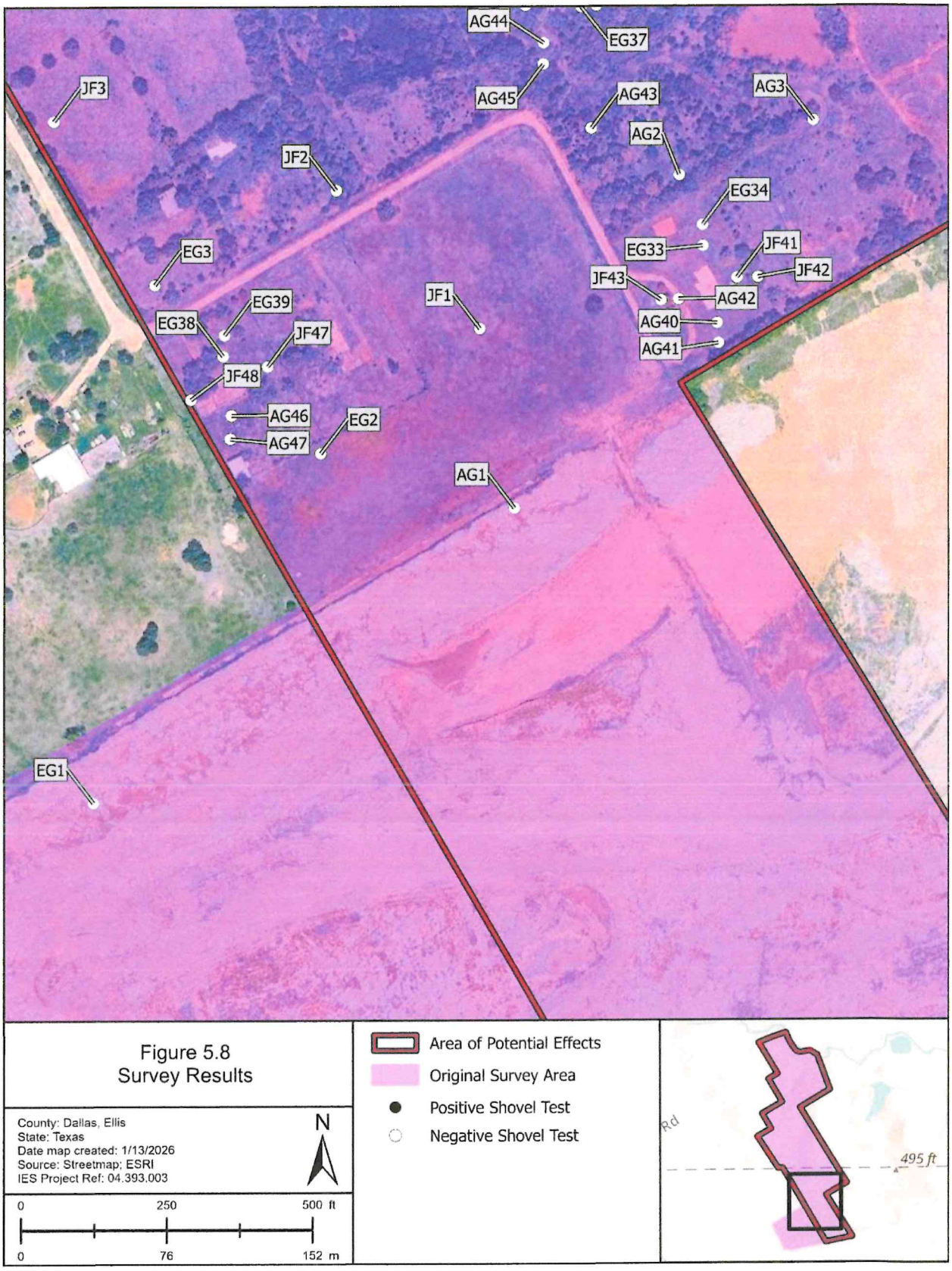

JF104
JF103
JF105
JF102
JF106
JF101
EG25
EG24
AG33
AG32
AG29
EG23
EG22
JF29
Figure 5.3
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft


EG26
JF106
JF32
JF31
EG25
EG24
AG33
AG31
AG32
AG30
EG22
JF29
JF30
JF27
EG21
AG27
AG25
AG26
EG18
EG19
EG20
JF34
JF26
JF25
JF35
JF33
JF24
JF23
EG17
AG23
AG22
Figure 5.4
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft


AG28
AG24
AG25
AG27
AG26
JF36
EG18
EG19
EG29
JF34
EG28
EG20
JF26
JF35
EG27
AG36
JF33
JF24
JF23
AG35
AG34
EG17
AG23
AG22
JF22
EG16
EG15
JF21
JF20
JF18
AG20
AG21
EG30
AG38
EG10
JF19
JF40
AG37
EG11
EG12
EG13
EG32
JF37
EG0
JF38
AG39
JF39
EG31
EG14
JF17
AG19
JF16
AG17
AG18
JF13
JF14
AG16
AG13
AG14
AG15
EG46
EG45
Figure 5.5
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft


JF13
JF14
AG16
AG14
AG15
EG46
EG45
EG47
JF11
TL3
JF12
TL5
AG54
TL4
AG53
AG50
EG49
AG11
EG48
AG12
AG51
AG57
TL7
AG56
EG9
TL6
AG55
EG8
AG48
AG49
JF8
JF9
JF49
AG10
AG9
EG42
EG40
EG6
EG5
EG41
JF5
JF7
JF6
AG7
AG8
JF3
Figure 5.6
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft


JF15
JF14
AG13
TL3
EG44
TL4
EG43
JF10
AG12
AG50
TL1
TL2
AG51
AG52
AG6
AG5
EG7
JF7
AG4
EG4
JF45
JF44
JF4
EG37
EG36
JF46
EG35
AG44
AG45
AG43
AG3
AG2
JF2
Figure 5.7
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft


AG44
EG37
JF3
AG45
AG43
AG3
AG2
JF2
EG34
EG3
EG33
JF41
JF43
JF42
JF1
AG42
EG39
EG38
AG40
JF47
AG41
JF48
AG46
EG2
AG47
AG1
EG1
Figure 5.8
Survey Results
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
250
500 ft
0
76
152 m
Area of Potential Effects
Original Survey Area
Positive Shovel Test
Negative Shovel Test
Rd
495 ft

In general, shovel testing encountered shallow upland soils across the APE, which typically contained two soil strata. Stratum I consisted of very dark grayish brown (10YR3/2) or light olive brown (2.5Y 5/3) clay from the surface to an average depth of 20 to 30 cmbs (**Appendix A, Photographs 53** through **60**). Stratum II consisted of a very dark gray (10YR 3/1) or dark grayish brown (2.5Y 4/2) clay from the termination of Stratum I to an average depth of 30 to 40 cmbs. Shovel tests were terminated due to a culturally sterile subsoil, the water table, compact clay soils, dense layer of gravel and/or rock, large roots, or depth. One shovel test was positive for cultural deposits.

5.2 Archeological Resources

5.2.1 - *41DL598*

This newly recorded historic-period site was encountered within the northern portion of the APE (**Figure 5.9**). The site pertained to the remains of a residence first depicted in a 1968 aerial photograph. Modern aerial photographs indicate the house was demolished between 2006 and 2008.

The site was located within an upland prairie setting on a property lot along High Ridge Drive. Ground surface visibility was limited due to tall grasses, small shrubs, and a large push pile of dead trees covering part of the site. The site was documented within an area extending approximately 110 ft (33 m) north-to-south by 75 ft (23 m) east-to-west, encompassing approximately 0.12 ac. The site was delineated based on the distribution of archeological features, negative shovel tests, and observed disturbances. The site is located entirely within the APE.

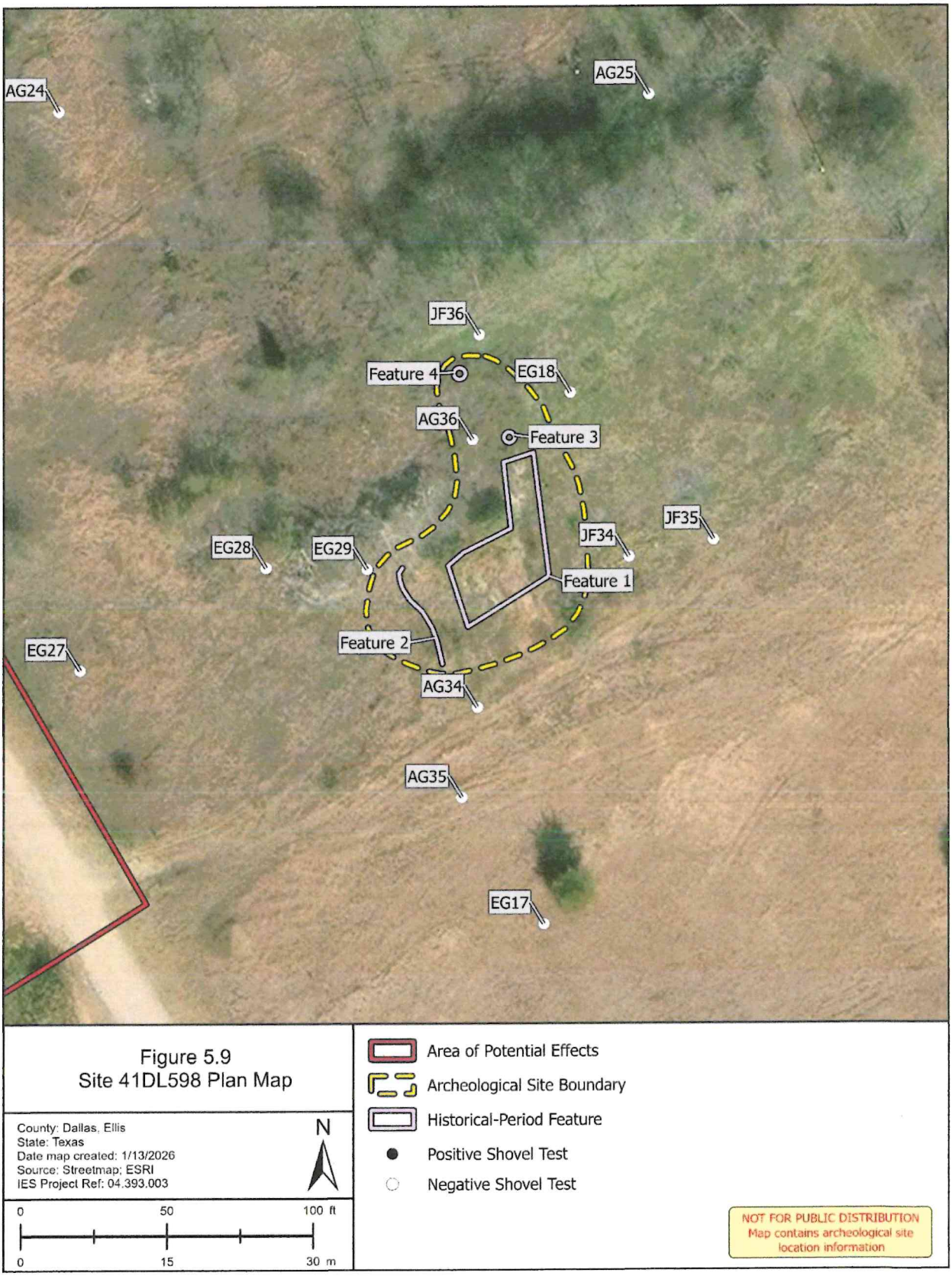
The site contained four surface features and a surface scatter containing architectural debris associated with the former residence (**Appendix B.1, Photographs 1** through **5**). Overall, most of the observed artifact scatter comprised concrete slab fragments, rusted bits of metal sheeting, metal wire, burned sherds of utilitarian porcelain, and pieces of rubber tire. No diagnostic artifacts were observed within the site. Gravel was found across most of the site. An unpaved gravel driveway connected the site to High Ridge Road.

During the delineation, IES investigators excavated 10 shovel tests (**Appendix B.1, Photographs 6** and **7**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (10YR 3/2) or dark gray (10YR 4/1) clay to a depth of approximately 5 to 30 cmbs. Shovel tests excavated near site features contained a high frequency of gravel and small concrete fragments mixed with sandy loam or loam in the upper stratum. Beneath that stratum, soils varied from a light yellowish brown (10YR 6/4) to black (10YR 2/1) clay to a depth of 25 to 45 cmbs. Shovel tests were terminated due to encountering sterile subsoil or a dense layer of gravel. All shovel tests were negative for cultural deposits.

5.2.1.1 - *Features*

Feature 1 was an exposed area of fragmented concrete slab foundation (**Figure 5.10**; **Appendix B.1, Photograph 8**). The feature measured approximately 46 by 34 ft (14 by 10 m) north-to-south by east-to-west. At the time of survey, the majority of the feature was covered by a pile of brush. Various bits of construction debris were observed scattered on the visible portions of the feature.

Feature 2 was a segment of exposed sidewalk that connected the private driveway to the front door of the home (**Figure 5.11**; **Appendix B.1, Photograph 9**). The sidewalk was located 10 ft (3 m) west of Feature 1. The feature extended approximately 29 ft (9 m) and was 3 ft (1 m) in width. Like Feature 1, the sidewalk was partially obscured by a pile of brush.


AG24
AG25
JF36
Feature 4
EG18
AG36
Feature 3
JF35
JF34
EG28
EG29
Feature 1
Feature 2
EG27
AG34
AG35
EG17
Figure 5.9
Site 41DL598 Plan Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

Feature 3 was a well or cistern located approximately 7 ft (2 m) north of Feature 1 (**Figure 5.12**; **Appendix B.1, Photographs 10** and **11**). The feature measured approximately 2.6 by 3 ft (0.8 by 1 m). The feature was composed of a pit in the ground with a concrete slab fragment overlooking one side of the hole. The pit may have been lined with concrete, but vegetation growing in the feature reduced visibility.

Feature 4 was a well or cistern encountered approximately 27 ft (8 m) northwest of Feature 3 (**Figure 5.13**; **Appendix B.1, Photograph 12**). The feature measured approximately 2.6 ft (0.8 m) in diameter. The walls and collar of the feature were composed of concrete lined with corrugated sheet metal. One side of the well has a hole for piping. The feature had been plugged with soil.

5.2.1.2 - *Archival Research*

The site was located within the 97-ac M.L. Swing & G.W. Laws Survey, Abstract 1447, patented on 01 November 1861. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (**Table 5.1**). Based on deed records and site observations, the site most likely pertained to the Gipson family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

Table 5.1: Chain of Title for 41DL598

Grantor	Grantee	Date	Volume	Page	Instrument Number
Sage Construction Company	Public (Dallas and Ellis Counties)	09/30/1965	665	1700	196500197825
B&J Builders & Supply	United Savings Association of Texas	12/05/1977	78006	1367	1978005061751
Diana L. Gipson	Anthony D. Gipson	03/17/1988	88055	550	198800554663
Anthony D. and Joyce E. Gipson	Waste Management of Texas	09/21/1995	95185	960	199501850314

5.2.1.3 - *Site Summary*

Site 41DL598 was documented within an approximate 110 ft (33 m) north-to-south by 75 ft (23 m) east-to-west, encompassing approximately 0.12 ac within the APE. Four features and a surface scatter of architectural debris were encountered. The site represents a historic-period house constructed in the 1960s and demolished in the 2000s. Ten shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.2 - *41DL599*

This newly recorded historic-period site was encountered within the central portion of the APE (**Figure 5.14**). The site encompassed the demolished remains of a house located on a farmstead. A house is first depicted on the property in a 1956 aerial photograph and may have been constructed in the early twentieth century, as it's illustrated in the 1920 Soil Map of Dallas County. This house was torn down between 1958 and 1961. By 1972, a new home was constructed adjacent to the footprint of the original home. The house was expanded in the late 1980s or early 1990s. It appears the house was demolished in 2008 or 2009.

The site was located within an upland prairie setting near Nolan Road. Ground surface visibility was limited due to grass cover and construction debris. The site was documented within an area extending approximately 180 ft (55 m) north-to-south by 132 ft (40 m) east-to-west, encompassing approximately 0.28 ac. The site was delineated based on the distribution of archeological features and negative shovel tests. The site is located entirely within the direct APE.



Figure 5.10: Site 41DL598, Feature 1, View to the East



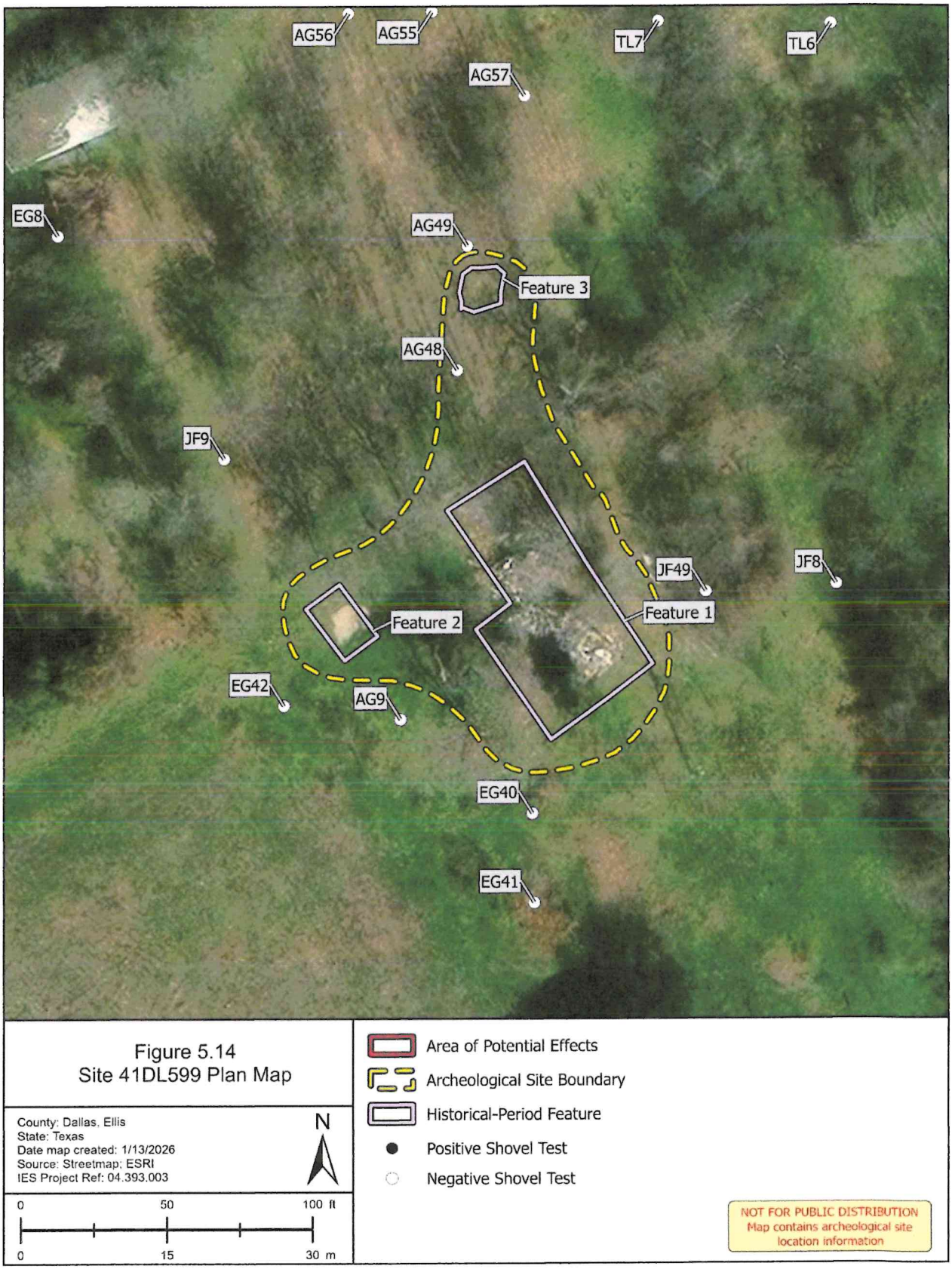
Figure 5.11: Site 41DL598, Feature 2, View to the South



Figure 5.12: Site 41DL598, Feature 3, View to the West



Figure 5.13: Site 41DL598, Feature 4, View to the Northeast


AG56
AG55
TL7
TL6
AG57
EG8
AG49
Feature 3
AG48
JF9
JF49
JF8
Feature 1
Feature 2
EG42
AG9
EG40
EG41
Figure 5.14
Site 41DL599 Plan Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

The site contained three surface features and a pile of construction debris associated with the former house (**Appendix B.2, Photograph 1**). Surface materials were largely composed of lumber, unmarked machine-made brick wall fragments, and composite shingles. Modern trash, such as a foam sandal and a plastic truck bed liner, was also observed within the site.

During the delineation, IES investigators excavated nine shovel tests (**Appendix B.2, Photographs 2** through **4**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (10YR 3/2) or dark gray (10YR 4/1) clay to a depth of approximately 15 to 35 cmbs. Beneath that stratum, soils were generally a dark brown (10YR 3/3) clay to a depth of 35 to 50 cmbs. Shovel tests were terminated due to sterile subsoil or disturbance. All shovel tests were negative for cultural deposits.

5.2.2.1 - *Features*

Feature 1 was the remnants of a house that measured approximately 84 by 53 ft (25 by 16 m) north-to-south by east-to-west (**Figure 5.15**; **Appendix B.2, Photographs 5** through **8**). The feature consisted of a concrete slab foundation and a large pile of construction debris from the demolished house. Debris included lumber, sections of roofing with composite shingles, brick wall fragments containing unmarked, four-hole tan bricks, and window or door frames.

Feature 2 was a section of concrete slab driveway located 44 ft (13 m) southwest of Feature 1 (**Figure 5.16**; **Appendix B.2, Photograph 9**). The feature measured approximately 14 by 13 ft (4 by 4 m) north-south by east-west. The feature likely extends to the house foundation, but was obscured by sediment and vegetation at the time of survey.

Feature 3 was a small pile of debris located 58 ft (18 m) north of Feature 1 (**Figure 5.17**; **Appendix B.2, Photograph 10**). The feature measured approximately 20 ft (6 m) in diameter. The pile was composed of concrete fragments and unidentified metal pieces. Surface visibility was limited by vegetation cover. Shovel tests excavated near the feature were negative for subsurface deposits. The feature was located in the vicinity of the home visible in aerial photographs dating to the 1950s.

5.2.2.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 23 in Dallas County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (**Table 5.2**). Based on deed records and site observations, the site most likely pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project website, or other local history resources.

Table 5.2: Chain-of-Title for 41DL599

Grantor	Grantee	Date	Volume	Page	Instrument Number
Sleepy Hollow Addition II of Terry Construction	Public (Dallas and Ellis Counties)	12/01/1966	958	1206	196600169160
B&J Builders & Supply	United Savings Association of Texas	11/21/1977	78101	890	1978006044070
United Savings Association of Texas	W.L. Bradshaw	08/24/1992	92178	3863	199201789533
W.L. and Jacqueline Bradshaw	Glen and Janice Copeland	8/27/1992	92168	4694	199201684815
Glen and Janice Copeland	Waste Management of Texas	5/16/1995	95095	5829	199500953827



Figure 5.15: Site 41DL599, Feature 1, View to the South



Figure 5.16: Site 41DL599, Feature 2, View to the East



Figure 5.17: Site 41DL599, Feature 3, View to the South

5.2.2.3 - *Site Summary*

Site 41DL599 was documented within an approximately 180 ft (55 m) north-to-south by 132 ft (40 m) east-to-west, encompassing approximately 0.28-ac area within the APE. Three features and a surface scatter of architectural debris were encountered. The site represents a historic-period house constructed in the 1960s or 1970s and demolished in the 2000s. Nine shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.3 - *41DL600*

This newly recorded historic period was encountered within the central portion of the APE (**Figure 5.18**). The site contained three features located on a slope and within a drainage between a small stock pond and a large water retention pond (**Appendix B.3, Photographs 1** through **4**). According to historical aerial photographs, two of these features appear to have been constructed sometime between 1968 and 1979.

Ground surface visibility was limited due to leaf litter and vegetation cover. The site was documented within an area extending approximately 44 ft (13 m) northwest-to-southeast by 69 ft (21 m) northeast-to-southwest, encompassing approximately 0.05 ac. The site was delineated based on the distribution of archeological features, negative shovel tests, and topographic setting limitations. The site is located entirely within the APE.

During the delineation, IES investigators excavated seven shovel tests (**Appendix B.3, Photographs 5** through **7**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of two layers with an upper stratum of very dark grayish brown (10YR 3/2) or dark grayish brown (2.5Y 4/2) clay to a depth of approximately 15 to 60 cmbs. The lower stratum was generally composed of an olive brown (2.5Y 4/3) or grayish brown (2.5Y 5/2) clay to a depth of 30 to 78 cmbs. Shovel tests were terminated due to sterile subsoil. All shovel tests were negative for cultural deposits.



Figure 5.18
Site 41DL600 Plan Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

5.2.3.1 - *Features*

Feature 1 was an area of laid bricks located along a drainage channel (**Figure 5.19**; **Appendix B.3, Photographs 8** and **9**). The feature measured approximately 10 ft (3 m) in length and 20 ft (6 m) in width and was located in the southwest part of the site. The feature was composed of a single layer of bricks, most of which were produced by the Ferris Brick Company (1923 to 1985; Graves 2012). One brick featured a marking of "T.F.B. Co," which may have been produced by the Tucson Fire Brick Company; however, no further information could be found regarding this company. According to aerial photographs, the feature may have been constructed sometime in the 1970s.

Feature 2 was an earthen berm along the southeast side of the small stock pond north of the site (**Figure 5.20**; **Appendix B.3, Photograph 10**). The feature measured approximately 24 ft (7 m) in length and 3 ft (1 m) in height. The berm was located approximately 10 ft (3 m) north of Feature 1. The berm and associated pond were created in the 1970s.

Feature 3 was an artifact concentration encountered approximately 20 ft (6 m) east of Feature 2 (**Figure 5.21**; **Appendix B.3, Photographs 11** through **21**). The feature measured approximately 7 by 11 ft (2 by 3 m). The feature contained about 100 artifacts, which included glass bottles, beverage cans, part of a porcelain toilet bowl, and construction debris. Bottles with diagnostic features included a salad dressing bottle patented in 1953, a Hawaiian Punch bottle produced by the Ball Brothers Glass Manufacturing Company after 1960, an Owens-Illinois Glass Company bottle dating to 1979, and a 1980s amber-colored beer bottle by the Anchor Hocking Glass Corporation.

5.2.3.2 - *Archival Research*

Site 41DL600 was located within the 160-ac James Abbott Survey, Abstract 23 in Dallas County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (**Table 5.3**). Based on deed records, the site pertained to the Hill family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project website, or other local history resources.

Table 5.3: Chain of Title for 41DL600

Grantor	Grantee	Date	Volume	Page	Instrument Number
Sleepy Hollow Addition II of Terry Construction	Public (Dallas and Ellis Counties)	12/01/1966	958	1206	196600169160
B&J Builders & Supply	United Savings Association of Texas	12/05/1977	78006	1367	1978005061751
United Savings Association of Texas	Frank P. and Joyce Hill	12/05/1977	78006	1367	1978005061751
Frank P. and Joyce Hill	Waste Management of Texas	4/14/1995	95074	611	199500745585



Figure 5.19: Site 41DL600, Feature 1, View to the East



Figure 5.20: Site 41DL600, Feature 2, View to the North



Figure 5.21: Site 41DL600, Feature 3, View to the East

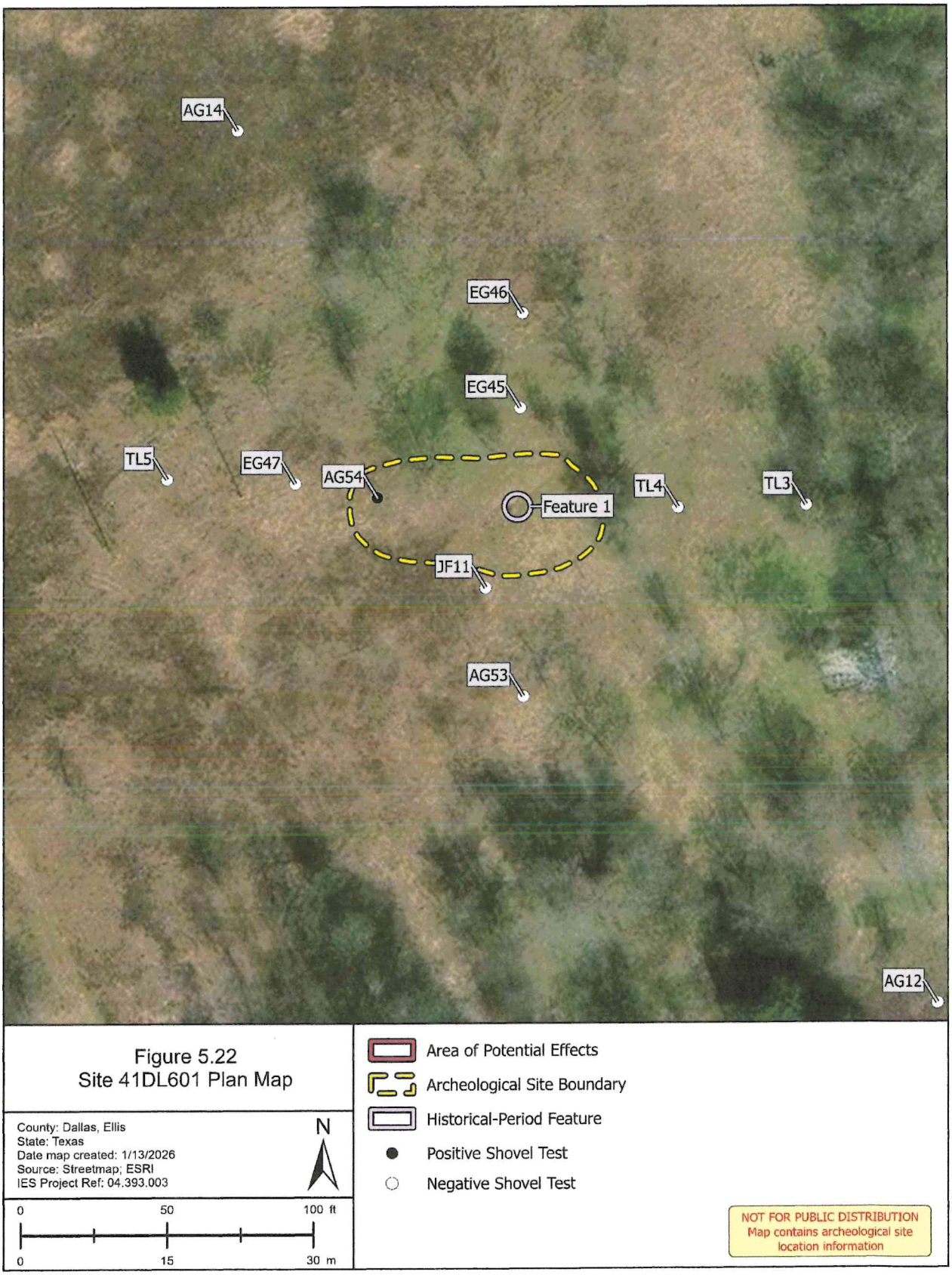
5.2.3.3 - *Site Summary*

Site 41DL600 occupied an area approximately 44 ft (13 m) northwest-to-southeast by 69 ft (21 m) northeast-to-southwest, encompassing approximately 0.05 ac. Three surface features were encountered. Ten shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.4 - *41DL601*

This newly recorded historic-age site was encountered within the central portion of the APE (**Figure 5.22**). The site pertained to a house constructed between 1961 and 1968. The house was demolished between 1995 and 2001. The site was located within a prairie setting on a ridge slope. Ground surface visibility was limited due to grass and tree cover (**Appendix B.4, Photographs 1** through **5**). The site was documented within an area extending approximately 87 ft (26 m) north-to-south by 40 ft (12 m) east-to-west, encompassing approximately 0.07 ac. The site was delineated based on the distribution of archeological features and negative shovel tests. The site is located entirely within the APE. A modern, collapsed shed was located 114 ft (35 m) east of the site.

During the delineation, IES investigators excavated nine shovel tests (**Appendix B.4, Photographs 6** through **8**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (2.5Y 3/2) clay or clay loam to a depth of approximately 10 to 40 cmbs. Beneath that stratum, soils were generally an olive brown (2.5Y 4/3) or a reddish brown (2.5Y 5/3) clay with yellowish-brown (10YR 5/6) clay mottling to a depth of 30 to 50 cmbs. Shovel tests were terminated due to sterile subsoil. One shovel test (AG54) contained a concrete fragment in the test wall between 2 and 13 cmbs (**Appendix B.4, Photograph 9**). No other artifacts were encountered at the site.


AG14
EG46
EG45
TL5
EG47
AG54
Feature 1
TL4
TL3
JF11
AG53
AG12
Figure 5.22
Site 41DL601 Plan Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

5.2.4.1 - *Features*

Feature 1 was a well located in the center of the site (**Figure 5.23; Appendix B.4, Photographs 10** through **12**). The feature measured approximately 3 ft (1 m) in diameter. The top of the well was situated just below the surrounding ground surface. The feature was lined with concrete and had been plugged with dirt.



Figure 5.23: Site 41DL601, Feature 1

5.2.4.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 23, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.3**). Based on deed records and field observations, the site likely pertained to the Hill family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project website, or other local history resources.

5.2.4.3 - *Site Summary*

Site 41DL601 occupied an area approximately 87 ft (26 m) north-to-south by 40 ft (12 m) east-to-west, encompassing approximately 0.07 ac in the APE. The center of the site contained a concrete well feature. Nine delineation shovel tests were excavated from the well feature, resulting in one positive shovel test containing a concrete fragment. No other cultural materials were encountered within the site.

5.2.5 - *41DL602*

This newly recorded historic-age site was encountered within the central portion of the APE (**Figure 5.24**). The site pertained to two wells located on a ridge at the northeast corner of a former pasture. A 1956 aerial shows there were several buildings within the vicinity of the site, but none overlapped. By 1968, it appears these structures had been removed from the property. The 1972 aerial photograph depicts a new, large building constructed close to the site. The building was demolished in the late 1990s or early 2000s. The site was located directly north of 41DL602.



Figure 5.24
Site 41DL602 Plan Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

Ground surface visibility was largely limited due to grass and tree cover (**Appendix B.5, Photographs 1** through **4**). The site was documented within an area extending approximately 38 ft (12 m) in diameter, encompassing approximately 0.03 ac. The site was delineated based on the distribution of archeological features and negative shovel tests. The site is located entirely within the APE.

During the delineation, IES investigators excavated seven shovel tests (**Appendix B.5, Photographs 5** through **7**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (10YR 3/2) or dark gray (10YR 4/1) clay to a depth of approximately 10 to 35 cmbs. Beneath that stratum, soils were generally a dark brown (10YR 3/3) clay to a depth of 35 to 50 cmbs. Shovel tests were terminated due to sterile subsoil or disturbance. All shovel tests were negative for cultural deposits.

5.2.5.1 - *Features*

Feature 1 was composed of two adjacent wells that were located in the center of the site (**Figure 5.25; Appendix B.5, Photographs 8** and **9**). Each well measured approximately 4 ft (1.2 m) in diameter. The walls of each well were concrete and extended to the ground surface. Both wells were filled with dirt.



Figure 5.25: Site 41DL602, Feature 1, View to the South

5.2.5.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 23 in Dallas County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (**Table 5.4**). Based on deed records and site observations, the site pertained to the Smith and New families' ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

Table 5.4: Chain of Title for 41DL602

Grantor	Grantee	Date	Volume	Page	Instrument Number
Sleepy Hollow Addition II of Terry Construction	Walter D. Smith	09/19/1974	74184	1033	197400161339
Walter D. Smith	Tommie and Marion Case	12/06/1978	79060	2113	197900605850
Tommie and Marion Case	Jerry and Marry Jessup New	02/12/1980	80031	1368	198000316107
Mary Jessup New	Waste Management of Texas	4/21/1995	95079	1822	199500791947

5.2.5.3 - *Site Summary*

Site 41DL602 was documented within an approximately 38 ft (12 m) in diameter area, encompassing approximately 0.03 ac a within the APE. One feature containing adjacent wells was encountered. The site represents a farmstead dating to the mid-twentieth century. Seven shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.6 - *41EL306*

This newly documented historic-period site was encountered within the central portion of the APE (**Figure 5.26**). The site featured the remains of a house constructed in the early 1970s. The house was demolished in 2016. The site was located within an upland prairie setting on a property lot along Nolan Road. Ground surface visibility was limited as a result of vegetation cover and illegal dumping of modern trash along the former gravel driveway (**Appendix B.6, Photographs 1** through **3**). The site was documented within an area extending approximately 113 ft (35 m) north-to-south by 86 ft (26 m) east-to-west, encompassing approximately 0.18 ac. The site was delineated based on the distribution of archeological features, negative shovel tests, and observed disturbances. The site is located entirely within the APE

During the delineation, IES investigators excavated eight shovel tests (**Appendix B.6, Photographs 4** through **7**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of black (10YR 2/1) or very dark brown (10YR 2/2) clay or clay loam to a depth of approximately 10 to 40 cmbs. Beneath that stratum, soils varied from a very dark grayish brown (10YR 3/2) to black (10YR 2/1) clay to a depth of 30 to 55 cmbs. Shovel tests excavated near the former driveway areas exhibited disturbed soils containing gravel and soil mottling. Shovel tests were terminated due to encountering sterile subsoil or ground disturbance. All shovel tests were negative for cultural deposits.

5.2.6.1 - *Features*

Feature 1 was a concrete slab foundation located in the center of the site (**Figure 5.27**; **Appendix B.6, Photographs 8** through **12**). The feature measured approximately 70 by 33 ft (22 by 10 m) northwest-southeast by northeast-southwest. House siding was observed scattered on the surface of the feature. Small sections of linoleum flooring still covered parts of the foundation.

5.2.6.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (**Table 5.5**). Based on deed records and site observations, the site pertained to the Bradshaw family ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.


EG34
EG33
JF41
JF42
Feature 1
JF43
AG42
AG40
AG41
Figure 5.26
Site 41EL306 Plan Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Figure 5.27: Site 41EL306, Feature 1, View to the North

Table 5.5: Chain of Title for 41EL306

Grantor	Grantee	Date	Volume	Page	Instrument Number
Sleepy Hollow Addition II of Terry Construction	Public (Dallas and Ellis Counties)	12/01/1966	958	1206	196600169160
B&J Builders & Supply	United Savings Association of Texas	12/05/1977	78006	1367	1978005061751
United Savings Association of Texas	W.L. Bradshaw	08/24/1992	92178	3863	199201789533
W.L. Bradshaw	Waste Management of Texas	05/12/1995	95094	183	199500941169

5.2.6.3 - *Site Summary*

Site 41EL306 was documented within an area approximately 113 ft (35 m) north-to-south by 86 ft (26 m) east-to-west, encompassing approximately 0.18 ac within the APE. One concrete slab foundation feature was encountered. The site represents a historic-period house constructed in the early 1970s and demolished in 2016. Eight shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.7 - *41EL307*

This newly recorded historic-age site was encountered within the central portion of the APE (**Figure 5.28**). The site pertained to a farmstead constructed in the 1970s. The site was located within an upland prairie setting near Nolan Road. Ground surface visibility was limited due to vegetation cover and leaf litter. Site 41EL307 was documented within an area extending approximately 180 ft (55 m) north-to-south by 317 ft (97 m) east-to-west, encompassing approximately 0.73 ac. The site was delineated based on the distribution of archeological features and negative shovel tests. The site is located entirely within the APE.



Figure 5.28
Site 41EL307 Plan Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 100 200 ft
0 30 61 m

Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

The site contained five surface features and a few surface artifacts. These artifacts included metal shearing scissors and a shard of solarized bottle glass, which dates to the late nineteenth or early twentieth centuries (**Appendix B.7, Photographs 1** and **2**). The glass shard was located near the footprint of a former house depicted in aerial photographs dating to the 1950s. The house may have been constructed much earlier, as historical maps available for Ellis County do not illustrate many buildings or structures overall. Modern plastic and rubber trash was observed near the features.

During the delineation, IES investigators excavated 10 shovel tests (**Appendix B.7, Photographs 3** and **4**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (10YR 3/2) or dark gray (10YR 4/1) clay or clay loam to a depth of approximately 15 to 35 cmbs. Beneath that stratum, soils were generally black (10YR 2/1) or very dark gray (10YR 3/1) clay to a depth of 30 to 45 cmbs. Shovel tests were terminated due to sterile subsoil. All shovel tests were negative for cultural deposits.

5.2.7.1 - *Features*

Feature 1 was a barn located in the center of the site (**Figure 5.29**; **Appendix B.7, Photographs 5** through **9**). The feature measured approximately 36 by 64 ft (11 by 20 m) north-south by east-west. At the time of survey, portions of the barn had collapsed. Parts of the feature still standing displayed wood framing covered with corrugated metal sheeting. The barn interior contained an animal pen, piles of lumber, metal farm equipment, and wooden shelving units. According to historical aerial photographs, the barn was constructed in the 1970s.

Feature 2 was a brick and concrete block-lined drainage channel in the southern part of the site (**Figure 5.30**; **Appendix B.7, Photographs 10** and **11**). The feature was located 75 ft (23 m) south of Feature 1. The feature extended approximately 110 ft (34 m) along the drainage and was 15 ft (4 m) in width. The feature was mostly composed of a single layer of unmarked, three-hole, machine-made brick. One section of the canal near the western feature end contained a single layer of concrete block. The feature was not clearly visible in aerial photographs until 1995.

Feature 3 was a concentration of artifacts located approximately 65 ft (20 m) west of Feature 1 (**Figure 5.31**; **Appendix B.7, Photograph 12**). The feature measured approximately 12 by 31 ft (4 by 10 m). The feature was composed of a scatter of unmarked brick fragments similar to those used in Feature 2. Plastic trash was observed on the surface of the feature. Historical aerial photographs indicate a small shed was located in the vicinity of the feature beginning in the 1970s. The shed appears to have been removed between 1995 and 2001.

Feature 4 was a pile of concrete cinderblocks encountered approximately 52 ft (16 m) east of Feature 1 and north of the drainage that flows into Feature 2 (**Figure 5.32**; **Appendix B.7, Photographs 13** and **14**). The feature measured approximately 17 ft (5 m) in diameter and about 2 ft (0.6 m) in height. The majority of the blocks in the feature appeared to be broken.

Feature 5 was a small shed located approximately 55 ft (17 m) east-northeast of Feature 4 (**Figure 5.33**; **Appendix B.7, Photographs 15** and **16**). The feature measured approximately 7 by 9 ft (2 by 3 m). The shed was composed of wood framing covered with corrugated metal sheeting. The feature is visible in aerial photographs as early as 1979.

5.2.7.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.5**). Based on deed records and site observations, the site pertained to the Bradshaw family ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.



Figure 5.29: Site 41EL307, Feature 1, View to the South



Figure 5.30: Site 41EL307, Feature 2, View to the Northwest



Figure 5.31: Site 41EL307, Feature 3, View to the Southwest



Figure 5.32: Site 41EL307, Feature 4, View to the North



Figure 5.33: Site 41EL307, Feature 5, View to the East

5.2.7.3 - *Site Summary*

Site 41EL307 was documented within an area approximately 180 ft (55 m) north-to-south by 317 ft (97 m) east-to-west, encompassing approximately 0.73 ac within the APE. The site contained five surface features, representing a historic-period farmstead largely constructed in the 1970s with an earlier component possibly dating to the late nineteenth or early twentieth century. Ten shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.2.8 - *41EL308*

This newly recorded historic-age site was encountered within the central portion of the APE (**Figure 5.34**). The site encompassed the foundation of a house located on a subdivided property lot south of Nolan Road (**Appendix B.8, Photographs 1** and **2**). The house was constructed between 1968 and 1972. In the 1970s, a detached shed or garage was built west of the main house. The house was demolished in 2016. A modern storage shed was located south of the site on the same property lot (**Appendix B.8, Photograph 3**).

Ground surface visibility was limited due to grass cover and leaf litter. Site 41EL308 was documented within an area extending approximately 82 ft (25 m) north-to-south by 146 ft (45 m) east-to-west, encompassing approximately 0.22 ac. The site was delineated based on the distribution of archeological features, negative shovel tests, and identified property boundaries. The site appeared to be located entirely within the APE.

During the delineation of site 41EL308, IES investigators excavated six shovel tests (**Appendix B.8, Photograph 4**). The soil profile exposed during shovel testing within the site was generally uniform and consisted of an upper stratum of very dark grayish brown (10YR 3/2) or dark gray (10YR 4/1) clay to a depth of approximately 10 to 40 cmbs. Beneath that stratum, soils were generally a black (10YR 2/1) or very dark gray (10YR 3/1) clay to a depth of 20 to 50 cmbs. Shovel tests were terminated due to sterile subsoil or disturbance. All shovel tests were negative for cultural deposits.


EG39
EG38
JF47
Feature 1
JF48
AG46
AG47
EG2
Figure 5.34
Site 41EL308 Plan Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Historical-Period Feature
Positive Shovel Test
Negative Shovel Test
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site
location information

5.2.8.1 - *Features*

Feature 1 was the concrete slab foundation of a house that measured approximately 84 by 53 ft (25 by 16 m) in the center of the site (**Figure 5.35; Appendix B.8, Photographs 5** and **6**). No artifacts were encountered on the foundation or around it.

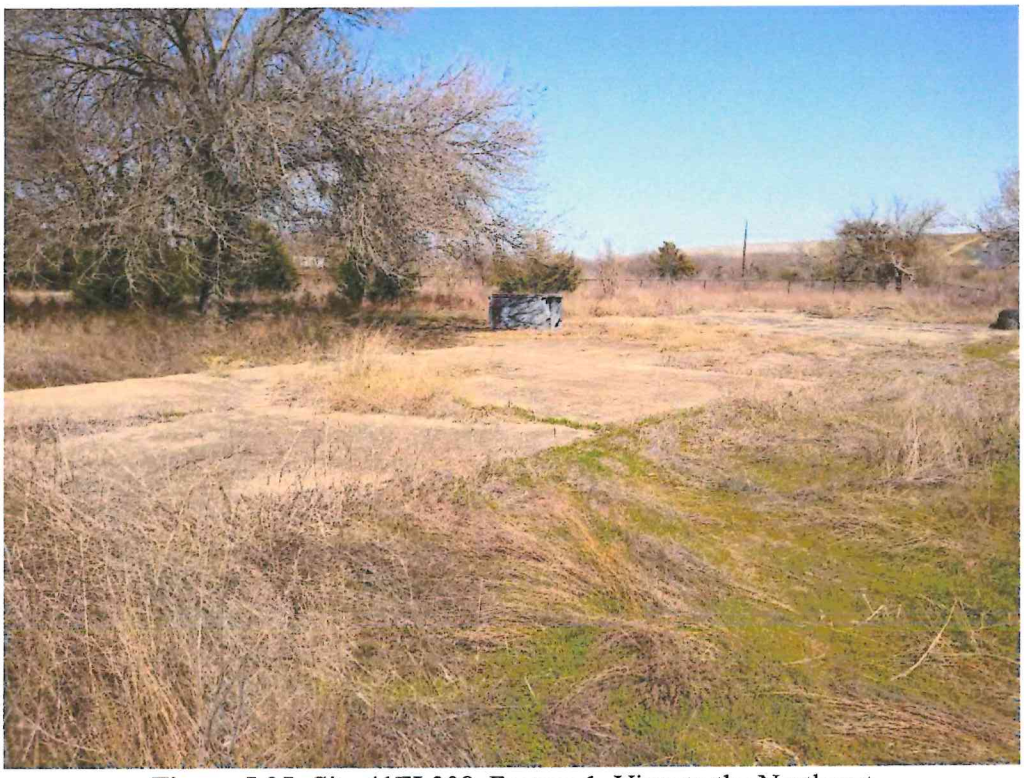


Figure 5.35: Site 41EL308, Feature 1, View to the Northeast

5.2.8.2 - *Archival Research*

The site was located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.5**). Based on deed records and site observations, the site pertained to the Bradshaw family ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

5.2.8.3 - *Site Summary*

Site 41EL308 was documented within an approximately 82 ft (25 m) north-to-south by 146 ft (45 m) east-to-west area, encompassing approximately 0.22 ac within the APE. The site contained a concrete slab foundation associated with a house constructed between 1968 and 1972 and demolished in 2016. Six shovel tests were excavated in the site's vicinity during intensive survey and site delineation, none of which yielded cultural materials.

5.3 Above-Ground Resources

Through detailed background research and reconnaissance survey, six historic-age, above-ground resources were identified and documented within the APE (**Figure 5.36**). Resources 1 through 6 pertain to former farmsteads and a residence along Nolan Road and High Ridge Drive. The composition, characteristics, NRHP eligibility, and integrity (if applicable) of these resources are summarized in this section. Additional representative photographs are provided within **Appendix C**.

5.3.1 - *R-1*

Resource 1 (R-1) was an agricultural shed located on rural property at 2610 Nolan Road (**Table 5.6; Appendix C.1, Photographs 1** through **3**). It encompassed 100 square ft (ft^2) and was designed in the agricultural utilitarian style. The characteristics attributed to this design are vernacular materials (wood and/or sheet metal), wide, open footprints, and simplistic ornamentation. Reflective of this design, the agricultural shed featured a moderately-pitched, shed-style, and a heavily bowed, plywood roof. The building sat upon a compact soil foundation, and the building's perimeter was missing walls along each elevation. The wooden cylindrical beams were exposed, and adjacent fascia surrounded the roofline. Stone blocks were present along the northeastern elevation of the shed.

5.3.1.1 - *Archival Research*

The resource was constructed between 1968 and 1972 on a small farm tract located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.5**). Based on deed records and field observations, R-1 pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

5.3.1.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a storage shed on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture The building was associated with an era when much of the Ferris area was still predominantly rural and featured farmsteads with main residences and various agricultural outbuildings. Despite the agricultural shed's association to the historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Criterion B: During background research, it was determined the resource was not associated with any historically significant individuals.

Criterion C: The resource possessed many of the character-defining features associated with the agricultural utilitarian style, such as vernacular materials (local timber for framing) and simplistic, minimalistic architecture. While the resource possessed a high degree of integrity, it did not possess any distinguishable significance under the themes of Architecture as it did not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural utilitarian architectural development within the region.

Criterion D: The resource was typical of twentieth-century agricultural architecture and was well represented within the North Central Texas region. As such, R-1 did not possess potential to yield important information regarding construction methods and materials.



Figure 5.36
Above Ground Resources

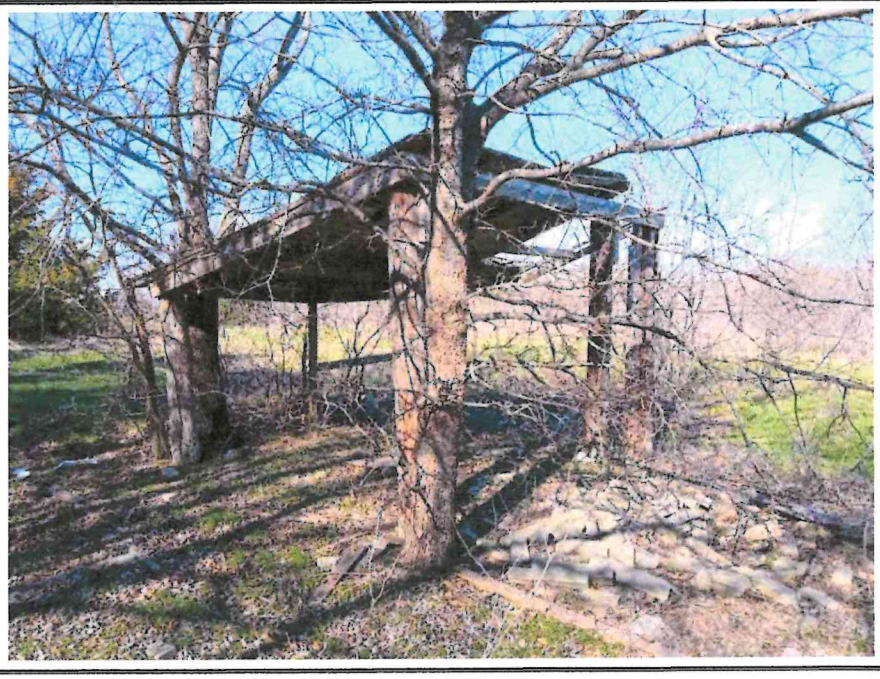
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 500 1,000 ft
0 150 300 m

Area of Potential Effects
Above Ground Resource

Table 5.6: R-1

Construction Date / Architectural Elements	Appendix C.1, Photograph 1
Built between 1968-1972 agricultural shed/wood exterior/compact soil foundation/shed roof.	

5.3.2 - *R-2*

Resource 2 (R-2) was a barn located at 2915 Nolan Road (**Table 5.7; Appendix C.2, Photographs 1** through **3**). It encompassed 1,650 ft^2 and was designed in the agricultural utilitarian style. The characteristics attributed to this design are vernacular materials (wood and/or sheet metal), open, wide footprints, and simplistic ornamentation. Reflective of this design, the barn featured a moderately-pitched, front gabled, and a ribbed corrugated roof extended with metal fascia. The building sat upon a compact soil foundation, with wood-framing and had an S-corrugated metal exterior selection along each wall. No fenestration was present; however, an S-corrugated metal sliding door entryway was present along the southwest wall.

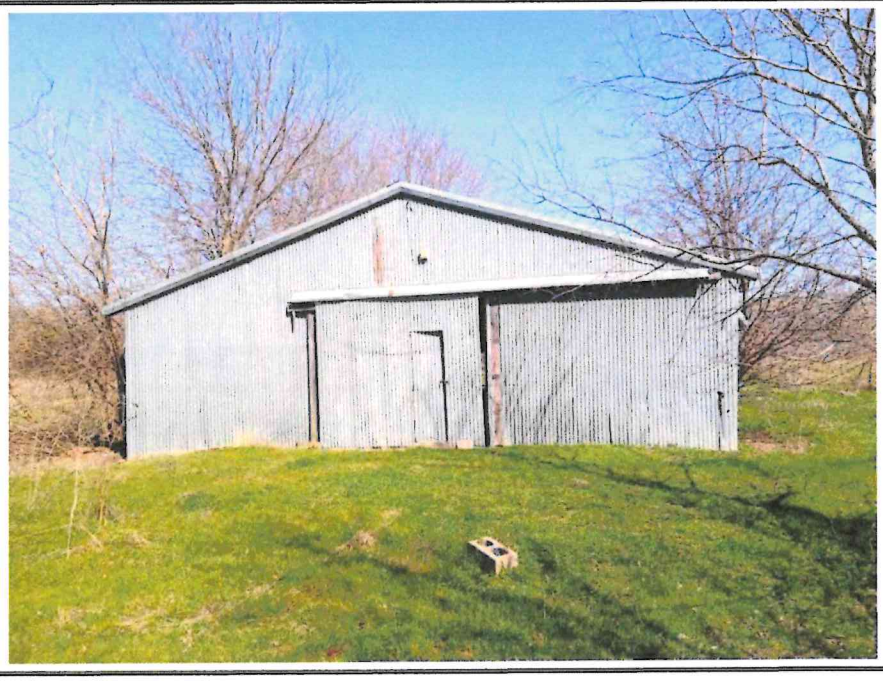
5.3.2.1 - *Archival Research*

The barn was constructed between 1972 and 1979 and was located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.5**). Based on deed records and field observations, R-2 pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

5.3.2.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a barn on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture. The building was associated with an era when much of the Ferris area was still predominantly rural and featured farmsteads with main residences and various agricultural outbuildings. Despite the barn's association with this historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Table 5.7: R-2

Construction Date / Architectural Elements	Appendix C.2, Photograph 1
Built between 1972 and 1979/ S-corrugated metal exterior/compact soil foundation/front-gabled roof.	

Criterion B: During background research, it was determined R-2 was not associated with any historically significant individuals.

Criterion C: R-2 possessed many of the character-defining features associated with the agricultural utilitarian style, such as vernacular materials (local timber for framing) and simplistic, minimalistic architecture. While the resource possessed a high degree of integrity, it did not possess any distinguishable significance under the themes of Architecture, as it did not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural utilitarian architectural development within the region.

Criterion D: R-2 was typical of twentieth-century agricultural architecture and was well represented within the North Central Texas region. As such, R-2 did not have the potential to yield important information regarding construction methods and materials.

5.3.3 - *R-3*

Resource 3 (R-3) was a double-level residence located on a lot at 2750 Nolan Road (**Table 5.8; Appendix C.3, Photographs 1** and **2**). It encompassed 2,800 ft^2 and was designed in the Minimal Traditional style, which was popular after WWII. The characteristics attributed to this design are economic massing, vernacular materials, and simplistic ornamentation. Reflective of this design, the residence featured a moderately-pitched, front-gabled, and an asphalt-shingled roof extended with large eaves. The building sat upon a concrete slab foundation with a plywood and fiber cement exterior along each wall. Fenestration was present along each wall and is mostly composed of wood hung units. Single-door entryways were also present on the east and west walls.

5.3.3.1 - *Archival Research*

The residence was constructed between 1972 and 1979 and was located within the 160-ac James Abbott Survey, Abstract 16 in Ellis County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP

Criterion A and/or B (*see* **Table 5.5**). Based on deed records and field observations, R-3 pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

5.3.3.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a residence on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture. The building was associated with an era when much of the Ferris area was still predominantly rural and featured farmsteads with main residences and various agricultural outbuildings. Despite the residence's association to this historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Criterion B: During background research, it was determined that the resource was not associated with any historically significant individuals.

Table 5.8: R-3

Construction Date / Architectural Elements	**Appendix C.3, Photograph 1**
Built between 1972 and 1979/featured plywood and fiber cement siding exterior/concrete slab foundation/front gabled roof.	

Criterion C: The resource possessed many of the character-defining features associated with the Minimal Traditional style, such as vernacular materials (local timber for framing) and simplistic, minimalistic architecture. The resource does not possess any distinguishable significance under the themes of Architecture as it does not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural residential architectural development within the region.

Criterion D: The resource was typical of twentieth-century agricultural residential and was well represented within the North Central Texas region. As such, the resource did not have the potential to yield important information regarding construction methods and materials.

5.3.4 - *R-4*

Resource 4 (R-4) was a large barn once associated with the house at archeological site 41DL599 and was located at 2625 Nolan Road (**Table 5.9; Appendix C.4, Photographs 1** through **6**). It encompassed 1,650 ft^2 and was designed in the agricultural utilitarian style. The characteristics attributed to this design are vernacular materials (wood and/or sheet metal), open, wide footprints, and simplistic ornamentation. Reflective of this design, the barn featured a low-pitched, front-gabled, and an S-corrugated metal roof extended with large eaves. The building sat upon a compact soil foundation, metal framed, and had an S-corrugated metal exterior along each wall. No fenestration was present; however, a metal, sliding door entryway was present along the northwest wall.

5.3.4.1 - *Archival Research*

The barn was constructed between 1972 and 1979 and was located within the 160-ac James Abbott Survey, Abstract 23 in Dallas County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.2**). Based on deed records and site observations, the resource most likely pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project website, or other local history resources.

5.3.4.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a barn on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture. Despite the barn's association with this historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Criterion B: During background research, it was determined that the resource was not associated with any historically significant individuals.

Criterion C: The resource possessed many of the character-defining features associated with the agricultural utilitarian style, such vernacular materials (metal poles for framing) and simplistic, minimalistic architecture. While the resource possessed a high degree of integrity, it did not possess any distinguishable significance under the themes of Architecture, as it did not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural utilitarian architectural development within the region.

Criterion D: The resource was typical of twentieth-century agricultural construction and was well represented within the North Central Texas region. As such, the resource did not have the potential to yield important information regarding construction methods and materials.

Table 5.9: R-4

Construction Date / Architectural Elements	Appendix C.4, Photograph 1
Built between 1972 and 1979 barn/featured S-corrugated metal exterior/concrete slab foundation/front-gable roof.	

5.3.5 - *R-5*

Resource 5 (R-5) was a livestock shed located at 2708 Nolan Road (**Table 5.10; Appendix C.5, Photographs 1** through **5**). It encompassed 800 ft^2 and was designed in the agricultural utilitarian style. The characteristics attributed to this design are vernacular materials (wood and/or sheet metal), open, wide footprints, and simplistic ornamentation. Reflective of this design, the barn featured a low-pitched, side-gabled, and an S-corrugated metal roof extended with large eaves. The building sat upon a compact soil foundation, was timber framed, and had an S-corrugated metal exterior along each wall. No fenestration was present; however, doorless entryways were located along the southeast wall.

5.3.5.1 - *Archival Research*

The shed was constructed between 1972 and 1979 and was located within the 160-ac James Abbott Survey, Abstract 23 in Dallas County, patented on 27 September 1859. Using public records provided by the DCCO, a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.2**). Based on deed records and site observations, the resource most likely pertained to the Bradshaw family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project website, or other local history resources.

5.3.5.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a livestock shed on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture. The building was associated with an era when much of the Ferris area was still predominantly rural and featured farmsteads with main residences and various agricultural outbuildings. Despite the shed's association with this historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Criterion B: During background research, it was determined that the resource was not associated with any historically significant individuals.

Criterion C: The resource possessed many of the character-defining features associated with the agricultural utilitarian style, such as vernacular materials (timber for framing and corrugated metal) and simplistic, minimalistic architecture. While the resource possessed a high degree of integrity, it did not possess any distinguishable significance under the themes of Architecture, as it did not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural utilitarian architectural development within the region.

Criterion D: The resource was typical of twentieth-century agricultural construction and was well represented within the North Central Texas region. As such, the resource did not have the potential to yield important information regarding construction methods and materials.

Table 5.10: R-5

Construction Date / Architectural Elements	Appendix C.5, Photograph 1
Built between 1972 and 1979/featured S-corrugated metal exterior/compact soil foundation/side-gabled roof.	

5.3.6 - *R-6*

Resource 6 (R-6) was a small-scale shed located at 3418 High Ridge Drive (**Table 5.11; Appendix C.6, 1** through **4**). It encompassed 80 ft^2 and was designed in agricultural utilitarian style. The characteristics attributed to this design are vernacular materials (wood framing and siding) and simplistic ornamentation. Reflective of this design, the building featured a moderately-pitched, side-gabled, and an S-corrugated metal roof extended with large. The building sat upon a compact soil foundation and had a wood siding exterior along each wall. Fenestration was not present; however, the southeast wall featured a single-door entryway.

5.3.6.1 - *Archival Research*

The shed was constructed between 1961 and 1968 and was located within the 97-ac M.L. Swing & G.W. Laws Survey, Abstract 1447, patented on 01 November 1861. Using public records provided by the DCCO,

a chain-of-title for the property was produced to determine potential eligibility under NRHP Criterion A and/or B (*see* **Table 5.11**). Based on deed records and site observations, the resource most likely pertained to the Gipson family's ownership of the property. No names presented within the chain-of-title were listed in the Handbook of Texas Online, the TxGenWeb Project.

5.3.6.2 - *Evaluation of Significance*

Criterion A: The resource was a structure constructed as a shed on land utilized for agricultural purposes and was associated with a significant historical theme of Agriculture. Despite the shed's association with this historic era of the region, it did not appear to be associated with a specific event(s) or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region.

Criterion B: During background research, it was determined that the resource was not associated with any historically significant individuals.

Table 5.11: R-6

Construction Date / Architectural Elements	**Appendix C.6, Photograph 1**
Built between 1961 and 1968/ small-scale shed/featured wood siding exterior/compact soil foundation/side-gable roof.	

Criterion C: The resource possessed many of the character-defining features associated with the agricultural utilitarian style, such as vernacular materials (timber for framing and corrugated metal) and simplistic, minimalistic architecture. While the resource possessed a high degree of integrity, it did not possess any distinguishable significance under the themes of Architecture, as it did not embody the characteristics of any high architectural style, was not known to be the work of a master, nor was it associated with broad agricultural utilitarian architectural development within the region.

Criterion D: is the resource was typical of twentieth-century agricultural construction and was well represented within the North Central Texas region. As such, the resource did not have the potential to yield important information regarding construction methods and materials.

CHAPTER 6: SUMMARY, RECOMMENDATIONS, AND CONCLUSIONS

6.1 Summary and Recommendations

During the cultural resources survey for the Skyline Landfill Expansion Project, the 287-ac APE was inspected through pedestrian reconnaissance and intensive archeological survey. During the intensive survey, 169 shovel tests were excavated within the APE. Through the survey, eight newly recorded archeological sites (41DL598, 41DL599, 41DL600, 41DL601, 41DL602, 41EL306, 41EL307, and 41EL308) were encountered. In addition, six above-ground resources were identified within the APE. A summary of the encountered resources and NRHP eligibility recommendations are provided within this chapter and are summarized within **Table 6.1**.

Table 6.1: Summary of NRHP Eligibility Recommendations

Resource ID	NRHP Eligibility Recommendations
41DL598	Not eligible
41DL599	Not eligible
41DL600	Not eligible
41DL601	Not eligible
41DL602	Not eligible
41EL306	Not eligible
41EL307	Not eligible
41EL308	Not eligible
R-1	Not eligible
R-2	Not eligible
R-3	Not eligible
R-4	Not eligible
R-5	Not eligible
R-6	Not eligible

41DL598 was a newly recorded historic-period site containing the remnants of a house constructed in the mid-twentieth century. During the IES survey, four features associated with the home were observed, including concrete slab foundation, a sidewalk, and two wells or cisterns. Non-diagnostic construction debris was observed on the surface. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41DL599 was a newly recorded historic-period site containing the remnants of a house constructed in the mid-twentieth century. During the IES survey, three features associated with the property were observed. Surface materials largely consisted of construction debris, such as lumber, shingles, and unmarked bricks, from the recently demolished house. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the

surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, this site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41DL600 was a newly recorded historic-period site containing three features pertaining to modifications to waterways and a trash deposit. These features generally dated to the mid- and late-twentieth century. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41DL601 was a newly recorded historic-period site containing a well feature associated with a mid-twentieth-century farmstead. During the IES survey, four features associated with the home were observed. One shovel test contained a fragment of concrete, possibly associated with a structure identified on historical aerial photographs. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41DL602 was a newly recorded historic-period site containing two adjacent concrete wells associated with a mid-twentieth-century farmstead. No other cultural resources were encountered. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended that 41DL602 is not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41EL306 was a newly recorded historic-period site containing the remnants of a house constructed in the mid-twentieth century. The feature consisted of an intact concrete slab foundation. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended t not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41EL307 was a newly recorded historic-period site containing features and artifacts associated with a farmstead largely constructed in the mid-twentieth century. The site featured a barn, an agricultural shed, brick and concrete lined-drainage channel, and piles of debris. Artifacts encountered on the surface included shears and a piece of solarized glass, which may be associated with an early twentieth-century occupation formerly located in the vicinity of the farmstead. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

41EL308 was a newly recorded historic-period site containing the remnants of a house constructed in the mid-twentieth century. The site featured concrete slab foundation and a modern shed were observed on a subdivided residential lot. The site did not retain sufficient data to contribute important information regarding community development in the City of Ferris or the surrounding region during the twentieth century. As such, the site was considered to have little research potential and was not likely to yield any additional information relevant to understanding the historic period within the region. Due to the lack of association with a significant historical event(s) or person(s), the lack of important architectural features, and the low potential to yield significant archeological data, the site did not meet NRHP significance standards under Criteria A, B, C, or D and was recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

R-1 through **R-6** were buildings associated with former farmsteads and a residence within the APE. During the assessment of the above-ground resources, it was concluded that resources R-1 through R-6 pertained to architectural styles from the mid-twentieth century. The resources did not appear to be associated with a specific event or pattern of events that have made a significant contribution to the broad patterns of agriculture of Ferris and the broader Dallas-Fort Worth region. Through archival research, it was determined that none of the resources were associated with a significant person. None of these resources possessed high artistic value, nor were they determined to be the work of a master. The resources are derivative of agricultural utilitarian and Minimal Traditional construction, which was occurring in both suburban, urban, and rural areas in the Dallas-Fort Worth region and beyond around this time and do not contribute significantly to the themes of Agriculture and Architecture. As such, R-1 through R-6 are recommended as not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4.

6.2 Conclusions

Based on the findings of this due diligence cultural resources survey, IES recommends the project be allowed to proceed as planned. If any human remains are encountered during construction, the operators should immediately cease work in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to evaluate the findings to provide management and consultation guidance prior to resuming construction activities.

This page intentionally left blank

CHAPTER 7: REFERENCES CITED

Abbott, J. T.

2001 *Houston Area Geoarchaeology: A Framework for Archeological Investigation, Interpretation, and Cultural Resources Management in the Houston Highway District.* Report 27. Archeological Studies Program, Environmental Affairs Division, Texas Department of Transportation, Austin.

2011 *Geoarchaeology of North-Central Texas: A Framework for Archeological Investigation, Interpretation, and Cultural Resources Management in the Fort Worth Highway District.* Report 130, Archeological Studies Program, Environmental Affairs Division, Texas Department of Transportation, Austin

Brooks, C. A., et al.

1964 *Soil Survey of Ellis County, Texas.* United States Department of Agriculture, Soil Conservation Services, in cooperation with Texas Agricultural Experiment Station.

Coffee, D. R., et al.

1980 *Soil Survey of Dallas County, Texas.* United States Department of Agriculture, Soil Conservation Service, in cooperation with Texas Agricultural Experiment Station.

Council of Texas Archeologists (CTA)

2020 Revised Archeological Survey Standards for Texas. *CTA Newsletter* 44(1).

2024 Guidelines and Standards for Reports. *CTA Newsletter* 48(1).

Estaville, Lawrence, and Richard Earl

2008 *Texas Water Atlas.* Texas A&M University Press, College Station.

Graves, Jim

2012 Brick Manufactures of the United States. Unpublished manuscript.

Griffith, Glenn, Sandy Bryce, James Omernik, and Anne Rogers

2007 Ecoregions of Texas. Texas Commission on Environmental Quality, Austin.

Haaser, Robert J.

2020 Ellis County, *The Handbook of Texas Online.* Texas State Historical Association. https://www.tshaonline.org/handbook/entries/ellis-county (accessed June 2024).

Hart, Brian

2023 Ferris, TX, *The Handbook of Texas Online.* Texas State Historical Association. https://www.tshaonline.org/handbook/entries/ferris-tx (accessed June 2024).

Maxwell, Lisa C.

2021 Dallas County, *The Handbook of Texas Online.* Texas State Historical Association. https://www.tshaonline.org/handbook/entries/dallas-county (accessed June 2024).

McGowen, J. H., C. V. Proctor, W. T. Haenggi, D. F. Reaser, and V. E. Barnes

1987 *Geologic Atlas of Texas: Dallas Sheet.* Bureau of Economic Geology. The University of Texas at Austin.

Texas Archeological Site Atlas (TASA)

2024 Texas Archeological Sites Atlas. http://nueces.thc.state.tx.us/ (accessed May 2024).

Texas Historic Sites Atlas (THSA)

2024 Texas Historic Sites Atlas. http://nueces.thc.state.tx.us/ (accessed May 2024).

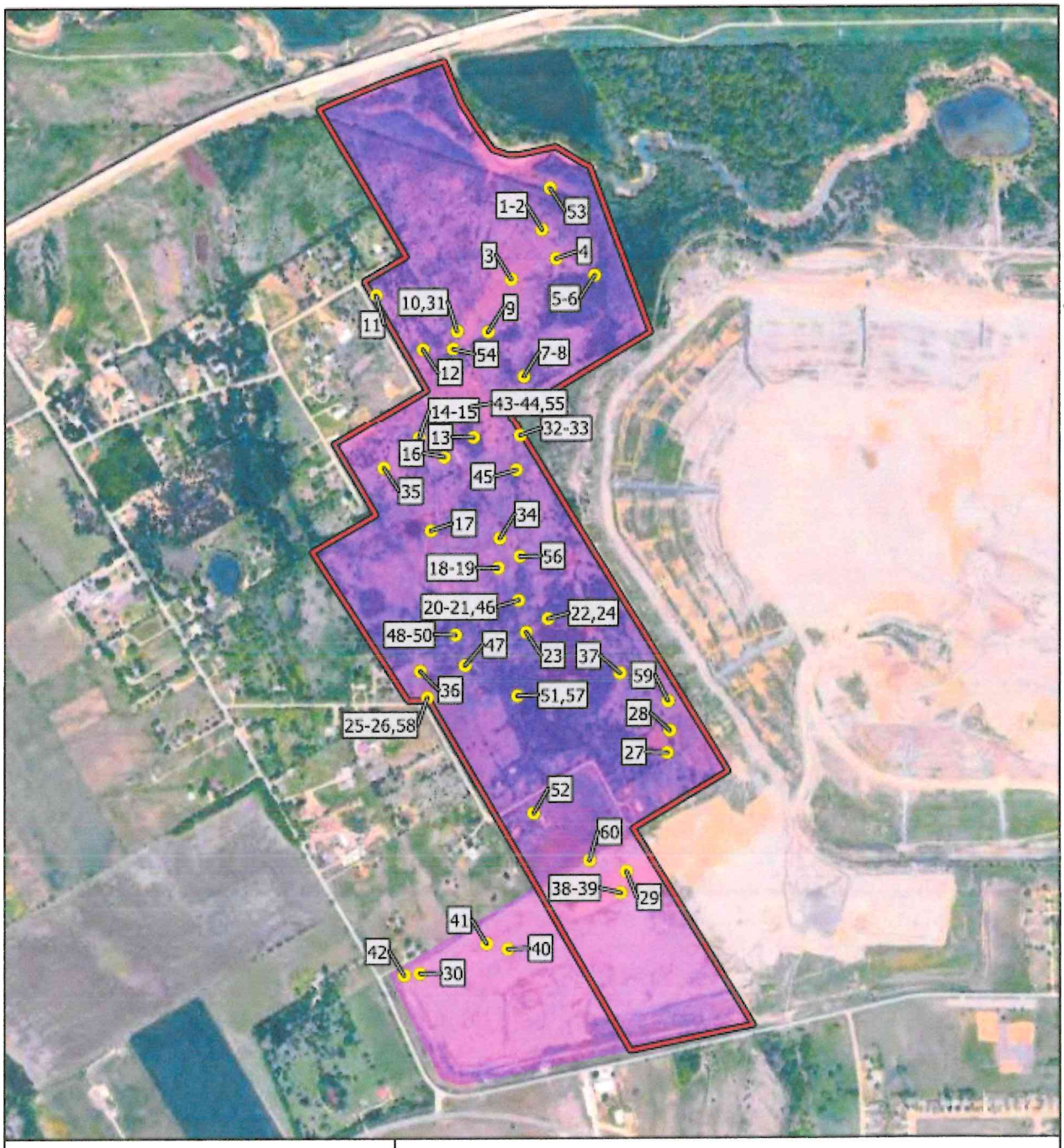
U.S. Census Bureau (USCB)

2024 Archival census records. Electronic document, https://www2.census.gov/library/publications/, accessed June 2024.

U.S. Department of Agriculture (USDA)
2024 Web Soil Survey. Natural Resources Conservation Service: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm (accessed May 2024).

U.S. Geological Survey (USGS)
2024 U.S. Department of the Interior Mineral Resources On-Line Spatial Data Website: http://mrdata.usgs.gov/sgmc/tx.html (accessed May 2024).

APPENDIX A
General Photograph Location Map and Photographs



Appendix A
General
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003



Photograph 1: Survey area overview, facing north.



Photograph 2: Survey area overview, facing west.



Photograph 3: Survey area overview, drainage, facing east.



Photograph 4: Survey area overview, inundated area, facing northeast.



ɔgraph 5: Survey area overview, forested lowland, facing north.



Photograph 6: Survey area overview, forested lowland, facing south.



Photograph 7: Survey area overview, facing west.



Photograph 8: Survey area overview, facing east.



Photograph 9: Survey area overview, facing south.



Photograph 10: Survey area overview, facing south.



ograph 11: Survey area overview, facing south.



Photograph 12: Survey area overview, trash pile, facing east.



Photograph 13: Survey area overview, tree grove, facing east.



Photograph 14: Survey area overview, facing north.



Photograph 15: Survey area overview, facing south.



Photograph 16: Brush pile on former house site, facing west.



ograph 17: Survey area overview, pond, facing west.



Photograph 18: Survey area overview, fence line, facing west.



Photograph 19: Survey area overview, facing north.



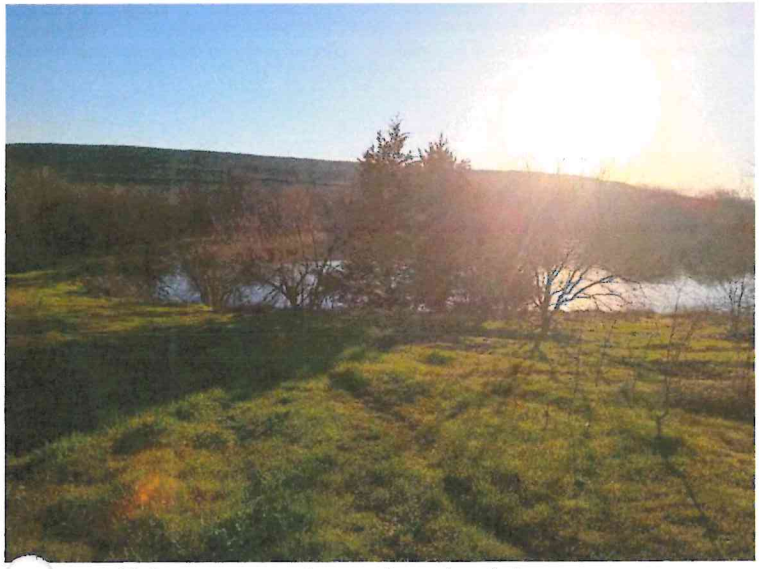
Photograph 20: Survey area overview, facing east.



Photograph 21: Survey area overview, facing south.



Photograph 22: Earthen dam along large retention pond, facing east.



ɔgraph 23: Survey area overview, pond overview, facing east.



Photograph 24: Survey area overview, pond overview, facing south.



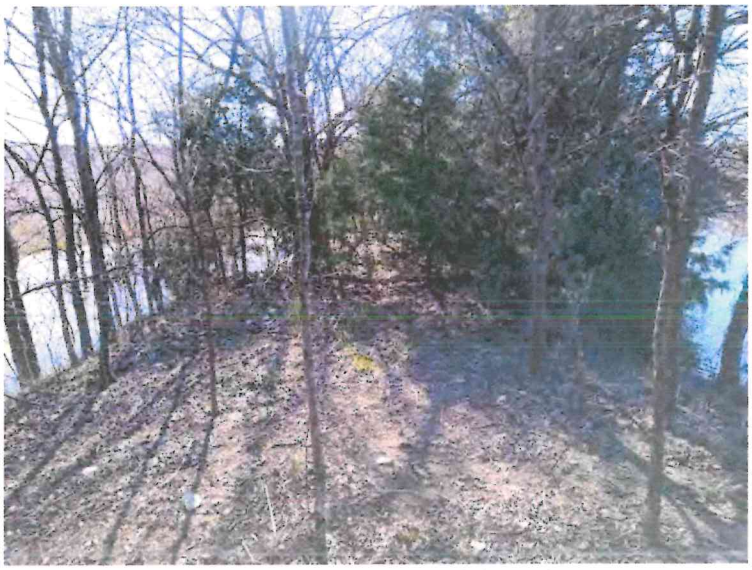
Photograph 25: Survey area overview, facing north.



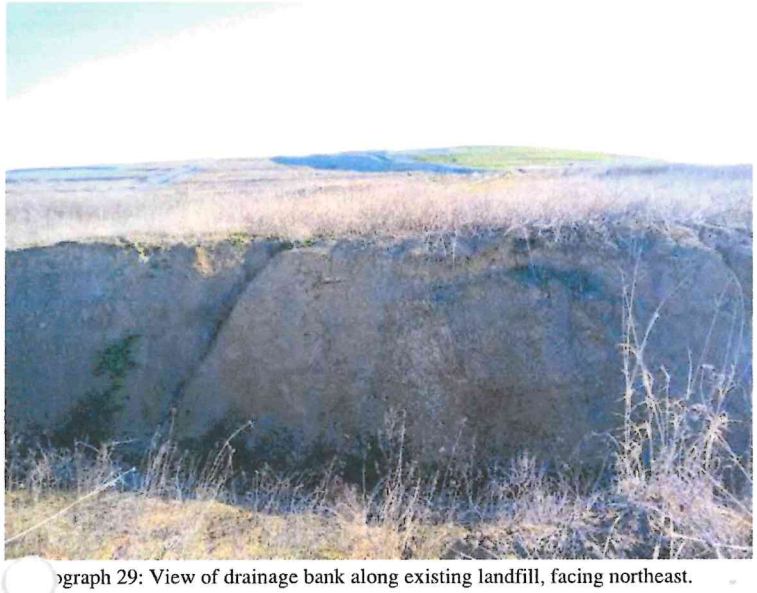
Photograph 26: Survey area overview, facing east.



Photograph 27: Survey area overview, water retention pond, facing north.



Photograph 28: Survey area overview, top of berm, facing south.



ograph 29: View of drainage bank along existing landfill, facing northeast.



Photograph 30: Survey area overview, wetland, facing southwest.



Photograph 31: Survey area overview, road and monitoring wells, facing north.



Photograph 32: Survey area overview, two track road, facing west.



Photograph 33: Push piles at end of road, facing east.



Photograph 34: Survey area overview, two track road, facing west.



ɔgraph 35: Survey area overview, two track road, facing west.



Photograph 36: Survey area overview, road corridor, facing east.



Photograph 37: Survey area overview, two track road, facing south.



Photograph 38: Top of landfill expansion, facing south.



Photograph 39: Top of landfill expansion, facing southwest.



Photograph 40: Top of landfill expansion, facing west.



ɔgraph 41: Edge of landfill, facing west.



Photograph 42: Inundated area near landfill, facing southeast.



Photograph 43: Modern house foundation, facing west.



Photograph 44: Modern house foundation, facing south.



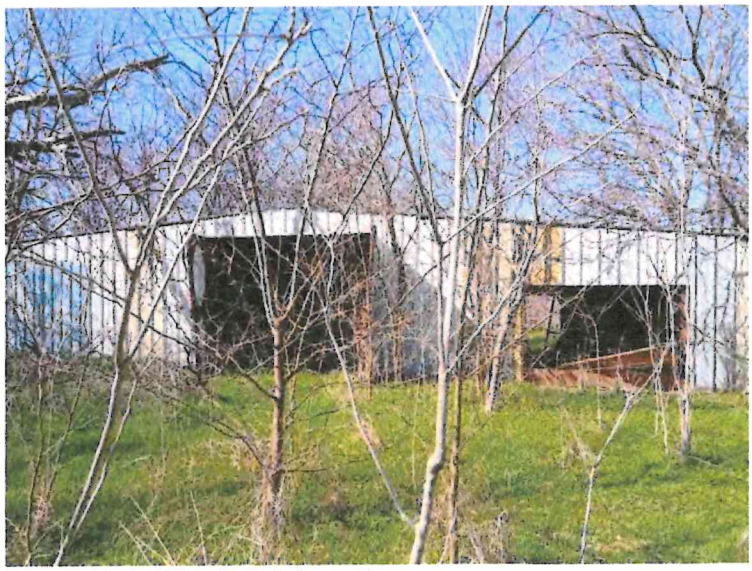
Photograph 45: Modern sheet metal shed, facing southwest.



Photograph 46: Modern collapsed shed, facing east.



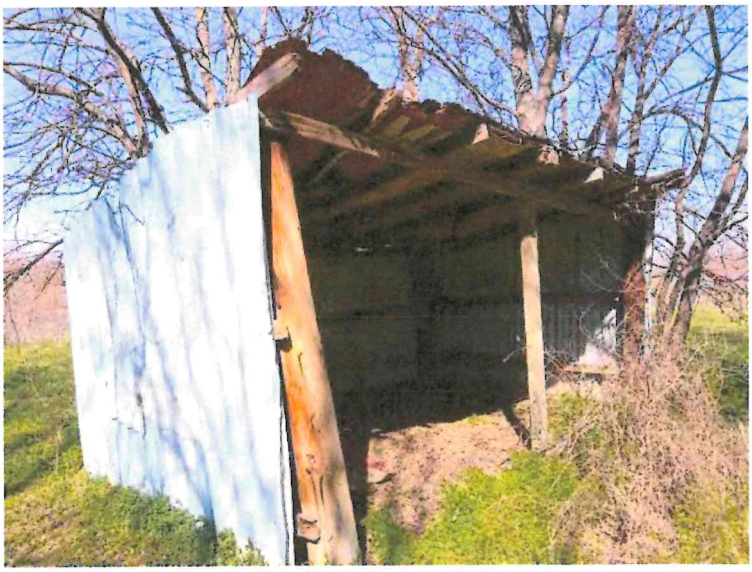
ograph 47: Modern barn, facing north.



Photograph 48: Modern barn, facing north.



Photograph 49: Barn interior, facing south.



Photograph 50: Shed associated with modern barn, facing southeast.



Photograph 51: Carport, facing west.



Photograph 52: Modern building foundation, facing southeast.



ograph 53: Soil profile, JF32.



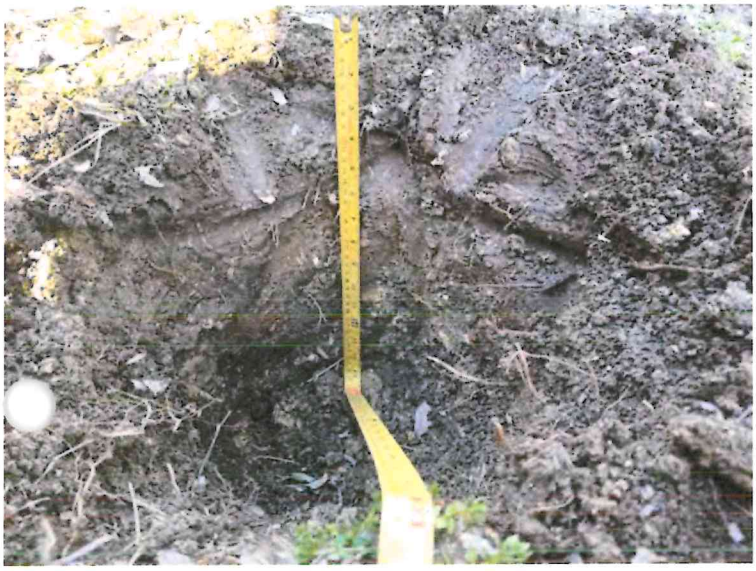
Photograph 54: Soil profile, AG25.



Photograph 55: Soil profile, AG23.



Photograph 56: Soil profile, JF14.



Photograph 57: Soil profile, JF7.



Photograph 58: Soil profile, JF5.



ograph 59: Soil profile, AG04.



Photograph 60: Soil profile, AG01.

APPENDIX B
Site Photograph Location Map and Photographs



Appendix B.1
Site 41DL598
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41DL598, Site overview, facing northeast.



Photograph 2: Site 41DL598, Site overview, facing southwest.



Photograph 3: Site 41DL598, Brush push piles on part of house footprint, facing north.



Photograph 4: Site 41DL598, Surface materials example.



ɔgraph 5: Site 41DL598, Site overview, gravel on surface, facing south.



Photograph 6: Site 41DL598, Soil profile, EG18.



Photograph 7: Site 41DL598, Soil profile, AG35.



Photograph 8: Site 41DL598, Feature 1, facing east.



Photograph 9: Site 41DL598, Feature 2, facing south.



Photograph 10: Site 41DL598, Feature 3, facing east.



ɔgraph 11: Site 41DL598, Feature 3, facing west.



Photograph 12: Site 41DL598, Feature 4.



Appendix B.2
Site 41DL599
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41DL599, Site overview, facing east.



Photograph 2: Site 41DL599, Soil profile, AG09.



Photograph 3: Site 41DL599, Soil profile, EG40.



Photograph 4: Site 41DL599, Soil profile, AG48.



ıgraph 5: Site 41DL599, Feature 1, facing north.



Photograph 6: Site 41DL599, Feature 1, facing west.



Photograph 7: Site 41DL599, Feature 1, facing south.



Photograph 8: Site 41DL599, Feature 1, facing southeast.



Photograph 9: Site 41DL599, Feature 2, facing east.



Photograph 10: Site 41DL599, Feature 3, facing south.



Appendix B.3
Site 41DL600
Photograph Location Map

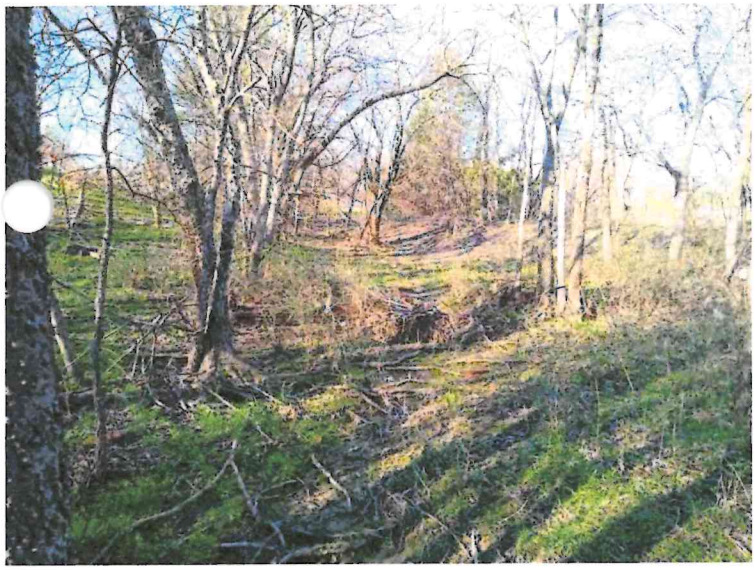
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41DL600, Site overview, facing west.



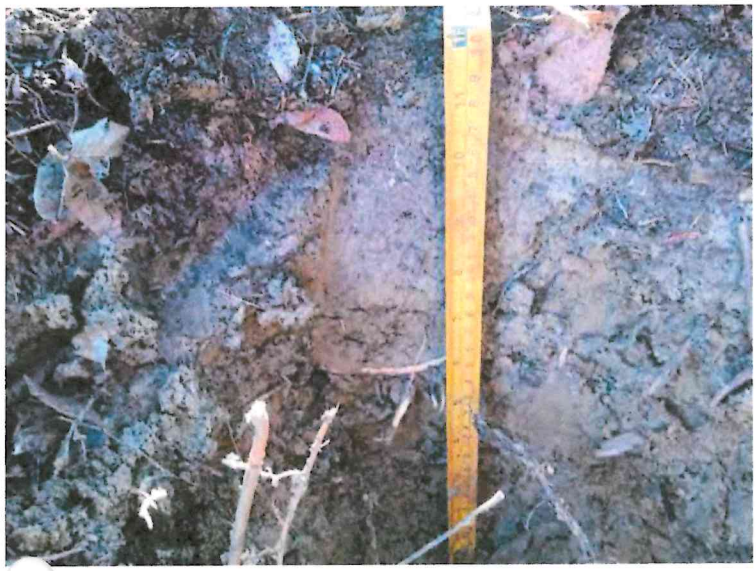
Photograph 2: Site 41DL600, Site overview, facing north.



Photograph 3: Site 41DL600, Site overview, facing west.



Photograph 4: Site 41DL600, Site overview, facing north.



ɔgraph 5: Site 41DL600, Soil profile, AG50.



Photograph 6: Site 41DL600, Soil profile, AG52.



Photograph 7: Site 41DL600, Soil profile, TL1.



Photograph 8: Site 41DL600, Feature 1, facing east.



Photograph 9: Site 41DL600, Bricks in Feature 1.



Photograph 10: Site 41DL600, Feature 2, facing north.



ıgraph 11: Site 41DL600, Feature 3, facing south.



Photograph 12: Site 41DL600, Feature 3, facing east.



Photograph 13: Site 41DL600, Surface artifact, Colorless glass bottle base; DES PAT 169344 // I I J (unknown symbol) 8 D 6.



Photograph 14: Site 41DL600, Surface artifact, Colorless glass bottle with external threads.



Photograph 15: Site 41DL600, Surface artifact, RUR Foods Inc. // 411-16 // (Ball logo) F12 // 27102 // Winston Salem N. C.



Photograph 16: Site 41DL600, Surface artifact, Colorless glass bottle; Hawaiian Punch.



ɔgraph 17: Site 41DL600, Surface artifact, Pull Tab can and BIC lighter.



Photograph 18: Site 41DL600, Surface artifact, Illinois Glass Co. // AT 79 // 19.



Photograph 19: Site 41DL600, Surface artifact, Colorless glass bottle.



Photograph 20: Site 41DL600, Surface artifact, Anchor Hocking Glass Co// 7 80 // 82.



Photograph 21: Site 41DL600, Surface artifact, Amber glass beer bottle.



Appendix B.4
Site 41DL601
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41DL601, Site overview, facing south.



Photograph 2: Site 41DL601, Site overview, facing east.



Photograph 3: Site 41DL601, Site overview, facing north.



Photograph 4: Site 41DL601, Site overview, facing west.



ograph 5: Site 41DL601, Site overview, facing northwest.



Photograph 6: Site 41DL601, Soil profile, EG45.



Photograph 7: Site 41DL601, Soil profile, TL3.



Photograph 8: Site 41DL601, Soil profile, TL5.



Photograph 9: Site 41DL601, Soil profile, AG54.



Photograph 10: Site 41DL601, Feature 1.



ograph 11: Site 41DL601, Feature 1.



Photograph 12: Site 41DL601, Feature 1 (Tape is 1m).



Appendix B.5
Site 41DL602
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41DL602, Site overview, facing east.



Photograph 2: Site 41DL602, Site overview, facing south.



Photograph 3: Site 41DL602, Site overview, facing east.



Photograph 4: Site 41DL602, Large brush pile at edge of site, facing east.



ɔgraph 5: Site 41DL602, Soil profile, AG55.



Photograph 6: Site 41DL602, Soil profile, TL6.



Photograph 7: Site 41DL602, Soil profile, TL7.



Photograph 8: Site 41DL602, Feature 1, facing south.



Photograph 9: Site 41DL602, Feature 1, facing southeast.



Appendix B.6
Site 41EL306
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Archeological Site Boundary
Photograph

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41EL306, Site overview, facing north.



Photograph 2: Site 41EL306, Site overview, modern trash and debris, facing south.



Photograph 3: Site 41EL306, Anchor Hocking baking dish from 1980s or 1990s.



Photograph 4: Site 41EL306, Soil profile, EG33 disturbed.



ograph 5: Site 41EL306, Soil profile, AG40.



Photograph 6: Site 41EL306, Soil profile, AG42.



Photograph 7: Site 41EL306, Soil profile, JF42.



Photograph 8: Site 41EL306, Feature 1, facing north.



Photograph 9: Site 41EL306, Feature 1, facing south.



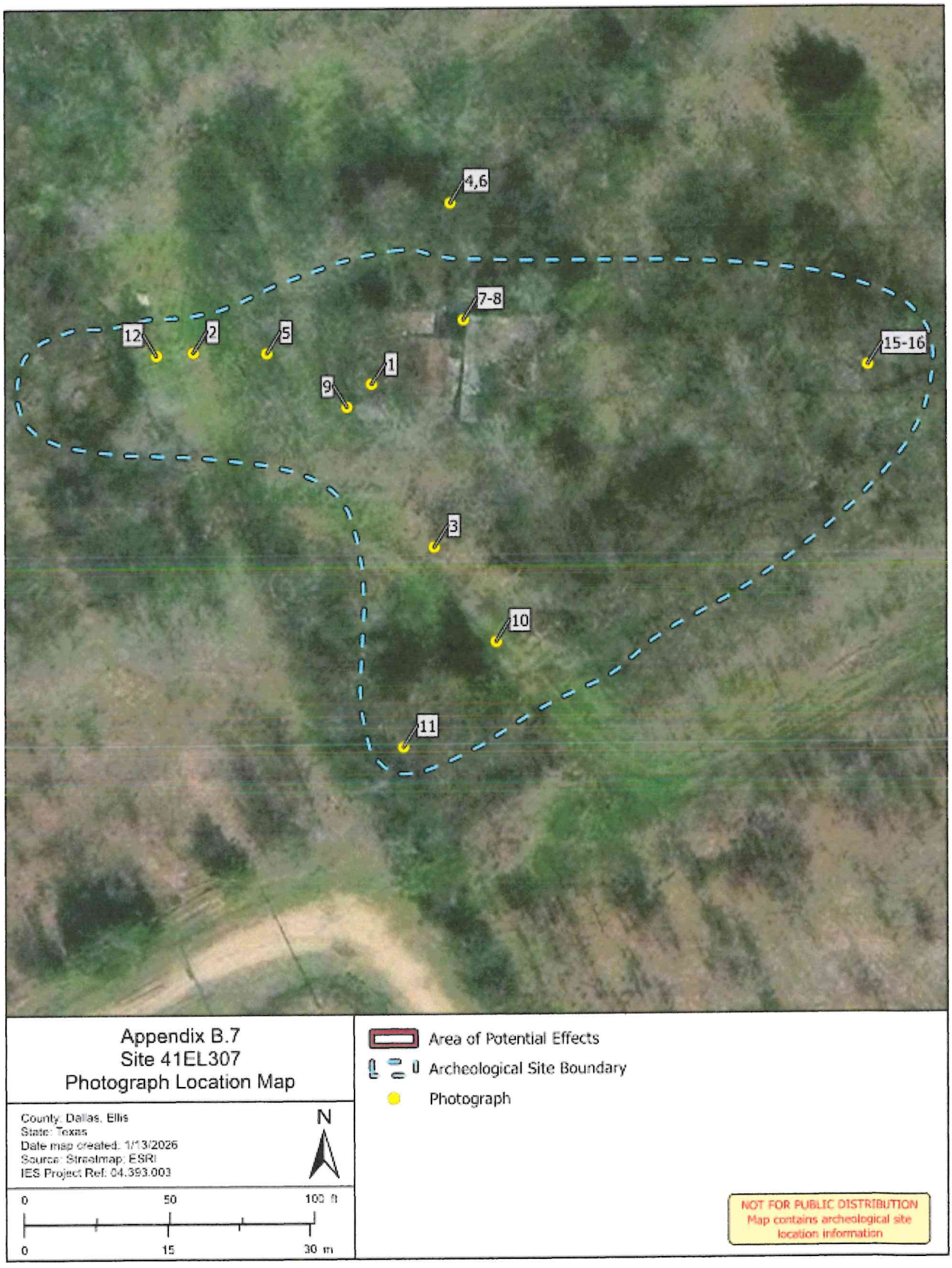
Photograph 10: Site 41EL306, Feature 1, facing west.



Photograph 11: Site 41EL306, Feature 1, facing west.



Photograph 12: Site 41EL306, Feature 1, facing north.


4,6
7-8
12
2
5
15-16
1
9
3
10
11
Appendix B.7
Site 41EL307
Photograph Location Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Photograph
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site
location information



Photograph 1: Site 41EL307, Surface artifact, Shears.



Photograph 2: Site 41EL307, Surface artifact, solarized purple glass fragment.



Photograph 3: Site 41EL307, Soil profile, AG44.



Photograph 4: Site 41EL307, Soil profile, JF44.



otograph 5: Site 41EL307, Feature 1, facing east.



Photograph 6: Site 41EL307, Feature 1, facing south.



Photograph 7: Site 41EL307, Feautre 1, facing east.



Photograph 8: Site 41EL307, Feature 1, facing northwest.



Photograph 9: Site 41EL307, Feature 1, facing northeast.



Photograph 10: Site 41EL307, Feature 2, facing northeast.



Photograph 11: Site 41EL307, Feature 2, facing northwest.



Photograph 12: Site 41EL307, Feature 2, facing southwest.



Photograph 13: Site 41EL307, Feature 4, facing north.



Photograph 14: Site 41EL307, Feature 4, facing northwest.

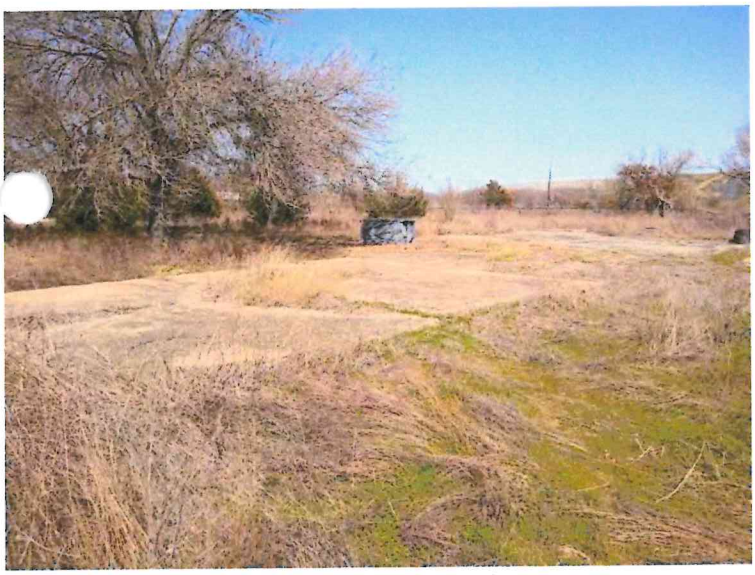


Photograph 15: Site 41EL307, Feature 5, facing northeast.



Photograph 16: Site 41EL307, Feture 5, facing east.

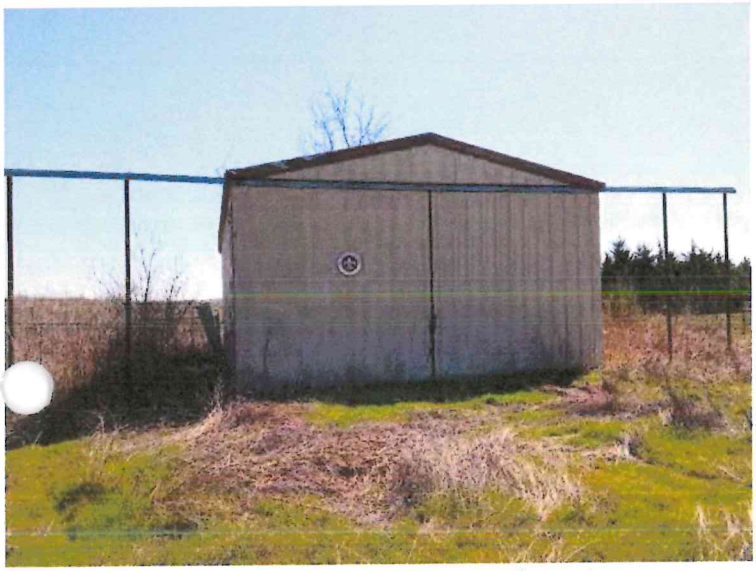

1-2,5-6
4
3
Appendix B.8
Site 41EL308
Photograph Location Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Archeological Site Boundary
Photograph
NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information



Photograph 1: Site 41EL308, Site overview, facing northeast.



Photograph 2: Site 41EL308, Site overview, facing northwest.



Photograph 3: Site 41EL308, Modern storage building, facing south.



Photograph 4: Site 41EL308, Soil profile, AG47.



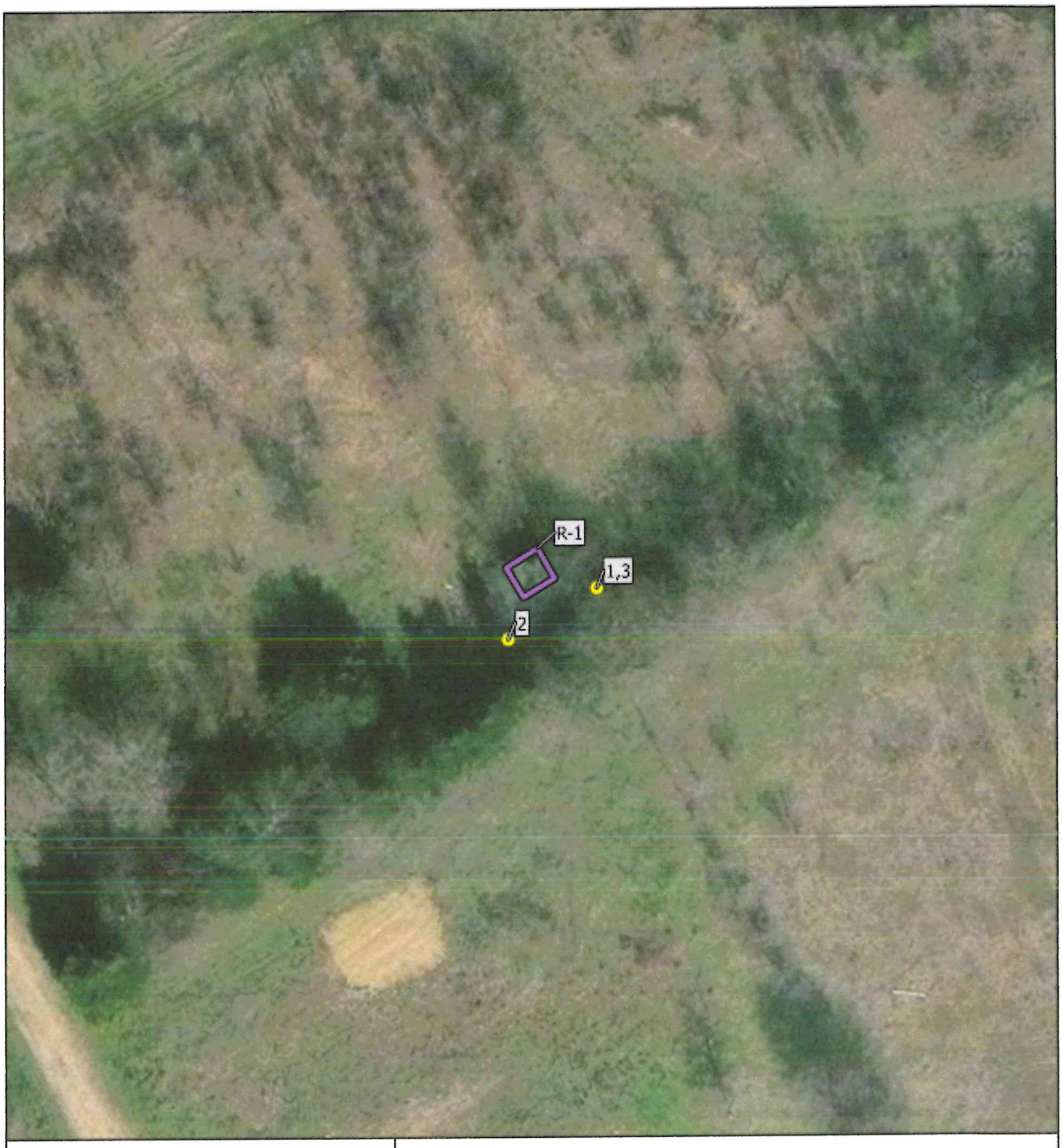
ıograph 5: Site 41EL308, Feature 1, facing southwest.



Photograph 6: Site 41EL308, Feature 1, facing northeast.

This page intentionally left blank

APPENDIX C
Above-Ground Resource
Photograph Location Map and Photographs



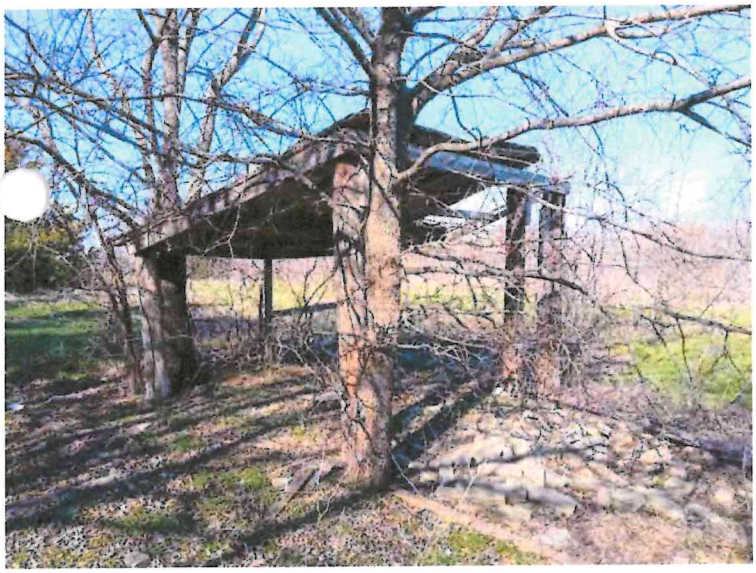
Appendix C.1
Resource R-1
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Above Ground Resource
Photograph



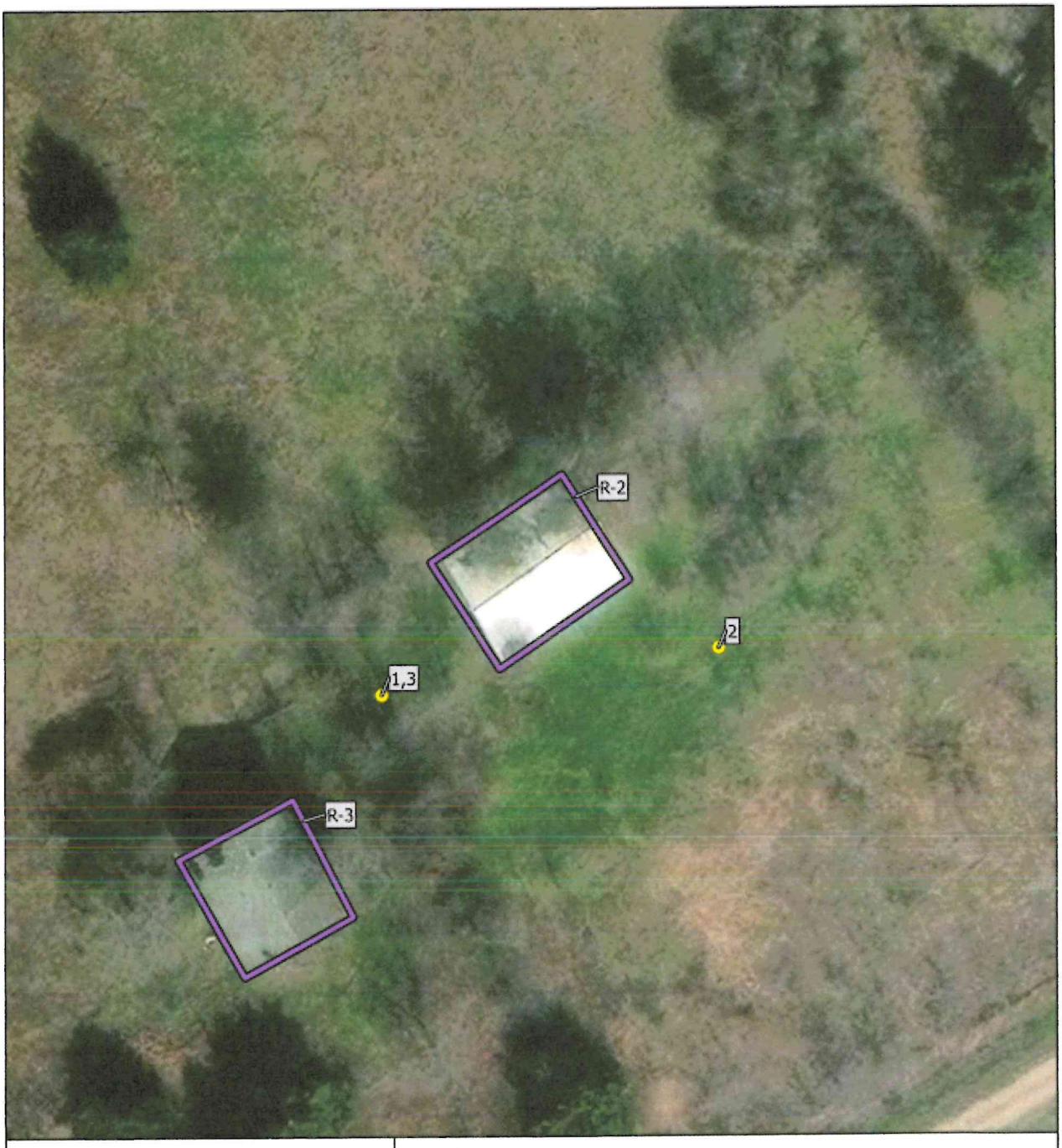
Photograph 1: R-1, facing northwest.



Photograph 2: R-1, facing northeast.



Photograph 3: R-1, facing west.



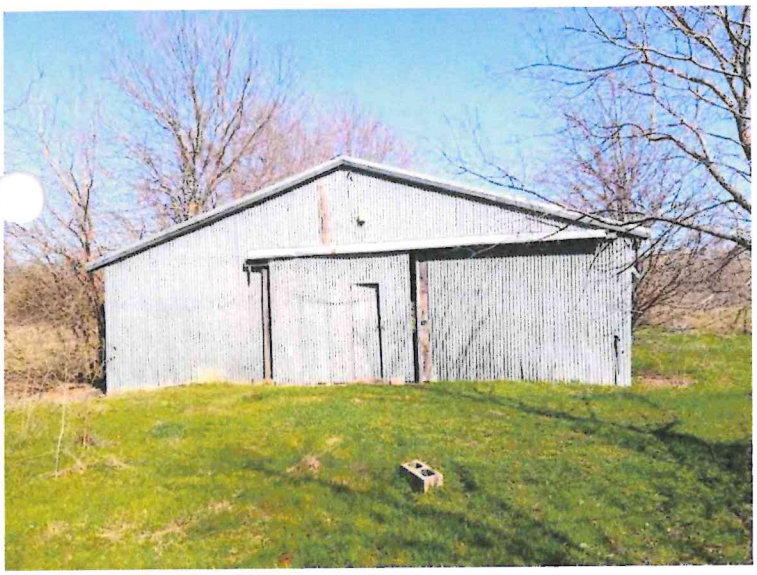
Appendix C.2
Resource R-2
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

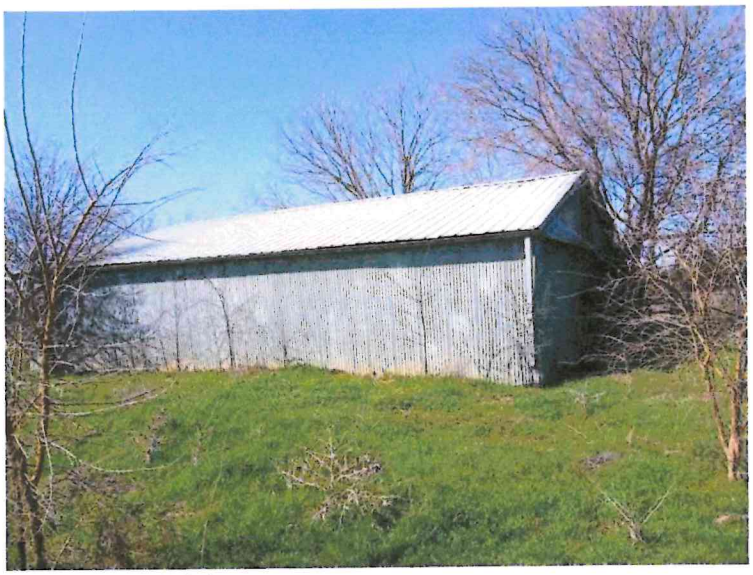
N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Above Ground Resource
Photograph



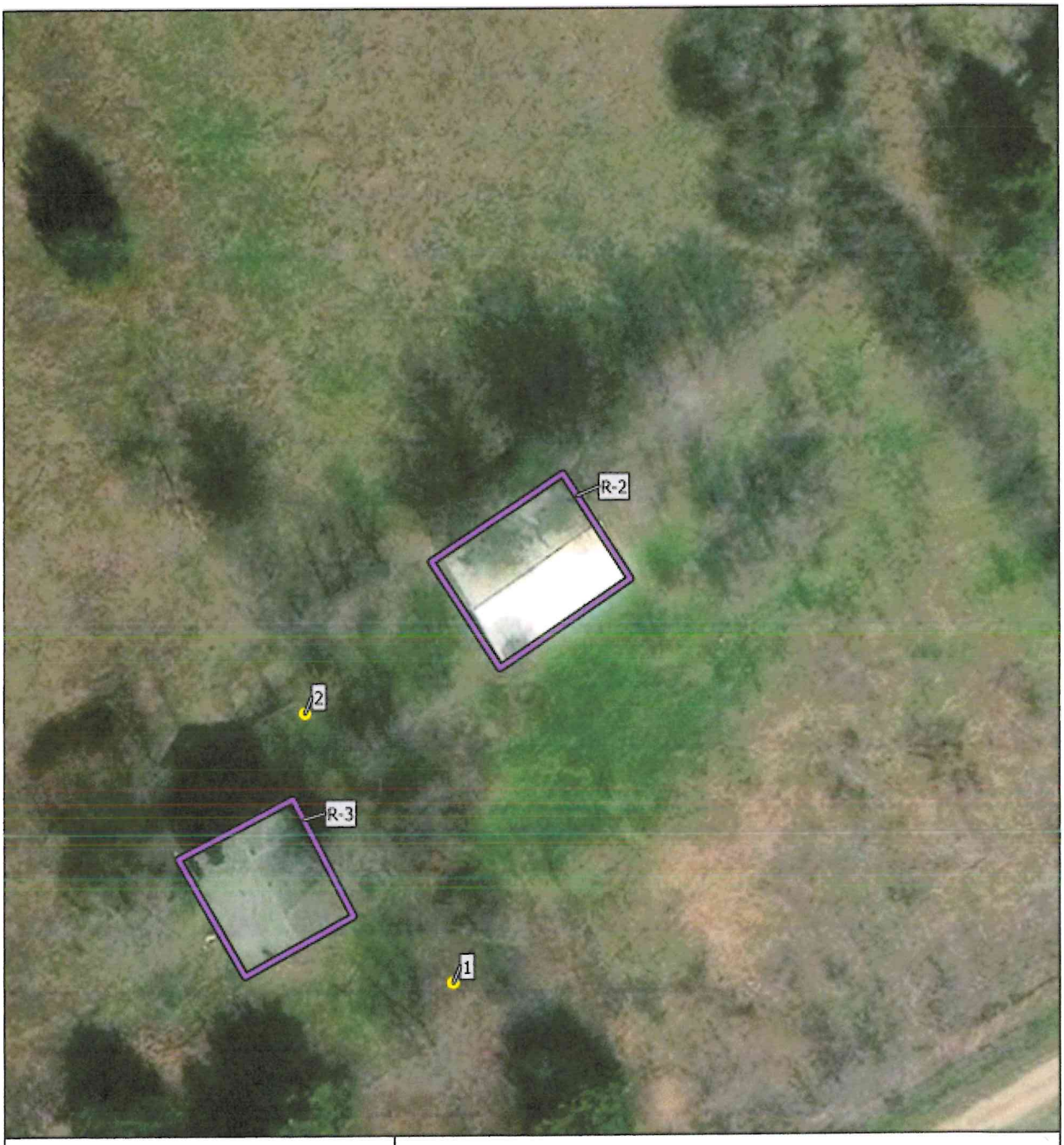
Photograph 1: R-2, facing northeast.



Photograph 2: R-2, facing west.



Photograph 3: R-2, facing northeast.



Appendix C.3
Resource R-3
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap; ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

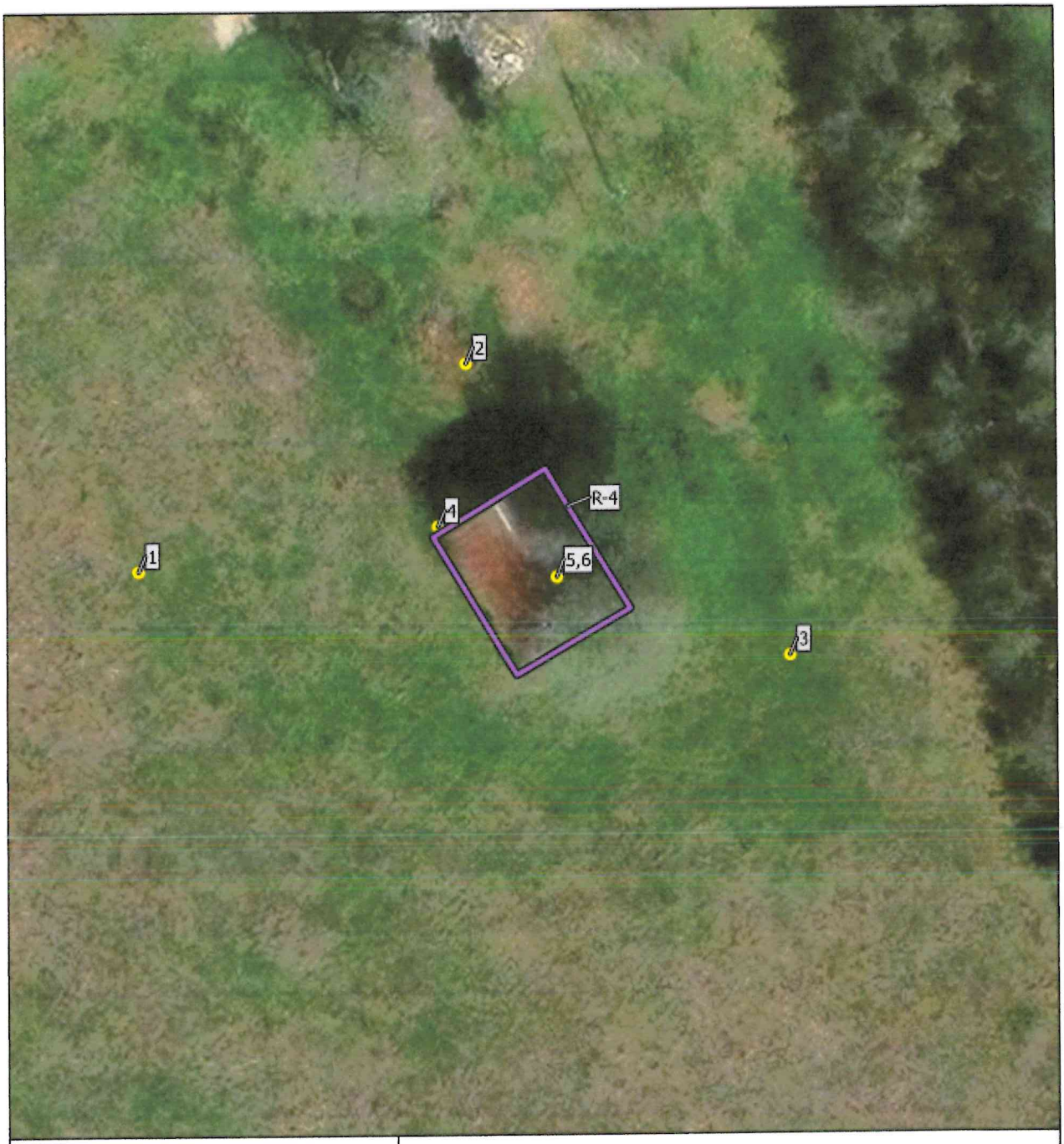
Area of Potential Effects
Above Ground Resource
Photograph



Photograph 1: R-3, facing west.



Photograph 2: R-3, facing south.



Appendix C.4
Resource R-4
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003

N

0 50 100 ft
0 15 30 m

Area of Potential Effects
Above Ground Resource
Photograph



Photograph 1: R-4, facing northeast.



Photograph 2: R-4, facing south.



Photograph 3: R-4, facing west.



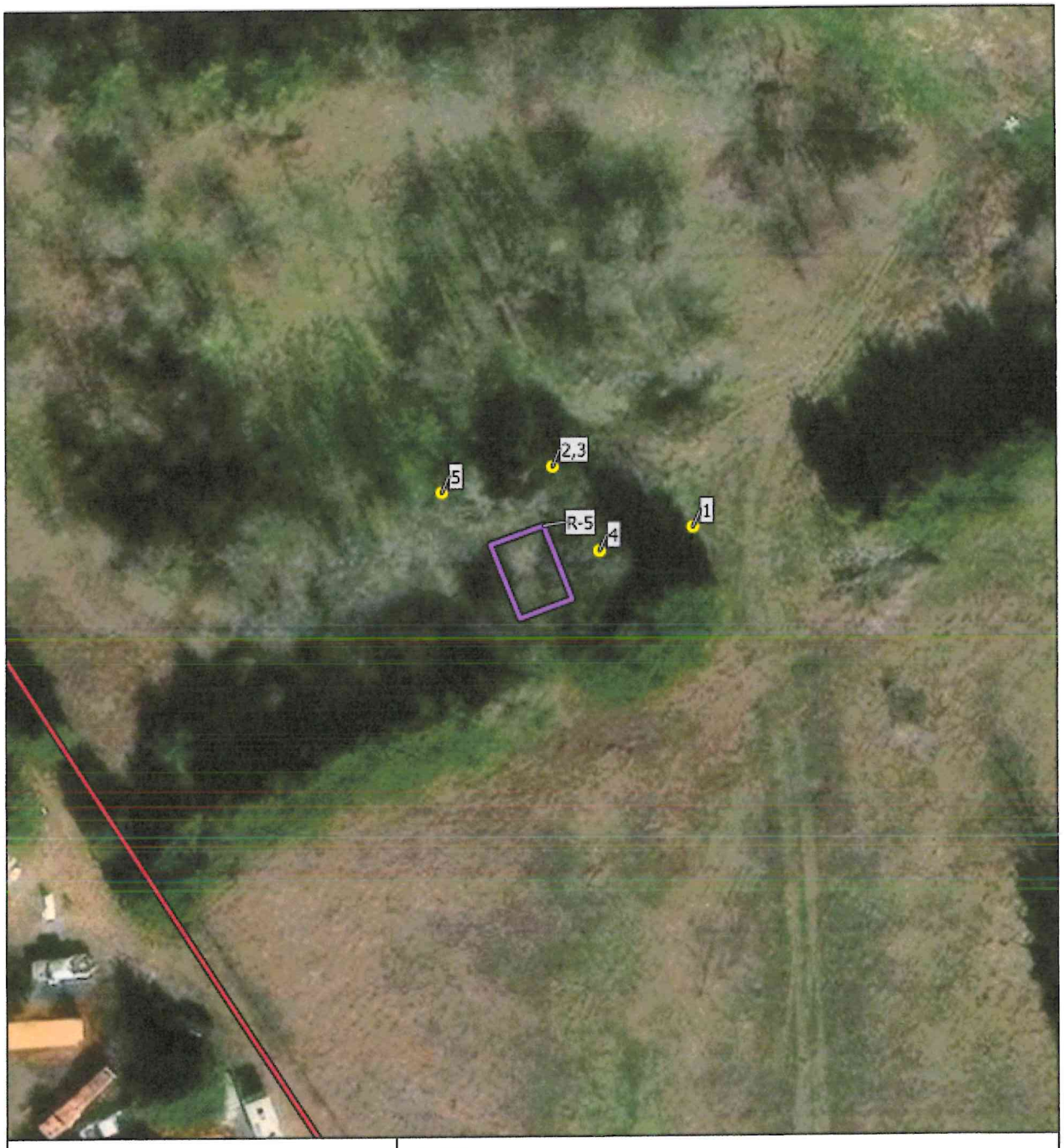
Photograph 4: R-4, facing south.



Photograph 5: R-4, facing south.



Photograph 6: R-4, facing north.



Appendix C.5
Resource R-5
Photograph Location Map

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003



Photograph 1: R-5, facing north.



Photograph 2: R-5, facing southeast.



Photograph 3: R-5, facing north.



Photograph 4: R-5, facing northwest.



tograph 5: R-5, facing southeast.

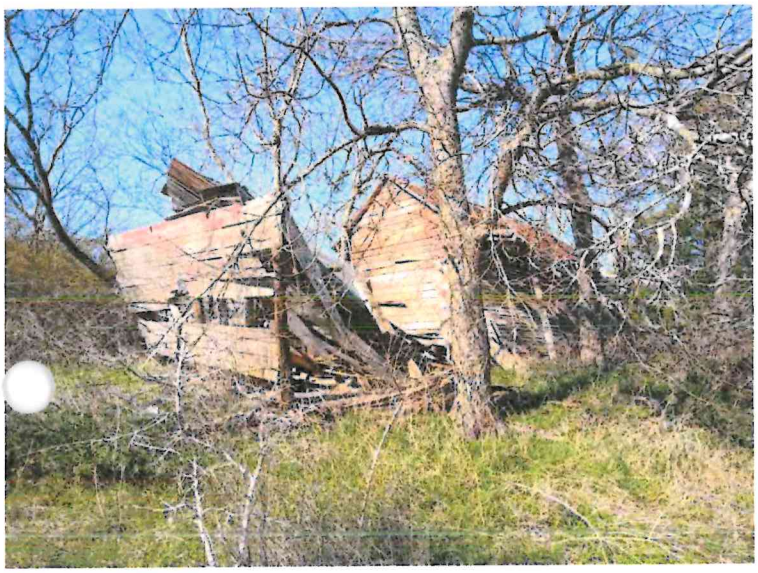

3
4
R-6
1
2
Appendix C.6
Resource R-6
Photograph Location Map
County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: Streetmap: ESRI
IES Project Ref: 04.393.003
N
0
50
100 ft
0
15
30 m
Area of Potential Effects
Above Ground Resource
Photograph



Photograph 1: R-6, facing northeast.



Photograph 2: R-6, facing north.



Photograph 3: R-6, facing west.



Photograph 4: R-6, facing south.

This page intentionally left blank

APPENDIX D
Shovel Test Log

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG1	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-32 cm; very dark grayish brown (10YR 3/2) clay loam; saturated; Stratum 2: 32-40 cm; dark brown (10YR 3/3) clay; calcium carbonate 3% mottling;	Negative
AG2	Termination: large roots Setting: pasture along fence line Excavator: AG	Stratum 1: 0-30 cm; very dark grayish brown (10YR 3/2) clay loam; rootlets;	Negative
AG3	Termination: Sterile Subsoil Setting: pasture slope Excavator: AG	Stratum 1: 0-33 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 33-40 cm; very dark gray (10YR 3/1) clay;	Negative
AG4	Termination: Sterile Subsoil Setting: upland prairie slope Excavator: AG	Stratum 1: 0-25 cm; dark gray (10YR 4/1) clay; Stratum 2: 25-32 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG5	Termination: compact clay Setting: upland prairie Excavator: AG	Stratum 1: 0-30 cm; black (10YR 2/1) clay; Stratum 2: 30-35 cm; very dark brown (10YR 2/2) clay; very compact clay;	Negative
AG6	Termination: Sterile Subsoil Setting: open area along two track road Excavator: AG	Stratum 1: 0-15 cm; dark gray (10YR 4/1) silty clay; Stratum 2: 15-29 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG7	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-20 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 20-30 cm; dark gray (10YR 4/1) clay;	Negative
AG8	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-30 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 30-40 cm; dark gray (10YR 4/1) clay;	Negative
AG10	Termination: Sterile Subsoil Setting: cleared corridor Excavator: AG	Stratum 1: 0-15 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 15-25 cm; dark grayish brown (2.5Y 4/2) clay loam; gravel and calcium carbonate 5% mottling;	Negative
AG11	Termination: Sterile Subsoil Setting: former pasture behind shed and barn Excavator: AG	Stratum 1: 0-20 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 20-30 cm; dark gray (10YR 4/1) clay;	Negative
AG12	Termination: Sterile Subsoil Setting: slope near drainage, prairie Excavator: AG	Stratum 1: 0-32 cm; light olive brown (2.5Y 5/3) clay;	Negative
AG13	Termination: roots Setting: upland prairie Excavator: AG	Stratum 1: 0-33 cm; light olive brown (2.5Y 5/3) clay;	Negative
AG14	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-27 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 27-35 cm; light olive brown (2.5Y 5/3) clay; 3% 2.5Y 5/4 mottling;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG28	Termination: Sterile Subsoil Setting: upland prairie ridge Excavator: AG	Stratum 1: 0-30 cm; light olive brown (2.5Y 5/3) clay; Stratum 2: 30-36 cm; light olive brown (2.5Y 5/4) clay;	Negative
AG29	Termination: Sterile Subsoil Setting: thicket on ridge slope Excavator: AG	Stratum 1: 0-27 cm; light olive brown (2.5Y 5/3) clay; rootlets;	Negative
AG30	Termination: Sterile Subsoil Setting: forested lowland Excavator: AG	Stratum 1: 0-10 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 10-25 cm; reddish brown (2.5YR 4/3) clay; saturated;	Negative
AG31	Termination: Sterile Subsoil Setting: forested lowland Excavator: AG	Stratum 1: 0-18 cm; very dark grayish brown (2.5Y 3/2) clay; Stratum 2: 18-28 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG32	Termination: Sterile Subsoil Setting: upland prairie ridge top Excavator: AG	Stratum 1: 0-15 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 15-26 cm; reddish brown (2.5YR 4/3) clay; 2.5Y 6/6 clay 5% mottling;	Negative
AG33	Termination: Sterile Subsoil Setting: prairie slope, lowland Excavator: AG	Stratum 1: 0-42 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 42-50 cm; grayish brown (2.5Y 5/2) clay;	Negative
AG43	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-17 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 17-32 cm; dark grayish brown (2.5Y 4/2) clay; frequent calcium carbonate mottling;	Negative
EG0	Termination: Sterile Subsoil Setting: field with sparse mixed hardwoods and low to medium grassses Excavator: EG	Stratum 1: 0-31 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 31-41 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG1	Termination: Sterile Subsoil Setting: Flood plain with waist high grasses Excavator: EG	Stratum 1: 0-28 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 28-42 cm; very dark gray (10YR 3/1) clay;	Negative
EG2	Termination: Sterile Subsoil Setting: Flood plain with waist high grasses Excavator: EG	Stratum 1: 0-26 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 26-38 cm; very dark gray (10YR 3/1) clay;	Negative
EG3	Termination: Sterile Subsoil Setting: Flood plain with waist high grasses Excavator: EG	Stratum 1: 0-29 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 29-40 cm; very dark gray (10YR 3/1) clay;	Negative
EG4	Termination: Sterile Subsoil Setting: Hilltop with mixed hardwoods Excavator: EG	Stratum 1: 0-24 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 24-42 cm; dark grayish brown (10YR 4/2) clay;	Negative
EG5	Termination: Sterile Subsoil Setting: Field with low and medium grasses Excavator: EG	Stratum 1: 0-25 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 25-35 cm; very dark gray (10YR 3/1) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG15	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-28 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 28-35 cm; light olive brown (2.5Y 5/3) clay; 3% 2.5Y 5/4 mottling;	Negative
AG16	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-29 cm; very dark grayish brown (2.5Y 3/2) clay; Stratum 2: 29-38 cm; dark grayish brown (2.5Y 4/2) clay; 1% 2.5Y 5/3 mottling;	Negative
AG17	Termination: Sterile Subsoil Setting: upland prairie slope Excavator: AG	Stratum 1: 0-17 cm; very dark grayish brown (2.5Y 3/2) clay; Stratum 2: 17-27 cm; dark grayish brown (2.5Y 4/2) clay; 10% 2.5Y 5/4 clay mottling;	Negative
AG18	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-25 cm; very dark grayish brown (2.5Y 3/2) clay; Stratum 2: 25-40 cm; reddish brown (2.5YR 4/3) clay;	Negative
AG19	Termination: Sterile Subsoil Setting: upland prairie slope Excavator: AG	Stratum 1: 0-26 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 26-35 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG20	Termination: high frequency of roots Setting: dense tree grove in flat setting Excavator: AG	Stratum 1: 0-25 cm; very dark grayish brown (2.5Y 3/2) silty clay; in small drainage;	Negative
AG21	Termination: Sterile Subsoil Setting: slope of open area near push piles Excavator: AG	Stratum 1: 0-29 cm; dark grayish brown (2.5Y 4/2) silty clay; possibly disturbed or eroded soils; Stratum 2: 29-40 cm; light olive brown (2.5Y 5/3) clay; rootlets;	Negative
AG22	Termination: Sterile Subsoil Setting: upland prairie slope Excavator: AG	Stratum 1: 0-15 cm; dark grayish brown (2.5Y 4/2) clay loam; Stratum 2: 15-29 cm; reddish brown (2.5YR 4/3) clay;	Negative
AG23	Termination: compact clay Setting: behind former home Excavator: AG	Stratum 1: 0-10 cm; very dark grayish brown (10YR 3/2) clay; 10YR 5/4, gravels mottling; disturbed; Stratum 2: 10-33 cm; very dark brown (10YR 2/2) clay; calcium carbonate mottling;	Negative
AG24	Termination: Sterile Subsoil Setting: upland prairie slope Excavator: AG	Stratum 1: 0-26 cm; light olive brown (2.5Y 5/4) clay;	Negative
AG25	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-10 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 10-25 cm; light olive brown (2.5Y 5/3) clay;	Negative
AG26	Termination: Sterile Subsoil Setting: upland prairie ridge slope Excavator: AG	Stratum 1: 0-7 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 7-22 cm; light olive brown (2.5Y 5/3) clay;	Negative
AG27	Termination: Sterile Subsoil Setting: tree grove on ridge slope Excavator: AG	Stratum 1: 0-7 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 7-22 cm; light olive brown (2.5Y 5/3) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG6	Termination: Sterile Subsoil Setting: Field with low and medium grasses Excavator: EG	Stratum 1: 0-36 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 36-48 cm; very dark gray (10YR 3/1) clay;	Negative
EG7	Termination: Sterile Subsoil Setting: Hill slope near pond with mixed hardwoods Excavator: EG	Stratum 1: 0-30 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 30-41 cm; very dark gray (10YR 3/1) clay;	Negative
EG8	Termination: Depth Setting: Field with low and medium grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-80 cm; light yellowish brown (10YR 6/4) clay loam; 35% 10YR 6/8 mottling; 5% calcium carbonate;	Negative
EG9	Termination: Sterile Subsoil Setting: Field with low and medium grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-28 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 28-39 cm; very dark gray (10YR 3/1) clay;	Negative
EG10	Termination: Sterile Subsoil Setting: knoll with clustered juniper and low grasses Excavator: EG	Stratum 1: 0-31 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 31-40 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG11	Termination: Sterile Subsoil Setting: hill with clustered juniper and low grasses Excavator: EG	Stratum 1: 0-33 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 33-44 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG12	Termination: Sterile Subsoil Setting: field with sparse mixed hardwoods and low to medium grassses Excavator: EG	Stratum 1: 0-26 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 26-39 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG13	Termination: Sterile Subsoil Setting: field with sparse mixed hardwoods and low to medium grassses Excavator: EG	Stratum 1: 0-32 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 32-43 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG14	Termination: Sterile Subsoil Setting: field with clustered juniper and low grasses Excavator: EG	Stratum 1: 0-26 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 26-38 cm; very dark grayish brown (10YR 3/2) clay;	Negative
EG15	Termination: Sterile Subsoil Setting: hill with clustered juniper and low grasses Excavator: EG	Stratum 1: 0-24 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 24-42 cm; light yellowish brown (10YR 6/4) clay;	Negative
EG16	Termination: Sterile Subsoil Setting: field with sparse mixed hardwoods and low to medium grassses Excavator: EG	Stratum 1: 0-19 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 19-31 cm; very dark grayish brown (10YR 3/2) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG17	Termination: Sterile Subsoil Setting: hill with sparse mixed hardwoods and low to medium grassses Excavator: EG	Stratum 1: 0-20 cm; dark grayish brown (10YR 4/2) clay; Stratum 2: 20-31 cm; light yellowish brown (10YR 6/4) clay;	Negative
EG18	Termination: Sterile Subsoil Setting: hill with low to medium grassses Excavator: EG	Stratum 1: 0-27 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 27-39 cm; yellowish brown (10YR 5/4) clay;	Negative
EG19	Termination: Sterile Subsoil Setting: hill slope with low to medium grassses and new growth thickets Excavator: EG	Stratum 1: 0-18 cm; dark grayish brown (10YR 4/2) clay loam; Stratum 2: 18-30 cm; dark grayish brown (10YR 4/2) clay;	Negative
EG20	Termination: Sterile Subsoil Setting: hill slope with low to medium grassses and new growth thickets Excavator: EG	Stratum 1: 0-26 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 26-35 cm; very dark gray (10YR 3/1) clay;	Negative
EG21	Termination: Sterile Subsoil Setting: flood plain with mixed hardwoods and dense vegetation Excavator: EG	Stratum 1: 0-21 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 21-30 cm; very dark gray (10YR 3/1) clay;	Negative
EG22	Termination: Sterile Subsoil Setting: hill slope with low to medium grassses Excavator: EG	Stratum 1: 0-23 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 23-34 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG23	Termination: Sterile Subsoil Setting: field with juniper and low grasses Excavator: EG	Stratum 1: 0-16 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 16-28 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG24	Termination: Sterile Subsoil Setting: field with juniper and low grasses Excavator: EG	Stratum 1: 0-21 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 21-32 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG25	Termination: Sterile Subsoil Setting: field with juniper and low grasses Excavator: EG	Stratum 1: 0-20 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 20-30 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG26	Termination: Sterile Subsoil Setting: floodplain mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-20 cm; dark gray (10YR 4/1) clay loam; frequent rootlets; Stratum 2: 20-40 cm; dark gray (10YR 4/1) clay loam; frequent rootlets; Stratum 3: 40-55 cm; very dark gray (10YR 3/1) clay;	Negative
EG27	Termination: Sterile Subsoil Setting: hill slope with low to medium grassses Excavator: EG	Stratum 1: 0-22 cm; reddish brown (2.5YR 5/3) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG30	Termination: Sterile Subsoil Setting: hill with low grasses Excavator: EG	Stratum 1: 0-19 cm; dark gray (10YR 4/1) clay; Stratum 2: 19-30 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG40	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-24 cm; dark gray (10YR 4/1) clay; Stratum 2: 24-35 cm; very dark gray (10YR 3/1) clay;	Negative
JF1	Termination: Sterile Subsoil Setting: Upland field, tall grasses Excavator: JF	Stratum 1: 0-30 cm; dark gray (10YR 4/1) clay; <1% calcium carbonate, rootlets; Stratum 2: 30-45 cm; very dark gray (10YR 3/1) clay; <1% calcium carbonate;	Negative
JF2	Termination: Sterile Subsoil Setting: Upland field, short grass, juniper, and mixed hardwood Excavator: JF	Stratum 1: 0-35 cm; very dark gray (10YR 3/1) clay; many rootlets; Stratum 2: 35-50 cm; black (10YR 2/1) clay;	Negative
JF3	Termination: Sterile Subsoil Setting: Upland field, short and tall grasses, juniper, and mixed hardwood Excavator: JF	Stratum 1: 0-30 cm; very dark gray (10YR 3/1) clay; many rootlets; Stratum 2: 30-40 cm; black (10YR 2/1) clay;	Negative
JF4	Termination: Sterile Subsoil Setting: Upland forest, short grass and mixed hardwood Excavator: JF	Stratum 1: 0-30 cm; very dark gray (10YR 3/1) clay; many rootlets; Stratum 2: 30-40 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative
JF5	Termination: Sterile Subsoil Setting: Upland field, short grass and mixed hardwood Excavator: JF	Stratum 1: 0-25 cm; dark grayish brown (10YR 4/2) clay; few rootlets; Stratum 2: 25-40 cm; brown (10YR 4/3) clay; <1% calcium carbonate, slickensides;	Negative
JF6	Termination: Sterile Subsoil Setting: Upland field, short grass and mixed hardwood Excavator: JF	Stratum 1: 0-25 cm; dark grayish brown (10YR 4/2) clay; few rootlets; Stratum 2: 25-45 cm; brown (10YR 4/3) clay; <1% calcium carbonate, slickensides;	Negative
JF7	Termination: Sterile Subsoil Setting: Forested slope, cleared path Excavator: JF	Stratum 1: 0-25 cm; dark yellowish brown (10YR 3/4) clay; 3% 10YR 6/3 mottling; few rootlets, 3% calcium carbonate; Stratum 2: 25-40 cm; black (10YR 2/1) clay; 2% calcium carbonate;	Negative
JF8	Termination: Sterile Subsoil Setting: Gentle slope off upland field Excavator: JF	Stratum 1: 0-35 cm; dark yellowish brown (10YR 3/4) clay; 1% calcium carbonate; Stratum 2: 35-45 cm; dark brown (10YR 3/3) clay; <1% calcium carbonate;	Negative
JF9	Termination: Sterile Subsoil Setting: Gentle slope off upland field Excavator: JF	Stratum 1: 0-40 cm; very dark gray (10YR 3/1) clay; 1% calcium carbonate, 5% gravels 1-5cm; Stratum 2: 40-50 cm; black (10YR 2/1) clay; 2% calcium carbonate;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
JF10	Termination: Sterile Subsoil Setting: Upland interfluve, short grasses and juvenile hardwoods Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; roots; Stratum 2: 20-35 cm; olive (5Y 5/3) clay; few rootlets;	Negative
JF11	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; rootlets; Stratum 2: 15-35 cm; olive (5Y 5/3) clay;	Negative
JF12	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; very few roots, many rootlets; Stratum 2: 15-35 cm; olive (5Y 5/3) clay;	Negative
JF13	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; few rootlets; Stratum 2: 15-30 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF14	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; few roots and rootlets; Stratum 2: 20-35 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF15	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; few large roots and rootlets; Stratum 2: 15-25 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF16	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, honey locust, and mixed hardwood Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; many roots and rootlets; Stratum 2: 20-35 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF17	Termination: Water Table Setting: Bottom of slopes adjacent pond, short grasses, thin reeds, honey locust Excavator: JF	Stratum 1: 0-40 cm; dark grayish brown (10YR 4/2) clay;	Negative
JF18	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; frequent roots; Stratum 2: 15-25 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF19	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; few roots and rootlets; Stratum 2: 20-30 cm; light olive brown (2.5Y 5/3) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
JF20	Termination: Sterile Subsoil Setting: Lower slopes, tall grasses and juniper Excavator: JF	Stratum 1: 0-25 cm; light yellowish brown (2.5Y 6/3) clay; few large roots; Stratum 2: 25-40 cm; light yellowish brown (2.5Y 6/3) clay; 30% 10YR 5/1 mottling;	Negative
JF21	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; frequent rootlets; Stratum 2: 15-30 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF22	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; frequent rootlets; Stratum 2: 15-30 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF23	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; frequent rootlets; Stratum 2: 20-35 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF24	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, honey locust, and juniper Excavator: JF	Stratum 1: 0-30 cm; light olive brown (2.5Y 5/3) clay; few fine roots, few calcium carbonate;	Negative
JF25	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, honey locust, and juniper Excavator: JF	Stratum 1: 0-30 cm; light olive brown (2.5Y 5/3) clay; few fine roots, few calcium carbonate;	Negative
JF26	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses Excavator: JF	Stratum 1: 0-15 cm; light olive brown (2.5Y 5/3) clay; few rootlets; Stratum 2: 15-30 cm; olive brown (2.5Y 4/3) clay;	Negative
JF27	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, honey locust and juniper Excavator: JF	Stratum 1: 0-20 cm; olive (5Y 5/3) clay; frequent fine roots and rootlets; Stratum 2: 20-35 cm; olive (5Y 4/3) clay;	Negative
JF28	Termination: Sterile Subsoil Setting: Upland slopes, juniper grove Excavator: JF	Stratum 1: 0-25 cm; pale olive (5Y 6/4) clay; few roots;	Negative
JF29	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, honey locust and juniper Excavator: JF	Stratum 1: 0-10 cm; olive (5Y 5/3) clay; very frequent fine roots and rootlets; Stratum 2: 10-30 cm; olive (5Y 4/3) clay; few rootlets, few calcium carbonate;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
JF30	Termination: Sterile Subsoil Setting: Gentle lower slopes around drainages, privet, juniper, mixed hardwood Excavator: JF	Stratum 1: 0-30 cm; gray (10YR 5/1) clay; few roots; Stratum 2: 30-45 cm; gray (10YR 5/1) clay; slickensides;	Negative
JF31	Termination: Sterile Subsoil Setting: Floodplain of Ten Mile Creek, mixed hardwood, short grasses, reeds Excavator: JF	Stratum 1: 0-25 cm; gray (10YR 5/1) clay; few roots; Stratum 2: 25-35 cm; gray (10YR 5/1) clay; slickensides;	Negative
JF32	Termination: Sterile Subsoil Setting: Floodplain of Ten Mile Creek, mixed hardwood, short grasses, reeds Excavator: JF	Stratum 1: 0-15 cm; dark grayish brown (10YR 4/2) clay; frequent roots and rootlets; Stratum 2: 15-25 cm; dark brown (10YR 3/3) clay; few fine roots; Stratum 3: 25-40 cm; dark brown (10YR 3/3) clay; slickensides;	Negative
JF33	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses Excavator: JF	Stratum 1: 0-10 cm; dark olive brown (2.5Y 3/3) clay; frequent rootlets; Stratum 2: 10-35 cm; light olive brown (2.5Y 5/3) clay;	Negative
JF40	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses and mixed hardwood Excavator: JF	Stratum 1: 0-30 cm; dark gray (10YR 4/1) clay; frequent roots and rootlets; Stratum 2: 30-45 cm; very dark grayish brown (10YR 3/2) clay; slickensides;	Negative
JF47	Termination: Sterile Subsoil Setting: gentle prairie, tall grass and mixed hardwood Excavator: JF	Stratum 1: 0-40 cm; black (10YR 2/1) clay; rootlets, <1% calcium carbonate streaks; Stratum 2: 40-50 cm; black (10YR 2/1) clay; 1% calcium carbonate;	Negative
JF48	Termination: Sterile Subsoil Setting: gentle prairie, tall grass and mixed hardwood Excavator: JF	Stratum 1: 0-35 cm; black (10YR 2/1) clay; rootlets, <1% calcium carbonate; Stratum 2: 35-50 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative
JF49	Termination: Sterile Subsoil Setting: Gentle slope off upland field Excavator: JF	Stratum 1: 0-30 cm; very dark grayish brown (10YR 3/2) clay; 1% calcium carbonate, roots and rootlets; Stratum 2: 30-45 cm; dark brown (10YR 3/3) clay; <1% calcium carbonate;	Negative
JF101	Termination: Sterile Subsoil Setting: Broad upland slopes, tall grasses and woody shrubs Excavator: JF	Stratum 1: 0-25 cm; olive brown (2.5Y 4/3) clay; Stratum 2: 25-45 cm; olive brown (2.5Y 4/3) clay; <1% calcium carbonate;	Negative
JF102	Termination: Sterile Subsoil Setting: Broad upland slopes, tall grasses and woody shrubs. Sparse juniper Excavator: JF	Stratum 1: 0-40 cm; olive brown (2.5Y 4/3) clay; Stratum 2: 40-55 cm; olive brown (2.5Y 4/3) clay; <1% calcium carbonate;	Negative
JF103	Termination: Sterile Subsoil Setting: Cleared footslopes, short grasses along reedy terrace Excavator: JF	Stratum 1: 0-20 cm; very dark gray (10YR 3/1) clay; Stratum 2: 20-40 cm; very dark gray (10YR 3/1) clay;	Negative

Survey Shovel Test Log

ID	General Description	Soil Description	Cultural Component
JF104	Termination: Sterile Subsoil Setting: Sparsely forested terrace of Ten Mile Creek Excavator: JF	Stratum 1: 0-25 cm; dark grayish brown (10YR 4/2) clay loam; few roots; Stratum 2: 25-40 cm; dark grayish brown (10YR 4/2) silty clay loam; Stratum 3: 40-50 cm; brown (10YR 5/3) clay; 1% calcium carbonate threads;	Negative
JF105	Termination: Sterile Subsoil Setting: Cleared footslopes, short grasses along reedy terrace Excavator: JF	Stratum 1: 0-20 cm; very dark gray (10YR 3/1) clay; Stratum 2: 20-40 cm; very dark gray (10YR 3/1) clay;	Negative
JF106	Termination: Sterile Subsoil Setting: Broad upland slopes, tall grasses and woody shrubs. Sparse juniper Excavator: JF	Stratum 1: 0-40 cm; olive brown (2.5Y 4/3) clay; Stratum 2: 40-50 cm; olive brown (2.5Y 4/3) clay; <1% calcium carbonate;	Negative

41DLX-01 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG28	Termination: Sterile Subsoil Setting: hill with low grasses Excavator: EG	Stratum 1: 0-33 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 33-45 cm; very dark gray (10YR 3/1) clay;	Negative

41DLx-01 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG34	Termination: dense gravel layer Setting: upland prairie Excavator: AG	Stratum 1: 0-5 cm; dark yellowish brown (10YR 3/4) loam;	Negative
AG35	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-24 cm; very dark grayish brown (10YR 3/2) clay loam; rootlets; Stratum 2: 24-37 cm; very dark brown (10YR 2/2) clay;	Negative
AG36	Termination: gravel Setting: upland prairie Excavator: AG	Stratum 1: 0-20 cm; dark yellowish brown (10YR 3/4) sandy clay loam; 10YR 5/6 sandy clay mottling; high frequency of gravel and a few pieces of modern trash;	Negative
EG29	Termination: Sterile Subsoil Setting: hill with low grasses Excavator: EG	Stratum 1: 0-28 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 28-41 cm; very dark gray (10YR 3/1) clay;	Negative

41DLx-02 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG37	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-9 cm; yellowish brown (10YR 5/6) sandy clay; disturbed; Stratum 2: 9-28 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG38	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-28 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
AG39	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-11 cm; dark gray (2.5Y 4/1) clay; Stratum 2: 11-28 cm; dark grayish brown (2.5Y 4/2) clay;	Negative
EG31	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-24 cm; dark gray (10YR 4/1) clay; Stratum 2: 24-36 cm; very dark gray (10YR 3/1) clay;	Negative
EG32	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-25 cm; dark gray (10YR 4/1) clay; Stratum 2: 25-35 cm; very dark gray (10YR 3/1) clay;	Negative
JF37	Termination: Sterile Subsoil Setting: Ridge top, tall grasses and mixed hardwood Excavator: JF	Stratum 1: 0-25 cm; dark gray (10YR 4/1) clay; few roots and rootlets; Stratum 2: 25-40 cm; very dark grayish brown (10YR 3/2) clay; very few calcium carbonate;	Negative
JF38	Termination: Sterile Subsoil Setting: Ridge top, tall grasses and mixed hardwood Excavator: JF	Stratum 1: 0-20 cm; dark gray (10YR 4/1) clay; few roots and rootlets; Stratum 2: 20-35 cm; very dark grayish brown (10YR 3/2) clay; very few calcium carbonate, some slickensides;	Negative
JF39	Termination: Sterile Subsoil Setting: Upland slopes, tall grasses, juniper, and honey locust Excavator: JF	Stratum 1: 0-20 cm; light olive brown (2.5Y 5/3) clay; few large roots and frequent rootlets; Stratum 2: 20-30 cm; light olive brown (2.5Y 5/3) clay;	Negative

41DLx-03 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG48	Termination: Sterile Subsoil Setting: former pasture Excavator: AG	Stratum 1: 0-30 cm; very dark brown (10YR 2/2) clay loam; Stratum 2: 30-41 cm; very dark grayish brown (10YR 3/2) clay; calcium carbonate inclusions;	Negative
AG49	Termination: Sterile Subsoil Setting: former pasture Excavator: AG	Stratum 1: 0-29 cm; dark brown (10YR 3/3) clay loam; Stratum 2: 29-38 cm; dark yellowish brown (10YR 3/4) clay;	Negative

41DLx-04 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG50	Termination: Sterile Subsoil Setting: berm slope near pond, forested Excavator: AG	Stratum 1: 0-18 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 18-30 cm; grayish brown (2.5Y 5/2) clay; saturated;	Negative
AG51	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-15 cm; dark grayish brown (2.5Y 4/2) clay; Stratum 2: 15-28 cm; grayish brown (2.5Y 5/2) clay;	Negative
AG52	Termination: Sterile Subsoil Setting: berm between Feature 1 and large pond Excavator: AG	Stratum 1: 0-13 cm; very dark grayish brown (10YR 3/2) clay loam; berm fill; Stratum 2: 13-39 cm; dark grayish brown (2.5Y 4/2) clay; small gravels @ bottom of test;	Negative
EG43	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-30 cm; dark gray (10YR 4/1) clay; Stratum 2: 30-43 cm; very dark gray (10YR 3/1) clay;	Negative
EG44	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-32 cm; dark gray (10YR 4/1) clay; Stratum 2: 32-43 cm; very dark gray (10YR 3/1) clay;	Negative
TL1	Termination: Sterile Subsoil Setting: gentle sloping wooded terrace, near minor drainage Excavator: TL	Stratum 1: 0-59 cm; very dark grayish brown (10YR 3/2) clay; very sticky, many tree roots, massive structure; Stratum 2: 59-78 cm; olive brown (2.5Y 4/3) clay; 10YR 5/6 5% iron depletions mottling; many roots, extremely sick and very hard, massive structure;	Negative
TL2	Termination: Sterile Subsoil Setting: gentle sloping wooded terrace Excavator: TL	Stratum 1: 0-45 cm; very dark grayish brown (10YR 3/2) clay; very sticky, many tree roots, massive structure; Stratum 2: 45-58 cm; olive brown (2.5Y 4/3) clay; 10YR 5/6 5% iron depletions mottling; many roots, extremely sick and very hard, massive structure;	Negative

41DLx-05 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG53	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-12 cm; very dark grayish brown (2.5Y 3/2) clay; Stratum 2: 12-40 cm; dark grayish brown (2.5Y 4/2) clay; 2.5Y 5/6 clay towards bottom of test mottling;	Negative
AG54	Termination: Sterile Subsoil Setting: upland prairie Excavator: AG	Stratum 1: 0-11 cm; dark grayish brown (2.5Y 4/2) clay; some gravel mottling; concrete; Stratum 2: 11-31 cm; light olive brown (2.5Y 5/3) clay;	0-20 cmbs: concrete fragments between 2 to 13 cmbs
EG45	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-39 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 39-50 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG46	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-37 cm; reddish brown (2.5YR 5/3) clay; Stratum 2: 37-46 cm; reddish brown (2.5YR 5/3) clay;	Negative
EG47	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-14 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 14-34 cm; reddish brown (2.5YR 5/3) clay; Stratum 3: 34-43 cm; reddish brown (2.5YR 5/3) clay; 5% calcium carbonate;	Negative
TL3	Termination: Sterile Subsoil Setting: gentle sloping wooded terrace Excavator: TL	Stratum 1: 0-35 cm; very dark grayish brown (2.5Y 3/2) clay loam; many roots, very sticky, massive structure; Stratum 2: 35-49 cm; olive brown (2.5Y 4/3) clay; 10YR 5/6 5% iron depletions mottling; small common concretions, very sticky, many roots, massive structure;	Negative
TL4	Termination: Sterile Subsoil Setting: gentle sloping tall grass terrace Excavator: TL	Stratum 1: 0-38 cm; very dark grayish brown (2.5Y 3/2) clay loam; many roots, very sticky, massive structure; Stratum 2: 38-50 cm; olive brown (2.5Y 4/3) clay; 10YR 5/6 5% iron depletions mottling; small common concretions, very sticky, many roots, massive structure;	Negative
TL5	Termination: Sterile Subsoil Setting: gentle sloping tall grass terrace Excavator: TL	Stratum 1: 0-38 cm; very dark grayish brown (2.5Y 3/2) clay loam; many roots, very sticky, massive structure; Stratum 2: 38-53 cm; olive brown (2.5Y 4/3) clay; 10YR 5/6 5% iron depletions mottling; small common concretions, very sticky, many roots, massive structure;	Negative

41DLx-06 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG55	Termination: Sterile Subsoil Setting: former pasture with tree saplings Excavator: AG	Stratum 1: 0-13 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 13-34 cm; very dark grayish brown (2.5Y 3/2) clay; calcium carbonate inclusions;	Negative
AG56	Termination: Sterile Subsoil Setting: former pasture with tree saplings Excavator: AG	Stratum 1: 0-16 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 16-30 cm; very dark grayish brown (2.5Y 3/2) clay; calcium carbonate mottling;	Negative
AG57	Termination: Sterile Subsoil Setting: former pasture with tree saplings Excavator: AG	Stratum 1: 0-14 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 14-34 cm; very dark grayish brown (2.5Y 3/2) clay; 2.5Y 4/3 clay mottling;	Negative
EG48	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-32 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 32-43 cm; very dark gray (10YR 3/1) clay;	Negative
EG49	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-28 cm; dark gray (10YR 4/1) clay; Stratum 2: 28-39 cm; very dark gray (10YR 3/1) clay;	Negative
TL6	Termination: Sterile Subsoil Setting: Almost ridge summit, tall grasses and juvenile trees Excavator: TL	Stratum 1: 0-34 cm; dark brown (10YR 3/3) clay loam; very hard, high concentration of gravels, few roots; Stratum 2: 34-44 cm; reddish brown (2.5YR 5/3) clay; very hard, high concentration of gravels and calcium carbonate nodule inclusions, few roots;	Negative
TL7	Termination: Sterile Subsoil Setting: Almost ridge summit, tall grasses and juvenile trees Excavator: TL	Stratum 1: 0-32 cm; dark brown (10YR 3/3) clay loam; very hard, high concentration of gravels, few roots; Stratum 2: 32-42 cm; reddish brown (2.5YR 5/3) clay; very hard, high concentration of gravels and calcium carbonate nodule inclusions, few roots;	Negative

41DLx-1 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
JF34	Termination: Sterile Subsoil Setting: Upland ridge peak, tall grasses, honey locust and juniper Excavator: JF	Stratum 1: 0-5 cm; dark grayish brown (10YR 4/2) clay; disturbed, 40% gravels and crumbled foundation; Stratum 2: 5-30 cm; very dark grayish brown (10YR 3/2) clay; sparse rootlets; Stratum 3: 30-40 cm; dark brown (10YR 3/3) clay; <1% calcium carbonate;	Negative
JF35	Termination: Sterile Subsoil Setting: Upland ridge peak, tall grasses, honey locust and juniper Excavator: JF	Stratum 1: 0-20 cm; very dark gray (10YR 3/1) clay; gravels and crumbled foundation @ surface; Stratum 2: 20-35 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative
JF36	Termination: Sterile Subsoil Setting: Upland ridge peak, tall grasses, honey locust and juniper Excavator: JF	Stratum 1: 0-30 cm; very dark gray (10YR 3/1) clay; few roots and rootlets; Stratum 2: 30-45 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative

41ELX-02 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG37	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-33 cm; dark gray (10YR 4/1) clay; Stratum 2: 33-42 cm; very dark gray (10YR 3/1) clay;	Negative

41ELX-03 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG39	Termination: Sterile Subsoil Setting: field with mixed hardwoods, juniper and low grasses Excavator: EG	Stratum 1: 0-34 cm; dark gray (10YR 4/1) clay; Stratum 2: 34-45 cm; very dark gray (10YR 3/1) clay;	Negative
EG41	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-29 cm; dark gray (10YR 4/1) clay; Stratum 2: 29-40 cm; very dark gray (10YR 3/1) clay;	Negative
EG42	Termination: Disturbed Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-13 cm; light gray (10YR 7/2) sandy loam;	Negative

41ELx-01 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG40	Termination: Sterile Subsoil Setting: overgrown yard, upland Excavator: AG	Stratum 1: 0-11 cm; very dark brown (10YR 2/2) clay loam; rootlets; Stratum 2: 11-30 cm; very dark grayish brown (10YR 3/2) clay; 10YR 5/2 sandy clay, calcium carbonate specks mottling;	Negative
AG41	Termination: Sterile Subsoil Setting: cleared path with short grass Excavator: AG	Stratum 1: 0-20 cm; very dark brown (10YR 2/2) clay loam; Stratum 2: 20-37 cm; very dark grayish brown (10YR 3/2) clay; calcium carbonate and small gravels <3% mottling;	Negative
AG42	Termination: Disturbed Setting: upland, short grass Excavator: AG	Stratum 1: 0-7 cm; grayish brown (10YR 5/2) sandy loam; high frequency of gravel mottling; could not dig through gravel layer;	Negative
JF41	Termination: Sterile Subsoil Setting: Upland pasture, short grasses and mixed hardwood Excavator: JF	Stratum 1: 0-40 cm; black (10YR 2/1) clay; many roots and rootleta; Stratum 2: 40-55 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative
JF42	Termination: Sterile Subsoil Setting: Upland pasture, short grasses and mixed hardwood Excavator: JF	Stratum 1: 0-35 cm; black (10YR 2/1) clay; many roots and rootleta; Stratum 2: 35-50 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative
JF43	Termination: Sterile Subsoil Setting: Upland pasture, short grasses and mixed hardwood Excavator: JF	Stratum 1: 0-30 cm; black (10YR 2/1) clay; many roots and rootleta; Stratum 2: 30-40 cm; black (10YR 2/1) clay; <1% calcium carbonate;	Negative

41ELx-02 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG44	Termination: Sterile Subsoil Setting: overgrown barn yard, upland Excavator: AG	Stratum 1: 0-30 cm; very dark grayish brown (10YR 3/2) clay; roots; Stratum 2: 30-40 cm; very dark grayish brown (2.5Y 3/2) clay; roots;	Negative
AG45	Termination: Sterile Subsoil Setting: overgrown barn yard Excavator: AG	Stratum 1: 0-20 cm; very dark grayish brown (10YR 3/2) clay; Stratum 2: 20-30 cm; very dark grayish brown (2.5Y 3/2) clay; calcium carbonate inclusions mottling;	Negative
EG36	Termination: Sterile Subsoil Setting: hill with low grasses and mixed hardwoods Excavator: EG	Stratum 1: 0-23 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 23-34 cm; very dark gray (10YR 3/1) clay;	Negative
JF44	Termination: Sterile Subsoil Setting: gentle upland slope, mixed hardwood Excavator: JF	Stratum 1: 0-20 cm; very dark grayish brown (10YR 3/2) clay; many roots; Stratum 2: 20-35 cm; black (10YR 2/1) clay; few roots, few calcium carbonate;	Negative
JF45	Termination: Sterile Subsoil Setting: gentle upland slope, mixed hardwood Excavator: JF	Stratum 1: 0-15 cm; very dark grayish brown (10YR 3/2) clay; many roots; Stratum 2: 15-30 cm; black (10YR 2/1) clay; few roots, 3% calcium carbonate;	Negative
JF46	Termination: Sterile Subsoil Setting: gentle upland slope, mixed hardwood Excavator: JF	Stratum 1: 0-25 cm; very dark grayish brown (10YR 3/2) clay; many roots; Stratum 2: 25-40 cm; black (10YR 2/1) clay; few roots, <1% calcium carbonate;	Negative

41ELx-03 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG46	Termination: Sterile Subsoil Setting: former home lawn, upland Excavator: AG	Stratum 1: 0-20 cm; very dark grayish brown (10YR 3/2) clay loam; Stratum 2: 20-34 cm; very dark grayish brown (2.5Y 3/2) clay; calcium carbonate inclusions mottling;	Negative
AG47	Termination: Disturbed Setting: former home lawn, upland Excavator: AG	Stratum 1: 0-8 cm; very dark grayish brown (10YR 3/2) clay loam; frequent gravel; Stratum 2: 8-19 cm; pale brown (10YR 6/3) sandy loam; frequent gravel; Stratum 3: 19-38 cm; dark gray (10YR 4/1) clay; calcium carbonate mottling; dense layer of gravel @ bottom of test;	Negative
EG38	Termination: Sterile Subsoil Setting: field with mixed hardwoods, juniper and low grasses Excavator: EG	Stratum 1: 0-22 cm; dark gray (10YR 4/1) clay; Stratum 2: 22-34 cm; very dark gray (10YR 3/1) clay;	Negative

ELx-01 Shovel Test Log

ID	General Description	Soil Description	Cultural Component
EG33	Termination: Sterile Subsoil Setting: field with low grasses Excavator: EG	Stratum 1: 0-47 cm; dark gray (10YR 4/1) sandy clay loam; banding of 10YR 7/1 with gravels, 7.5YR 6/8 sand, and 5YR 4/6 sandy loam; Stratum 2: 47-54 cm; very dark gray (10YR 3/1) clay; 3% calcium carbonate;	Negative
EG34	Termination: Sterile Subsoil Setting: field with low grasses Excavator: EG	Stratum 1: 0-39 cm; dark gray (10YR 4/1) clay; Stratum 2: 39-50 cm; very dark gray (10YR 3/1) clay;	Negative

ELx-02 Shovel Test Log

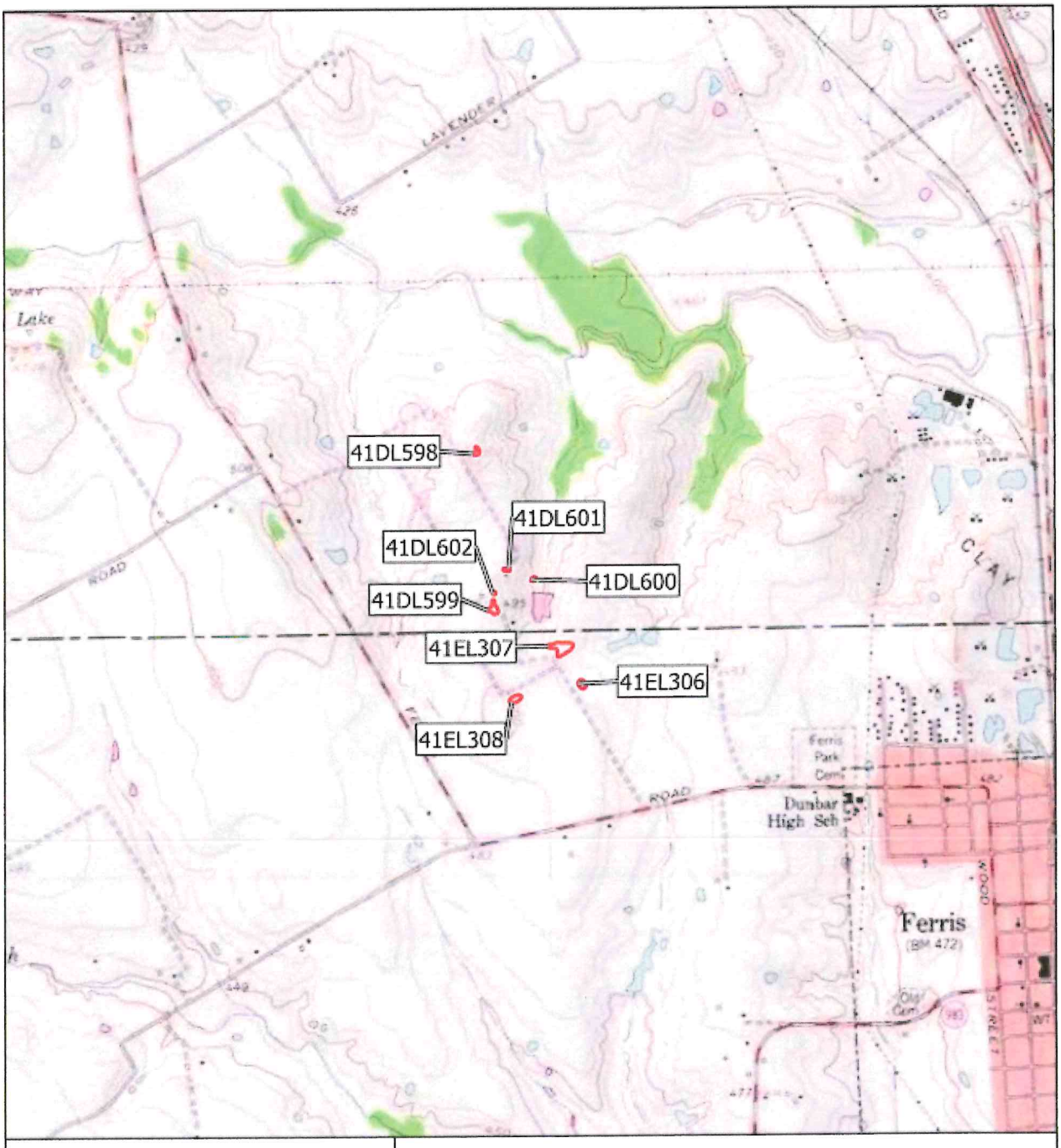
ID	General Description	Soil Description	Cultural Component
EG35	Termination: Sterile Subsoil Setting: field with mixed hardwoods and low grasses Excavator: EG	Stratum 1: 0-26 cm; dark gray (10YR 4/1) clay loam; Stratum 2: 26-36 cm; very dark gray (10YR 3/1) clay;	Negative

TBD Shovel Test Log

ID	General Description	Soil Description	Cultural Component
AG9	Termination: Disturbed Setting: upland prairie Excavator: AG	Stratum 1: 0-15 cm; dark gray (10YR 4/1) loam; gravels 30%+ mottling; terminated @ compact gravel layer;	Negative

This page intentionally left blank

APPENDIX E
Site Location Map



Appendix E
Archeological Site Location

County: Dallas, Ellis
State: Texas
Date map created: 1/13/2026
Source: (c) USGS 7.5' Quad, Ferris
IES Project Ref: 04.393.003

N

0 2,000 4,000 ft
0 600 1,200 m

NOT FOR PUBLIC DISTRIBUTION
Map contains archeological site location information

SKYLINE LANDFILL

APPENDIX IIG

TPDES PERMIT

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Texas Pollutant Discharge Elimination System
Stormwater Multi-Sector General Permit

The Notice of Intent (NOI) for the facility listed below was received on November 9, 2021. The intent to discharge stormwater associated with industrial activity under the terms and conditions imposed by the Texas Pollutant Discharge Elimination System (TPDES) stormwater Multi-Sector General Permit (MSGP) TXR050000 is acknowledged. Your facility's unique TPDES MSGP stormwater authorization number is:

TXR05U147
Coverage Effective: December 12, 2006
Sector: L,P Primary SIC code: 4953

TCEQ's stormwater MSGP requires certain stormwater pollution prevention and control measures, possible monitoring and reporting, and periodic inspections. Among the conditions and requirements of this permit, you must have prepared and implemented a stormwater pollution prevention plan (SWP3) that is tailored to your industrial site. As a facility authorized to discharge under the stormwater MSGP, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

Facility/Site Information:
RN100542232
Skyline Recycling And Disposal Facility
1201 N Central St
Ferris, TX 75125
Dallas County

Operator:
CN600127856
Waste Management of Texas, Inc.
5012 Martin Luther King Fwy
Fort Worth, TX 76119

The MSGP and all authorizations expire on August 14, 2026, unless otherwise amended. If you have any questions related to your application, you may contact the Stormwater Processing Center by email at SWPERMIT@tceq.texas.gov or by telephone at (512) 239-3700. For technical issues, you may contact the stormwater technical staff by email at SWGP@tceq.texas.gov or by telephone at (512) 239-4671. Also, you may obtain information on the TCEQ web site at https://www.tceq.texas.gov/goto/wq-dpa. A copy of this document should be kept with your SWP3.

Issued Date: November 09, 2021

FOR THE COMMISSION

SKYLINE LANDFILL

APPENDIX IIH

FEDERAL AVIATION ADMINISTRATION DOCUMENTATION

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

Kellen Benbrook
Airport Manager
Lancaster Regional Airport
950 Ferris Road
Lancaster, Texas 75146

Re: Waste Management Skyline Landfill Permit Amendment
TCEQ Permit No. MSW 42E
Dallas and Ellis Counties, Texas
Documentation of Coordination

Dear Mr. Benbrook:

On behalf of Waste Management of Texas, Inc., Biggs & Mathews Environmental, Inc. is preparing to submit a Texas Commission on Environmental Quality permit amendment application for the Waste Management Skyline Landfill (Skyline Landfill), located in Dallas and Ellis Counties, Texas. The facility site entrance is located approximately one mile south of the Malloy Bridge Road and IH-45 Business South/N Central Street intersection as shown on the attached drawing, IIA.4 – Airport Map. Pursuant to 30 TAC §330.61(i)(5) and §330.545(b), this letter is to document coordination with the Lancaster Regional Airport.

BME has coordinated with the Federal Aviation Administration and has received a "Determination of No Hazard to Air Navigation". Copies of Aeronautical Study 2024-ASW-3552-OE, 2024-ASW-3553-OE, 2024-ASW-3555-OE, 2024-ASW-3556-OE and 2024-ASW-3557-OE and Bird Control Plan are attached for your information.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ♦ TBPG No. 50222

Gregory W. Adams, P.E.
Principal

Attachments: Drawing IIA.4 – Airport Map
FAA Determination of No Hazard Reports
Skyline Landfill Bird Control Plan

cc: Mr. James Smith, Area Director, Disposal Operations, Waste Management of Texas, Inc.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3552-OE
Prior Study No.
2024-ASW-1222-OE

Issued Date: 09/09/2025

WASTE MANAGEMENT OF TEXAS
GUY CAMPBELL
5012 MLK Jr
Fort Worth, TX 76119

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Existing Municipal Solid Waste Landfill Skyline Landfill
County, State: Dallas, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Skyline Landfill	32-32-54.37N	96-41-14.11W	485 Ft	156 Ft	641 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 03/09/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3552-OE.

Signature Control No: 615063297-677091033 (EXT)
andrew.hollie@faa.gov
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-3552-OE

Expansion of existing landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3553-OE
Prior Study No.
2024-ASW-1221-OE

Issued Date: 09/09/2025

WASTE MANAGEMENT OF TEXAS
GUY CAMPBELL
5012 MLK Jr
Fort Worth, TX 76119

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Existing Municipal Solid Waste Landfill Skyline Landfill
County, State: Dallas, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Skyline Landfill	32-33-04.21N	96-40-51.89W	589 Ft	62 Ft	651 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 03/09/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3553-OE.

Signature Control No: 615065884-677091037 (EXT)
andrew.hollie@faa.gov
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-3553-OE

Proposed expansion of existing landfill

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3555-OE
Prior Study No.
2024-ASW-1223-OE

Issued Date: 09/09/2025

WASTE MANAGEMENT OF TEXAS
GUY CAMPBELL
5012 MLK Jr
Fort Worth, TX 76119

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Existing Municipal Solid Waste Landfill Skyline Landfill
County, State: Dallas, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Skyline Landfill	32-32-59.45N	96-40-31.44W	433 Ft	309 Ft	742 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 03/09/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3555-OE.

Signature Control No: 615066642-677091035 (EXT)
andrew.hollie@faa.gov
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-3555-OE

Expansion of existing landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3556-OE
Prior Study No.
2024-ASW-1224-OE

Issued Date: 09/09/2025

WASTE MANAGEMENT OF TEXAS
GUY CAMPBELL
5012 MLK Jr
Fort Worth, TX 76119

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Existing Municipal Solid Waste Landfill Skyline Landfill
County, State: Dallas, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Skyline Landfill	32-32-47.88N	96-40-36.27W	603 Ft	158 Ft	761 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 03/09/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3556-OE.

Signature Control No: 615066993-677091036 (EXT)
andrew.hollie@faa.gov
Specialist

Attachment(s)

Expansion of existing landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3557-OE
Prior Study No.
2024-ASW-1225-OE

Issued Date: 09/09/2025

WASTE MANAGEMENT OF TEXAS
GUY CAMPBELL
5012 MLK Jr
Fort Worth, TX 76119

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Existing Municipal Solid Waste Landfill Skyline Landfill
County, State: Ellis, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Skyline Landfill	32-32-38.72N	96-40-59.43W	522 Ft	200 Ft	722 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 03/09/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3557-OE.

Signature Control No: 615067489-677091034 (EXT)
andrew.hollie@faa.gov
Specialist

Attachment(s)

Expansion of existing landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3552-OE
Prior Study No.
2024-ASW-1222-OE

Issued Date: 05/13/2024

Guy Campbell
Waste Management of Texas
5012 MLK Jr
Fort Worth, TX 76119

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Existing Municipal Solid Waste Landfill Skyline Landfill
Location:	Ferris, TX
Latitude:	32-32-54.37N NAD 83
Longitude:	96-41-14.11W
Heights:	485 feet site elevation (SE)
	156 feet above ground level (AGL)
	641 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 11/13/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

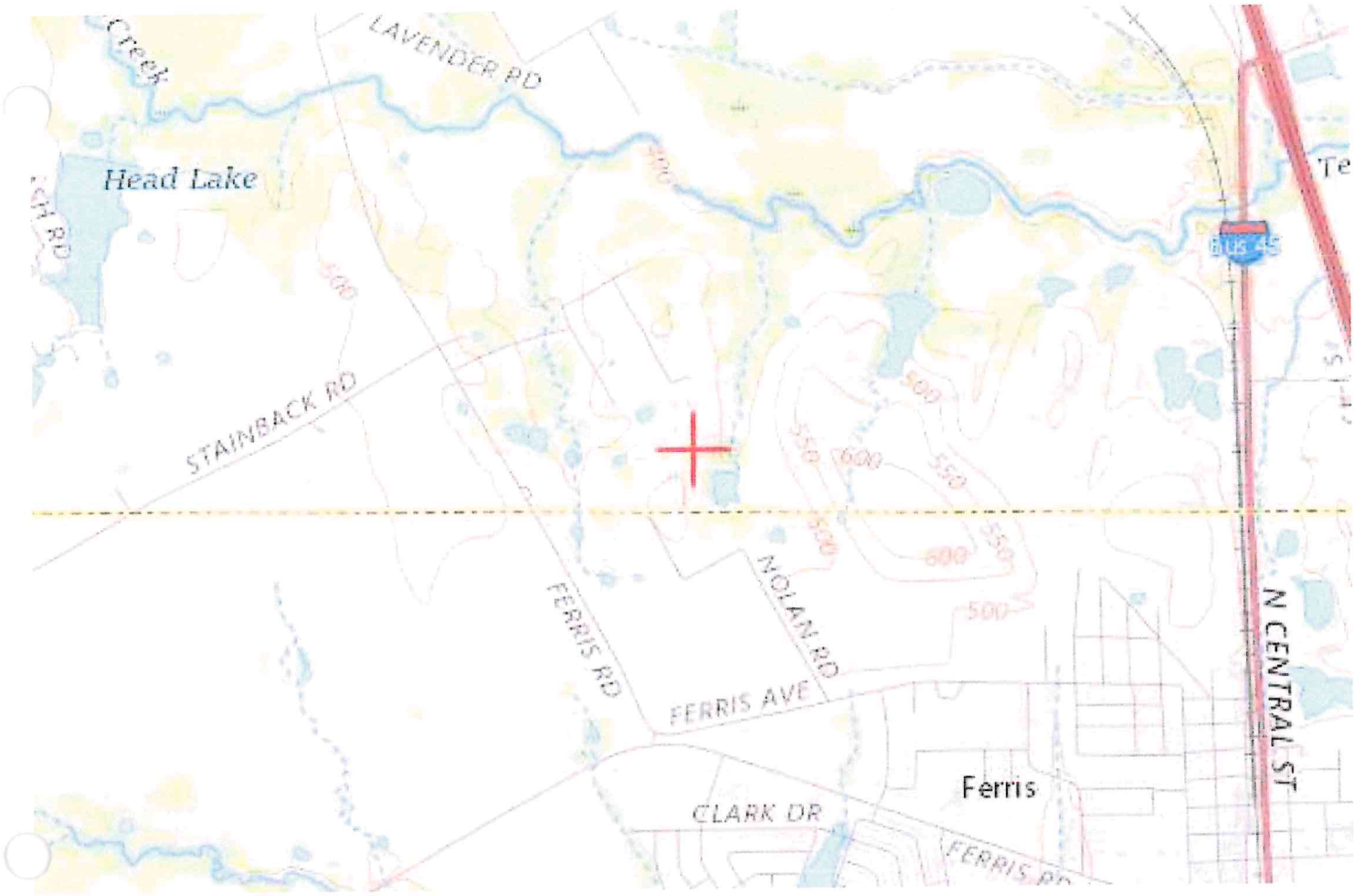
If we can be of further assistance, please contact our office at (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3552-OE.

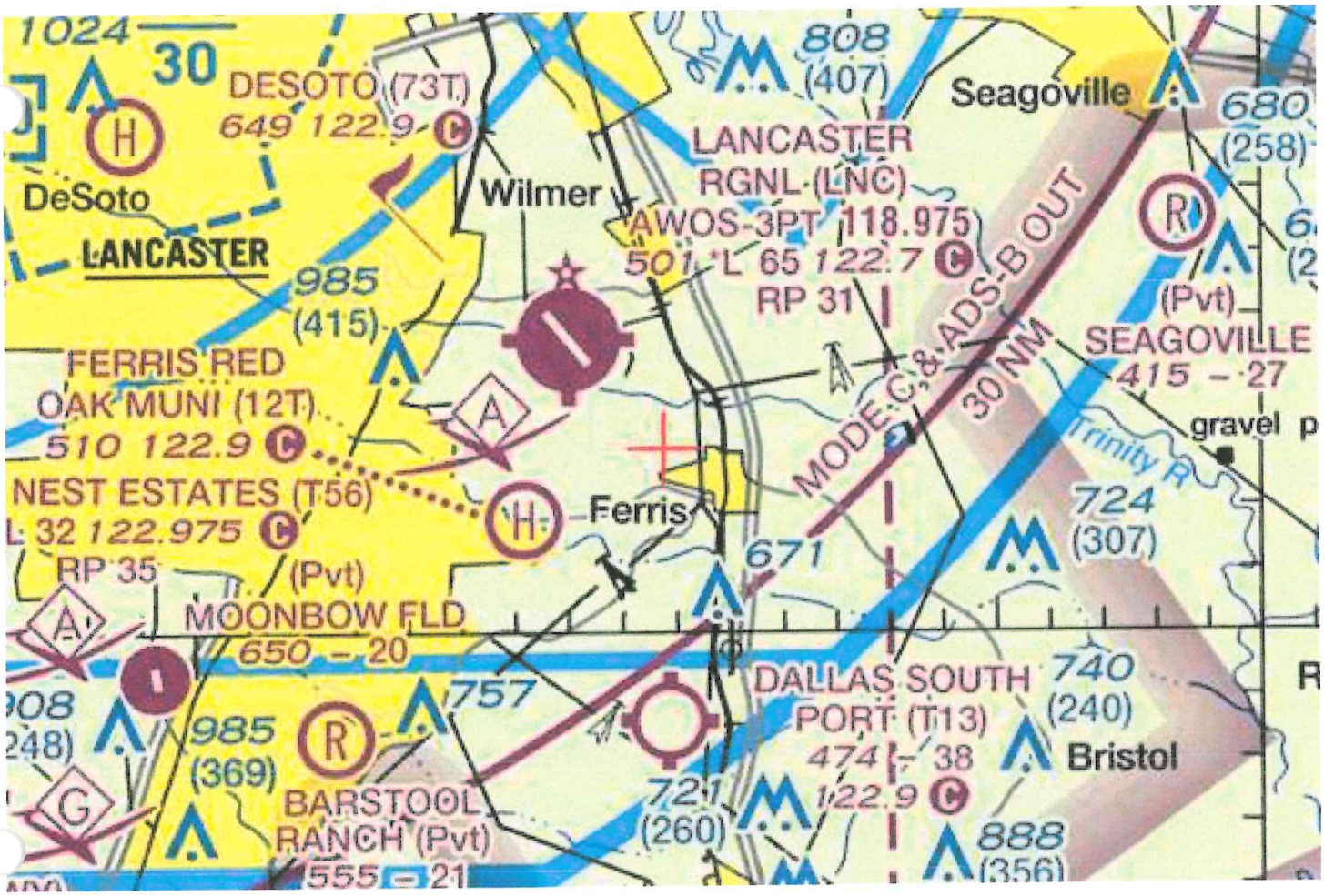
Signature Control No: 615063297-621354885 (DNE)
Andrew Hollie
Specialist

Attachment(s)
Case Description
Map(s)

Expansion of existing landfill.

TOPO Map for ASN 2024-ASW-3552-OE




1024
30
DESOTO (73T)
649 122.9 C
DeSoto
LANCASTER
985
(415)
FERRIS RED
OAK MUNI (12T)
510 122.9 C
NEST ESTATES (T56)
L 32 122.975 C
RP 35
(Pvt)
MOONBOW FLD
650 – 20
908
248)
985
(369)
BARSTOOL
RANCH (Pvt)
555 – 21
757
Wilmer
808
(407)
LANCASTER
RGNL (LNC)
AWOS-3PT 118.975
501 L 65 122.7 C
RP 31
Ferris
671
721
(260)
DALLAS SOUTH
PORT (T13)
474 – 38
122.9 C
740
(240)
Bristol
888
(356)
724
(307)
MODE C & ADS-B OUT
30 NM
Seagoville
680
(258)
(Pvt)
SEAGOVILLE
415 – 27
gravel p
Trinity R

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3553-OE
Prior Study No.
2024-ASW-1221-OE

Issued Date: 05/13/2024

Guy Campbell
Waste Management of Texas
5012 MLK Jr
Fort Worth, TX 76119

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Existing Municipal Solid Waste Landfill Skyline Landfill
Location:	Ferris, TX
Latitude:	32-33-04.21N NAD 83
Longitude:	96-40-51.89W
Heights:	589 feet site elevation (SE)
	62 feet above ground level (AGL)
	651 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

The FAA has identified the need for an analysis of potential wildlife hazards to aircraft as described in Advisory Circular 150/5200-33, Hazardous Wildlife Attractants on or Near Airports, to be accomplished for this proposal in accordance with 40 Code of Federal Regulation (CFR) 258 section 258.10. Owners or operators of new, existing, and lateral expansions of Municipal Solid Waste Landfill (MSWLF) units that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft, must demonstrate the MSWLF units design and operation do not pose a bird hazard to aircraft.

When the services of a wildlife damage management biologist are required, the FAA recommends that land use developers contact a consultant specializing in wildlife damage management or the appropriate United States Department of Agriculture (USDA) State Director of Wildlife Services. The USDA's state offices can be found on their website: (https://www.aphis.usda.gov).

This determination expires on 11/13/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

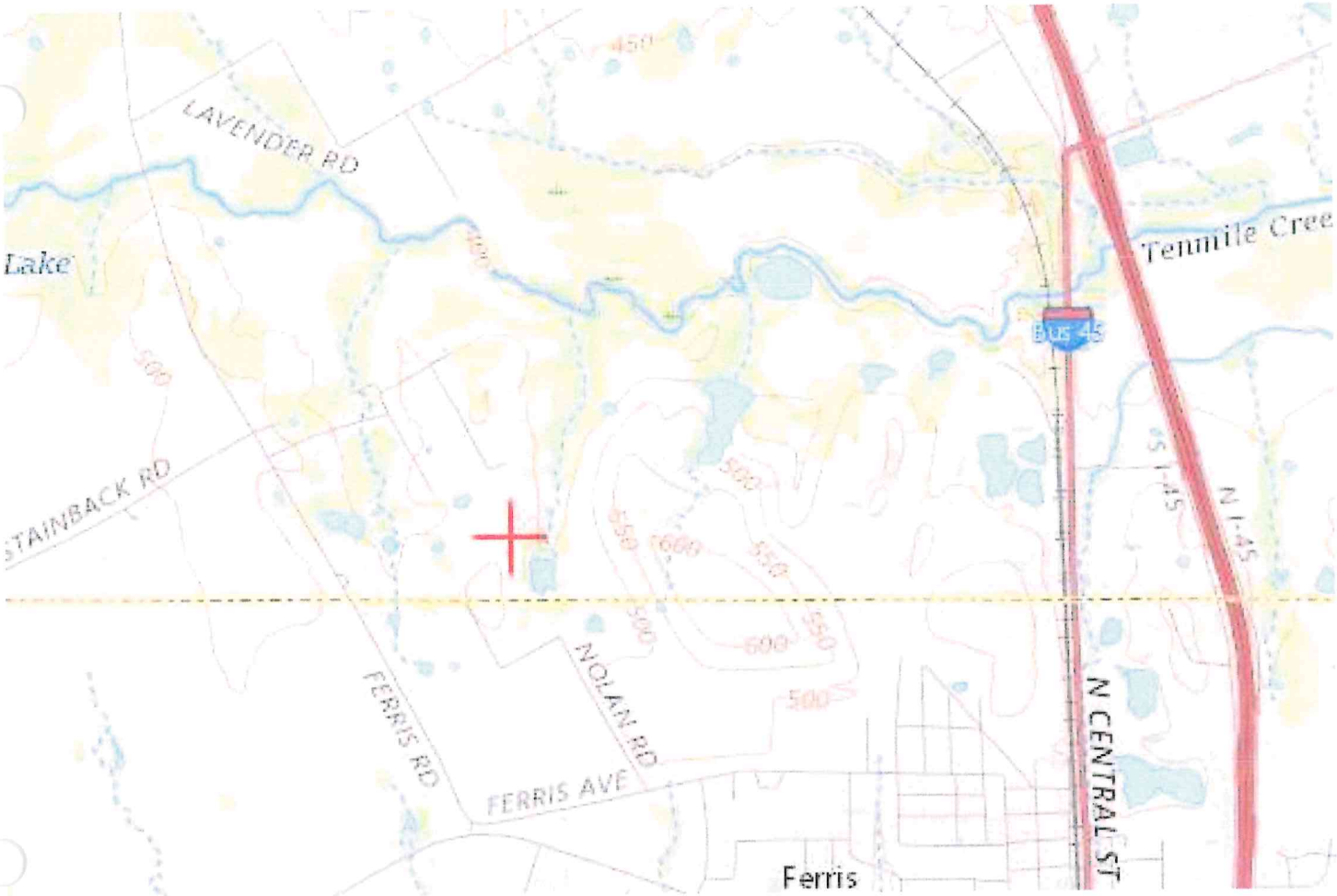
If we can be of further assistance, please contact our office at (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3553-OE.

Signature Control No: 615065884-621354998 (DNE)
Andrew Hollie
Specialist

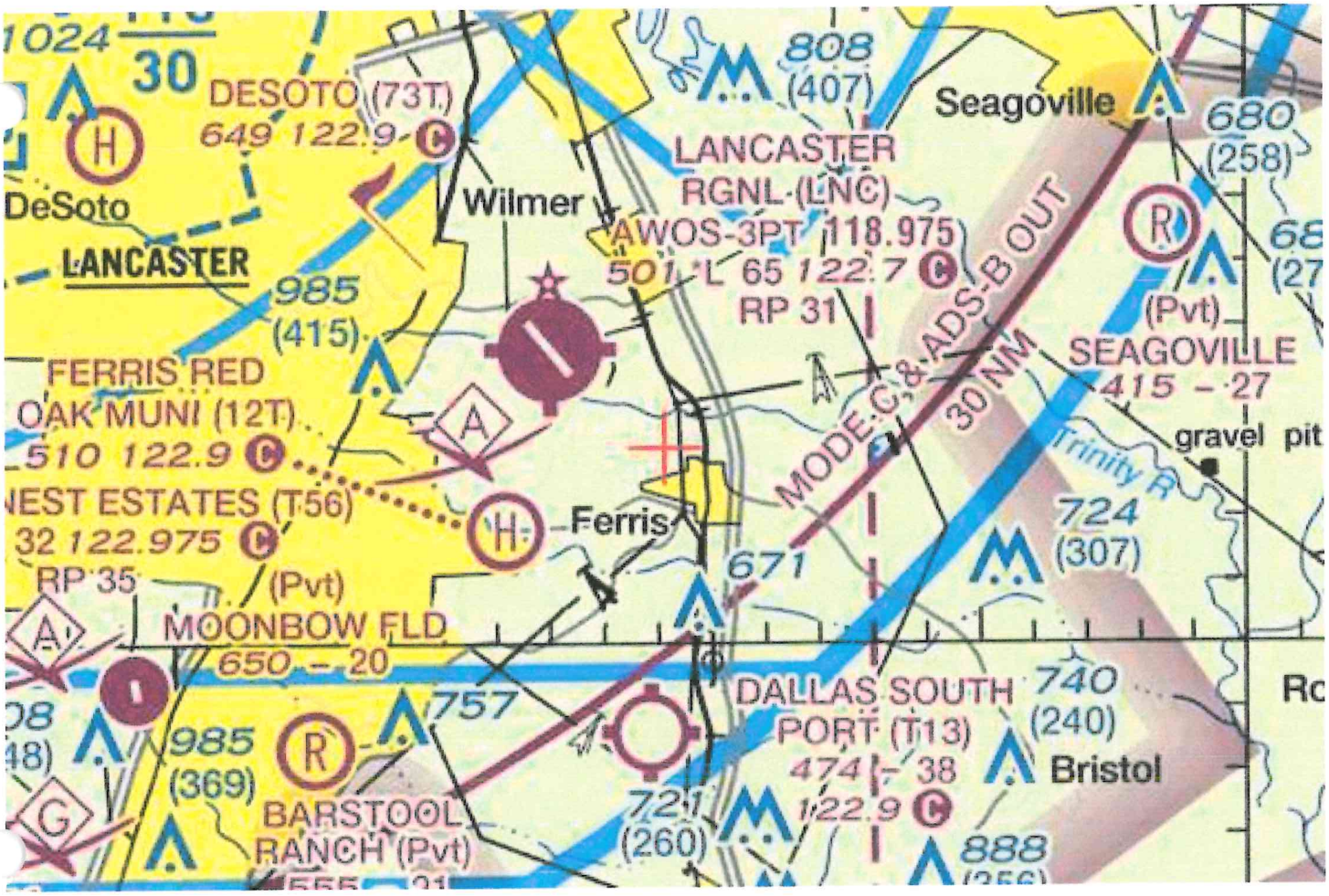
Attachment(s)
Case Description
Map(s)

Proposed expansion of existing landfill

TOPO Map for ASN 2024-ASW-3553-OE



Sectional Map for ASN 2024-ASW-3553-OE



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3555-OE
Prior Study No.
2024-ASW-1223-OE

Issued Date: 05/13/2024

Guy Campbell
Waste Management of Texas
5012 MLK Jr
Fort Worth, TX 76119

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Existing Municipal Solid Waste Landfill Skyline Landfill
Location:	Ferris, TX
Latitude:	32-32-59.45N NAD 83
Longitude:	96-40-31.44W
Heights:	433 feet site elevation (SE)
	309 feet above ground level (AGL)
	742 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4,5(Red),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

The FAA has identified the need for an analysis of potential wildlife hazards to aircraft as described in Advisory Circular 150/5200-33, Hazardous Wildlife Attractants on or Near Airports, to be accomplished for this proposal

in accordance with 40 Code of Federal Regulation (CFR) 258 section 258.10. Owners or operators of new, existing, and lateral expansions of Municipal Solid Waste Landfill (MSWLF) units that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft, must demonstrate the MSWLF units design and operation do not pose a bird hazard to aircraft.

When the services of a wildlife damage management biologist are required, the FAA recommends that land use developers contact a consultant specializing in wildlife damage management or the appropriate United States Department of Agriculture (USDA) State Director of Wildlife Services. The USDA's state offices can be found on their website: (https://www.aphis.usda.gov).

This determination expires on 11/13/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before June 12, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on June 22, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Andrew Hollie, at (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3555-OE.

Signature Control No: 615066642-621354636 (DNH)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

Abbreviations
AGL = Above Ground Level
RWY = Runway
MSL = Mean Sea Level
NEH = No Effect Height
NM = Nautical Mile
Part 77 = Title 14 CFR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our study has disclosed that this proposed increase to a landfill that consist of five studies that represent the outline and the high point, is located approximately 2.35 nm southeast, is within the protected surfaces at Lancaster Regional Airport (LNC), Lancaster, TX. These submissions are a refile as a 1A survey was provided that changed the coordinates and site elevation, as well as mitigating some effects.

The four studies that has an impact is as follows:

Aeronautical Study	AGL / MSL	Direct distance from runway end 31
2024-ASW-3553-OE	67 / 656	10130 feet / 1.67 nm
2024-ASW-3555-OE	309 / 742	11846 feet / 1.94 nm
2024-ASW-3556-OE	158 / 761	12195 feet / 2.00 nm
2024-ASW-3557-OE	200 / 722	11394 feet / 1.87 nm

The proponent agreed to lower the height of 2024-ASW-3553-OE to 62 AGL / 651 MSL.

Aeronautical study 2024-ASW-3555-ASW is being circulated for public comment and will represent the project as the study with the greatest impact. Any response for this study will be a response for the project.

At the existing height, this structure will penetrate these protected airport surfaces:

> 77.17 (a)(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

2024-ASW-3555-OE exceeds by 41 feet.

> 77.17 (a)(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23.

77.19 (a) Horizontal surface. A horizontal plane 150 feet above the established airport elevation.

2024-ASW-3553-OE exceeds by 5 feet. (Agreed to lower the 5 feet.)

77.19 (b) Conical surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

2024-ASW-3555-OE exceeds by 9 feet.
2024-ASW-3556-OE exceeds by 10 feet.

2024-ASW-3557-OE exceeds by 12 feet.

77.19 (d) Approach surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

2024-ASW-3557-OE exceeds by 23 feet.

77.19 (e) Transitional surface. These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

2024-ASW-3556-OE exceeds by 18 feet.

**Part 77 obstruction standards are used to screen the many proposals submitted in order to identify those which warrant further aeronautical study. This study is conducted in order to determine if the proposal would have a significant adverse effect on protected aeronautical operations and airspace. While part 77 obstruction standards trigger formal aeronautical study, including public circularization, these obstruction standards do not constitute absolute or arbitrary criteria for identification of hazards to air navigation. Accordingly, the fact that a proposed structure exceeds certain obstruction standards of part 77 is in itself not sufficient grounds for issuance of a determination of hazard to air navigation.

The proposal was circularized for public comment on 04/01/2024 to 5093 email respondents with zero responses returned.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

> The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.

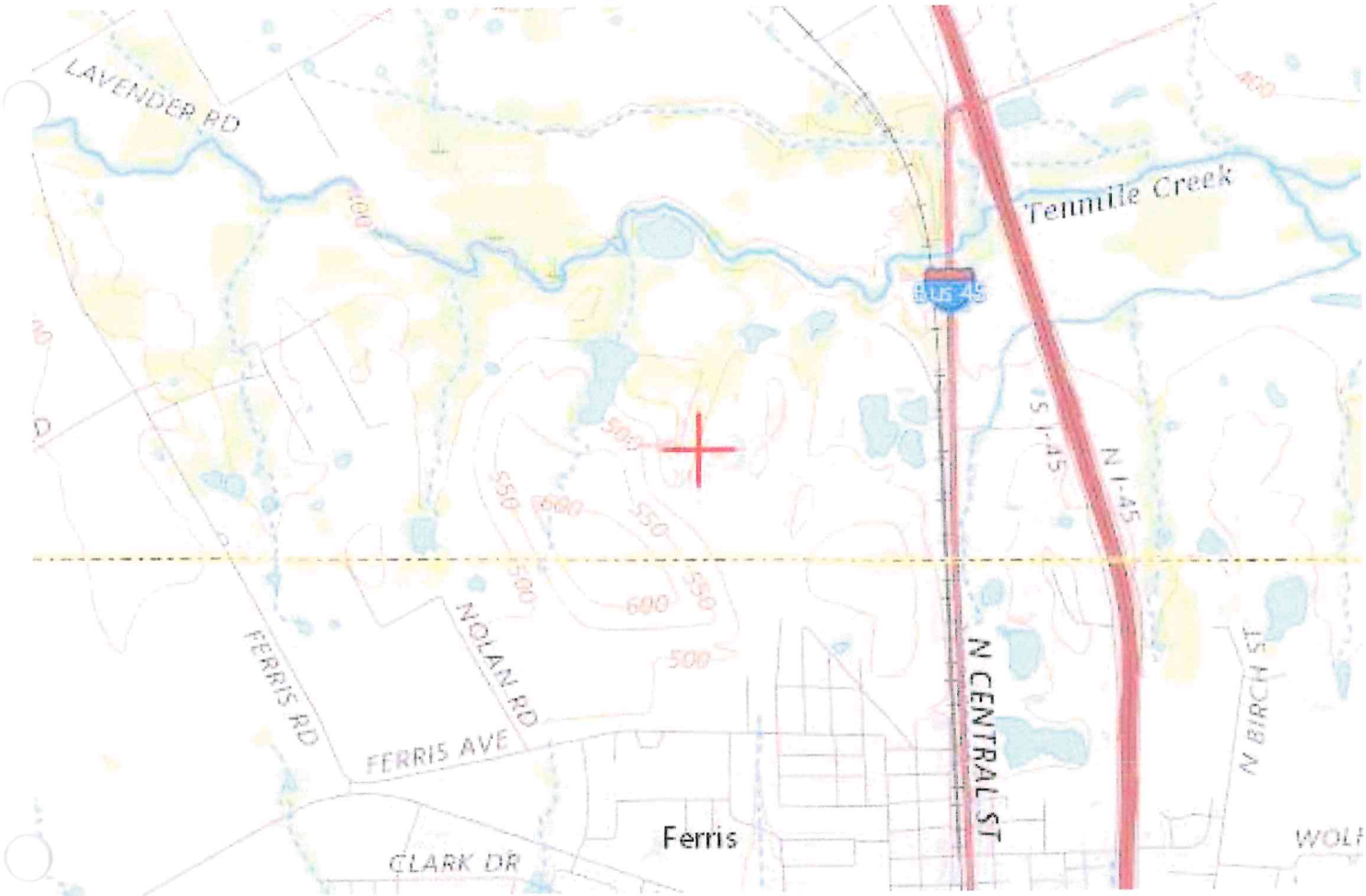
> The proposed structure would not penetrate those altitudes normally considered available to airmen for VFR en route flight.

The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

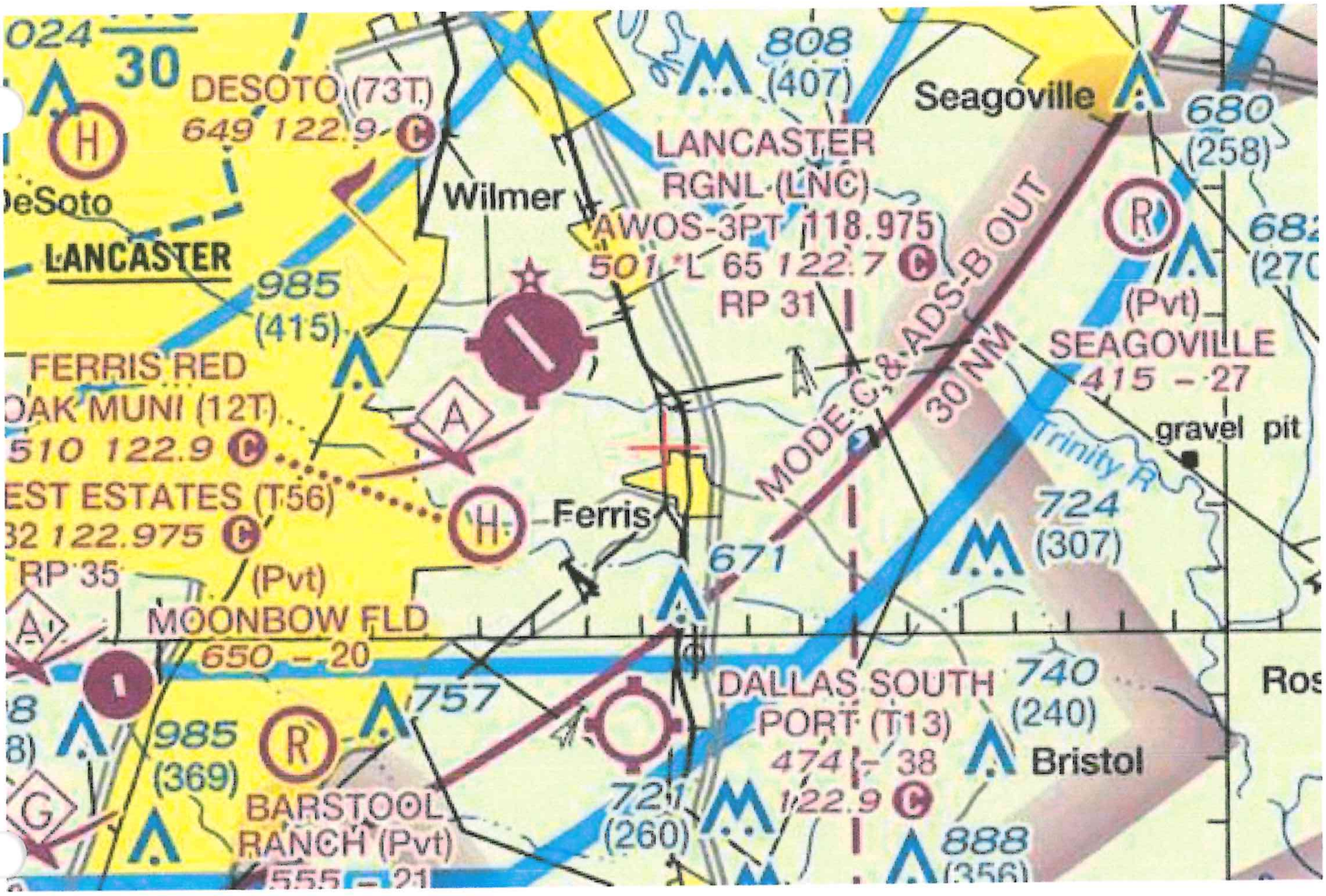
Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

Expansion of existing landfill.

TOPO Map for ASN 2024-ASW-3555-OE



Sectional Map for ASN 2024-ASW-3555-OE



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3556-OE
Prior Study No.
2024-ASW-1224-OE

Issued Date: 05/13/2024

Guy Campbell
Waste Management of Texas
5012 MLK Jr
Fort Worth, TX 76119

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Existing Municipal Solid Waste Landfill Skyline Landfill
Location:	Ferris, TX
Latitude:	32-32-47.88N NAD 83
Longitude:	96-40-36.27W
Heights:	603 feet site elevation (SE)
	158 feet above ground level (AGL)
	761 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4,5(Red),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

The FAA has identified the need for an analysis of potential wildlife hazards to aircraft as described in Advisory Circular 150/5200-33, Hazardous Wildlife Attractants on or Near Airports, to be accomplished for this proposal

in accordance with 40 Code of Federal Regulation (CFR) 258 section 258.10. Owners or operators of new, existing, and lateral expansions of Municipal Solid Waste Landfill (MSWLF) units that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft, must demonstrate the MSWLF units design and operation do not pose a bird hazard to aircraft.

When the services of a wildlife damage management biologist are required, the FAA recommends that land use developers contact a consultant specializing in wildlife damage management or the appropriate United States Department of Agriculture (USDA) State Director of Wildlife Services. The USDA's state offices can be found on their website: (https://www.aphis.usda.gov).

This determination expires on 11/13/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before June 12, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on June 22, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Andrew Hollie, at (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3556-OE.

Signature Control No: 615066993-621354637 (DNH)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

Abbreviations
AGL = Above Ground Level
RWY = Runway
MSL = Mean Sea Level
NEH = No Effect Height
NM = Nautical Mile
Part 77 = Title 14 CFR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our study has disclosed that this proposed increase to a landfill that consist of five studies that represent the outline and the high point, is located approximately 2.35 nm southeast, is within the protected surfaces at Lancaster Regional Airport (LNC), Lancaster, TX. These submissions are a refile as a 1A survey was provided that changed the coordinates and site elevation, as well as mitigating some effects.

The four studies that has an impact is as follows:

Aeronautical Study AGL / MSL Direct distance from runway end 31
2024-ASW-3553-OE 67 / 656 10130 feet / 1.67 nm
2024-ASW-3555-OE 309 / 742 11846 feet / 1.94 nm
2024-ASW-3556-OE 158 / 761 12195 feet / 2.00 nm
2024-ASW-3557-OE 200 / 722 11394 feet / 1.87 nm

The proponent agreed to lower the height of 2024-ASW-3553-OE to 62 AGL / 651 MSL.

Aeronautical study 2024-ASW-3555-ASW is being circulated for public comment and will represent the project as the study with the greatest impact. Any response for this study will be a response for the project.

At the existing height, this structure will penetrate these protected airport surfaces:

> 77.17 (a)(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

2024-ASW-3555-OE exceeds by 41 feet.

> 77.17 (a)(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23.

77.19 (a) Horizontal surface. A horizontal plane 150 feet above the established airport elevation.

2024-ASW-3553-OE exceeds by 5 feet. (Agreed to lower the 5 feet.)

77.19 (b) Conical surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

2024-ASW-3555-OE exceeds by 9 feet.
2024-ASW-3556-OE exceeds by 10 feet.

2024-ASW-3557-OE exceeds by 12 feet.

77.19 (d) Approach surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

2024-ASW-3557-OE exceeds by 23 feet.

77.19 (e) Transitional surface. These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

2024-ASW-3556-OE exceeds by 18 feet.

**Part 77 obstruction standards are used to screen the many proposals submitted in order to identify those which warrant further aeronautical study. This study is conducted in order to determine if the proposal would have a significant adverse effect on protected aeronautical operations and airspace. While part 77 obstruction standards trigger formal aeronautical study, including public circularization, these obstruction standards do not constitute absolute or arbitrary criteria for identification of hazards to air navigation. Accordingly, the fact that a proposed structure exceeds certain obstruction standards of part 77 is in itself not sufficient grounds for issuance of a determination of hazard to air navigation.

The proposal was circularized for public comment on 04/01/2024 to 5093 email respondents with zero responses returned.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

> The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.

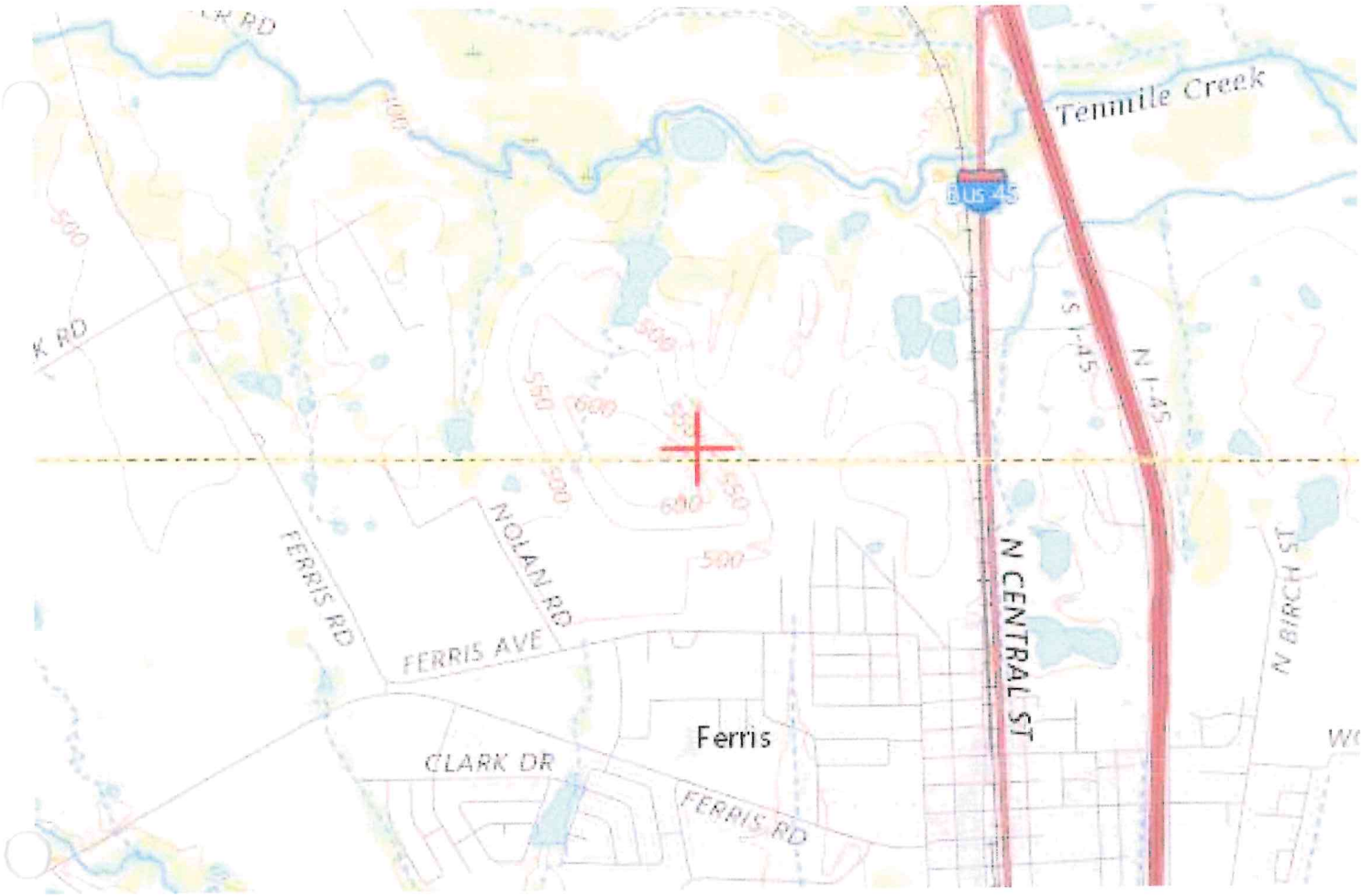
> The proposed structure would not penetrate those altitudes normally considered available to airmen for VFR en route flight.

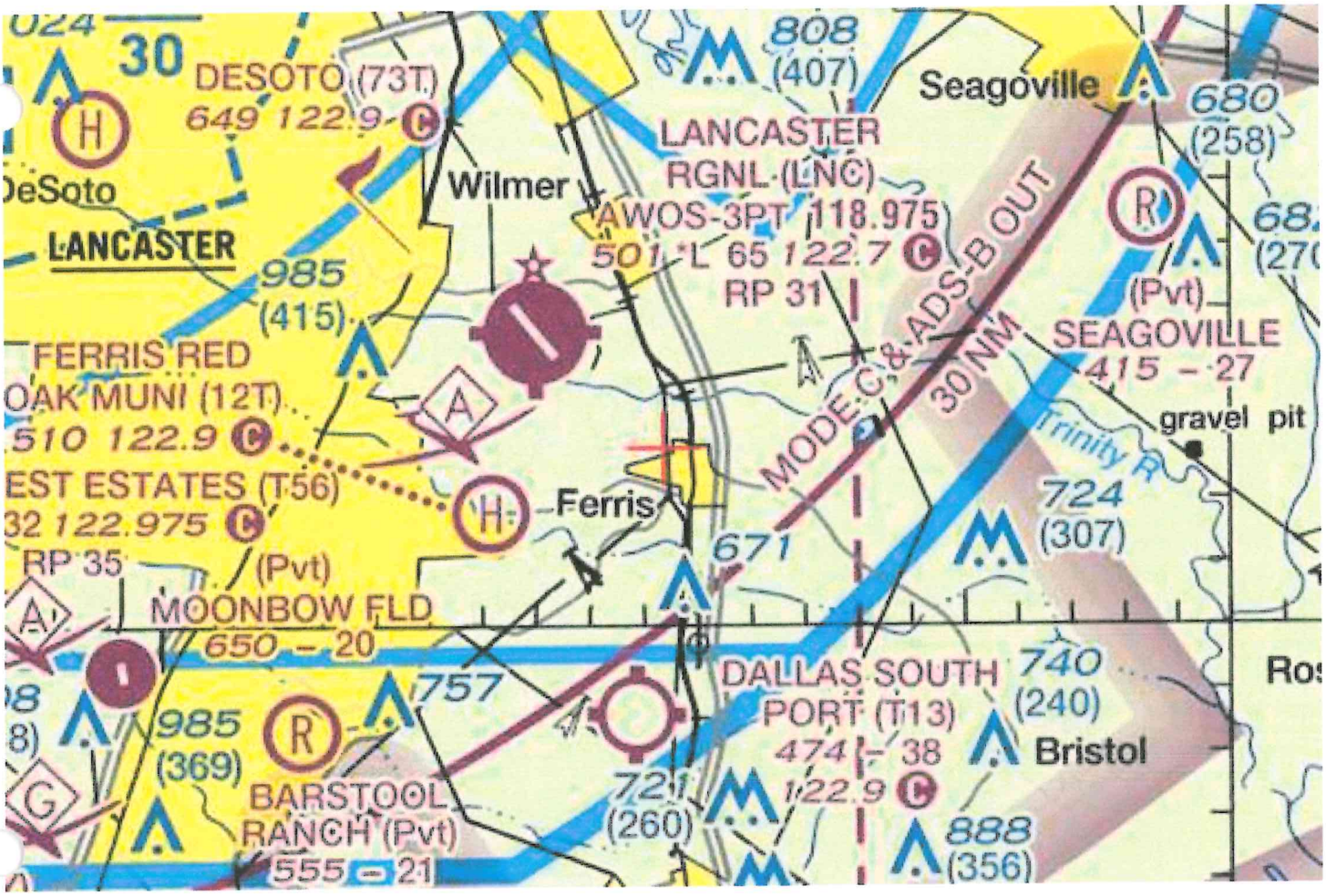
The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

Expansion of existing landfill.

TOPO Map for ASN 2024-ASW-3556-OE




30
DESOTO (73T)
649 122.9 C
DeSoto
LANCASTER
985
(415)
FERRIS RED
OAK MUNI (12T)
510 122.9 C
EST ESTATES (T56)
32 122.975 C
RP 35
(Pvt)
MOONBOW FLD
650 – 20
985
(369)
BARSTOOL
RANCH (Pvt)
555 – 21
757
808
(407)
LANCASTER
RGNL (LNC)
AWOS-3PT 118.975
501 L 65 122.7 C
RP 31
Wilmer
Ferris
671
721
(260)
DALLAS SOUTH
PORT (T13)
474 – 38
122.9 C
740
(240)
Bristol
888
(356)
724
(307)
MODE C & ADS-B OUT
30 NM
Seagoville
680
(258)
(Pvt)
SEAGOVILLE
415 – 27
gravel pit
Trinity R

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-3557-OE
Prior Study No.
2024-ASW-1225-OE

Issued Date: 05/13/2024

Guy Campbell
Waste Management of Texas
5012 MLK Jr
Fort Worth, TX 76119

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Existing Municipal Solid Waste Landfill Skyline Landfill
Location:	Ferris, TX
Latitude:	32-32-38.72N NAD 83
Longitude:	96-40-59.43W
Heights:	522 feet site elevation (SE)
	200 feet above ground level (AGL)
	722 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4,5(Red),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

The FAA has identified the need for an analysis of potential wildlife hazards to aircraft as described in Advisory Circular 150/5200-33, Hazardous Wildlife Attractants on or Near Airports, to be accomplished for this proposal

in accordance with 40 Code of Federal Regulation (CFR) 258 section 258.10. Owners or operators of new, existing, and lateral expansions of Municipal Solid Waste Landfill (MSWLF) units that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft, must demonstrate the MSWLF units design and operation do not pose a bird hazard to aircraft.

When the services of a wildlife damage management biologist are required, the FAA recommends that land use developers contact a consultant specializing in wildlife damage management or the appropriate United States Department of Agriculture (USDA) State Director of Wildlife Services. The USDA's state offices can be found on their website: (https://www.aphis.usda.gov).

This determination expires on 11/13/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before June 12, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on June 22, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Andrew Hollie, at (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-3557-OE.

Signature Control No: 615067489-621354638 (DNH)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

Abbreviations
AGL = Above Ground Level
RWY = Runway
MSL = Mean Sea Level
NEH = No Effect Height
NM = Nautical Mile
Part 77 = Title 14 CFR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our study has disclosed that this proposed increase to a landfill that consist of five studies that represent the outline and the high point, is located approximately 2.35 nm southeast, is within the protected surfaces at Lancaster Regional Airport (LNC), Lancaster, TX. These submissions are a refile as a 1A survey was provided that changed the coordinates and site elevation, as well as mitigating some effects.

The four studies that has an impact is as follows:

Aeronautical Study AGL / MSL Direct distance from runway end 31
2024-ASW-3553-OE 67 / 656 10130 feet / 1.67 nm
2024-ASW-3555-OE 309 / 742 11846 feet / 1.94 nm
2024-ASW-3556-OE 158 / 761 12195 feet / 2.00 nm
2024-ASW-3557-OE 200 / 722 11394 feet / 1.87 nm

The proponent agreed to lower the height of 2024-ASW-3553-OE to 62 AGL / 651 MSL.

Aeronautical study 2024-ASW-3555-ASW is being circulated for public comment and will represent the project as the study with the greatest impact. Any response for this study will be a response for the project.

At the existing height, this structure will penetrate these protected airport surfaces:

> 77.17 (a)(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

2024-ASW-3555-OE exceeds by 41 feet.

> 77.17 (a)(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23.

77.19 (a) Horizontal surface. A horizontal plane 150 feet above the established airport elevation.

2024-ASW-3553-OE exceeds by 5 feet. (Agreed to lower the 5 feet.)

77.19 (b) Conical surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

2024-ASW-3555-OE exceeds by 9 feet.
2024-ASW-3556-OE exceeds by 10 feet.

2024-ASW-3557-OE exceeds by 12 feet.

77.19 (d) Approach surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

2024-ASW-3557-OE exceeds by 23 feet.

77.19 (e) Transitional surface. These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

2024-ASW-3556-OE exceeds by 18 feet.

**Part 77 obstruction standards are used to screen the many proposals submitted in order to identify those which warrant further aeronautical study. This study is conducted in order to determine if the proposal would have a significant adverse effect on protected aeronautical operations and airspace. While part 77 obstruction standards trigger formal aeronautical study, including public circularization, these obstruction standards do not constitute absolute or arbitrary criteria for identification of hazards to air navigation. Accordingly, the fact that a proposed structure exceeds certain obstruction standards of part 77 is in itself not sufficient grounds for issuance of a determination of hazard to air navigation.

The proposal was circularized for public comment on 04/01/2024 to 5093 email respondents with zero responses returned.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

> The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

> The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.

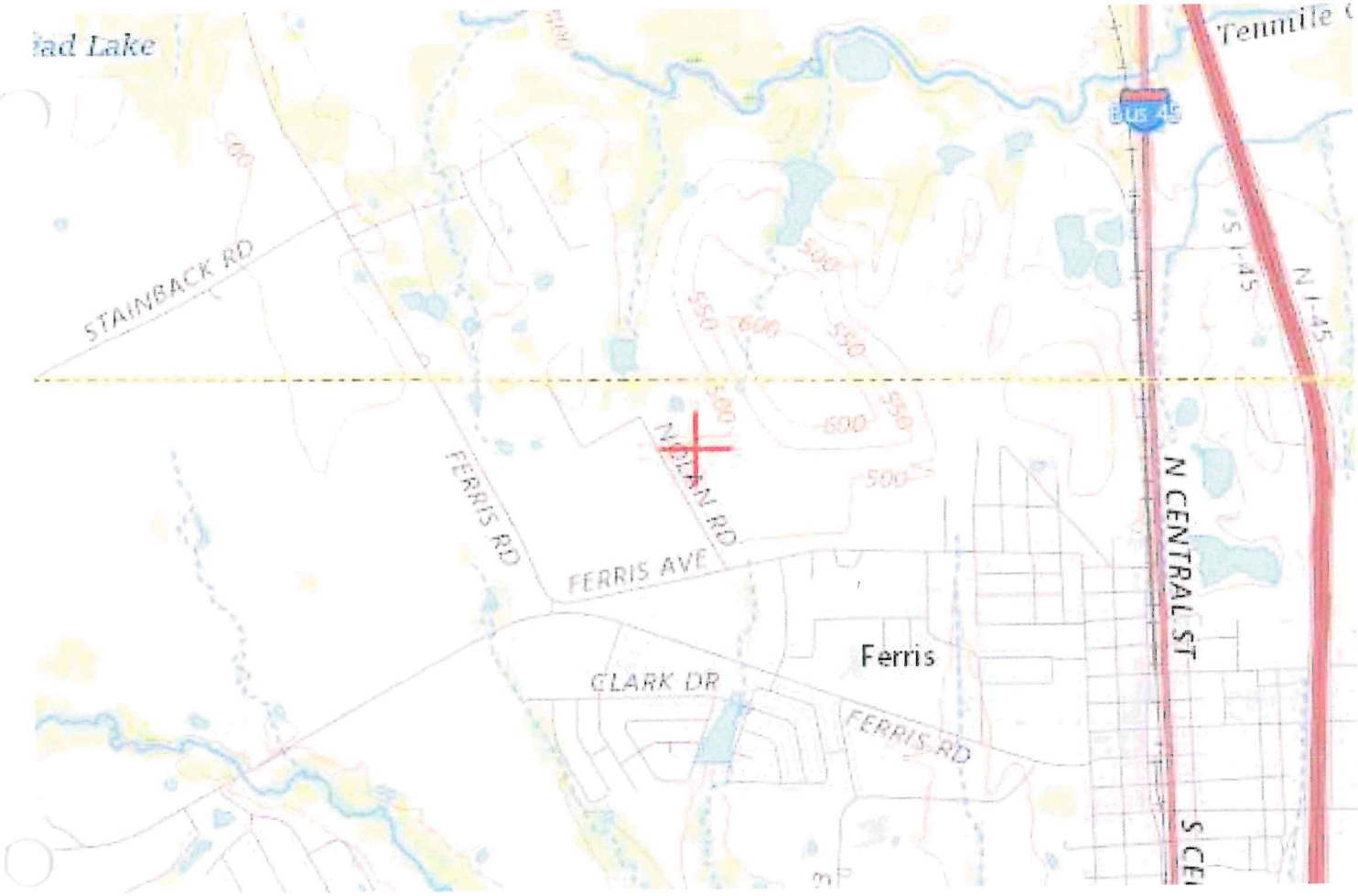
> The proposed structure would not penetrate those altitudes normally considered available to airmen for VFR en route flight.

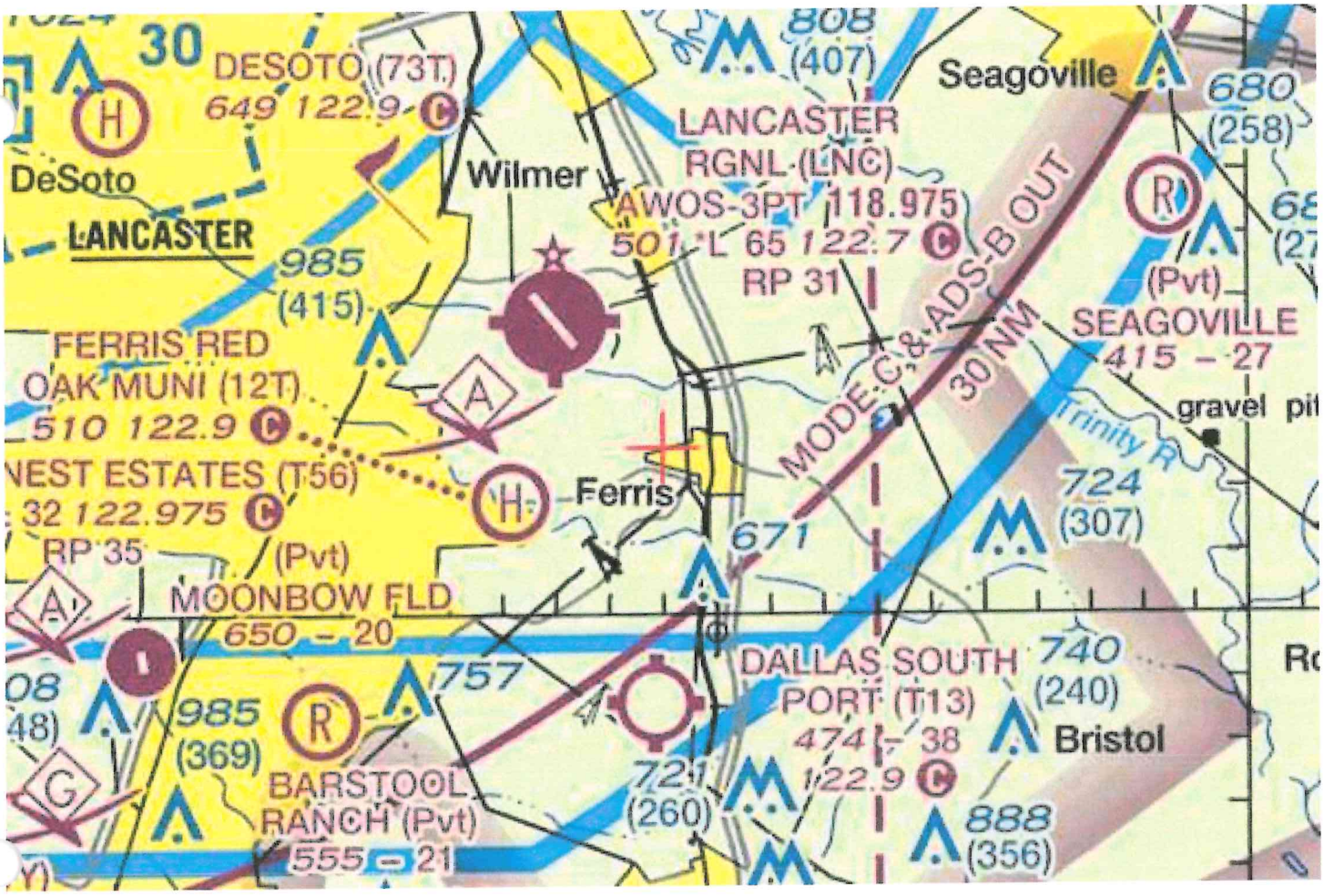
The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

Expansion of existing landfill.

TOPO Map for ASN 2024-ASW-3557-OE




30
DESOTO (73T)
649 122.9 C
DeSoto
LANCASTER
985
(415)
FERRIS RED
OAK MUNI (12T)
510 122.9 C
NEST ESTATES (T56)
32 122.975 C
RP 35
(Pvt)
MOONBOW FLD
650 – 20
985
(369)
BARSTOOL
RANCH (Pvt)
555 – 21
Wilmer
808
(407)
LANCASTER
RGNL (LNC)
AWOS-3PT 118.975
501 L 65 122.7 C
RP 31
Ferris
671
757
721
(260)
Seagoville
680
(258)
(Pvt)
SEAGOVILLE
415 – 27
MODE C & ADS-B OUT
30 NM
Trinity R
gravel pit
724
(307)
DALLAS SOUTH
PORT (T13)
474 – 38
122.9 C
740
(240)
Bristol
888
(356)

SKYLINE LANDFILL

APPENDIX III

NORTH CENTRAL TEXAS AREA COUNCIL OF GOVERNMENTS DOCUMENTATION

BIGGS & MATHEWS ENVIRONMENTAL, INC
TBPELS No. F-256 & No. 10194895 ♦ TBPG No. 50222

March 31, 2026

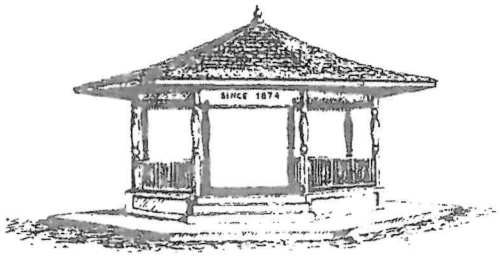
Upon TCEQ issuance of Administratively Complete, Biggs and Mathews Environmental, Inc., (BME) will submit Parts I and II of the application to the North Central Texas Council of Governments (NCTCOG) for review of the Skyline Landfill for conformance with the NCTCOG Regional Solid Waste Management Plan in accordance with 30 TAC §330.61(p).

SKYLINE LANDFILL

APPENDIX IIJ

FEMA APPROVAL

City of Ferris



"A Texas Main Street City"

February 28, 2012

Kenneth J. Welch, P.E.
Principal Engineer
Biggs & Mathews Environmental, Inc.
1700 Robert Road, Suite 100
Mansfield, Texas 76063

Re: Waste Management of Texas, Inc.
Skyline Landfill
Coordination of 100-Year Floodplain
City of Ferris, Texas

Dear Mr. Welch:

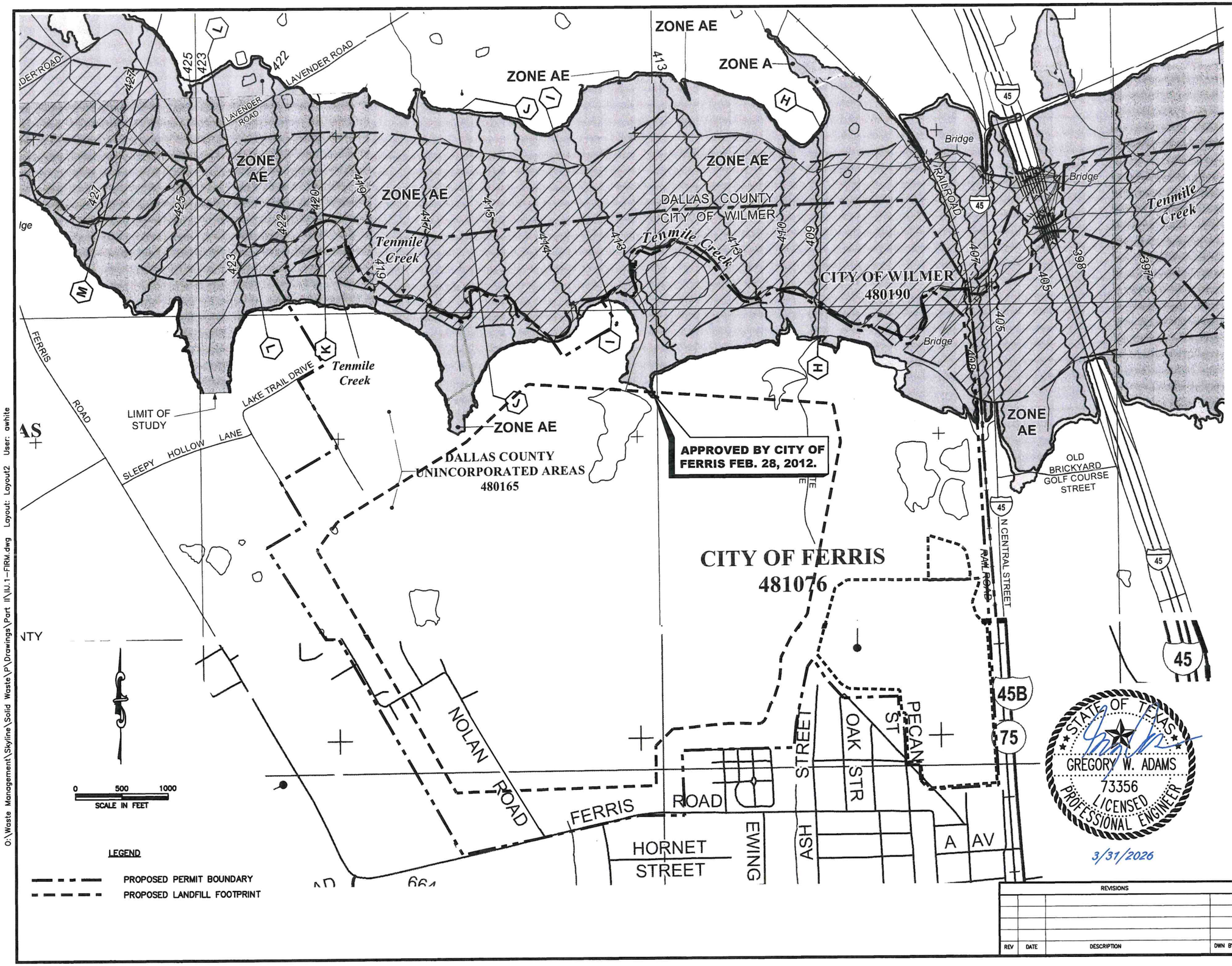
The City of Ferris Floodplain Administrator is responsible for floodplain management within the City of Ferris. The responsibilities of the City of Ferris Floodplain Administrator are part of the duties of the City Manager's Office. The City Manager's Office has reviewed the 100-year Floodplain Analysis of Ten Mile Creek related to the expansion of the Skyline Landfill. The Skyline Landfill is located entirely within the city limits of Ferris.

The 100-year Floodplain Analysis states that the proposed expansion of the Skyline Landfill requires placement of approximately 2,500 cubic yards of fill within the limits of the Federal Emergency Management Agency (FEMA) 100-year floodplain resulting in a loss of temporary floodplain storage volume of about 1.55 acre-feet. The analysis also states that the proposed expansion includes approximately 2,600 cubic yards of excavation within the limits of the FEMA 100-year floodplain providing about 1.61 acre-feet of temporary floodplain storage volume. These improvements within the 100-year floodplain are not within the 100-year floodway of Ten Mile Creek.

Our review of this analysis finds that the Skyline Landfill, if expanded as proposed, will not restrict the flow of the 100-year flood, will not reduce the temporary water storage capacity of the floodplain, and that the proposed encroachment in the 100-year floodplain by placement of fill is authorized. Waste Management of Texas, Inc. at the time of development within the 100-year floodplain will submit certified as-built information to the FEMA through the City of Ferris for a LOMR-F to be issued.

Sincerely,

Eric Strong
City Manager
City of Ferris, Texas



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year floodplain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.
- RM7 — Elevation Reference Mark
- M2 — River Mile
- 97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection

NOTES:

1. THIS MAP HAS BEEN COMPILED FROM FEMA FLOOD INSURANCE RATE MAP (FIRM) OF DALLAS COUNTY, TEXAS AND INCORPORATED AREAS COMMUNITY PANEL NUMBERS 48113C0670K, 48113C0665K, 48113C0655K, AND 48113C0660K REVISED JULY 3, 2025.
2. THIS MAP HAS BEEN COMPILED FROM FEMA FLOOD INSURANCE RATE MAP (FIRM) OF ELLIS COUNTY, TEXAS AND INCORPORATED AREAS COMMUNITY PANEL NUMBERS 48139C0100F, REVISED JULY 3, 2025.

STATE OF TEXAS
GREGORY W. ADAMS
73356
LICENSED
PROFESSIONAL ENGINEER
3/31/2026

FLOOD INSURANCE RATE MAP (FIRM)

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL

BIGGS & MATHEWS ENVIRONMENTAL
1700 ROBERT ROAD, STE. 100
MANSFIELD, TEXAS 76063
817-563-1144

TBPELS FIRM NO. F-256 AND NO. 10194895
TBPG FIRM NO. 50222

DRAWING IIJ.1

REVISIONS			
REV	DATE	DESCRIPTION	DWN BY

O:\Waste Management\Skyline\Solid Waste\P\Drawings\Part II\IJ.1-FIRM.dwg Layout: Layout2 User: awhite

SKYLINE LANDFILL

APPENDIX IIK

WASTE ACCEPTANCE PLAN FORM

Texas Commission on Environmental Quality

Waste Acceptance Plan Form
Type I and Type IAE Landfill Facilities

This form is designed to address the requirements for Waste Acceptance Plans in Part II of an application, as required by Title 30 Texas Administrative Code, Chapter 330, §330.61(b)(1). Rules are from Chapter 330 unless otherwise specified. If more space is needed for a line item or table item, include the information on a separate sheet and reference the line or table item.

A. Applicant Information

1. Facility Name: Waste Management Skyline Landfill
2. MSW Permit No.: 42E

B. Waste Generation Areas and Population Estimates

Table 1. Areas contributing waste to the facility and estimate of population or population equivalent served by the facility. Values are estimates, not permit limits.

Waste Generation Area	Estimate of Population or Population Equivalent Served in each Area
Dallas County	609,000
Ellis County	609,000
Henderson	406,000
Kaufman	406,000
Tarrant	406,000

Estimated population or population equivalent served by the facility

2,436,000

C. General Sources and Types of Waste to be Accepted at the Facility

General sources of waste to be received (household, commercial, industrial, etc.).

Household, commercial, industrial

2. Types of Waste to be Accepted for Disposal at the Facility

a. Indicate whether the following wastes will be accepted for disposal (check "Yes" for will accept or "No" for will not accept).

i. ☑ Yes ☐ No Municipal solid waste [§330.3(88)]

ii. ☑ Yes ☐ No Construction or demolition waste [§330.3(33)]

iii. ☑ Yes ☐ No Brush [§330.3(18)]

iv. ☑ Yes ☐ No Rubbish [§330.3(130)]

v. ☐ Yes ☐ No Used or scrap tires that have been processed (such as by splitting, shredding, quartering or sidewall removal) in a manner acceptable to the executive director [§330.3(130)]

vi. ☑ Yes ☐ No Class 2 nonhazardous industrial solid waste [§330.3(22), §330.173(i)]

vii. ☑ Yes ☐ No Class 3 nonhazardous industrial solid waste [§330.3(23), §330.173(j)]

b. Indicate whether the following special wastes will be accepted for disposal. These wastes must have been or are to be treated and the treated materials have been tested and are certified to contain no free liquids.

i. ☑ Yes ☐ No Municipal wastewater treatment plant sludge. [§330.3(148)(D), §330.171(c)(7)]

ii. ☑ Yes ☐ No Other types of domestic sewage treatment plant sludge [§330.3(148)(D), §330.171(c)(7)]

iii. ☑ Yes ☐ No Municipal water-supply treatment plant sludge. [§330.3(148)(D), §330.171(c)(7)]

iv. ☑ Yes ☐ No Septic tank pumping waste [§330.171(c)(7)]

v. ☑ Yes ☐ No Grease trap waste. [§330.3(59), §330.171(c)(7)]

vi. ☑ Yes ☐ No Grit trap waste [TAC §330.3(60), §330.171(c)(7)]

vii. ☑ Yes ☐ No Waste from commercial or industrial wastewater treatment plants [§330.3(148)(G), §330.171(b)]

viii. ☑ Yes ☐ No Other liquid waste. Explain _____ [§330.171(c)(7)]

ix. Specify other special wastes to be accepted for disposal that are not listed above and for which free liquids may be an issue.

_____

_____

c. Indicate whether the following Special Wastes will be accepted for disposal.

i. ☑ Yes ☐ No Municipal hazardous waste from conditionally exempt small quantity generators [§330.171(c)(6), §330.3(32)].

ii. ☐ Yes ☑ No Class 1 industrial nonhazardous solid waste (excluding waste that is Class 1 only because of asbestos content). May be accepted only at Type I landfills with a Class 1 cell [§330.3(21), §330.171(b), §330.3(148)(B), §330.173]; may not be accepted at arid exempt [AE] landfills [330.173(a)].

iii. ☑ Yes ☐ No Waste that is Class 1 only because of asbestos content [§330.3(21), §330.171(b), §330.3(148)(B), §330.171(c)(3)(I), 30 TAC §330.171(c)(3)]

iv. ☑ Yes ☐ No Waste from commercial air pollution control devices [§330.171(b), §330.3(148)(G), §330.331(e)]

v. ☑ Yes ☐ No Tanks, drums, or containers that were used for shipping or storing any material that has been listed as a hazardous constituent in 40 CFR Part 261, Appendix VII but has not been listed as a commercial chemical product in 40 CFR §261.33(e) or (f) [§330.171(b), §330.3(148)(G)]

vi. ☑ Yes ☐ No Drugs, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]

vii. ☑ Yes ☐ No Contaminated foods, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]

viii. ☑ Yes ☐ No Contaminated beverages, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]

ix. ☑ Yes ☐ No Empty containers that have been used for pesticide, herbicide, fungicide, or rodenticide, that have been triple-rinsed before receipt at the landfill, are rendered unusable before receipt or on arrival, and are covered by the end of the same working day they are received [§330.171(c)(5)(A)]

x. ☑ Yes ☐ No Empty containers for which triple-rinsing is not feasible or practical (e.g. paper bags, cardboard containers) that are managed as a municipal hazardous waste from a conditionally exempt small quantity generator or in accordance with requirements for disposal of industrial wastes [§330.171(c)(5)(B), §330.171(c)(6), §330.173]

xi. ☑ Yes ☐ No Regulated asbestos-containing material (RACM) [40 CFR 261, §330.171(c)(3), §330.3(126)]

xii. ☑ Yes ☐ No Non-regulated asbestos-containing material (non-RACM) [40 CFR 261, §330.171(c)(4), §330.3(93)]

xiii. ☑ Yes ☐ No Incinerator ash [§330.3(148)(M), §330.171(b)]

xiv. ☑ Yes ☐ No Soil contaminated by petroleum products, crude oils, or chemicals in concentrations of greater than 1,500 mg/kg total petroleum hydrocarbons; or contaminated by constituents of concern that exceed the concentrations listed in §335.521(a)(1) [§330.3(148)(N), §330.171(b)(4)] (may be accepted at Type I landfills with Class 1 cells. [§330.331(e)] (Excluded from Type I AE. [§330.173(a)])

xv. ☑ Yes ☐ No Household-generated used oil filters that have been crushed to less than 20% of original volume or processed by a method other than crushing to remove all free-flowing used oil. The processing method may include (1) having the filter separated into component parts and free-flowing used oil removed from the filter element by compression; (2) having a replaceable filter medium that has been compressed to remove free-flowing used oil; **or** (3) having a housing that has been punctured and the filter drained for at least 24 hours. [§330.171(d)].

xvi. ☑ Yes ☐ No Waste from oil, gas, and geothermal activities subject to regulation by the Railroad Commission of Texas) [§330.171(b), §330.3(148)(P)]

xvii. ☑ Yes ☐ No Waste generated outside the boundaries of Texas that contains any industrial waste; any waste associated with oil, gas, and geothermal exploration; or any of the special wastes that are indicated in §330.3(148) [§330.171(b), §330.3(148)(Q)]

xviii. ☑ Yes ☐ No Dead animals [§330.171(c)(2)]

xix. ☑ Yes ☐ No Slaughterhouse wastes [§330.171(c)(2)]

xx. ☑ Yes ☐ No Treated medical waste from health care-related facilities. [§330.3(85), §326.75(r)]

xxi. Specify other special wastes to be accepted for disposal that are not listed above:

_____

_____

D. Waste Prohibited from Disposal

The following wastes are prohibited from disposal.

- Any waste not authorized for disposal above, including those for which "No" has been indicated.
- Untreated medical waste. This prohibition may be superseded by the executive director in writing when disposal of untreated medical waste is required to protect human health and the environment from the effects of a natural or man-made disaster. [§330.171(c)(1), §330.3(85)]
- Lead-acid storage batteries. [§330.15(e)(1)]
- Used motor vehicle oil. [§330.15(e)(2)]
- Used oil filters from internal combustion engines except for used oil filters from households that have been processed as described in §330.171(d). [§330.15(e)(3)]
- Whole used or scrap tires. [§330.15(e)(4)]
- Items containing CFCs that have not been handled in accordance with 40 CFR §82.156(f). [§330.15(e)(5)]
- Bulk or noncontainerized liquid waste unless the waste is household waste other than septic waste and as defined by the Paint Filter Test, EPA Method 9095. [§330.15(e)(6), §330.3(81)]
- Containers holding liquids unless: the container is similar in size to those found in household waste, the container is designated to hold liquids for other than storage, **or** the waste is household waste. [§330.15(e)(6), §330.3(81)]
- Regulated hazardous waste [40 CFR §261.3] that is not excluded from regulation as a hazardous waste [40 CFR §261.4(b)] or that was not generated by a conditionally exempt small-quantity generator. [§330.15(e)(7), §330.3(127)]
- Waste that exhibits the characteristics for hazardous waste [40 CFR §261.3] from oil, gas, and geothermal activities subject to regulation by the Railroad Commission of Texas. [§330.15(e)(7)]
- Polychlorinated biphenyl (PCB) wastes, [40 CFR Part 761] unless authorized by the United States Environmental Protection Agency. [§330.15(e)(8)]
- Radioactive materials, [Chapter 336] except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services. [§330.15(e)(9)]

Specify any other wastes to be prohibited for disposal that are not listed above.

E. Material Recovery

Will the facility recover materials from incoming waste? ☐ Yes ☑ No

If yes, provide a descriptive narrative describing the percentage of incoming waste, if applicable, that must be recovered and its intended use.

F. Estimated Maximum Annual Waste Acceptance Rate Projected for Five Years [§330.61(b)(1)(C)]

Provide an **estimated** maximum annual waste acceptance rates at the facility, projected for five years. These rates are not permit limitations.

Table 1. Five-Year Projection for Waste Acceptance.

Year	Estimated Maximum Annual Waste Acceptance Rate
1	1,900,000
2	1,919,000
3	1,938,000
4	1,958,000
5	1,977,000

G. Storage and Processing Units

Indicate units that will store or process waste at the facility. Describe the wastes that will be stored or processed in these units. Provide the final disposition or use (e.g., landfill disposal, composting) of the processed materials. **Waste storage and processing authorized separately (such as a registered transfer station within the permit boundary of a landfill) should not be included on this form.**

Storage and processing units must be illustrated (or locations described) on site layout figures in Part II of the application.

Examples:

1. Unit: liquid stabilization unit, Purpose: process, Waste Type: liquid waste, Disposition: solidified material to be disposed in a properly authorized landfill; or
2. Unit: grease separation and dewatering unit, Purpose: process, Disposition: water to WWTP and grease to composter or Type I landfill.

Table 1. Waste storage and processing units.

Unit	Purpose	Waste Type Stored or Processed	Final Disposition or Use
Large Item Storage	☑ Store ☐ Process	Large items, white goods, etc	Landfill
Reusable Materials Staging Area	☑ Store ☐ Process	Brick, concrete, shingles, etc	Landfill operations
Citizen's Convenience Area	☑ Store ☐ Process	All accepted waste types	Landfill
Leachate Storage Facility	☑ Store ☑ Process	Leachate	POTW
Bioremediation Treatment Pad	☑ Store ☑ Process	Petroleum contaminated materials	Landfill
Liquid Stabilization Facility	☑ Store ☑ Process	Material requiring solidificaiton	Landfill

H. Prohibited from Processing

The following wastes are prohibited from processing:

- Any wastes not authorized for processing above.
- Lead-acid storage batteries may not be incinerated. [§330.15(e)(1)]
- Used motor vehicle oil may not be incinerated. [§330.15(e)(2)]
- Regulated hazardous waste [40 CFR §261.3] that is not excluded from regulation as a hazardous waste [40 CFR §261.4(b)] or that was not generated by a conditionally exempt small-quantity generator. [§330.15(e)(7), §330.3(127)]

Specify any other wastes to be prohibited for storage or processing that are not listed above.

I. Special Waste Acceptance Plan [§330.171(b)(2)]

Does this application include an **optional** Special Waste Acceptance Plan?
☑ Yes ☐ No

If yes, please provide its location in the application.

Part IV, Appendix IVB

J. Limiting Parameters [§330.61(b)(1)]

1. Regulated Hazardous Waste
   MSW landfills may not accept regulated hazardous waste [§330.3(127)] for processing or disposal. The presence or characteristic of any material meeting the definition of a regulated hazardous waste is a limiting parameter for waste disposal or processing.
2. Free Liquids
   The presence of free liquids, as defined by the Paint Filter Test, EPA Method 9095, in waste, but not household waste and not liquid in containers similar in size to those found in household waste, is a limiting parameter for waste disposal. [§330.15(e)(6), §330.3(81)]
3. PCBs
   The presence of polychlorinated biphenyls (PCB) wastes [40 CFR Part 761] unless authorized by the United States Environmental Protection Agency is a limiting parameter for waste disposal or processing. [§330.15(e)(8)]
4. Radioactive Materials
   The presence of radioactive materials [Chapter 336], except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services, is a limiting parameter for waste disposal or processing. [§330.15(e)(9)]
5. Class 1 Solid Waste

   For all Type I AE landfills and for Type I landfills that do not have a Class 1 cell [330.331(e)] or have chosen to excluded Class 1 industrial nonhazardous solid waste, 1,500 mg/kg TPH and the concentrations in 30 TAC §335.521(a)(1) are limiting parameters for waste disposal.
6. Other limitations: