FARMERS BRANCH

City of Farmers Branch
13000 William Dodson
Farmers Branch, Texas 75234

March 22, 2012

Mark R. Vickery, P.G.
Executive Director
Texas Commission on Environmental Quality
12100 Park 35 Circle, MC-109
Austin, Texas 78753

Re: Camelot Landfill
Major Permit Amendment Application, TCEQ Permit No. MSW-1312B
Denton County

Dear Mr. Vickery:

On behalf of the City of Farmers Branch, please find the enclosed major permit amendment application for the Camelot Landfill. Included are four copies of the application for your review and comment. Parts I through IV are included, as required by TCEQ's municipal solid waste regulations.

The City of Farmers Branch is fully committed to operating the Camelot Landfill consistent with TCEQ rules for the protection of human health and the environment.

We appreciate your review of this permit application and look forward to your comments. In the meantime, if you have any questions, please do not hesitate to call me.

Sincerely,
CITY OF FARMERS BRANCH

Gary D. Greer
City Manager

Copies submitted: 1 original and 3 copies

cc: Shane Davis, City of Farmers Branch
Jeffrey P. Young, P.E., Weaver Boos Consultants, LLC–Southwest

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

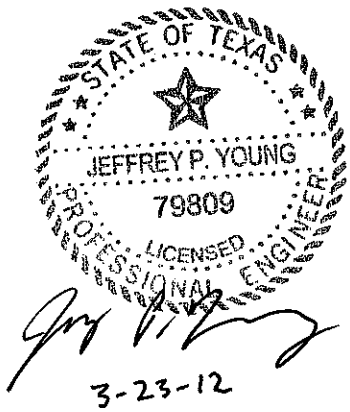
MAJOR PERMIT AMENDMENT APPLICATION

VOLUME 1 OF 6

Prepared for

City of Farmers Branch

March 2012



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-6A

This document is intended for permitting purposes only.

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

MAJOR PERMIT AMENDMENT APPLICATION
VOLUME 1 OF 6

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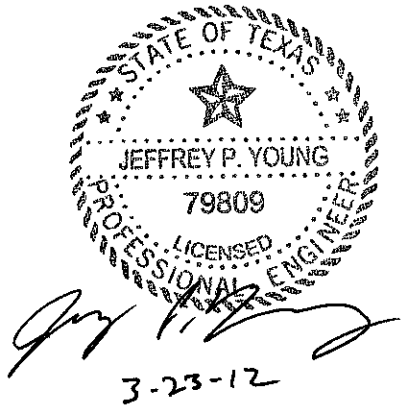

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CITY OF LEWISVILLE, DENTON COUNTY
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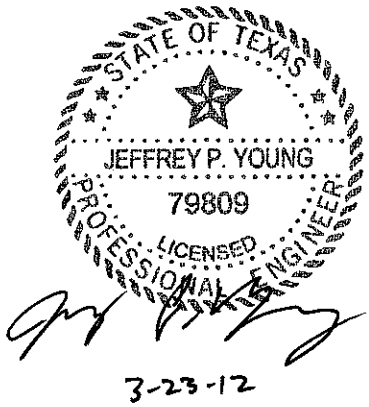

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CAMELOT LANDFILL MAJOR PERMIT AMENDMENT APPLICATION
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CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

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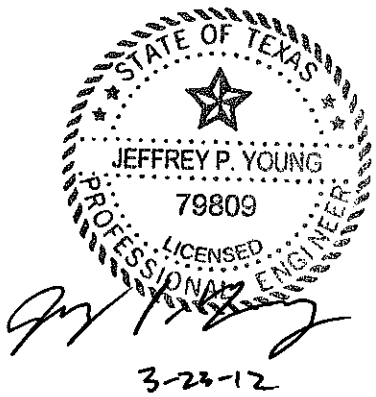

Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

Project No. 0120-84-11-89-01

Texas Commission on Environmental Quality

Permit or Registration Application for Municipal Solid Waste Facility

Part I

A. General Information

Facility Name:	Camelot Landfill (see note at bottom of page)			
Physical or Street Address (if available):	580 Huffines Blvd.			
(City) (County)(State)(Zip Code):	Lewisville	Denton	TX	75056
(Area Code) Telephone Number:	(972) 492-3888			
Charter Number:				

If the application is submitted on behalf of a corporation, provide the Charter Number as recorded with the Office of the Secretary of State for Texas.

Operator Name[1]:	City of Farmers Branch			
Mailing Address:	13000 William Dodson Parkway			
(City) (County)(State)(Zip Code):	Farmers Branch	Dallas	TX	75234
(Area Code) Telephone Number:	(972) 919-2601			
(Area Code) FAX Number:	(972) 919-2614			
Charter Number:				

If the permittee is the same as the operator, type "Same as Operator".

Permittee Name:	Same as Operator			
Physical or Street Address (if available):				
(City) (County)(State)(Zip Code):			TX	
(Area Code) Telephone Number:				
Charter Number:				

If the application is submitted by a corporation or by a person residing out of state, the applicant must register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.

Agent Name:				
Mailing Address:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
(Area Code) FAX Number:				

Application Type:

☒	Permit	☒	Major Amendment	☐	Minor Amendment
☐	Registration	☐	Modification	☐	Temporary Authorization
		☒	w/Public Notice		
		☐	w/out Public Notice	☐	Notice of Deficiency Response

Facility Name: With this major amendment application, the name of the facility will change from Camelot Sanitary Landfill to Camelot Landfill, as discussed in Parts I/II – Section 2.1.

[1] The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on this application [Section 361.087 Texas Health and Safety Code].

Facility Classification:

☒	Type I	☐	Type IV	☐	Type V	☐	Type IX
☐	Type I AE	☐	Type IV AE	☐	Type VI		

Activities covered by this application (check all that apply):

☒	Storage	☒	Processing	☒	Disposal

Waste management units covered by this application (check all that apply):

☐	Containers	☒	Tanks	☐	Surface Impoundments	☒	Landfills
☐	Incinerators	☐	Composting	☐	Type IV Demonstration Unit	☒	Type IX Energy/Material Recovery
☒	Other (Specify)	Citizens Convenience Center		☐	Other (Specify)		
☒	Other (Specify)	Wood Waste Processing		☐	Other (Specify)		

Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?

☐ Yes ☒ No

If yes, state the other TCEQ program authorizations requested.

Not Applicable

Provide a brief description of the portion of the facility covered by this application. For amendments, modifications, and temporary authorizations, provide a brief description of the exact changes to the permit or registration conditions and supporting documents referenced by the permit or registration. Also, provide an explanation of why the amendment, modification, or temporary authorization is requested.

The purpose of this Major Permit Amendment is to secure authorization for a vertical and horizontal expansion of the Camelot Landfill. The existing active 198.3-acre waste disposal area will be expanded by 38.5-acres. The existing permit boundary, surveyed in November 2010 as 350.77 acres, will be expanded by 118.85 acres to 469.62 acres. The maximum permitted final cover elevation will be increased from 523 ft-msl to 725 ft-msl and the resulting capacity increase is 37,700,000 cy. This landfill expansion will provide for the long-term disposal needs of the City of Farmers Branch, Denton County, and surrounding communities.

Does the application contain confidential Material? ☐ Yes ☒ No

If yes, cross-reference the confidential material *throughout the application* and submit as a separate document or binder conspicuously marked "CONFIDENTIAL."

Alternative Language Notice Instructions

For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, trigger a bilingual education program to apply to an entire school district should the requisite alternative language speaking student population exist. However, there may not exist any bilingual students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location in satisfaction of the school's obligation to provide such a program as a member of a triggered district.

If it is determined that an alternative language notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete the publication in the alternative language.

Alternative Language Notice Application Form:

Alternative language notice confirmation for this application:

1. Is a bilingual program required by the Texas Education Code in the school district where the facility is located? ☒ YES ☐ NO

   (If NO, alternative language notice publication not required)

2. If YES to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility? ☒ YES ☐ NO

(IF YES to questions 1 and 2, alternative language publication is required; If NO to question 2, then consider the next question)

3. If YES to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location? ☐ YES ☐ NO

(If Yes to questions 1 and 3, alternative language publication is required; If NO to question 3, then consider the next question)

4. If YES to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC ' 89.1205(g)?
   ☐ YES ☐ NO

(If Yes to questions 1 and 4, alternative language publication is required; If NO to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program? Spanish

Note: Applicants for new permits and major amendments must make a copy of the administratively complete application available at a public place in the county where the facility is, or will be, located for review and copying by the public.

Public place where administratively complete permit application will be located.				
Public Place (e.g., public library, county court house, city hall, etc.):	Lewisville Public Library			
Mailing Address:	1197 West Main Street			
(City) (County)(State)(Zip Code):	Lewisville	Denton	TX	75067
(Area Code) Telephone Number:	(672) 219-3570			

B. Facility Location

Except for Type I AE and Type IV AE landfill facilities, for permits, registrations, amendments, and modifications requiring public notice, provide the URL address of a publicly accessible internet web site where the application and all revisions to that application will be posted.
http://www.ftwweaverboos.com

Local Government Jurisdiction:	Lewisville, TX
Within City Limits of:	Lewisville, TX
Within Extraterritorial Jurisdiction of City of:	Not Applicable

Is the proposed municipal or industrial solid waste disposal or processing facility located in an area in which the governing body of the municipality or county has prohibited the disposal or processing of municipal or industrial solid waste? (If YES, provide a copy of the ordinance or order):

☐ YES ☒ NO

Provide a description of the location of the facility with respect to known or easily identifiable landmarks.
This site entrance is located at 580 Huffines Boulevard, approximately 1,800 feet south of the State Highway 121 Business and Huffines Boulevard intersection.

Detail the access routes from the nearest United States or state highway to the facility.
From State Highway 121 Business vehicles travel approximately 1,800 feet south on Huffines Boulevard to the site.

Provide the latitudinal and longitudinal geographic coordinates of the facility.

Latitude	N 33° 01 52.86"
Longitude	W 96° 57' 05.56"
Elevation (above msl)	460 ft-msl

Is the facility within the Coastal Management Program boundary?	☐ Yes	☒ No

Texas Department of Transportation District Location:

TXDOT District Name & Number:	Dallas District			
District Engineer's Name:	Bill Hale, P.E.			
Street or P. O. Box:	P.O. Box 133067			
(City) (County)(State)(Zip Code):	Dallas	Dallas	TX	75313-3067
(Area Code) Telephone Number:	214-320-6100			
(Area Code) FAX Number:	214-320-4488			

The local governmental authority or agency responsible for road maintenance:

Agency Name	Texas Department of Transportation			
Contact Person's Name:	Gary Bailey, Denton County Area Engineer			
Street or P. O. Box:	2624 West Prairie			
(City) (County)(State)(Zip Code):	Denton	Denton	TX	76201
(Area Code) Telephone Number:	940-387-1414			
(Area Code) FAX Number:	940-383-2267			

Agency Name	City of Lewisville Department of Public Services, Public Works Division			
Contact Person's Name:	Ron Carson, Operations Supervisor, Street Maintenance			
Street or P. O. Box:	1100-D North Kealy			
(City) (County)(State)(Zip Code):	Lewisville	Denton	TX	75057
(Area Code) Telephone Number:	940-387-1414			
(Area Code) FAX Number:	940-383-2267			

State Representative:

District Number:	65			
State Representative's Name:	Burt R. Solomons			
District Office Address:	1029 W. Rosemeade Pkwy., Suite 108			
(City) (County)(State)(Zip Code):	Carrollton	Denton	TX	76053
(Area Code) Telephone Number:	972-394-3904			
(Area Code) FAX Number:	972-394-5638			

State Senator:

District Number:	9			
State Senator's Name:	Chris Harris			
District Office Address:	2001 E. Lamar Blvd., Ste. 150			
(City) (County)(State)(Zip Code):	Arlington	Tarrant	TX	76006
(Area Code) Telephone Number:	817-461-9109			
(Area Code) FAX Number:	817-469-9652			

Council of Government (COG) Information:

COG Name:	North Central Texas Council of Governments			
COG Representative's Name:	Doug Anthony			
COG Representative's Title:	Environmental & Development Planner			
Street or P. O. Box:	P.O. Box 5888			
(City) (County)(State)(Zip Code):	Arlington	Tarrant	TX	76005-5888
(Area Code) Telephone Number:	817-695-9139			
(Area Code) FAX Number:	817-695-9191			

River Basin Information:

River Authority:	Trinity River Authority, Northern Region			
Contact Person's Name:	Michelle Clark			
Watershed Sub-Basin Name:	Elm Fork Trinity River Below Lewisville Lake			
Street or P. O. Box:	P.O. Box 240			
(City) (County)(State)(Zip Code):	Arlington	Tarrant	TX	76004
(Area Code) Telephone Number:	817-493-5100			
(Area Code) FAX Number:	817-417-0367			

This site is located in the following District of the U.S. Army Corps of Engineers:			
☐ Albuquerque, NM	☒ Ft. Worth, TX	☐ Galveston, TX	☐ Tulsa, OK

C. Maps

General **(Refer to Figure I/II-4.2 in Parts I/II)**
For permits, registrations, and amendments only, submit a topographic map, ownership map, county highway map, or a map prepared by a registered professional engineer or a registered surveyor which shows the facility and each of its intake and discharge structures and any other structure or location regarding the regulated facility and associated activities. Maps must be of material suitable for a permanent record, and shall be on sheets 8-1/2 inches by 14 inches or folded to that size, and shall be on a scale of not less than one inch equals one mile. The map shall depict the approximate boundaries of the tract of land owned or to be used by the applicant and shall extend at least one mile beyond the tract boundaries sufficient to show the following:

each well, spring, and surface water body or other water in the state within the map area;

the general character of the areas adjacent to the facility, including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc;

the location of any waste disposal activities conducted on the tract not included in the application; and

the ownership of tracts of land adjacent to the facility and within a reasonable distance from the proposed point or points of discharge, deposit, injection, or other place of disposal or activity.

General location maps **(Refer to Figure I/II-4.1 in Parts I/II)**

For permits, registrations, and amendments only, submit at least one general location map at a scale of one-half inch equals one mile. This map shall be all or a portion of a county map prepared by Texas Department of Transportation (TxDOT). If TxDOT publishes more detailed maps of the proposed facility area, the more detailed maps shall also be included in Part I. Use the latest revision of all maps.

Land ownership map **(Refer to Figure I/II-5.1 in Parts I/II)**

Provide a map that locates the property owned by adjacent and potentially affected landowners. The maps should show all property ownership within 1/4 mile of the facility, on-site facility easement holders, and all mineral interest ownership under the facility.

Landowners list **(Refer to Table 5-1 in Parts I/II)**

Provide the adjacent and potentially affected landowners' list, keyed to the land ownership map with each property owner's name and mailing address. The list shall include all property owners within 1/4 mile of the facility, easement holders, and all mineral interest ownership under the facility. Provide the property, easement holders', and mineral interest owners' names and mailing addresses derived from the real property appraisal records as listed on the date that the application is filed. Provide the list in electronic form, as well.

D. Property owner information (Refer to Parts I/II, Sections 13 and 14)

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operator only, provide the following:

(1) the legal description of the facility;

(A) the abstract number as maintained by the Texas General Land Office for the surveyed tract of land;

(B) the legal description of the property and the county, book, and page number or other generally accepted identifying reference of the current ownership record;

(C) for property that is platted, the county, book, and page number or other generally accepted identifying reference of the final plat record that includes the acreage encompassed in the application and a copy of the final plat, in addition to a written legal description;

(D) a boundary metes and bounds description of the facility signed and sealed by a registered professional land surveyor;

(E) on-site easements at the facility, and

(F) drawings of the boundary metes and bounds description; and

(2) a property owner affidavit signed by the owner.

E. Legal authority (Refer to Parts I/II, Section 15)

Provide verification of the legal status of the owner and operator, such as a one-page certificate of incorporation issued by the secretary of state. List all persons having over a 20% ownership in the proposed facility.

Indicate Ownership status of the facility:									
☐	Private	☐	Corporation	☒	Partnership	☐	Proprietorship	☐	Non-Profit Organization
☐	Public	☐	Federal	☐	Military	☐	State	☐	Regional
☐	County	☒	Municipal	☐	Other (Specify)				

Does the operator own the facility units and the facility property?	☐ Yes	☒ No*

*Called 18.71 acres of the proposed permit boundary are owned by Camelot Landfill TX, LP. The remaining 450.91 acres of the permit boundary are owned by the City of Farmers Branch. Property owner affidavits for both property owners are included in Section 14 of Parts I/II.

If "No," for permits, registrations, amendments, and modifications that changes the legal description, a change in owner, or a change in operators submit a copy of the lease for the use of or the option to buy the facility units or facility property, as appropriate, and identify:				
Owner Name:	Camelot Landfill TX, LP			
Street or P. O. Box:	911 E. Highway 121 Business, Suite 201			
(City) (County)(State)(Zip Code):	Lewisville	Denton	TX	75057
(Area Code) Telephone Number:	972-434-2010			
(Area Code) FAX Number:	972-434-7069			
Filing Number:	10813011			

F. Evidence of Competency (Also refer to Parts I/II, Section 16)

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operators submit a list of all Texas solid waste sites that the owner and operator have owned or operated within the last ten years.

Site Name	Site Type	Permit/Reg. No.	County	Dates of Operation
Camelot Landfill	Type I MSW Landfill	MSW-1312A	Denton	1979 to Current
City of Farmers Branch Landfill	Inactive Type I MSW Landfill	MSW-946	Denton	Undeveloped
City of Farmers Branch Landfill	Type I MSW Landfill	MSW-1049	Dallas	Unknown to 1980

Submit a list of all solid waste sites in all states, territories, or countries in which the owner and operator have a direct financial interest.

Site Name	Location	Dates of Operation	Regulatory Agency (Name & Address)
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A licensed solid waste facility supervisor, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations will be employed before commencing facility operation.

Provide the names of the principals and supervisors of the owner's and operator's organization, together with previous affiliations with other organizations engaged in solid waste activities.

Name	Previous Affiliation	Other Organization
Shane Davis, Environmental Compliance Specialist	City of Lubbock	

For landfill permit applications only, evidence of competency to operate the facility shall also include landfilling and earthmoving experience if applicable, and other pertinent experience, or licenses as described in 30 TAC Chapter 30 possessed by key personnel. The number and size of each type of equipment to be dedicated to facility operation will be specified in greater detail on Part IV of the application within the site operating plan.

Landfilling/Earthmoving Equipment Types	Personnel Experience or Licenses
Refer to Part IV – Site Operating Plan	Refer to Part IV – Site Operating Plan

For mobile liquid waste processing units, submit a list of all solid waste, liquid waste, or mobile waste units that the owner and operator have owned or operated within the past five years. Submit a list of any final enforcement orders, court judgments, consent decrees, and criminal convictions of this state and the federal government within the last five years relating to compliance with applicable legal requirements relating to the handling of solid or liquid waste under the jurisdiction of the commission or the United States Environmental Protection Agency. Applicable legal requirement means an environmental law, regulation, permit, order, consent decree, or other requirement.

Solid waste, liquid waste, or mobile waste units owned or operated within past 5 years	Texas and federal final enforcement orders, court judgments, consent decrees, and criminal convictions
Not Applicable	Not Applicable

G. Appointments (Refer to Parts I/II, Section 17)

Provide documentation that the person signing the application meets the requirements of 30 TAC §305.44, Signatories to Applications. If the authority has been delegated, provide a copy of the document issued by the governing body of the owner or operator authorizing the person that signed the application to act as agent for the owner or operator.

H. Application Fees

For a new permit, registration, amendment, modification, or temporary authorization, submit a $150 application fee.

For authorization to construct an enclosed structure over an old, closed municipal solid waste landfill in accordance with 30 TAC 330 Subchapter T, submit a $2,500 application fee.

If paying by check, send payment to:

Texas Commission on Environmental Quality
Financial Administration Division, MC 214
P. O. Box 13087
Austin, Texas 78711-3087

Payment maybe made online using TCEQ e-pay at www.tceq.state.tx.us/e-services/	
E-pay confirmation number	582EA000118867

PROPERTY OWNER AFFIDAVIT (Also, refer to Parts I/II, Section 14)

"I, Gary D. Greer, City Manager
(property owner)
acknowledge 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 in accordance with Title 30 Texas Administrative Code §330.19, Deed Recordation. I further acknowledge that I or the operator and the State of Texas shall have access to the property during the active life and post-closure care period, if required, after closure for the purpose of inspection and maintenance."

Gary D. Greer — 3/26/12

(Owner signature) (Date)

Signature Page

I, Gary D. Greer (Operator) City Manager (Title)

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.

Signature: Gary D Greer Date: 3/26/12

TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR

I, _____ (Print or Type Operator Name), hereby designate _____ (Print or Type Representative Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

_____
Signature

SUBSCRIBED AND SWORN to before me by the said Gary D. Greer, City Manager

On this 26th day of March, 2012

My commission expires on the ~~May~~ 14th day of May, 2013

NATALIA H. DAVIS NOTARY PUBLIC STATE OF TEXAS EXPIRES 5-14-2013

Natalia H. Davis
Notary Public in and for

Dallas County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)

ADDITIONAL INFORMATION

The following additional information is provided to facilitate the review of this application.

- Signature Authority. As noted in Parts I/II – Section 16, Gary D. Greer is the City Manager and signatory for this application. Consistent with §305.44, Mr. Greer is the Chief Executive Officer of the City organization, responsible directly for the Finance, Communications and Economic Development Departments and indirectly for all others. Additional information can be found on the City's website at the following web address:

  www.farmersbranch.info/discover/city-management

- Mailing List. The hard copy of the mailing list and the CD included in the CD case following this page (included only in the original document submitted to TCEQ) includes the landowners listed in Parts I/II – Section 5. This list has been developed consistent with §330.59(c) and §39.101(c)(2)(D). Per a conversation with the City of Lewisville, health authority matters are directed to the County Health Department; therefore, a City health authority contact has not been provided. The CD contains a file that has been prepared in a format that meets the United States Postal Service requirements for machine readability.

- Site Name Change. As noted on page 1 of the Part 1 form, on page 1 of the TCEQ Core Data Form, and in Parts I/II, Section 2.1, a facility name change request is included in the application. The facility name under TCEQ Permit No. MSW-1312A is "Camelot Sanitary Landfill." Upon approval of this application (TCEQ Permit No. MSW-1312B), the facility name will be "Camelot Landfill."

- Individual Responsible for Publishing Newspaper Notice to the Public. The individual who will be responsible for publishing newspaper notice to the public will be Shane Davis with the City of Farmers Branch. Mr. Davis's contact information is listed below.

  Shane Davis
  Solid Waste Administrator
  City of Farmers Branch
  13000 William Dodson Pkwy.
  Farmers Branch, TX 75234
  972-919-2614 – Office
  972-247-4836 – Fax
  Shane.Davis@FarmersBranch.info

In addition, please copy the Engineer of Record for the application, whose contact information is listed below.

Jeffrey P. Young, P.E.
Senior Engineer
Weaver Boos Consultants, LLC–Southwest
6420 Southwest Boulevard, Suite 206
Fort Worth, TX 76109
817-735-9770 – Office
817-735-9775 – Fax
jyoung@weaverboos.com

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions regarding completion of 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 **Major Permit Amendment**

2. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No Major Permit Amendment

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN 600131676		RN 101479038

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy) 3/11/2010

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other: _____

7. General Customer Information

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☒ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☐ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)* | *If new Customer, enter previous Customer below* | *End Date:*

10. Mailing Address:

City	State	ZIP	ZIP + 4

11. Country Mailing Information *(If outside USA)* | **12. E-Mail Address** *(if applicable)*

13. Telephone Number ( ) - | **14. Extension or Code** | **15. Fax Number** *(if applicable)* ( ) -

16. Federal Tax ID *(9 digits)* | **17. TX State Franchise Tax ID** *(11 digits)* | **18. DUNS Number** *(if applicable)* | **19. TX SOS Filing Number** *(if applicable)*

20. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?
☐ Yes ☐ No

SECTION III: Regulated Entity Information

22. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☒ Update to Regulated Entity Name ☐ Update to Regulated Entity Information ☒ No Change** *(See below)*

**If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

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

Camelot Landfill

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*							
	City		State		ZIP		ZIP + 4	
25. Mailing Address:	a						
	City		State		ZIP		ZIP + 4	

26. E-Mail Address:			
27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*	
( ) -		( ) -	

30. Primary SIC Code (4 digits)	31. Secondary SIC Code (4 digits)	32. Primary NAICS Code (5 or 6 digits)	33. Secondary NAICS Code (5 or 6 digits)

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:			
36. Nearest City	County	State	Nearest ZIP Code

37. Latitude (N) In Decimal:			38. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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 or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

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

SECTION IV: Preparer Information

40. Name:	Jeffrey P. Young, P.E.	41. Title:	Senior Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(817) 735-9770	111	(817) 735-9775	jyoung@weaverboos.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 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	City of Farmers Branch	Job Title:	City Manager
Name *(In Print)*:	Gary D. Greer	Phone:	(972) 919-2515
Signature:	Gary D. Greer	Date:	3/26/12

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

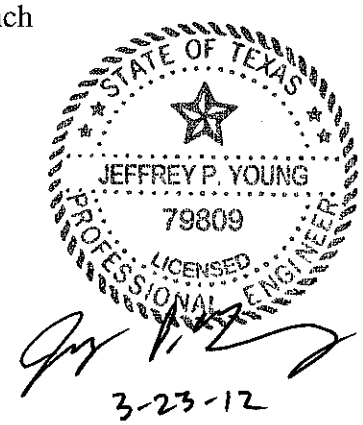
MAJOR PERMIT AMENDMENT APPLICATION

PARTS I/II
GENERAL APPLICATION REQUIREMENTS

Prepared for

City of Farmers Branch

March 2011



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-6A

This document is for permitting purposes only.

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STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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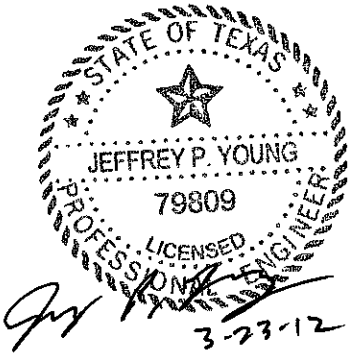

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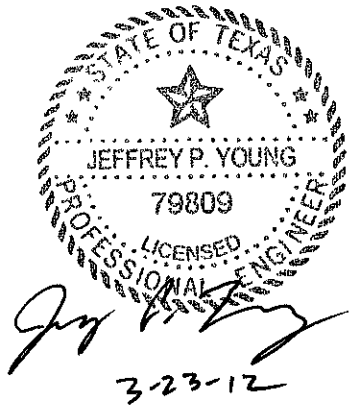

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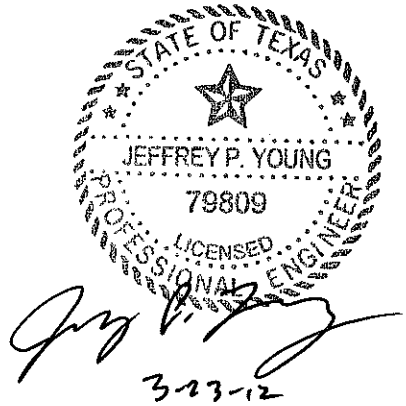

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LIST OF ACRONYMS

BMPs – best management practices

CFR – Code of Federal Regulations

CLOMR –Conditional Letter of Map Revision

EPA – U.S. Environmental Protection Agency

ETJ – extra territorial jurisdiction

FAA – Federal Aviation Administration

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map

ft-msl – feet above mean sea level

FWS – U.S. Fish and Wildlife Service

GCCS – Gas Collection and Control System

GLER – Geomembrane Liner Evaluation Report

GWSAP – groundwater sampling and analysis plan

NCTCOG – North Central Texas Council of Governments

LCS – leachate collection system

LFG – landfill gas

LLDPE – Low Linear Density Polyethylene

MSW – municipal solid waste

NAAQS – National Ambient Air Quality Standards

NFIP – National Flood Insurance Program

LIST OF ACRONYMS (Continued)

NOI – Notice of Intent

NSPS – New Source Performance Standards

NWP – Nationwide Permit

PCBs – polychlorinated biphenyls

PI – Point of Intersection

POTW – publicly owned treatment works

PVI – Point of Vertical Intersection

QA-QC – quality assurance-quality control

RCRA – Resource Conservation Recovery Act

SDP – site development plan

SLER – soils and liner evaluation report

SOP – site operating plan

TAC – Texas Administrative Code

TCEQ – Texas Commission on Environmental Quality

TDH – Texas Department of Health

THC – Texas Historical Commission

TPDES – Texas Pollutant Discharge Elimination System

TPWD –Texas Parks and Wildlife Department

TWC – Texas Water Commission

TWDB – Texas Water Development Board

LIST OF ACRONYMS (Continued)

TxDOT – Texas Department of Transportation

USACE – U.S. Army Corps of Engineers

USGS – U.S. Geological Survey

WBC – Weaver Boos Consultants

1 INTRODUCTION

This section addresses §330.59, §330.61, and §305.45.

The purpose of this Major Permit Amendment is to secure authorization for a vertical and horizontal expansion of the Camelot Landfill. The existing active 198.3-acre waste disposal area will be expanded by 38.5 acres. The existing permit boundary, surveyed in November 2010 as 350.77 acres, will be expanded by 118.85 acres to 469.62 acres. The maximum permitted final cover elevation will be increased from 523 ft-msl to 725 ft-msl and the resulting capacity increase is 37,700,000 cy. This landfill expansion will provide for the long-term disposal needs of the City of Farmers Branch, Denton County, and surrounding communities.

The General Application Requirements Section (Parts I/II) of this Permit Amendment Application for the Camelot Landfill has been prepared consistent with the State of Texas requirements set forth in Title 30 Texas Administrative Code (TAC) §330.59 and §330.61. Part II has been combined with Part I in accordance with §330.57(c)(2). Section 2, Supplementary Technical Report, presents an overview of the project and a detailed facility description as well as the types of waste that will be accepted at the facility. The remaining portions of Parts I/II present information on specific existing conditions on and around the site and regulatory matters of the entities involved in the application process.

2 SUPPLEMENTARY TECHNICAL REPORT

2.1 Facility Location and Project Overview

This section addresses §305.45(a)(7), §305.45(a)(8), §330.57(l), §330.59(b), §330.61(b), §330.61(l), §330.61(o), and §330.61(p).

The Camelot Landfill is an existing municipal solid waste facility (TCEQ Permit No. MSW-1312A) in Denton County which is owned by the City of Farmers Branch. The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

The site was originally permitted as a solid waste landfill under Texas Department of Health (TDH) Permit No. 1312 in December 1979. The permit was amended in March 1981, before the site opened, to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW-1312A). The site was upgraded to Subtitle D standards in 1996. A minor amendment to revise the facility's base grades and final cover configuration was approved by the TCEQ in 2001. The minor amendment reduced the footprint of the site from 238 acres to the existing 198.3 acres.

The purpose of this Major Permit Amendment is to secure authorization for a vertical and horizontal expansion of the Camelot Landfill. Comparisons between (1) the existing permitted and proposed landfill completion plans and (2) the existing permitted and proposed excavation plans are shown on Figure I/II-2.1 and Figure I/II-2.2, respectively. As shown, the existing active 198.3-acre waste disposal area will be expanded by 38.5 acres. The proposed expansion area will be located within the proposed 469.62-acre permit boundary. The maximum permitted final cover elevation will be increased from 523.0 ft-msl to 725.0 ft-msl. The resulting capacity increase is 37,700,000 cubic yards. This landfill expansion will provide for the long-term disposal needs of the City of Farmers Branch, Denton County and surrounding communities. A facility name change is included in the application. The facility name under TCEQ Permit No. MSW-1312A is "Camelot Sanitary Landfill." Upon approval of this application (TCEQ Permit No. MSW-1312B), the facility name will be "Camelot Landfill."

As shown on Figures I/II-2.1 and I/II-2.2, the permit boundary will be expanded to the north by adding 118.85 acres to the existing 350.77-acre permit boundary. The area within the proposed permit boundary expansion area includes an inactive municipal solid waste permit area (TCEQ Permit No. MSW-946). The current permittee of TCEQ Permit No. MSW-946 is the City of Farmers Branch. This permit was issued by the TCEQ on

March 15, 1979 to the Town of Highland Park. The 102.58-acre property and the permit were transferred to the City of Farmers Branch in 2000 (refer to Appendix I/IIH for additional information). The permitted facility has never been developed; however, the record for this permit does indicate some waste filling occurred in the late 1960s and 1970s (refer to Section 3.1 for additional information). As noted in Section 17, the City of Farmers Branch requests that TCEQ Permit No. MSW-946 be revoked upon approval of this permit amendment application, as the majority of the 102.58-acre permit boundary of TCEQ Permit No. MSW-946 will be incorporated into the 469.62 acre permit boundary of TCEQ Permit No. MSW-1312B. Waste within the historic waste fill area associated with TCEQ Permit No. MSW-946 (as shown on Figures I/II-2.1 and I/II-2.2) will be moved to the 236.8-acre waste disposal area prior to the development of the North detention pond (refer to Section 4.6 of Part III and Section 4.25 of Part IV – SOP).

The existing Camelot Landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant Counties. This service area is based on current economic conditions. As economic conditions and available landfill disposal capacity change, the landfill may accept waste from areas other than those noted above.

The quantity and types of waste accepted at the landfill and the site design and operations are discussed in the following subsections. Consistent with Title 30 TAC §330.61(b), the sources and characteristics of wastes are detailed in the following sections. In addition, waste screening and acceptance procedures are further discussed in Part IV – SOP.

2.1.1 Waste Acceptance Plan

The Camelot Landfill is currently operated as a Type I municipal solid waste disposal facility. The facility accepts waste for disposal from both public and private entities in Denton, Collin, Dallas, and Tarrant counties. The proposed expansion of the site will not alter the current disposal patterns. The design and operation of the facility considers the characteristics of the waste types discussed in this section.

The major classifications of solid waste to be accepted at the Camelot Landfill include household waste, yard waste, commercial waste, industrial waste (non-hazardous), construction-demolition waste, and some special wastes. Each classification of waste is defined by §330.3 as follows (note that not all of the special wastes listed in §330.3(148) will be accepted at this site – refer to Part IV for additional information):

- **Household Waste:** Any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas); does not include brush.
- **Yard Waste:** Leaves, grass clippings, yard and garden debris, and brush, including clean woody vegetative material not greater than 6 inches in diameter, that result from landscaping maintenance and land-clearing operations. The term does not include stumps, roots, or shrubs with intact root balls.

- **Commercial Solid Waste:** All types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding residential and industrial wastes.
- **Industrial Waste (Nonhazardous):** Solid waste resulting from or incidental to any process of industry, manufacturing, mining or agricultural operations, classified as follows:
  - Class 2 Industrial Solid Waste – any individual solid waste or combination of industrial solid wastes that cannot be described as Class 1 or Class 3, as defined in §335.506 (relating to Class 2 waste determination).
  - Class 3 Industrial Solid Waste – any inert and essentially insoluble industrial solid waste, usually including, but not limited to, materials such as rock, brick, glass, dirt, and certain plastics and rubber, etc. that are not readily decomposable as further defined in §335.507 (relating to Class 3 waste determination).
- **Construction-Demolition Waste:** Waste resulting from construction or demolition projects; includes all materials that are directly or indirectly the by-products of construction work or that result from demolition of buildings and other structures, including but not limited to, paper, cartons, gypsum board, wood, excelsior, rubber, and plastics.
- **Special Wastes:** Any solid waste or combination of solid wastes that because of its quantity, concentration, physical or chemical characteristics, or biological properties requires special handling and disposal to protect human health or the environment. If improperly handled, transported, stored, processed, or disposed of, or otherwise managed, it may pose a present or potential danger to human health or the environment. Refer to the Waste Acceptance Plan in Part IV of the application for additional information regarding the acceptance of Special Waste.

Consistent with §330.15 the facility will not accept, or accept for disposal, liquid waste, regulated hazardous waste, prohibited PCBs, infectious medical wastes, or other wastes prohibited by TCEQ regulations.

A Citizens Convenience Center is provided for use by the general public (i.e., small-vehicle landfill customers) to dispose of their waste in an area separate from the working face. This improves site safety by reducing traffic at the working face. Waste material is off-loaded from the small-vehicles to roll-off containers. The site then hauls the roll-off containers periodically to the working face for disposal (refer to Parts I/II, Figure I/II-3.6; Appendix I/IIA, Drawings I/IIA.13 and I/IIA.14; and Part IV, Sections 4.2.1, 4.2.4, and 7.9 for additional information). Prior to the development of Cell 10, the Citizens Convenience Center will be relocated to the operation support area on the north end of the property or near the scale house (a permit modification or other applicable authorization request will be submitted in the future to authorize this relocation).

A Wood Waste Processing Area may be developed in the area north of the landfill to process source separated wood waste material. If developed, the wood waste material will be ground to reduce the size of the material to create wood chips. The Wood Waste Processing Area will consist of a material receiving area, a material processing area that will include a tub grinder to reduce material size (or the grinder may be brought to site as needed), and a wood chip storage area. The processed wood chips may be distributed to local citizens, governmental agencies, and/or used onsite for vegetation enhancement and erosion control.

Waste will only be disposed of in the 236.8-acre solid waste disposal area listed in this permit amendment. No additional waste will be disposed of in the 5.1-acre inactive unit located in the northeast portion of the site. As discussed in Section 4.6 of Part III – Site Development Plan Narrative and Section 4.25 of Part IV – SOP, the existing waste located in the 5.1-acre inactive unit and the historic waste fill area associated with TCEQ Permit No. MSW-946 will be relocated to the 236.8-acre disposal area. The inactive unit will be regraded with soil fill to create an open space/green field area. No other waste disposal activities will occur within the 469.62-acre Camelot Landfill permit boundary.

2.1.2 Disposal Volume and Rate of Waste

The following two subsections detail the volume of waste disposal capacity and the projected disposal rates.

Volume of Waste Disposal Capacity

The waste disposal capacity of the site is summarized in Table 2-1.

Table 2-1
Waste Disposal Capacity Summary

Item	Disposal Capacity[1]	
	Permit No. MSW-1312A	Permit No. MSW-1312B
Consumed Airspace[2]	15,357,000 cy	15,357,000 cy
Remaining Airspace	7,543,000 cy	45,243,000 cy
Airspace Gained by Expansion	---	37,700,000 cy
Total Capacity	**22,900,000 cy**	**60,600,000 cy**

[1] Disposal capacity is defined as waste and daily cover. The consumed airspace represents the waste that has been placed at the site as of August 28, 2010.

[2] The consumed airspace quantity does not include (1) the waste in the 5.1-acre inactive unit that will be relocated to the 236.8-acre disposal area and (2) the historic waste in the Permit No. MSW-946 area. The waste volume from these two areas will consume a portion of the total capacity of the 60.6 million cy disposal area.

Disposal Rate Projections

Two estimates have been developed to provide an assessment of the solid waste disposal rate for the Camelot Landfill. The first estimate is based on the City of Farmers Branch's knowledge of market conditions, both currently and after the permit is issued. A second estimate was completed based on historical waste inflow data.

The disposal rate projections are discussed in detail in Appendix IIIN and summarized in Table 2-2.

Table 2-2
Solid Waste Disposal Rate Summary

Method Used to Determine Solid Waste Generation Rate	Average Daily Waste Inflow (tons/day)	Maximum Projected Waste Inflow (tons/day)	Population Equivalent (persons)	Site Life (years)
City of Farmers Branch Projection	3,753	5,299	1,176,283	29.3
Historical Data	1,650	2,336	517,151	66.7

Currently, the Camelot Landfill accepts approximately 1,068 tons/day (305,478 tons per year), based on the 2010 TCEQ annual report. The waste inflow rate is assumed to increase consistent with the projected growth rate for the facility's general service area, which for this analysis is assumed to be Denton, Collin, Dallas, and Tarrant counties.

Operating criteria for a range of waste acceptance rates are included in Part IV – SOP. The above projections are based on current market conditions and may vary as market conditions change. These waste acceptance rates are not a limiting parameter of this permit. The actual yearly waste acceptance rate is a rolling quantity based on the sum of the previous four quarters of waste acceptance (refer to Part IV – SOP for additional information).

The estimated maximum annual waste acceptance rate for the facility for five years (beginning in 2011 and using the base year as 2010) is shown in the following table.

Year	Waste Acceptance Rate (tons per year)
2010*	305,478
2011	429,000
2012	435,692
2013	442,489
2014	449,392
2015	456,403
2016	462,199

*Actual acceptance rate based on 2010 TCEQ Annual Report.

The projected waste acceptance rate for other years is summarized in Part III, Appendix IIIN.

2.1.3 Solid Waste Containment System

The design objective of the containment system [final cover, Subtitle D liner, pre-Subtitle D area overliner (i.e., the term overliner refers to the liner system that will be installed over the existing pre-Subtitle D area), and leachate management systems] is to isolate the solid waste and remove leachate (defined as water that has contacted solid waste) that

may collect on the liner system. The Subtitle D liner system proposed for the landfill is a composite liner (compacted clay/60-mil geomembrane liner/ and drainage geocomposite). The containment system for the Camelot Landfill is shown in Figure 2.1.

The proposed continued development of the site does include a vertical expansion over the pre-subtitle D portion of the landfill. A containment system design for this area is provided to meet the point of compliance (POC) requirements listed in Title 30 TAC §330.331(a)(1). The design includes a composite liner system and slurry wall. The composite overliner system that will be constructed over the pre-Subtitle D waste disposal area will consist of a geosynthetic clay liner (GCL), a 40-mil LLDPE geomembrane liner, drainage geocomposite layer, and a soil protection cover layer.

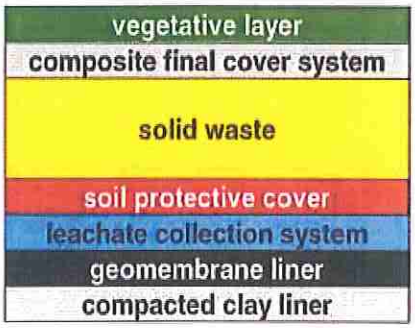


Figure 2.1. The liner and cover systems will be designed to meet or exceed all state and federal regulations.

Design information and the required QA/QC construction procedures for the individual components of the containment system are presented in Part III of this application.

2.1.4 Site Development Plan

The site development plan (SDP) is included in Part III of this application. This plan sets forth the overall design and operating characteristics of the landfill. Drawings showing the proposed landfill configuration during site development are presented in Parts I/II, Appendix I/IIA – Facility Layout Maps. A summary of the landfill configuration is provided below.

- The existing permit boundary, surveyed in November 2010 as 350.77 acres, will be expanded by 118.85 acres to 469.62 acres. The proposed permit boundary will add additional buffer area in the north portion of the landfill, as well as provide additional area for an operations support area and a possible wood waste processing area.
- The existing active 198.3-acre landfill unit will be expanded by 38.5 acres to create a 236.8-acre landfill unit. The existing 5.1-acre landfill unit located in the northeast portion of the site will remain inactive. During the development of the site, the existing waste within the 5.1-acre inactive unit and the historic waste fill area associated with TCEQ Permit No. MSW-946 will be relocated to the 236.8-acre disposal area. The inactive unit area will be regraded to create an open space/green field area.
- A summary of the capacity (volume of waste and cover soils) of the site is listed below:
  - Remaining capacity of existing site (TCEQ Permit No. MSW-1312A) = 7,543,000 cubic yards (as of August 28, 2010).

- Increase due to major permit amendment application = 37,700,000 cubic yards.
- Remaining capacity of the site with the major permit amendment application (TCEQ Permit No. MSW-1312B) = 45,243,000 cubic yards (as of August 28, 2010).

- The maximum elevation of the final cover will be 725 ft-msl, and the maximum waste elevation will be 721.5 ft-msl.
- The minimum elevation of the landfill excavation grades (or the elevation of the deepest excavation) will be 387 ft-msl (i.e., bottom of excavation in deepest sump). Throughout this application, the term "minimum elevation of excavation" and "elevation of the deepest excavation" are used interchangeably.
- A Subtitle D composite liner (2-feet-thick compacted clay liner overlain by a 60-mil HDPE geomembrane liner) and leachate collection system will be constructed according to §330.331(a)(2) and §330.333. Details for the liner and LCS are provided in Part III, Appendix IIIA-A – Liner, Overliner, and Final Cover System Details.
- The proposed continued development of the site does include a vertical expansion over the pre-Subtitle portion of the landfill. A containment system design for this area is provided to meet the point of compliance (POC) requirements listed in §330.331(a)(1). The design includes a composite liner system and slurry wall. The alternate composite overliner system consists of a GCL, a 40-mil LLDPE geomembrane, a drainage geocomposite leachate collection layer, and a 2-foot-thick protective layer. Details for the overliner system are provided in Part III, Appendix IIIA – Landfill Unit Design Information. The point of compliance demonstration is provided in Part III, Appendix IIIB.
- Above grade waste disposal will conform to the lines and grades set forth in Parts I/II, Appendix I/IIA, Drawing I/IIA.8 – Landfill Completion Plan. Side fill slopes will not exceed 25 percent from the toe of the side embankment to the top of the side embankment. The slope of the landfill top deck will be constructed at a 4 percent maximum slope.
- A final cover system will be constructed over the filled waste material, as shown in Part III, Appendix IIIA-A – Liner, Overliner, and Final Cover System Details. The final cover system is designed to minimize storm water infiltration.
- The existing Citizens Convenience Center is located in the northern portion of the site. Generalized construction details of the convenience center are included in Parts I/II, Appendix I/IIA. Operational requirements are included in Part IV-SOP. The convenience center uses watertight containers. Traffic to the facility is controlled by scale operators to ensure a safe and efficient operation. Prior to the development of Cell 10, the Citizens Convenience Center will be relocated to the operation support area on the north end of the property or near the scale house.

- The Wood Waste Processing Area may be located north of the landfill. Generalized construction details and a Wood Waste Storage and Processing Area Operating Plan are included in Part IV, Appendix IVD.

2.1.5 Site Monitoring Systems

To verify the integrity of the environmental protection systems, the following existing and proposed landfill monitoring systems will be installed and/or maintained.

- **Groundwater Monitoring System** – The purpose of the groundwater monitoring system is to verify the integrity of the containment systems and to confirm that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining groundwater samples from the monitoring wells on the perimeter of the landfill, which are screened in the uppermost aquifer. The TCEQ-approved groundwater monitoring system consists of 22 existing groundwater monitoring wells. The currently approved groundwater monitoring system was revised in 2010 to comply with Title 30 TAC §330.403(a)(2), which required the installation of additional groundwater monitoring wells. Since the waste footprint expansion area is located within the existing monitoring well network, this permit amendment proposes only minor changes to the existing groundwater monitoring system. The monitoring well locations are shown in Part III, Appendix IIIH, Figure IIIH-A.1. Two groundwater monitoring wells on the southern portion of the site will be relocated to allow for the completion of the slurry wall and proposed drainage improvements. One additional groundwater monitoring well will also be added to the southern portion of the site to maintain the 600-foot spacing requirement. Following the installation of the three proposed monitoring wells and the removal of existing monitoring well MW-18, the groundwater monitoring system will consist of 24 wells.
- **Landfill Gas Monitoring System** – The purpose of the landfill gas monitoring system is to monitor and verify that landfill gas does not migrate off-site. The TCEQ-approved landfill gas monitoring system consists of 18 existing gas probes (GMP-1 through GMP-18) around the existing permit boundary. As a result of landfill expansion, all 18 existing probes will be abandoned, and 22 new probes will be installed. As shown on Figure I/II-3.5, the site currently has an active landfill gas collection and control system (GCCS). The landfill gas monitoring system is discussed in detail in Part III, Appendix IIII.
- **Surface Water Monitoring Requirements** – The Camelot Landfill is subject to TCEQ stormwater permit requirements. A copy of the TPDES permit is included in Appendix I/IIG. Surface water monitoring is conducted consistent with TPDES requirements.

2.1.6 Site Operations

The Camelot Landfill is now and will continue to be operated by trained and TCEQ-licensed personnel. The Site Operating Plan (SOP) for the Camelot Landfill is presented

in Part IV of this permit application. The Site Operating Plan details the required equipment, personnel, and safety procedures required to operate the site in accordance with §330.65. The active landfill area will be covered each evening to control potential nuisance conditions such as odors and vectors. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis for compliance with state regulations.

The operating hours at the site are 3:00 a.m. to 7:30 p.m. Monday through Friday and 4:00 a.m. to 3:00 p.m. on Saturday. The site is closed on Sunday.

2.2 Regulatory Agency Coordination

Documentation of coordination with the following regulatory agencies is included in Appendix I/IIB:

- Federal Aviation Administration
- Texas Historical Commission
- Texas Department of Transportation
- Texas Parks and Wildlife Department
- North Central Texas Council of Governments
- U.S. Army Corps of Engineers
- U.S. Department of the Interior, Fish and Wildlife Service

2.3 Texas Historical Commission Review

As noted in Section 2.2, a Texas Historical Commission coordination letter is included in Appendix I/IIB. The Historical Commission concluded that no historic properties will be affected by the proposed expansion.

2.4 North Central Texas Council of Governments

The expansion of the Camelot Landfill is consistent with the North Central Texas Council of Governments (NCTCOG) Regional Sold Waste Management Plan. Parts I/II of this application was submitted to the NCTCOG in March 2012. A letter documenting that Parts I/II was submitted to the NCTCOG is included in Appendix I/IIB.

2.5 Abandoned Oil and Water Wells

At the time of this submittal, there are no known abandoned oil, gas, or water wells at the site. However, if an abandoned oil, gas, or water well is located, the Landfill Manager will provide written notification to the TCEQ's Executive Director of their location within

30 days after discovery during the course of facility development. As the site is developed, if any wells are encountered, they will be exposed, the casing cut to a minimum of 2 feet below the excavation, and the well capped and plugged in accordance with all applicable rules and regulations of the TCEQ, the Railroad Commission of Texas, or other applicable state agency.

The Landfill Manager will provide written notification to the Executive Director of the location of any existing or abandoned water wells within the facility upon discovery during site development. Within 30 days of such a discovery, the Landfill Manager will provide written notification and certification to the Executive Director of the TCEQ that all such wells have been capped, plugged, and closed in accordance with all applicable rules and regulations of the TCEQ or other applicable state agency.

For crude oil or natural gas wells, or other wells associated with mineral recovery that are under the jurisdiction of the Railroad Commission of Texas, within 30 days after the plugging of any such well, the Landfill Manager 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. In the event that an abandoned well causes a change to the liner installation plan, a permit modification will be submitted to the Executive Director in accordance with §330.161(d).

2.6 Internet Posting

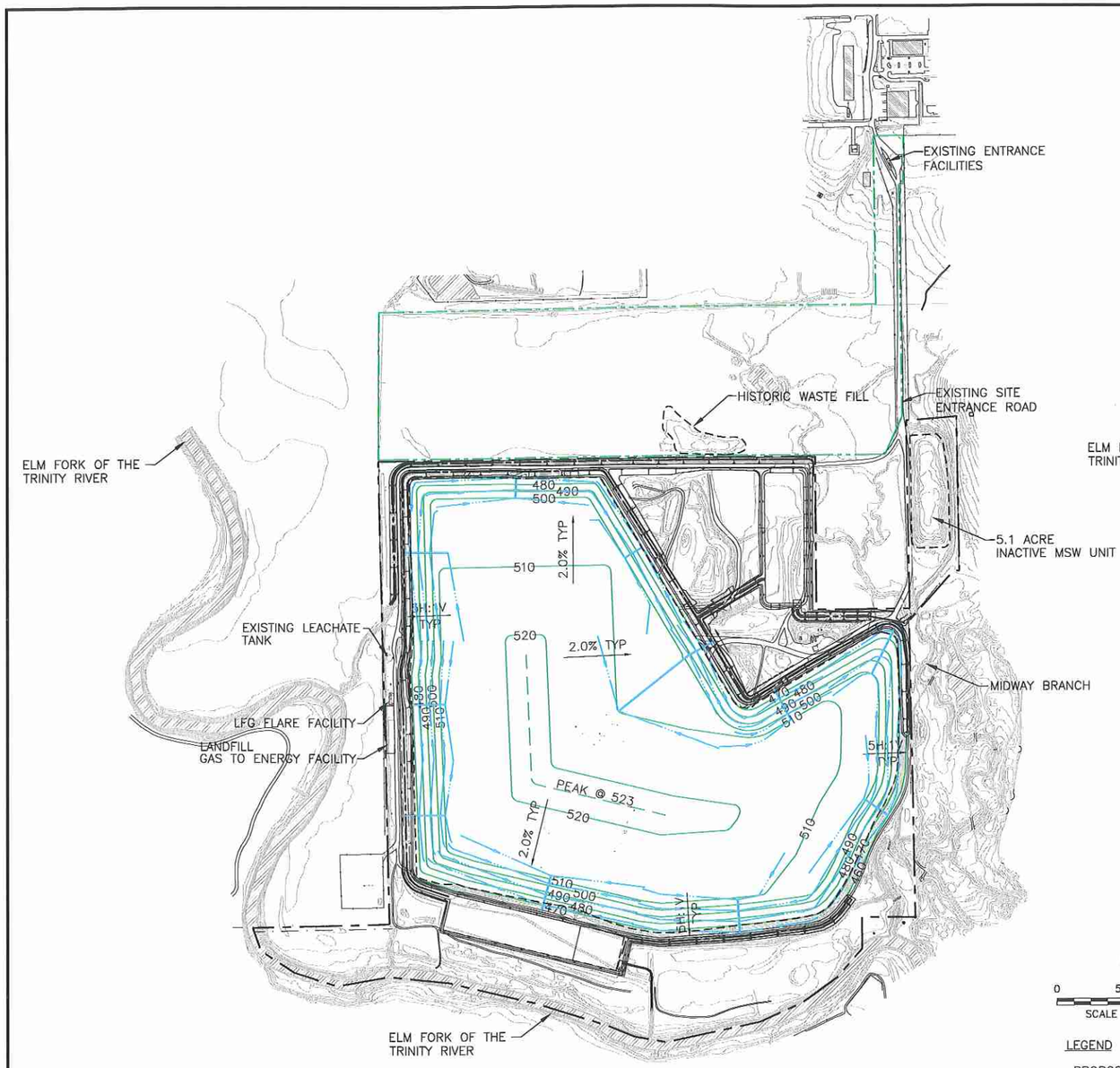
In accordance with 30 TAC §330.57(i), a complete copy of this permit application will be posted to the internet at the following publicly accessible website: http://www.ftwweaverboos.com. All future revisions or supplements to this permit application will also be posted at the same location. This internet posting is for informational purposes only.

2.7 Existing Permits/Authorizations

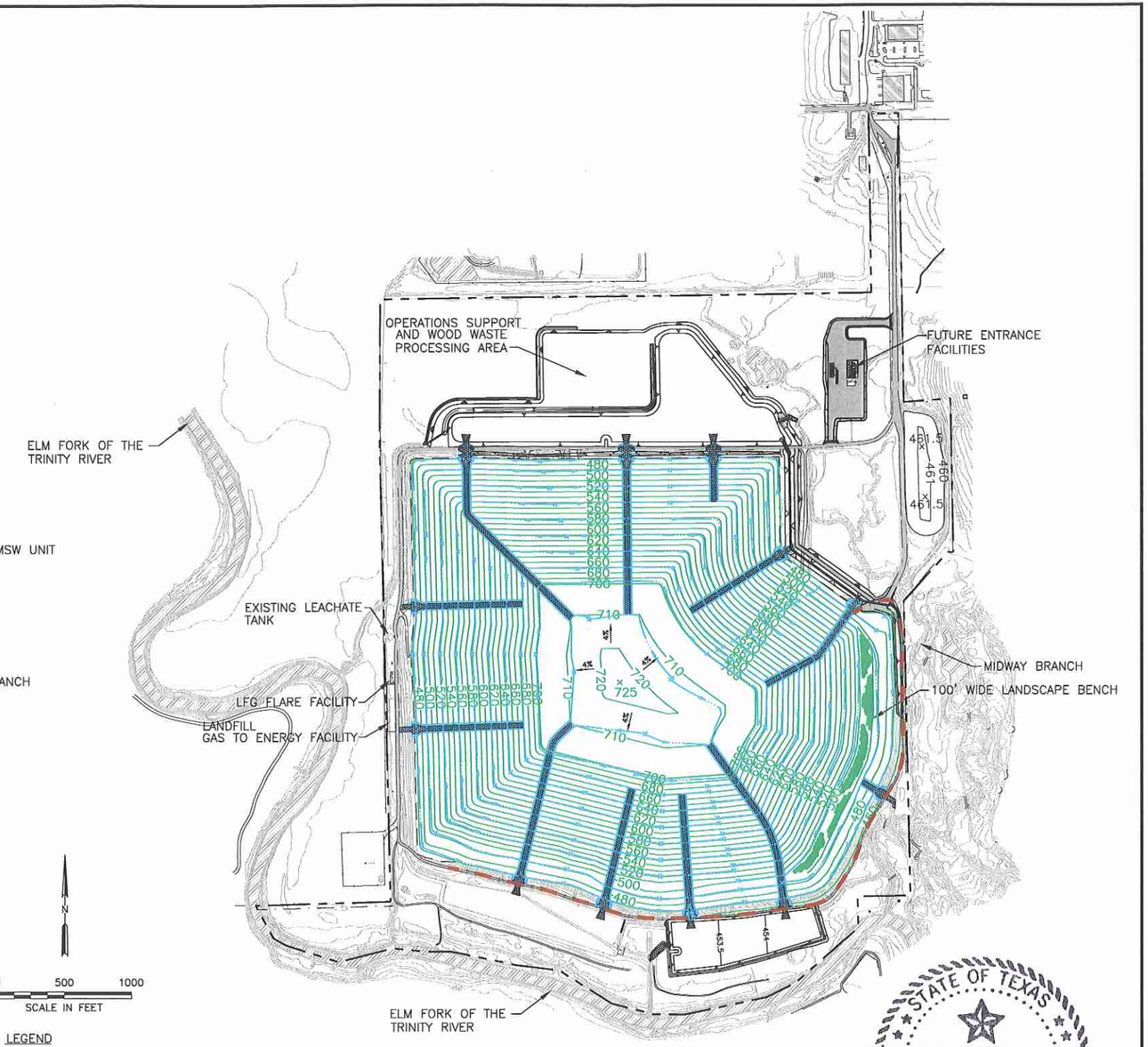
In accordance with 30 TAC §305.45(a)(7), the existing permits and authorizations for the facility are summarized in Table 2-3.

Table 2-3
Existing Permits/Authorizations

Description	Status
Hazardous Waste Management program under the Texas Solid Waste Disposal Act	No submittal is required nor has been applied for under the Hazardous Waste Management Program under the Texas Solid Waste Disposal Act.
Underground Injection Control (UIC) program under the Texas Injection Well Act	No submittal is required nor has been applied for under the Underground Injection Control Program under the Texas Injection Well Act.
Texas Pollutant Discharge Elimination System (TPDES) program under the Federal Clean Water Act (CWA) and Waste Discharge program under the Texas Water Code, Chapter 26	Refer to Appendix I/IIG for more information regarding the site's Multi-Sector Stormwater Permit (TCEQ Permit No. TXR05K396).
Prevention of Significant Deterioration (PSD) Program under the Federal Clean Air Act	No submittal for a Prevention of Significant Deterioration Program under the Federal Clean Air Act (FCAA) is required or has been applied for.
Nonattainment Program under the Federal Clean Air Act (FCAA)	No submittal for a non-attainment permit under the FCAA is required or has been applied for.
National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the FCAA	No submittal is required nor been applied for under the NESHAPS preconstruction approval under the FCAA.
Ocean dumping permits under the Marine Protection Research and Sanctuaries Act	No submittal is required nor have ocean dumping permits been applied for under the Marine Protection Research and Sanctuaries Act.
Dredge or fill permits under the Federal Clean Water Act	No dredge permits are required under the Federal Clean Water Act. Refer to Parts I/II – Section 11 for more information regarding the applicability of Nationwide Permit No. 43 to the construction of the two drainage structures located near or within Section 404 jurisdictional areas.
TCEQ Air Quality Permit or Registration	The emission sources at the landfill are currently authorized by two separate 30 TAC Chapter 116 Air Standard Permits, No. 75220 for the landfill issued March 30, 2005 and No. 75222 for the flare issued March 31, 2005. In addition, the landfill has a Title V General Operating Permit (Permit No. O-02376) issued on April 20, 2007. The Title V Permit and air authorizations will be updated and revised, as needed, once this major permit amendment application has been approved. The landfill gas to energy facility operated by an independent third party is authorized by a Standard Permit for Electric Generating Units No. 91989 issued March 23, 2010 and a Title V General Operating Permit No. O-03390 issued March 22, 2011.
Other environmental permits	The independently owned and operated landfill gas to energy facility has a Registration-by-Rule No. 48028.



PERMITTED LANDFILL COMPLETION PLAN
(TCEQ PERMIT NO. MSW–1312A)



PROPOSED LANDFILL COMPLETION PLAN
(TCEQ PERMIT NO. MSW–1312B)

N

0 500 1000
SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY (TCEQ PERMIT NO. MSW 1312B)
- EXISTING PERMIT BOUNDARY (TCEQ PERMIT NO. MSW 1312A)
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- PERMIT BOUNDARY FOR (TCEQ PERMIT NO. MSW 946)
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- 600 REGRADED BUFFER ZONE (GREENFIELD/OPEN SPACE) AREA

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PERMIT BOUNDARY FOR TCEQ PERMIT NO. MSW 1312A WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. PERMIT BOUNDARY FOR TCEQ PERMIT NO. MSW 1312B WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
4. PERMIT BOUNDARY REPRODUCED FROM THE LEGAL DESCRIPTION INCLUDED IN TCEQ PERMIT NO. MSW–946 DATED MARCH 15, 1979.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 2.1_FC COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-2.1

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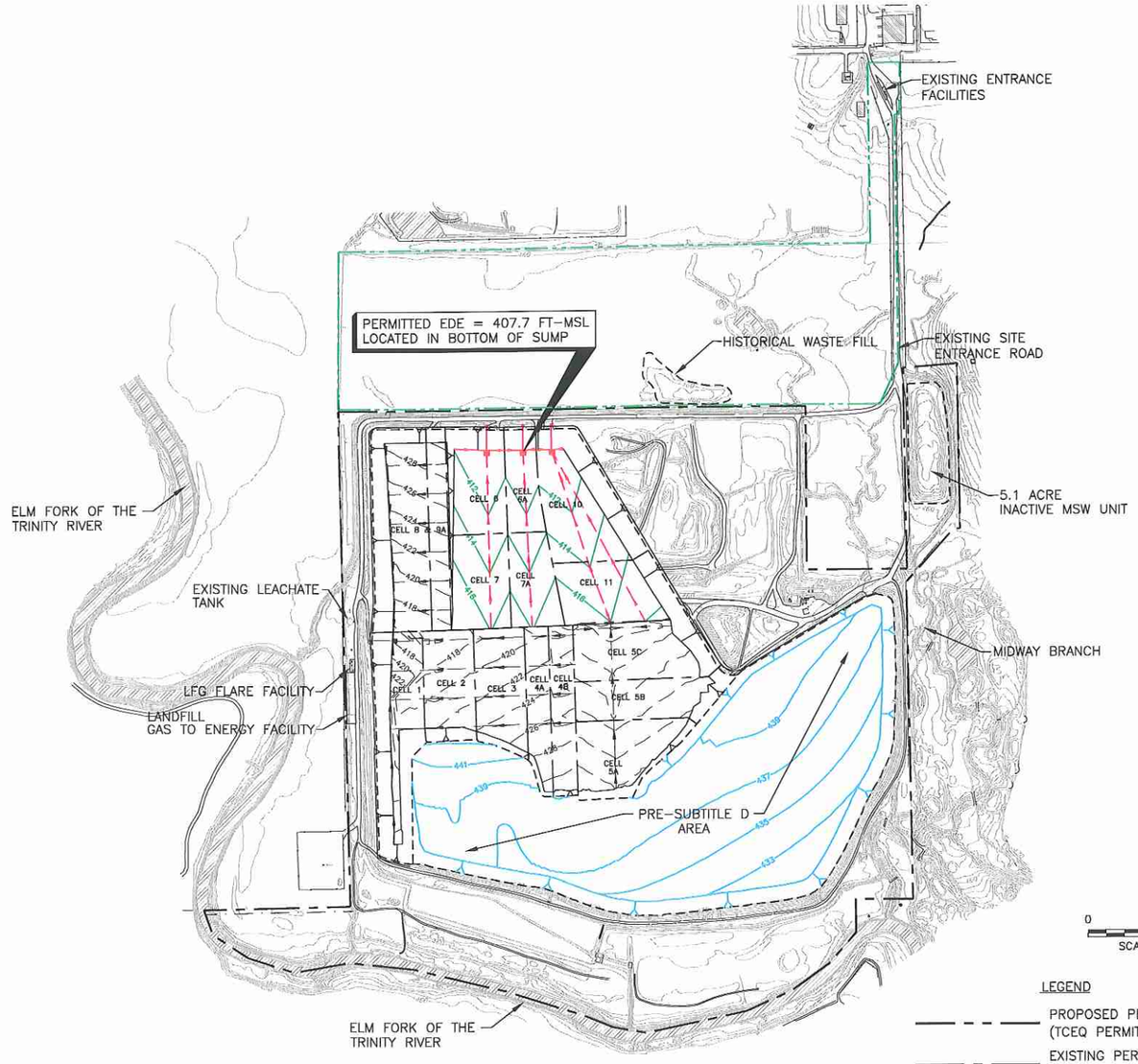
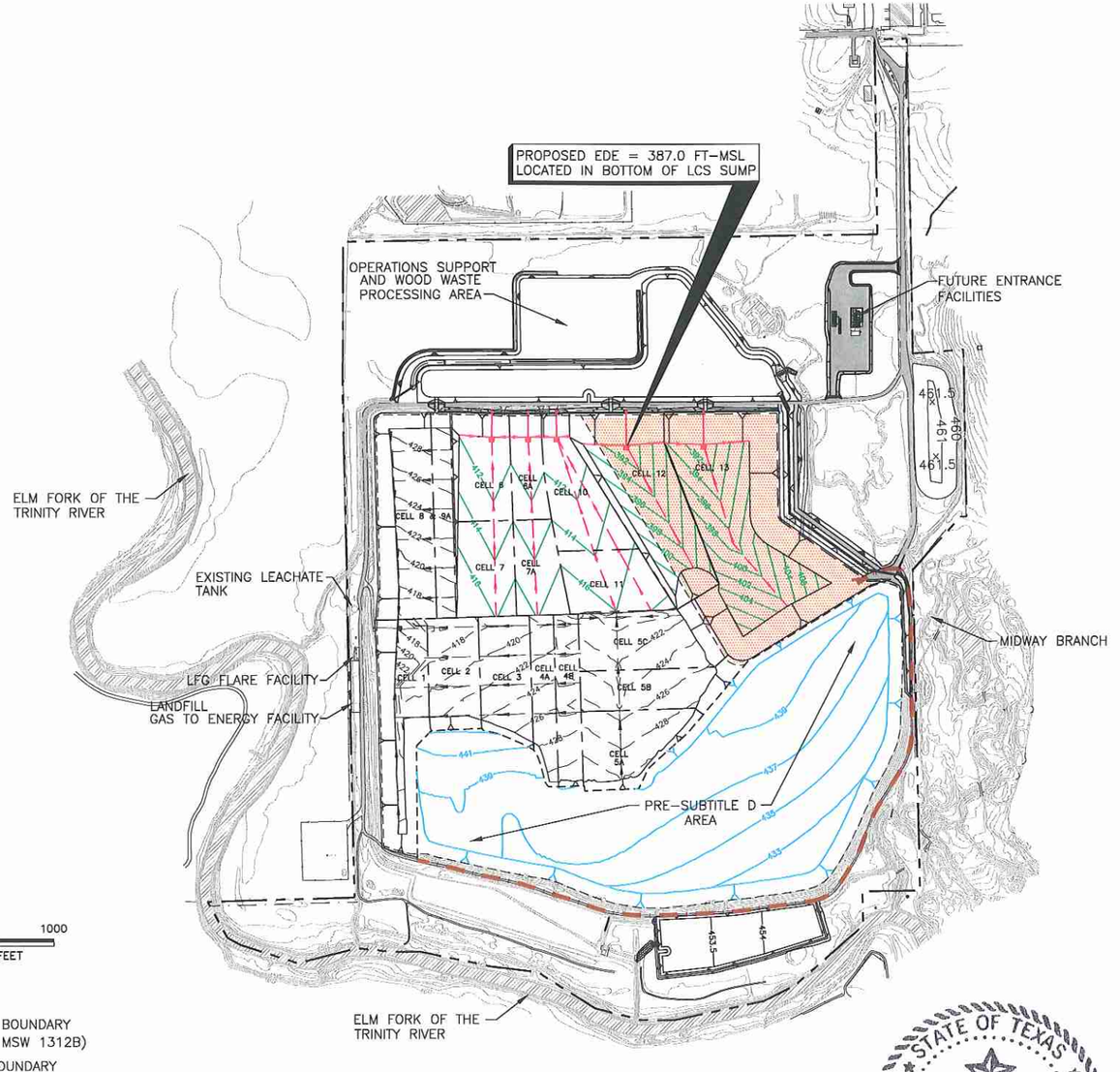


PERMITTED EXCAVATION PLAN
(TCEQ PERMIT NO. MSW-1312A)



PROPOSED EXCAVATION PLAN
(TCEQ PERMIT NO. MSW-1312B)

0 500 1000
SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY (TCEQ PERMIT NO. MSW 1312B)
- EXISTING PERMIT BOUNDARY (TCEQ PERMIT NO. MSW 1312A)
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- PERMIT BOUNDARY FOR (TCEQ PERMIT NO. MSW 946)
- 500 EXISTING CONTOUR
- 398 EXCAVATION CONTOUR
- LEACHATE LINE
- LEACHATE COLLECTION SUMP
- LEACHATE RISER
- 422 AS-BUILT TOP OF SUBTITLE D GEOMEMBRANE LINER
- 433 APPROXIMATE BOTTOM OF WASTE CONTOUR IN PRE-SUBTITLE D AREA
- PROPOSED WASTE FOOTPRINT LATERAL EXPANSION AREA
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- 600 REGRADED BUFFER ZONE (GREENFIELD/OPEN SPACE) AREA

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PERMIT BOUNDARY FOR TCEQ PERMIT NO. MSW 1312A WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
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4. PERMIT BOUNDARY REPRODUCED FROM THE LEGAL DESCRIPTION INCLUDED IN TCEQ PERMIT NO. MSW-946 DATED MARCH 15, 1979.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
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DATE: 03/2012
FILE: 1339-351-11
CAD: 2.2_EXCAV COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING AND PROPOSED EXCAVATION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-2.2

3 EXISTING CONDITIONS SUMMARY

3.1 Site History

This section addresses §330.61(a).

The site is an existing 351-acre municipal solid waste facility (TCEQ Permit No. MSW-1312A) in Denton County. An existing site plan is shown on Figure I/II-3.1.

The site was originally permitted as a landfill under Texas Department of Health (TDH) Permit No. 1312 in December 1979. The permit was amended in March 1981 before the site opened to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW-1312A). The site was upgraded to Subtitle D standards in 1996. A minor amendment to revise the facility's base grades and final cover configuration was approved by the TCEQ in 2001. The minor amendment reduced the waste disposal footprint from 238 acres to the existing 198.3 acres. As shown on Figure I/II-3.1, as of August 2010 the majority of the pre-Subtitle D area has been filled to the permitted grades. Also, as of August 2010 the site has developed Cells 1 through 5C and Cell 8/9A.

To the north of the Permit No. MSW-1312A permit boundary, there is an inactive municipal solid waste permit area (TCEQ Permit No. MSW-946 – refer to Figure I/II-3.1). The permittee of TCEQ Permit No. MSW-946 is the City of Farmers Branch. Permit No. MSW-946 was issued by the TCEQ on March 15, 1979 to the Town of Highland Park. The 102.58-acre property associated with TCEQ Permit No. MSW-946 and the permit were transferred to the City of Farmers Branch in 2000. The permitted facility has never been developed; however, the record for this permit does indicate some waste filling occurred in the late 1960s and 1970s.

Highland Park acquired the 102.58-acre area in 1967 with the intent of using the site for a future MSW landfill. This site was a replacement for a site that Highland Park operated in the city of Dallas. Correspondence from Highland Park shows that waste disposal occurred on the 102.58-acre tract between 1967 and 1978 on a limited basis. As noted above, a permit was issued for the site in 1979; however, it appears the site did not accept waste under TCEQ Permit No. MSW-946.

The limits of the historic waste fill associated with the 102.58-acre tract is shown on Figure I/II-3.1. The estimated limits is based on site topography and visual observations made during a July 2011 site visit. There are no drawings in the record for this permit that show the historic waste fill area. There is no record that final cover was placed on this area; however, this area does include a soil cover that is vegetated.

As shown on Figure I/II-3.1, there is also a 5.1-acre inactive unit on the northeast portion of the site associated with TCEQ Permit No. MSW-1312A. This area was filled in the early 1980s on an approved liner system. This unit is listed as an inactive since no waste has been placed in this area since the implementation of Subtitle D in 1993. No final cover has been placed over this MSW unit.

The existing permitted (TCEQ Permit No. MSW-1312A) final contour plan and excavation plan are reproduced in Figures I/II-3.2 and I/II-3.3.

3.2 Existing Liner Systems

The existing liner and leachate collection systems are discussed below.

3.2.1 Existing Pre-Subtitle D Liner System

The liner system in the pre-Subtitle D area was constructed between 1981 and 1993. The location of this area and a typical section that details this liner system are shown on Figures I/II-3.3 and I/II-3.4.

As shown on Figure I/II-3.4, the liner system is founded in the Eagle Ford Shale. Consistent with the permit requirements at the time, the SLERs for this area show that the in-situ hydraulic conductivity of the bottom liner was less than $1x10^{-7}$ cm/s. Typically, the hydraulic conductivity test showed values that ranged from $6x10^{-10}$ cm/s to $9x10^{-8}$ cm/s.

In addition, a 3-foot-thick sidewall liner was also constructed in the pre-Subtitle D area as shown on Figure I/II-3.4. The sidewall liner typically was constructed of 3 feet of compacted clay with a hydraulic conductivity of less than $1x10^{-7}$ cm/s. The SLERs for the sidewall liner show that the actual hydraulic conductivity was generally between $5x10^{-9}$ cm/s and $1x10^{-8}$ cm/s.

3.2.2 Existing Subtitle D Liner System

Cells 1 through 5C and Cell 8/9A were constructed to Subtitle D standards after 1993. The initial Subtitle D composite lined cell (Cell 1) was constructed in 1997. The most recent cell (Cell 5C) was constructed in 2008. Approximately 68.1 acres of the 109.9-acre Subtitle D area has been constructed at the site. The Subtitle D-lined cells have a liner system consisting of 2 feet of compacted clay liner, 60-mil HDPE geomembrane, leachate collection layer, and protective cover.

3.2.3 Existing Leachate Collection System

In the Subtitle D area, the collection layer slopes to drain toward perforated leachate collection pipes surrounded by drainage stone. The leachate collection pipes convey leachate to the leachate sumps. Leachate from the leachate collection sumps is pumped via a leachate forcemain to an existing 100,000-gallon leachate storage tank located west of Sector 1. Leachate from the existing 100,000-gallon leachate storage tank is conveyed

by an existing forcemain to an existing sanitary sewer located along the western edge of permit boundary that ties to the City of Lewisville's POTW.

3.3 Existing Final Cover System

The portion of the final cover that has been constructed on the south and east sides of the pre-Subtitle D area is shown on Figure I/II-3.1. This alternative soil final cover was certified via a permit modification approved by TCEQ in August 2011. The approval letter from TCEQ is included in Appendix IIIK-A.

3.4 Groundwater Monitoring System and Status of Corrective Action

The currently approved groundwater monitoring system was revised in 2010 to comply with Title 30 TAC §330.403(a)(2) and is shown on Figure I/II-3.1. Monitoring wells MW-19, MW-20, MW-1R, and MW-8 are background detection monitoring wells. The point of compliance detection monitoring wells include MW-3R, MW-9, MW-12B, MW-13R, MW-14, MW-15A, MW-16, MW-17, MW-18A, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29. Observations wells MW-10, MW-10A, MW-10B, MW-4R, MW-11, MW-12, and MW-12A are utilized as observation wells and are not part of the detection monitoring system. The revised groundwater monitoring system was installed in 2010. Monitoring well MW-18 will remain operational until the background data pool for the new monitoring well MW-18A is evaluated by the facility. The detection monitoring system monitors the uppermost groundwater zone in the Alluvial Strata that overlie the Shale Strata. These detection wells are being monitored semiannually for the constituents listed in the Groundwater Sampling and Analysis Plan.

Due to the detections of volatile organic compounds (VOCs) and arsenic in concentrations exceeding groundwater protection standards in monitoring wells MW-10, MW-11 and MW-12, the facility completed a nature and extent assessment of VOCs in groundwater at the southern edge of the landfill in 2004. The assessment included the installation of observation wells down gradient of these detection wells. The investigation's report concluded the groundwater impacts were caused by landfill gas migration.

In response to the VOCs detections, the facility installed an active gas collection and control system (GCCS) in three phases between 2005 and 2010. As shown in the Appendix IIIH-A groundwater monitoring data tables, the effectiveness of the GCCS is evidenced by the general reduction of VOC in groundwater concentrations during this time period. In 2009, the TCEQ approved the Corrective Action Plan that included continued operation of the GCCS and monitored natural attenuation.

In the fall of 2010, the facility installed new point of compliance monitor wells (i.e., MW-23, MW-24, MW-25, MW-26, MW-27, and MW-28) to the south and down

gradient of monitor wells MW-10, MW-11 and MW-12. These and other new monitor wells were installed to comply with Title 30 TAC §330.403(a)(2).

3.5 Landfill Gas Monitoring System

The TCEQ-approved landfill gas monitoring system consists of 18 existing gas probes (GMP-1 through GMP-18) located around the existing permit boundary. Monitoring of these probes is conducted quarterly.

As shown on Figure I/II-3.5, the site currently has an active landfill gas collection and control system (GCCS) which directs landfill gas to an existing landfill gas to energy facility and/or flare facility located on the west side of the site. This existing landfill gas to energy facility is owned and operated by an independent third party. The type IX registration-by-rule for this facility is No. 48028 and was approved on June 29, 2010. A copy of the registration approval letter is included in Appendix III I-G.

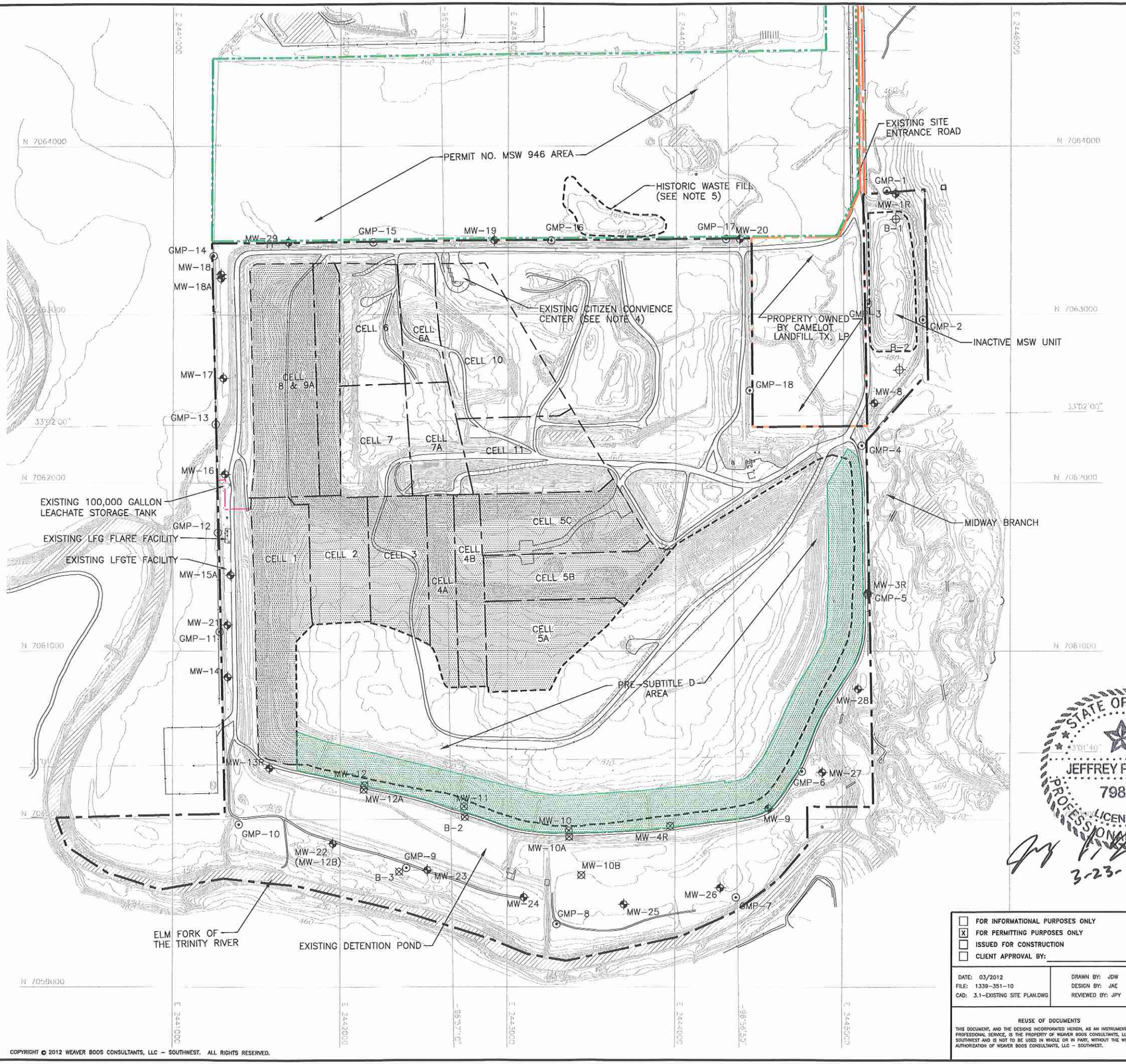
3.6 Existing Landfill Air Permits

The Camelot Landfill is located in an ozone non-attainment area and is authorized by air quality Standard Permit No. 75220 for the landfill issued March 30, 2005, Air Standard Permit No. 75222 for the flare issued March 31, 2005, and a General Operating Permit (Title V) No. O-02376 issued April 20, 2007. In accordance with the New Source Performance Standards/Emission Guidelines (NSPS/EG) the site conducted a Tier 2 Nonmethane organic compound (NMOC) Emission Rate Test in January 2008. A 5-year Tier II NMOC Emission Rate Report was submitted indicating the NMOC emission rate is below 50 Mg/yr until 2012. As such, no further NMOC emissions estimation will be completed until 2013 unless the parameters used in the NMOC report change such that the NMOC emission rate exceeds 50 Mg/yr.

The landfill gas to energy facility owned and operated by a independent third party is authorized by a Standard Air Permit for Electric Generating Units No. 91989 issued March 23, 2010 and a General Operating Permit (Title V) No. O-03390 issued March 22, 2011. Copies of the approval letters are included in Part III-Appendix III I.

3.7 Citizens Convenience Center

The Citizens Convenience Center is located along the northern portion of the site (refer to Figure I/II-3.6). The convenience center was authorized by a permit modification approved by the TCEQ on September 10, 2010. The convenience center allows small vehicle landfill customers to transfer their waste into a roll-off container without having to travel to the working face. Camelot Landfill personnel periodically take the roll-off containers to the working face for disposal. The convenience center is located over a paved area and uses watertight containers.



LEGEND

- PERMIT BOUNDARY (SEE NOTE 2) (PERMIT NO. MSW-1312A)
- AUTHORIZED PRE-SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- AUTHORIZED SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- CAMELOT LANDFILL TX, LP PROPERTY
- PERMIT BOUNDARY FOR TCEQ PERMIT NO. MSW-946 (SEE NOTE 3)
- 510 EXISTING CONTOUR
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- CELL BOUNDARY
- MW-8 PERMITTED GROUNDWATER MONITORING WELL
- GMP-1 PERMITTED GAS MONITORING PROBE
- MW-12 PERMITTED GROUNDWATER OBSERVATION WELL
- EXISTING SUBTITLE D COMPOSITE LINER AREA
- EXISTING LEACHATE FORCEMAIN
- CONSTRUCTED FINAL COVER

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY FOR PERMIT NO. MSW-1312A WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. PERMIT BOUNDARY REPRODUCED FROM THE LEGAL DESCRIPTION INCLUDED IN TCEQ PERMIT NO. MSW-946 DATED MARCH 15, 1979.
4. REFER TO FIGURE I/II-3.5 FOR ADDITIONAL CITIZEN CONVENIENCE CENTER INFORMATION.
5. THE HISTORIC WASTE FILL AREA LIMITS ARE APPROXIMATE. THE RECORD FOR TCEQ PERMIT NO. MSW-946 INDICATES WASTE WAS PLACED PRIOR TO THE ISSUANCE OF THE PERMIT IN 1979. HOWEVER, THERE IS NO DRAWING THAT SHOWS THE ACTUAL LIMITS OF WASTE. THE LIMITS WERE ESTABLISHED BY VISUAL OBSERVATIONS OF THE AREA. THIS WASTE WILL BE RELOCATED TO THE 236.8 ACRE DISPOSAL AREA.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-10
CAD: 3.1-EXISTING SITE PLAN.DWG

DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

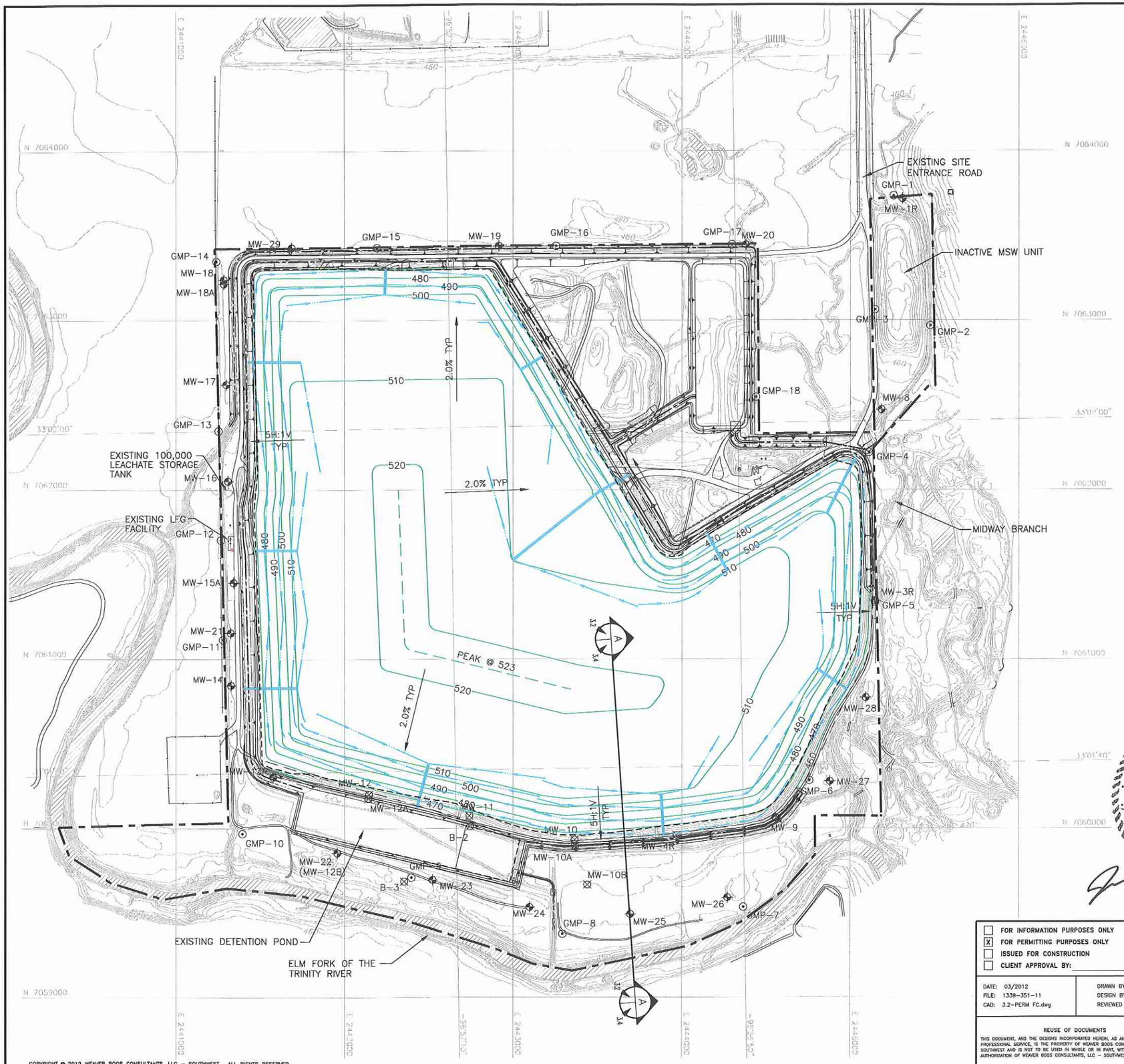
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING SITE PLAN (TCEQ PERMIT NO. MSW-1312A)

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-3.1



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2) (PERMIT NO. MSW-1312A)
- AUTHORIZED LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- 600 PERMITTED FINAL COVER CONTOUR (PERMIT NO. MSW-1312A)
- 500 EXISTING CONTOUR
- PERMITTED DRAINAGE SWALE
- PERMITTED LETDOWN STRUCTURE
- MW-8 PERMITTED GROUNDWATER MONITORING WELL
- GMP-1 PERMITTED LANDFILL GAS MONITORING PROBE
- MW-12 PERMITTED GROUNDWATER OBSERVATION WELL

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. THE PERMITTED FINAL CONTOUR PLAN WAS REPRODUCED FROM THE MINOR PERMIT AMENDMENT REQUEST PREPARED BY REED ENGINEERING GROUP, INC. IN NOVEMBER 2000.

STATE OF TEXAS
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79809
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DATE: 03/2012
FILE: 1339-351-11
CAD: 3.2-PERM FC.dwg
DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

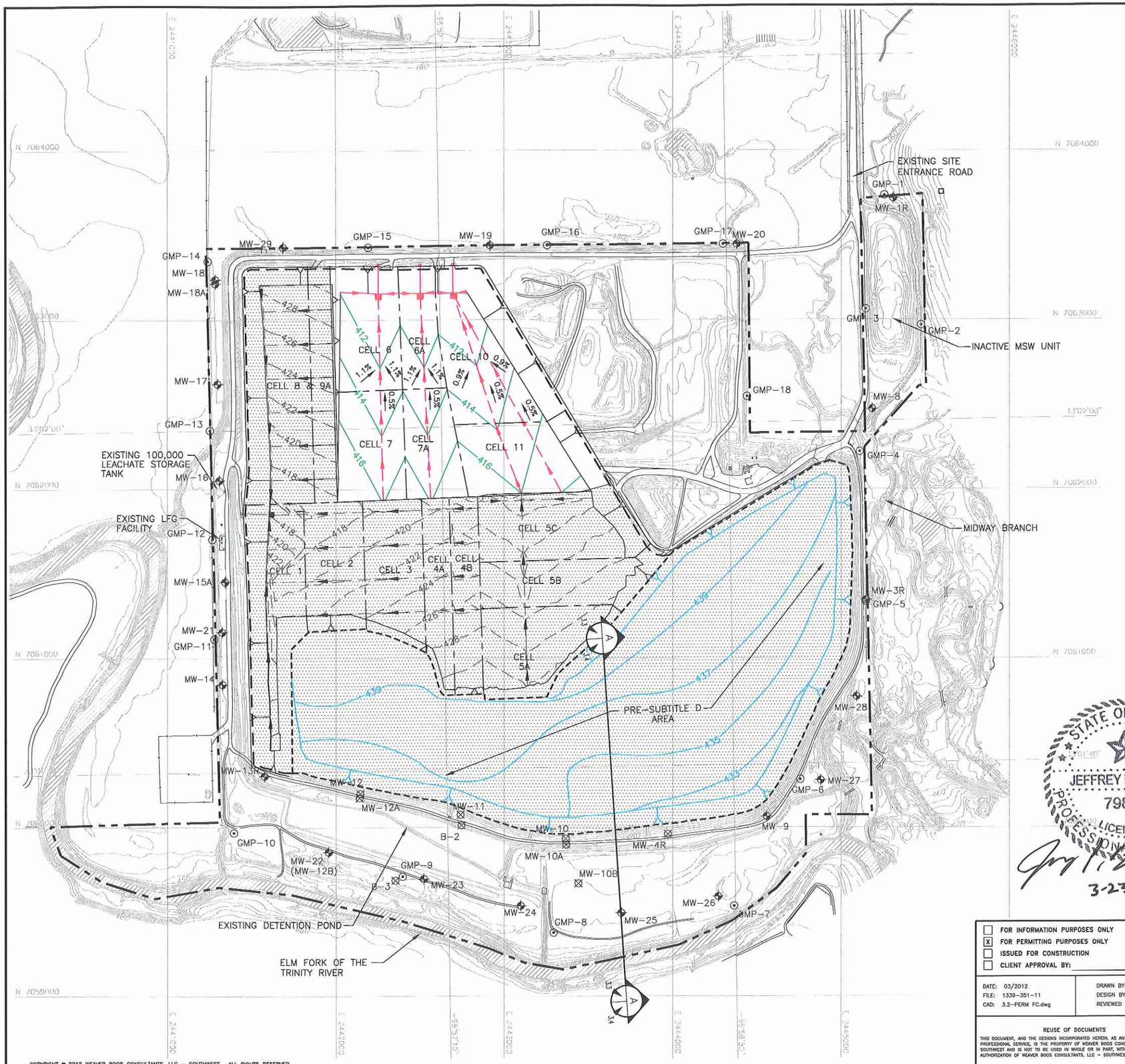
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT FINAL CONTOUR PLAN (TCEQ PERMIT NO. MSW-1312A)

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-3.2



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2) (PERMIT NO. MSW-1312A)
- AUTHORIZED PRE-SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- AUTHORIZED SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- CELL BOUNDARY
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- 500 EXISTING CONTOUR
- 412 PERMITTED EXCAVATION CONTOUR (PERMIT NO. MSW-1312A)
- 422 AS-BUILT TOP OF SUBTITLE D GEOMEMBRANE LINER (SEE NOTE 4)
- 433 APPROXIMATE BOTTOM OF WASTE CONTOUR IN PRE-SUBTITLE D AREA (SEE NOTE 5)
- PERMITTED LEACHATE LINE
- PERMITTED LEACHATE COLLECTION SUMP
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- CONSTRUCTED AREA
- MW-8 PERMITTED GROUNDWATER MONITORING WELL
- GMP-1 PERMITTED LANDFILL GAS MONITORING PROBE
- MW-12 PERMITTED GROUNDWATER OBSERVATION WELL

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. THE PERMITTED EXCAVATION PLAN IS REPRODUCED FROM THE CELLS 6,7,10 AND 11 LEACHATE COLLECTION SYSTEM IMPROVEMENTS PERMIT MODIFICATION (APPROVED IN MARCH 2011).
4. AS-BUILT TOP OF GEOMEMBRANE LINER CONTOURS WERE DEVELOPED FROM HISTORICAL SLERS MAINTAINED IN THE SITE OPERATING PLAN.
5. APPROXIMATE BOTTOM OF WASTE CONTOURS IN THE PRE-SUBTITLE D AREA WERE DEVELOPED FROM HISTORICAL SLER INFORMATION AND THE LOCATION OF TO TOP OF UNWEATHERED SHALE ZONE.

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DATE: 03/2012
FILE: 1339-351-11
CAD: 3.2-PERM FC.dwg
DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

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NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXCAVATION PLAN (TCEQ PERMIT NO. MSW-1312A)

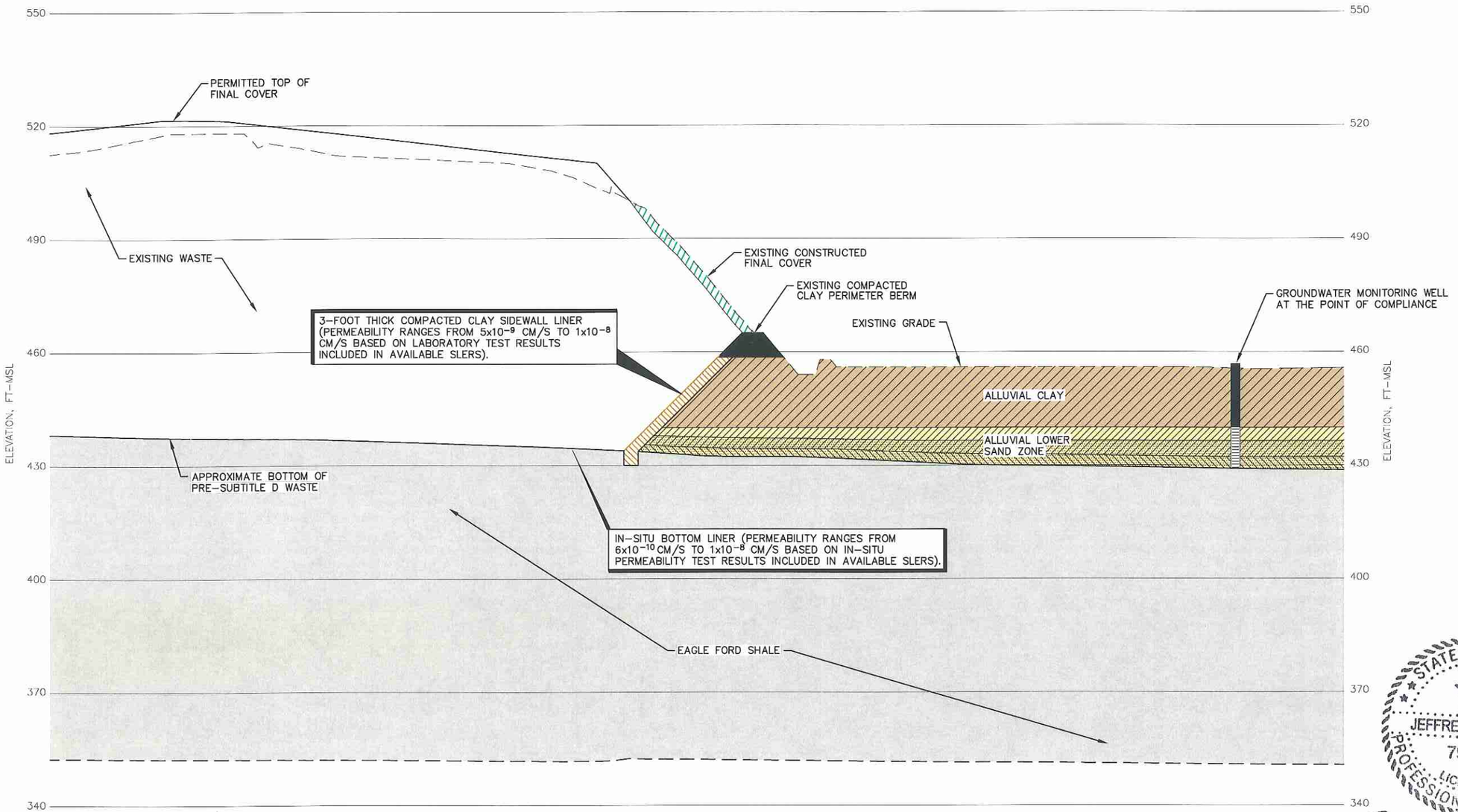
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-3.3

NORTH

SOUTH



SECTION A
(NTS)
3.2,3.3 3.4

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DATE: 03/2012
FILE: 1339-351-11
CAD: 3.4-SECTION.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT TYPICAL EXISTING LANDFILL SECTION

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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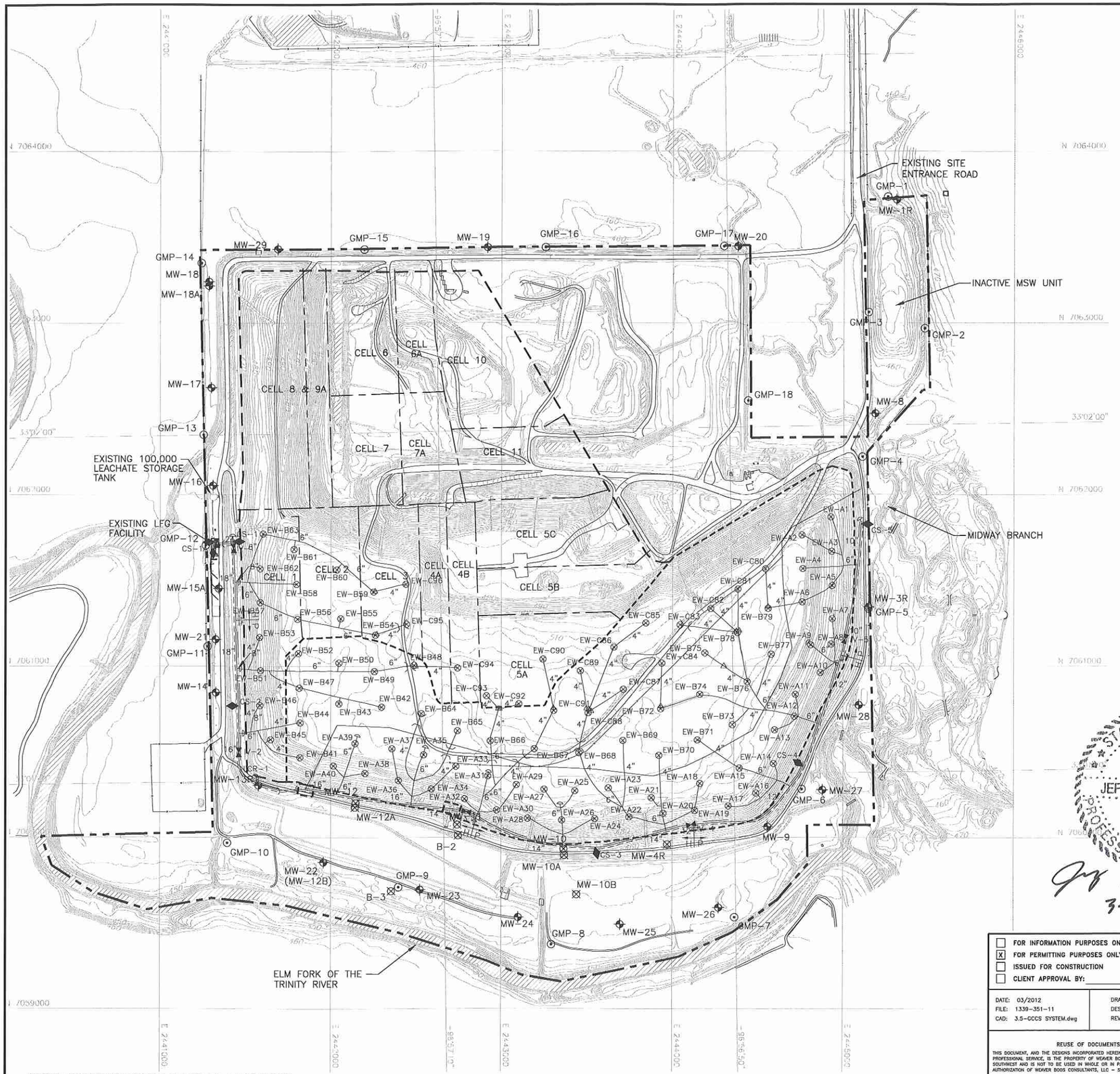
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-3.4



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2) (PERMIT NO. MSW-1312A)
- AUTHORIZED PRE-SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- AUTHORIZED SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW-1312A)
- CELL BOUNDARY
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- EXISTING LFG SYSTEM PIPING
- EW-B75 — LFG EXTRACTION WELL
- EXISTING AIR SUPPLY LINE
- EXISTING CONDENSATE FORCEMAIN
- CS-1A — EXISTING CONDENSATE SUMP
- MW-8 — PERMITTED GROUNDWATER MONITORING WELL
- GMP-1 — PERMITTED LANDFILL GAS MONITORING PROBE
- MW-12 — PERMITTED GROUNDWATER OBSERVATION WELL

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.

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DATE: 03/2012
FILE: 1339-351-11
CAD: 3.5-GCCS SYSTEM.dwg

DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

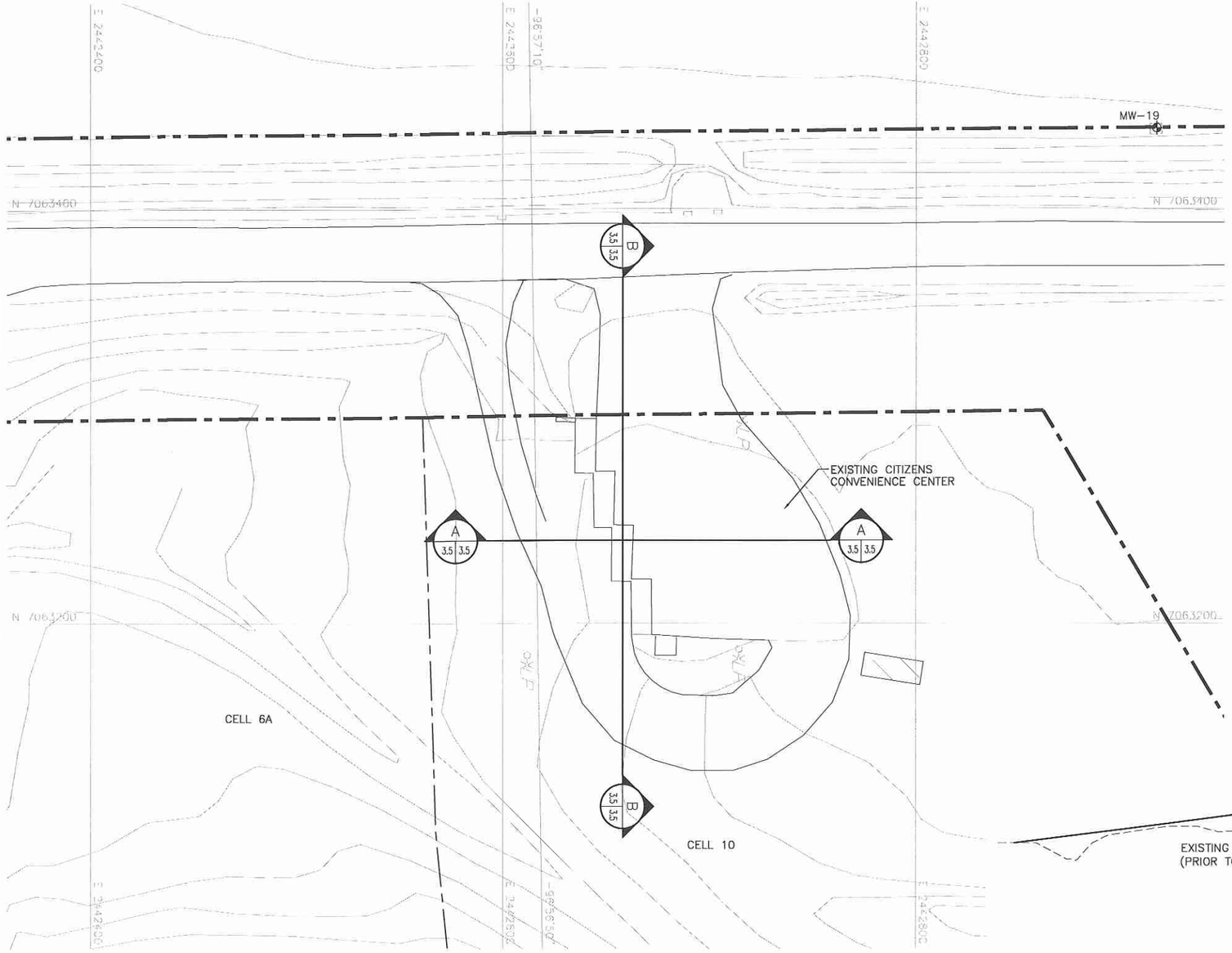
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING GCCS SYSTEM (TCEQ PERMIT NO. MSW-1312A)

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-3.5



LEGEND

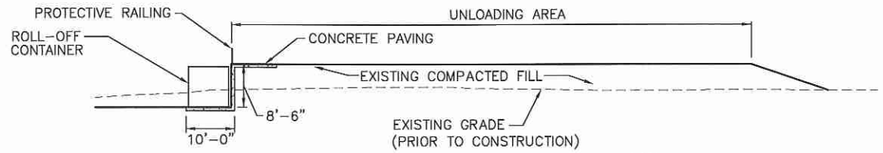
- PERMIT BOUNDARY (SEE NOTE 2) (PERMIT NO. MSW-1312A)
- AUTHORIZED SUBTITLE D AREA LIMIT OF WASTE
- N 7063200 — STATE PLANE COORDINATE SYSTEM
- 96°57'10" — GEODETIC COORDINATE SYSTEM
- 470 — EXISTING CONTOUR
- CELL BOUNDARY
- MW-19 — PERMITTED GROUNDWATER MONITORING WELL

N

0 30 60
SCALE IN FEET

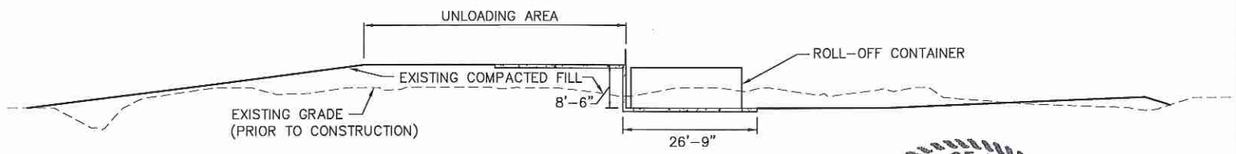
NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO PARTS I/II, APPENDIX I/IIA FOR CITIZENS CONVENIENCE CENTER DRAWINGS.



CONVENIENCE CENTER SECTION A (3.5 3.5)

0 15 30
SCALE IN FEET



CONVENIENCE CENTER SECTION B (3.5 3.5)

0 15 30
SCALE IN FEET

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
FILE: 1339-351-11
CAD: 3.6-CONVENIENCE CENTER.DWG
DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
CITIZENS CONVENIENCE CENTER PLAN
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

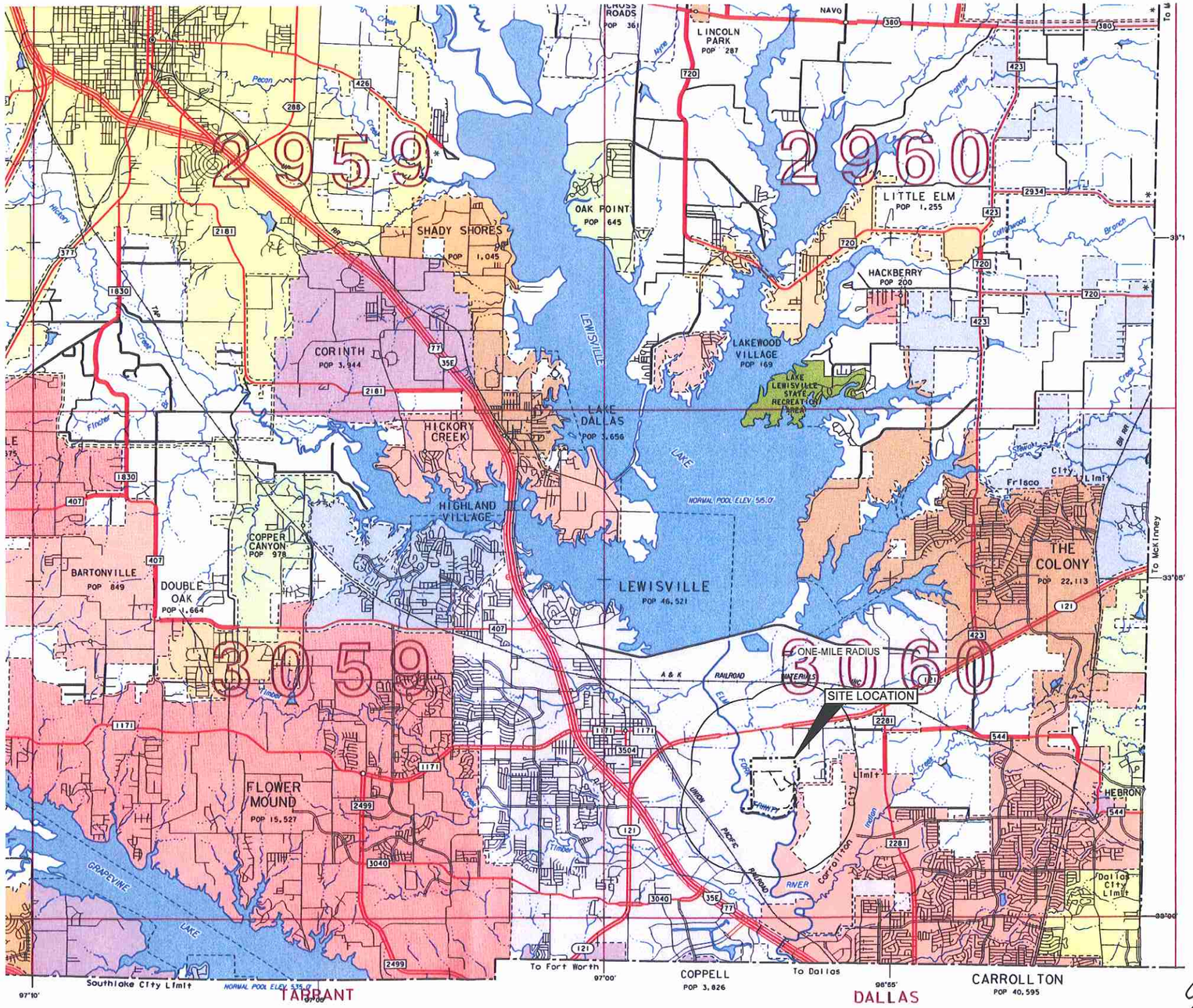
FIGURE I/II-3.6

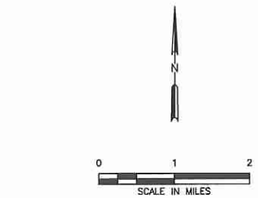
4 MAPS

This section addresses §330.59(c), §330.61(c), §330.61(e), §305.45(a)(6)(A), and §305.45(a)(6)(C).

A site location map and general topographic map are presented on Figures I/II-4.1 and I/II-4.2. Structures and inhabitable buildings located within 500 feet, as well as the nearest residence, are shown on Figure I/II-4.3.

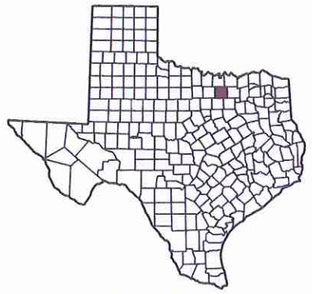
Figure I/II-4.1 and Figure I/II-4.2 show surface water bodies in accordance with Title 30 TAC §330.59(c)(1) and §305.45(a)(6)(A). Figure I/II-4.2 shows wells and springs in accordance with Title 30 TAC §330.59(c)(1) and §305.45(a)(6)(A). As noted on Figure I/II-4.2, no springs exist within a one-mile radius of the site.





LEGEND

- PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE



KEY TO COUNTIES

GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
FILE: 1339-351-11
CAD: 4.1-SITE LOC MAP.DWG

DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SITE LOCATION MAP

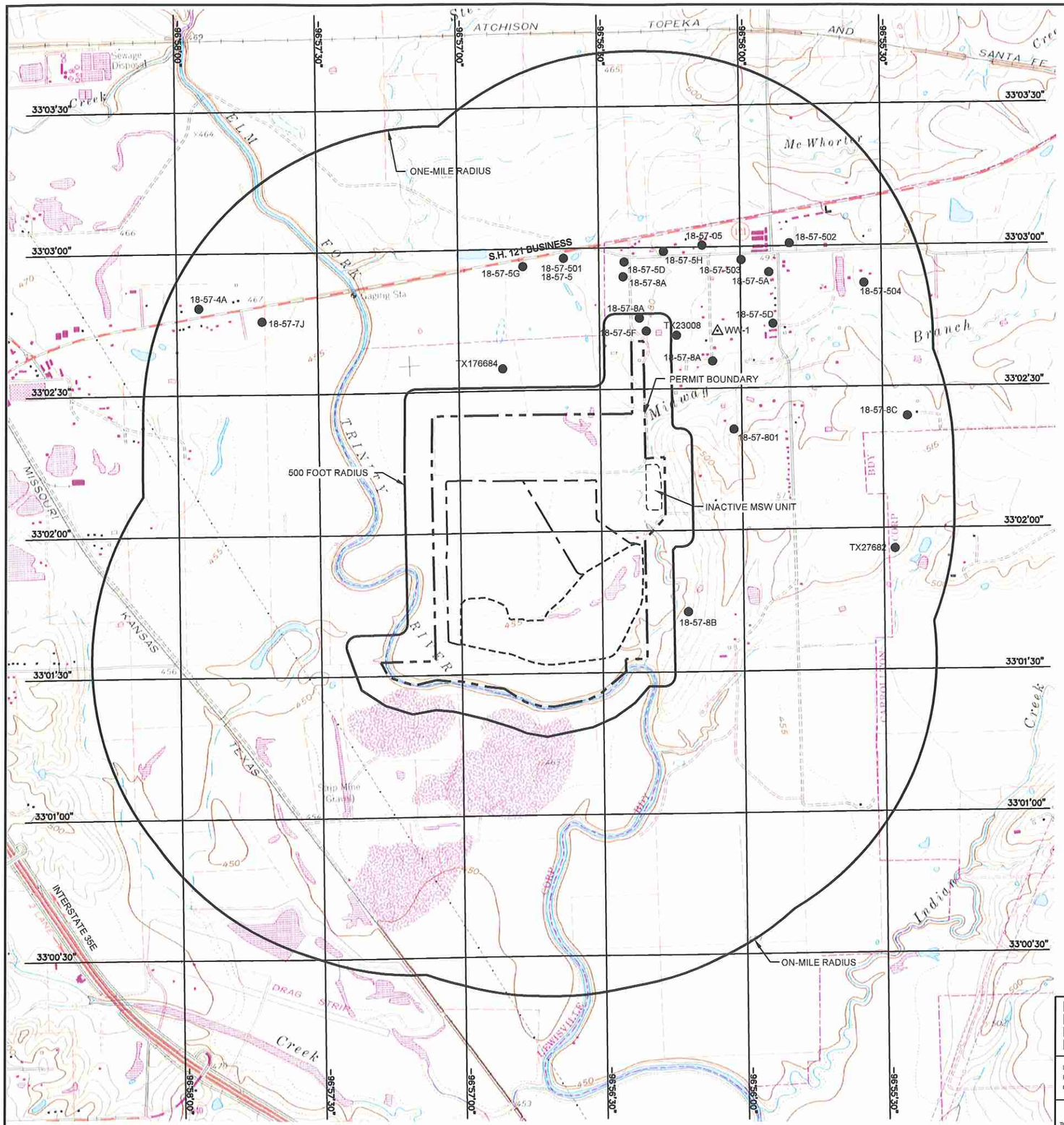
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

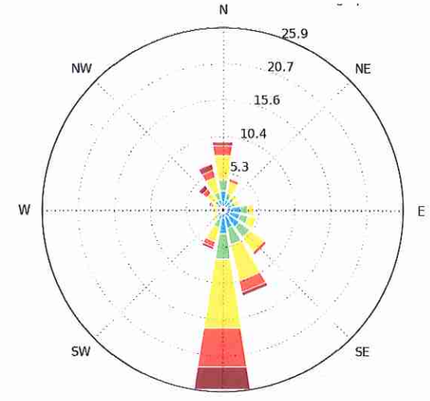
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-4.1

O:\1339\351\EXPANSION 2009\PARTS I-II\4.1-SITE LOCATION MAP.dwg, jwilson, 1:2



WIND ROSE
DFW AIRPORT
JAN 1995 – JUL 2011



Wind Speed [mph]
2-5 | 5-7 | 7-10 | 10-15 | 15-20 | 20+

N

0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- AUTHORIZED PERMITTED PRE–SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW–1312A)
- AUTHORIZED PERMITTED SUBTITLE D AREA LIMIT OF WASTE (PERMIT NO. MSW–1312A)
- PROPOSED LIMIT OF WASTE
- 33°02'00" GEODETIC COORDINATE SYSTEM
- TX176684 REGISTERED WATER WELL WITH GRID NUMBER OR WELL ID NUMBER ANNOTATED
- WW-1 POTENTIAL WATER WELL LOCATION IDENTIFIED BY WBC IN MARCH 2011 FROM ADJACENT ROADWAY

TEXAS

LEWISVILLE EAST, TEX.
N3300–W9702.5/7.5
1960
PHOTOREVISED 1981
DMA 4053 I SW–SERIES V882

CARROLLTON, TEX.
NW/4 CARROLLTON 15' QUADRANGLE
N3252.5–W9702.5/7.5
1999
DMA 4049 IV NW–SERIES V882

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

STATE OF TEXAS
JEFFREY P. YOUNG
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3-23-12

NOTES:

1. ACCESS ROADS WITHIN ONE–MILE OF THE SITE INCLUDE HUFFINES BOULEVARD, STATE HIGHWAY 121 BUSINESS, MIDWAY ROAD, HOLFORDS PRAIRIE ROAD, STATE HIGHWAY 121, RAILROAD STREET, AND HEBRON PARKWAY.
2. SEE FIGURE I/II–5.1 FOR PROPERTY OWNERS WITHIN 1,320 FEET OF THE SITE.
3. SEE SECTION 7.2 FOR DISCUSSION OF WATER WELLS. SEE APPENDIX IIIG FOR ADDITIONAL WATER WELL LOCATION INFORMATION.
4. WITHIN ONE–MILE OF THE SITE THERE ARE THREE SCHOOLS, EIGHT CHURCHES, ONE DAY CARE FACILITY. THERE ARE NO HISTORICAL MARKERS, HOSPITALS, OR SITES WITH EXCEPTIONAL AESTHETIC QUALITIES. BOTH THE ELM FORK OF THE TRINITY RIVER AND MIDWAY BRANCH ARE LOCATED WITHIN THE 1–MILE RADIUS AREA AS WELL AS SEVERAL SMALL STOCK PONDS (REFER TO THE LAND USE STUDY IN APPENDIX I/IIE FOR MORE INFORMATION).
5. REFER TO FIGURE I/II–4.3 FOR LOCATION OF THE NEAREST RESIDENCE.
6. THERE ARE NO AIRPORTS WITHIN 6–MILES OF THE PERMIT BOUNDARY (SEE SECTION 8 FOR MORE INFORMATION).
7. REFER TO SECTION 13 AND APPENDIX I/IIA, DRAWING I/IIA.1 FOR EASEMENT INFORMATION. REFER TO DRAWING I/IIA.12 FOR ACCESS CONTROL INFORMATION.
8. THE WIND ROSE IS REPRODUCED FROM THE TEXAS AUTOMATED SURFACE OBSERVING SYSTEM (ASOS) AT THE DFW AIRPORT. THE ASOS IS A JOINT PROGRAM OF THE NATIONAL WEATHER SERVICE, THE FEDERAL AVIATION ADMINISTRATION, AND THE DEPARTMENT OF DEFENSE.
9. ALL TOPOGRAPHIC INFORMATION FROM UNITED STATES GEOLOGICAL SURVEY 7 ½ MINUTE QUADRANGLE SHEETS LEWISVILLE EAST, TEX; CARROLTON, TEX.
10. NO SPRINGS EXIST WITHIN A 1–MILE RADIUS OF THE SITE.

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- [x] FOR PERMITTING PURPOSES ONLY
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- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339–351–11
CAD: 2–GEN. TOPO. MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

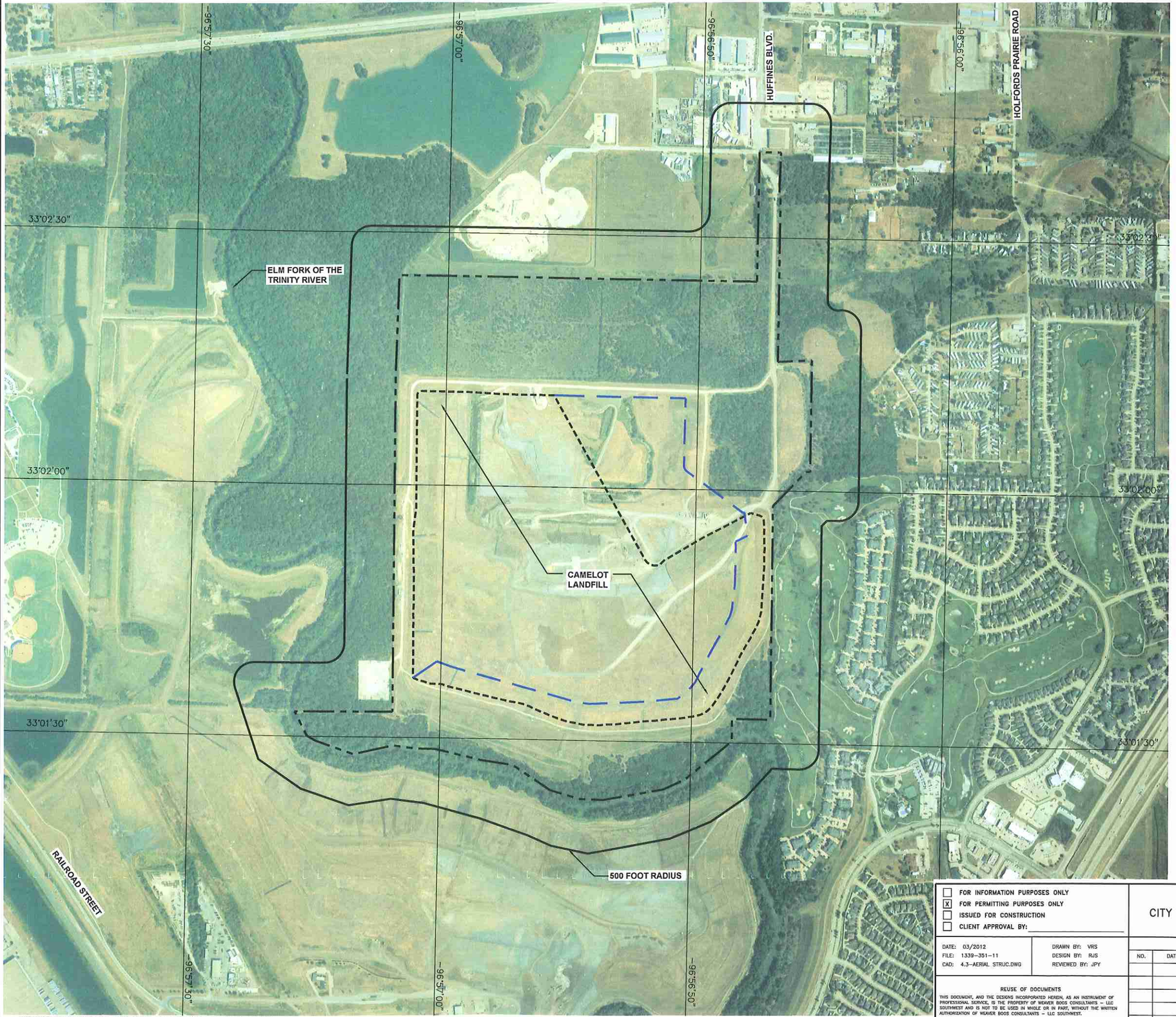
MAJOR PERMIT AMENDMENT GENERAL TOPOGRAPHIC MAP

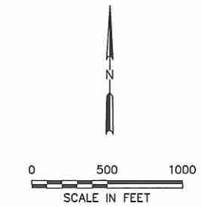
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II–4.2

O:\1339\351\EXPANSION 2009\PARTS I-II\4.2-TOPOGRAPHIC MAP.dwg, jwilson, 1:2





LEGEND:

- PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- NEWLY PERMITTED LIMIT OF WASTE (SEE NOTE 3)
- 33°02'00" GEODETIC COORDINATE SYSTEM

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. ALL STRUCTURES WITHIN 500 FEET ARE SHOWN ON THIS FIGURE. EACH STRUCTURE IS ASSUMED TO BE HABITABLE. LAND USE WITHIN A 500-FOOT RADIUS OF THE SITE CONSISTS OF INDUSTRIAL, RESIDENTIAL AND OPEN SPACE. THE NEAREST STRUCTURE TO THE PERMIT BOUNDARY IS LOCATED 40 FEET NORTH OF THE PERMIT BOUNDARY. NO RESIDENCES ARE LOCATED WITHIN 500 FEET OF THE PERMIT BOUNDARY. THE NEAREST RESIDENCE IS LOCATED 680 FEET EAST OF THE PERMIT BOUNDARY.
3. THE NEWLY PERMITTED AIRSPACE LIMIT OF WASTE REFLECTS THE LATERAL EXPANSION AREA AND THE LIMITS OF WASTE THAT IS ASSOCIATED WITH THE VERTICAL EXPANSION AREA FOR MSW PERMIT NO. 1312B.

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DATE: 03/2012
FILE: 1339-351-11
CAD: 4.3-AERIAL STRUC.DWG
DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT STRUCTURES AND INHABITABLE BUILDINGS WITHIN 500 FEET

CAMELOT SANITARY LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

FIGURE I/II-4.3

5 PROPERTY OWNERS LIST AND MAP

This section addresses §330.59(c), §305.45(a)(6)(D), and §39.101(c)(2)(D).

The following list and figure lists the names, mailing addresses, and location of the "Adjacent and Potentially Affected Landowners" within ¼ mile of Camelot Landfill. Refer to Figure I/II-5.1, Land Ownership Map, for location of the properties. The numbering on the land ownership list, Table I/II-5.1, corresponds to the numbers listed on Figure I/II-5.1. The list is based on records of the Denton County Central Appraisal District as of March 22, 2012. Table I/II-5.1 also lists the Mayor of the City of Lewisville, the County Health Authority and the Denton County Judge (as required by §39.101(c)(2)(D)). Based on a conversation with the Denton County Central Appraisal District, they do not maintain mineral ownership records.

TABLE I/II-5.1
PROPERTY OWNERS LIST

1. CITY OF FARMERS BRANCH
PO BOX 819010
DALLAS TX 75381-9010

2. CAMELOT LANDFILL TX LP
C/O REPUBLIC SERVICES
PO BOX 29246
PHOENIX AZ 85038-9246

3. WASTE MANAGEMENT OF TEXAS
PO BOX 1450
CHICAGO IL 60690-1450

4. FRED W DUWE ESTATE ETAL
C/O MARGIE COLLINSWORTH
8040 FRANKFORD RD #301
DALLAS TX 75252

5. RIVERVIEW IND PARK LP
5622 DYER ST # 200
DALLAS TX 75206-5004

6. BROWN-LEWISVILLE RAILROAD FAMILY
PO BOX 59831
DALLAS TX 75229-1831

7. SALEM RADIO PROPERTIES INC
4880 SANTA ROSA RD STE 300
CAMARILLO CA 93012-0958

8. CITY OF LEWISVILLE
ATTN DIRECTOR OF FINANCE
PO BOX 299002
LEWISVILLE TX 75029-9002

9. DALLAS BROADCASTING LLC
11451 KATY FWY STE 215
HOUSTON TX 77079-2010

10. JERI BOHANNAN
1707 BUNKER HILL LN
LEWISVILLE TX 75056-9419

11. ARC COMMUNITIES I LLC
C/O PROPERTY TAX DEPT
PO BOX 790830
SAN ANTONIO TX 78279-0830

12. MARTHA G THOMPSON
818 W HILL LN
LEWISVILLE TX 75056-9412

13. BOBBY BOHANNAN
822 W HILL LN
LEWISVILLE TX 75056-9412

14. ROSA MONREAL & JESUS MARTINEZ
826 W HILL LN
LEWISVILLE TX 75056-9412

15. BERTHA A SAMMONS
PO BOX 294352
LEWISVILLE TX 75029-4352

16. RAYMOND L HEAD
834 W HILL LN
LEWISVILLE TX 75056-9438

17. PYRAMID DRYWALL INC
PO BOX 175
LEWISVILLE TX 75067-0175

18. MIGUEL A MORENO
4921 WATSON DR
THE COLONY TX 75056-1027

19. LARRY & TERESA WILLIAMS
27754 HIGH VISTA DR
ESCONDIDO CA 92026-7211

20. NORMA I LOPEZ
1664 THOMAS LN
CARROLLTON TX 75010-3240

TABLE I/II-5.1
PROPERTY OWNERS LIST
(Continued)

21. ROBERT B & JOYCE E TAPLEY
1668 THOMAS LN
CARROLLTON TX 75010-3240

22. SAUDAMINI & VILAYIL DEVDAS
4341 MILSOP DR
CARROLLTON TX 75010-3245

23. TIMOTHY & HANNAH LAWRENCE
4337 MILSOP DR
CARROLLTON TX 75010-3245

24. WELLS FARGO BANK NA
9062 OLD ANAPOLIS RD
COLUMBIA MD 21045-1951

25. MICHAEL & CYNTHIA ACEVES
4329 MILSOP DR
CARROLLTON TX 75010-3245

26. WILLIAM P & JUDY S WILEMON
4325 MILSOP DR
CARROLLTON TX 75010-3245

27. SUSAN SONG
4321 MILSOP DR
CARROLLTON TX 75010-3245

28. JO A & PEDRO J ARRIAGA JR
4317 MILSOP DR
CARROLLTON TX 75010-3245

29. KEVIN A & SHANNA C DIXON
4313 MILSOP DR
CARROLLTON TX 75010-3245

30. ALBERTO E & MARIA S LIM
4309 MILSOP DR
CARROLTON TX 75010-3245

31. BOBBY JOSEPH & ELIZABETH SAMUEL
4305 MILSOP DR
CARROLLTON TX 75010-3245

32. ISAAC THOMAS AND K MARIAMMA
4301 MILSOP DR
CARROLLTON TX 75010-3245

33. MARY L & DONALD J SPRONG
1713 COYOTE RDG
CARROLLTON TX 75010-3229

34. KRISTIAN & MEGAN WAY
1708 BLAIR CT
CARROLLTON TX 75010-3247

35. DAVID & BEVERLY FERGUSON
1712 BLAIR CT
CARROLLTON TX 75010-3247

36. MICHARL MAHANEY
200 HAMILTON WAY
ROSWELL GA 30075-7119

37. DARRYL WHITLOCK
1708 GASTON CT
CARROLLTON TX 75010-3246

38. WILLIAM C BODNAR
7272 MEDITERRANEAN DR
PLANO TX 75093-2137

39. NORBERT L & ANGELA H BUTKUS
1705 GASTON CT
CARROLLTON TX 75010-3246

40. CINDY M & TODD L JACKSON
4257 HUNT DR
CARROLLTON TX 75010-3201

TABLE I/II-5.1
PROPERTY OWNERS LIST
(Continued)

41. BELLA VIDA GARDENS ASSOCIATES LLC & SUCHARASH BELLA VIDA LLC
C/O HARBOR GROUP INTL LLC
999 WATERSIDE DR STE 2300
NORFOLK VA 23510-3324

42. MOON GOLF PROPERTIES LTD
11826 HARRY HINES BLVD
DALLAS TX 75234-5917

43. INDIAN CREEK CARROLLTON
PO BOX 191947
DALLAS TX 75219-8510

44. DENTON COUNTY RECLAMATION & RD DIST
8300 DOUGLAS AVE STE 800
DALLAS TX 75225-5826

45. MICHAEL RICHARD COOPER REVOCABLE TRUST
517 BARFKNECHT LN
LEWISVILLE TX 75056-9597

46. BROWN LEWISVILLE RAILROAD FAMILY FIRST LP
5610 HARBOR TOWN DR
DALLAS TX 75287-7413

47. SALVADOR CORONA BROS EXCAVATION
415 CROCKETT
LEWISVILLE TX 75057-3653

48. NORTEX MODULAR SPACE
555 JUBILEE LN
LEWISVILLE TX 75056-4801

49. MARLUC LLC
50 REMINGTON TER
LEWISVILLE TX 75077-6781

50. NAOMI RUTH HURST
1001 FOREST PARK DR
LEWISVILLE TX 75057-2110

51. ROBERT F & KATHRYN CLARKE
PO BOX 187
PROSPER TX 75078-0187

52. SKINNER LANDS LEWISVILLE LLC
10175 FORTUNE PKWY UNIT 702
JACKSONVILLE FL 32256-6753

53. MICHAEL MAHONEY
527 BARFKNECHT LN
LEWISVILLE TX 75056-9566

54. CAMELOT LANDFILL TX LP
C/O REPUBLIC SERVICES PROP TAX
PO BOX 29246
PHOENIX AZ 85038-9246

55. HUGO J ONDREY JR
PO BOX 671
COPPELL TX 75019-0671

56. ROBERT S DIEROLF
1660 THOMAS LN
CARROLLTON TX 75010-3240

57. COY C & CATHERINE N STEWART
1656 THOMAS LN
CARROLLTON TX 75010-3240

58. SIMMOLE V SUNNY
4340 MILSOP DR
CARROLLTON TX 75010-3244

59. ALAN G COHEN
4321 ROBBINS DR
CARROLLTON TX 75010-3243

60. FEDERAL HOME LOAN MORTGAGE
5000 PLANO PKWY
CARROLLTON TX 75010-4900

TABLE I/II-5.1
PROPERTY OWNERS LIST
(Continued)

61. SRINI & MOHANA KRISH
4317 ROBBINS DR
CARROLLTON TX 75010-3243

62. SHOLA AKERE
4332 MILSOP DR
CARROLLTON TX 75010-3244

63. RICHARD L & HILARY M HITTLE
4313 ROBBINS DR
CARROLLTON TX 75010-3243

64. CAROL S THIRLWALL
1079 W ROUND GROVE RD
STE 300-413
LEWISVILLE TX 75067-7904

65. KYLE L & PAMELA L PRINCE
4309 ROBBINS DR
CARROLLTON TX 75010-3243

66. MATHEW GEORGE &
DAISY MATHEW
4324 MILLSOP DR
CARROLLTON TX 75010-3244

67. JU WON PARK
4320 MILLSOP DR
CARROLLTON TX 75010-3244

68. JAE WON AN
4261 HUNT DR
CARROLLTON TX 75010-3201

69. BARRY W & JANET M ELLISON
524 BARFKNECHT LN
LEWISVILLE TX 75056-9598

70. ANCAR VENTURE
5622 DYER ST STE 200
DALLAS TX 75206-5004

71. AAA RECYCLING INC
2001 RUGER DR
PLANO TX 75023-3222

72. NORTEX MODULAR LEASING & CONST CO
555 JUBILEE LN
LEWISVILLE TX 75056-4801

73. OCEAN INVESTMENT LLC
523 SHEPHERD DR
GARLAND TX 75042-6830

74. BRAD'S TOWING SERVICE INC
PO BOX 332
LEWISVILLE TX 75067-0332

75. CAMPANERISMO BIBLICO EL CAMINO
511 BARFKNECHT LN
LEWISVILLE TX 75056-9597

76. FLORENCE G BUTLER
1626 BUNKER HILL LN
LEWISVILLE TX 75056-9416

77. BNB LAND LLC
56 REMINGTON DR W
HIGHLAND VILLAGE TX 75077-4006

78. PM & K PROPERTIES LTD
2137 E HICKORY HILL RD
ARGYLE TX 76226-3126

79. P & M PROPERTIES LTD
PO BOX 4
ARGYLE TX 76226-0004

80. GARTH L JR & KATHY J GLIDEWELL
PO BOX 658
LEWISVILLE TX 75067-0658

TABLE I/II-5.1
PROPERTY OWNERS LIST
(Continued)

81. PIGNATARO PROPERTIES LTD
PO BOX 270040
DALLAS TX 75227-0040

82. S & S LEASING LC
1740 MIDWAY RD
LEWISVILLE TX 75056-9533

83. AMERICAN LANDSCAPE SYSTEMS INC
1780 MIDWAY RD
LEWISVILLE TX 75056-9533

84. HENKELS & MCCOY INC
985 JOLLY RD
BLUE BELL PA 19422-1903

85. MARTIN ARMENDARIZ
1708 BUNKER HILL LN TRLR 102
LEWISVILLE TX 75056-9507

86. LETICIA ALEMAN DBA SILVER CONCRETE LLC
1531 S STATE HIGHWAY 121 APT 134
LEWISVILLE TX 75067-5918

87. IRMA LETICIA PLATES
343 W WALTERS ST
LEWISVILLE TX 75057-3851

88. JUAN JOSE PLATAS
428 BARFKNECHT LN
LEWISVILLE TX 75056-9563

89. JOSE NEVAREZ
430 BARFKNECHT LN
LEWISVILLE TX 75056-9563

90. TONY D & SUSAN RASMUSSEN
4013 LAKESIDE DR
THE COLONY TX 75056-4105

91. DAA DEVELOPMENT INC
1550 E MISSOURI AVE STE 300
PHOENIX AZ 85014-2457

92. VICKI LYNN AKINS
504 BARFKNECHT LN
LEWISVILLE TX 75056-9565

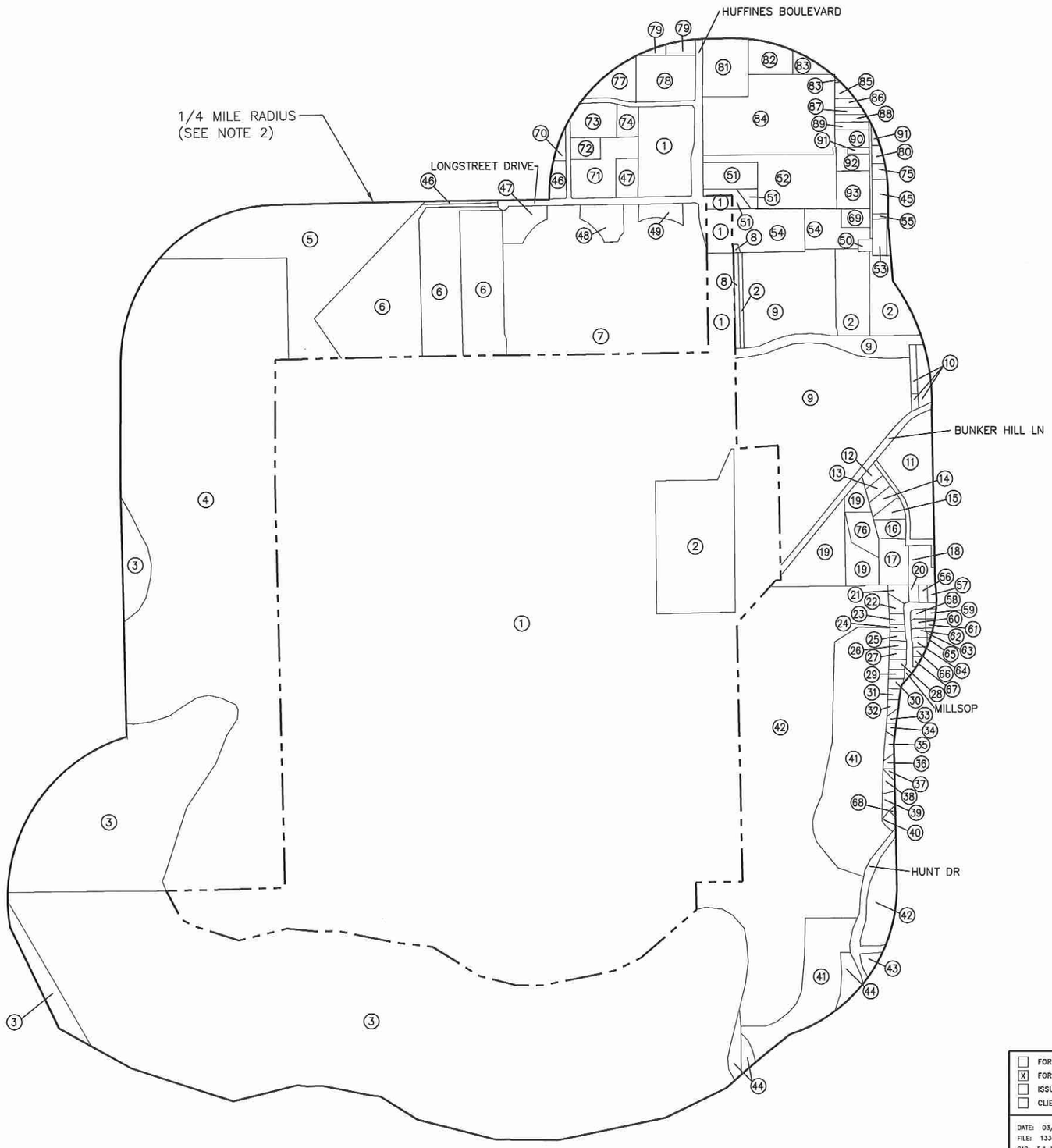
93. SKINNER LANDS LEWISVILLE LLC
10175 FORTUNE PKWY UNIT 702
JACKSONVILLE FL 32256-6753

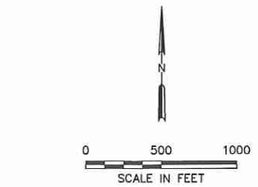
Notice Per Title 30 TAC §39.101(c)(2)(D)

1. HONORABLE DEAN UECKERT
   MAYOR CITY OF LEWISVILLE
   PO BOX 299002
   151 W CHURCH ST
   LEWISVILLE TX 75029-9002

2. HONORABLE MARY HORN
   DENTON COUNTY JUDGE
   110 W HICKORY ST 2ND FLOOR
   DENTON TX 76201-4168

3. BING BURTON PHD DIRECTOR
   DENTON COUNTY HEALTH DEPT
   535 S LOOP 288
   DENTON TX 76205





LEGEND

PERMIT BOUNDARY

1/4 MILE RADIUS LIMIT

(1) PROPERTY OWNER DESIGNATION

NOTES:

1. (1) REFER TO LANDOWNERS LISTED ON TABLE I/II–5.1.
2. THIS LINE REPRESENTS A 1/4 MILE DISTANCE FROM THE LIMIT OF THE PERMIT BOUNDARY.
3. REFER TO APPENDIX I/IIA, DRAWING I/IIA.1 FOR LOCATION OF EASEMENTS WITHIN THE PERMIT BOUNDARY.

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DATE: 03/2012
FILE: 1339-351-11
CAD: 5.1-LANDOWNERS MAP.DWG

DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: NT

PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT PROPERTY OWNERS MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II–5.1

6 AERIAL PHOTOGRAPH

An aerial photograph of the site and the surrounding area (minimum of one-mile radius from the site) is presented on Figure I/II-6.1.

This section addresses §330.61(f).

N

0 1000 2000
SCALE IN FEET

LEGEND:

PERMIT BOUNDARY

AUTHORIZED LIMIT OF WASTE

PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. THE INACTIVE MSW UNIT IN THE NORTHEASTERN PORTION OF THE SITE IS NOT DELINEATED SINCE THE WASTE IN THIS AREA WILL BE RELOCATED.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED PROFESSIONAL ENGINEER

3-23-12

☐ DRAFT
☒ FOR PERMITTING PURPOSES ONLY
☐ ISSUED FOR CONSTRUCTION
☐ CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 6.1-AERIAL.DWG

DRAWN BY: JDW
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
AERIAL PHOTOGRAPHY

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-6.1

7 LAND USE

7.1 Character of Surrounding Land and Land Use

Most land use within one mile of the permit boundary is presently classified as "Open" or "Industrial." Most of the "Open" land is in the City of Lewisville, and much of it is floodplain associated with the Elm Fork of the Trinity River. All land uses within one mile of the permit boundary are classified as follows.

This section addresses §330.61(g), §330.61(h), and §305.45(a)(6)(B)

Table 7-1
Land Use Within One Mile

Land Use	Acres	Percent	Remarks
Open	2,163	43.4	Vacant, undeveloped, 1 permitted landfill (MSW 946)
Industrial	1,159	23.3	3 operating landfills (DFW, Lewisville, and Camelot)
Recreation	994	19.9	Nature reserve, golf, athletic fields
Residential (SF)	424	8.5	1,572 single-family units
Residential (MF)	136	2.7	2,149 multi-family units
Office/Commercial	60	1.2	78 establishments
Other	48	1.0	8 churches, 3 schools, 1 daycare, 1 fire station
Total	**4,984**	**100.0**	

The land use study is included in Appendix I/IIE.

7.2 Water Wells Within 500 Feet

There are two registered water wells known to exist within 500 feet of the permit boundary. The registered water well closest to the landfill is TWDB well number TX18-57-5F, which is located approximately 183 feet north of the landfill's northernmost permit boundary. Additional details regarding the 2011 water well search are presented in Section 1.5 of Appendix IIIG in Part III.

8 TRANSPORTATION

8.1 Traffic Information

Access roads within one mile of the site include Huffines Boulevard, State Highway 121 Business, Midway Road, Holfords Prairie Road, State Highway 121, Railroad Street, and Hebron Parkway. The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business, and are easily accessed from area population centers via State Highway 121 business and Huffines Boulevard.

This section addresses §330.61(i).

A traffic impact study was prepared in February 2011 by WBC to address roadway and traffic issues throughout the expected life of the Camelot Landfill. The traffic study is included in Parts I/II, Appendix I/IID.

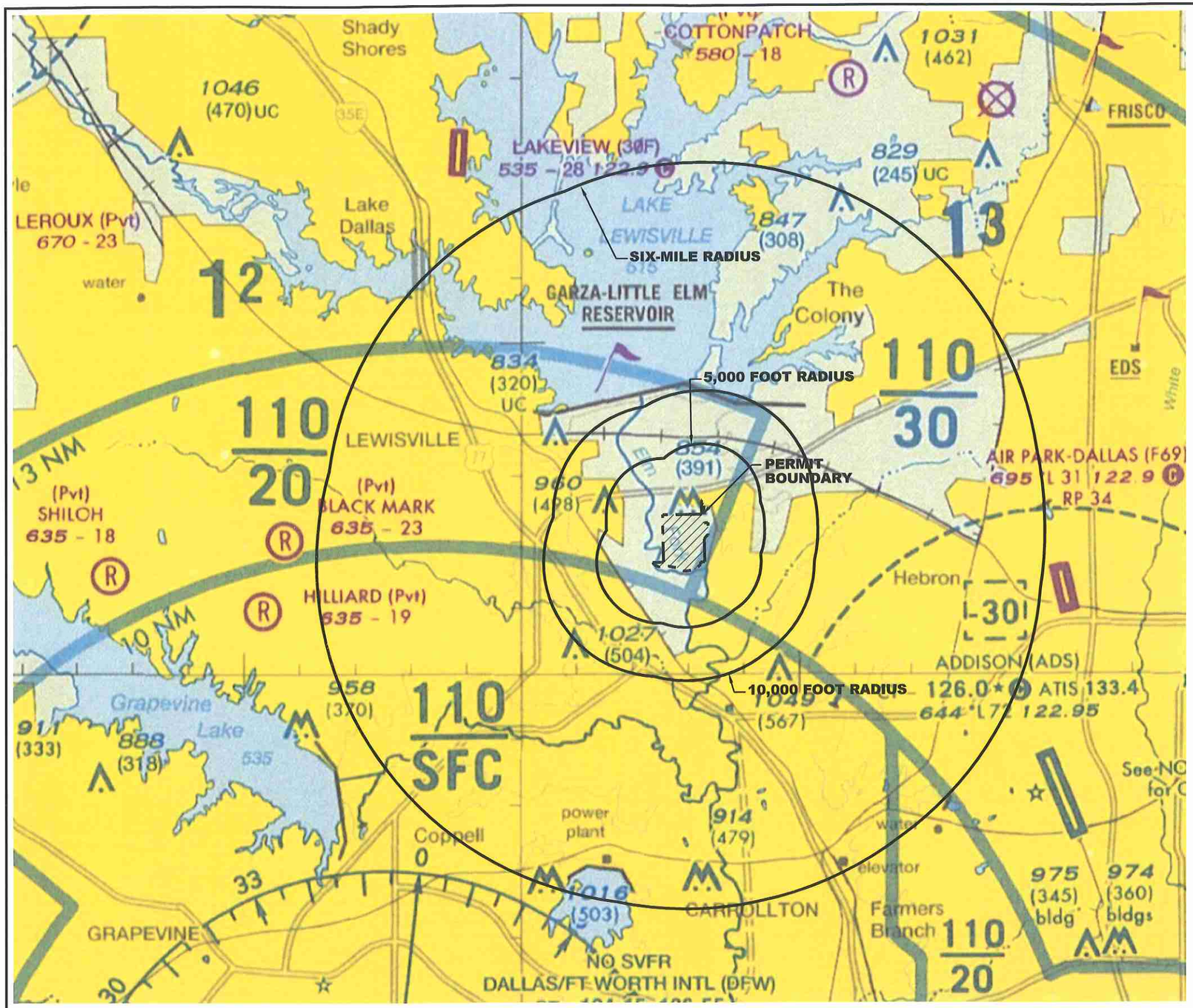
In summary, the traffic study concludes that the access roads within one mile of the landfill provide adequate access to the site. Coordination with TxDOT regarding traffic and location restrictions is included in Appendix I/IIB (TxDOT tab).

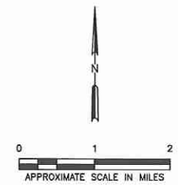
8.2 Airport Impact

TCEQ distance restrictions set forth in §330.545 require municipal solid waste disposal facilities to be located no closer than 10,000 feet to any runway end used by turbojet aircraft or no closer than 5,000 feet to any runway end used by piston-engine aircraft. As shown on Figure I/II-8.1, the closest public airport is the Air Park-Dallas Airport, located approximately 6.1 miles south of the site.

In the FAA's letter dated January 4, 2011 (see correspondence in Appendix I/IIB), the FAA had no objection to the proposed changes from the standpoint of potential wildlife hazards to aircraft. In addition, the FAA also reviewed the proposed changes to determine the potential for the site to be a hazard to air navigation. As documented in a letter dated February 10, 2011, the FAA has determined that the proposed changes do not pose a hazard to air navigation (refer to Appendix I/IIB for more information). Appendix I/IIB also includes a letter from FAA that confirms that the FAA has completed the critical evaluation necessary to determine that an incompatibility does not exist with area airports and the landfill.

The Airport Safety Location Restriction is included in Appendix I/IIC.





AIRPORTS

Other than hard-surfaced runways — Seaplane Base

Hard-surfaced runways 1500 ft. or greater

Open dot within hard-surfaced runway configuration indicates approximate VOR, VOR-DME, or VORTAC location.

All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.

ADDITIONAL AIRPORT INFORMATION

R — Private "(Pvt)" - Non-public use having emergency or landmark value.

Military - Other than hard-surfaced. All military airports are identified by abbreviations AFB, NAS, AAF, etc. For complete airport information consult DOD FLIP.

H — Heliport Selected

U — Unverified

Abandoned - paved having landmark value, 3000 ft. or greater

F — Ultralight Flight Park Selected

Services-fuel available and field tended during normal working hours depicted by use of ticks around basic airport symbol. (Normal working hours are Mon thru Fri 10:00 A.M. to 4:00 P.M. local time.) Consult A/FD for service availability at airports with hard-surfaced runways 1500 ft. or greater.

☆ Rotating airport beacon in operation Sunset to Sunrise.

PERMIT BOUNDARY

TOPOGRAPHIC INFORMATION

Roads

55 48 Road Markers

Railroad

Bridges And Viaducts

Power Transmission Lines

Aerial Cable

Landmark Feature - stadium, factory, school, golf course, etc.

Outdoor Theatre

Lookout Tower P-17 (Site Number) 618 (Elevation Base of Tower)

CG Coast Guard Station

Race Track

Tank - water, oil or gas

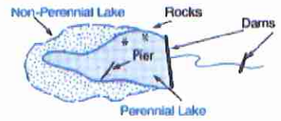
Oil Well • Water Well

Mines And Quarries

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.)



NOTE:

1. THIS MAP REPRODUCED FROM THE FAA DALLAS–FORT WORTH SECTIONAL AERONAUTICAL CHART 76th EDITION DATED SEPTEMBER 23, 2010.
2. NO AIRPORTS ARE PRESENT WITHIN 10,000 FEET OF THE PERMIT BOUNDARY. THE NEAREST AIRPORT IS AIR PARK–DALLAS AIRPORT.

☐ DRAFT
☒ FOR PERMITTING PURPOSES ONLY
☐ ISSUED FOR CONSTRUCTION
☐ CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 0120-107-11
CAD: 5-AIRPORT.DWG

DRAWN BY: JDW
DESIGN BY: JPY
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

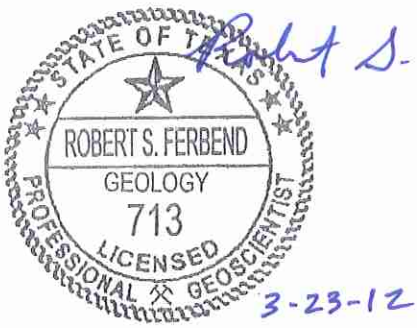
REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
AREA AIRPORTS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-8.1



Robert S. Ferbend

3-23-12

9 GENERAL GEOLOGY AND SOILS STATEMENT

9.1 Geology and Soils

This section addresses §330.61(j).

The site is located upon the outcrop of the Quaternary Alluvium as shown on the Figure IIIG-A.1 – Regional Geologic Map (modified from the Barnes, 1991). The Alluvium is a coarsening downward sequence of clays, sands, and gravels. It is underlain by the Eagle Ford Group. The Eagle Ford Group is largely a marine shale with lesser occurrences of limestone and bentonite seams. The lower formations of the Austin Group crop out and overlie the Eagle Ford Group about five miles east of the site. The outcrop contact between the Eagle Ford Group and the older, underlying Woodbine Group occurs approximately three miles west of the site at its closest extent.

Regional Cretaceous aquifers beneath the landfill include the Woodbine and Trinity aquifers. The Woodbine Formation is classified by the Texas Water Development Board (TWDB) (Ashworth and Hopkins, 1995) as a minor Texas aquifer, which is located above the underlying Trinity Aquifer. The Paluxy, Glen Rose, and underlying Twin Mountain formations comprise the Trinity Aquifer. The Woodbine and Trinity aquifers are separated by approximately 600 feet of low permeability sediments and are not hydraulically connected (Harden, 2004).

According to the US Department of Agriculture's Natural Resources Conservation Service website regarding the Soil Survey of Denton County, the soils at the site prior to landfill development consist largely of Ovan, Trinity, and Frio Silty clays – all are located in occasionally flooded floodplain areas. These alkaline, clayey soils are poorly to moderately drained with slow surface runoff and very slow permeability. Also identified within the proposed permit boundary area are minor areas of Arents series soils (i.e., loamy soils that were within the former sand and gravel pits).

9.2 Fault Areas

Camelot Landfill and the surrounding area were examined for the presence of geologic faulting in conformance with §330.555 criteria. The study was conducted by reviewing available literature, maps, and aerial photographs of the area. In addition, a site reconnaissance and review of 107 site borehole logs (drilled to a maximum depth of 111 feet below ground surface) was completed. The subsurface data were analyzed to evaluate the facility for the presence of Holocene faulting. No unusual strata offsets, scarps or

topographic breaks were interpreted within 200 feet of the site. No evidence of faulting was found associated with on-site or adjacent roadways. No structural influence of stream courses was observed. In addition, no unusual relief or topographic features, such as sag ponds, truncated alluvial spurs, or offset tributary alignments, were observed. As shown on Drawing I/IIC-4, the USGS Quaternary Fault and Fold Database of the US indicated no Holocene faults are located within 200 feet of the facility. Drawing I/IIC-5 indicates the nearest mapped fault is a Ouachita-age inactive fault located about six miles northeast of the landfill at its closest extent. Therefore, the site is in compliance with the fault areas location restriction. The fault area location restriction demonstration is included in Appendix I/IIC.

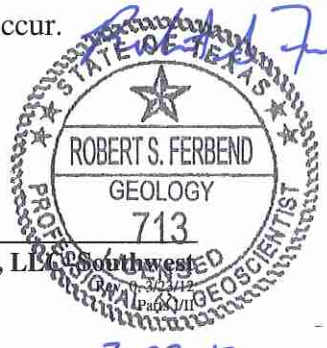
9.3 Seismic Impact Zones

The seismic impact zone location restriction defined by §330.557 is an area with a 10 percent or greater probability that the maximum horizontal acceleration in rock, expressed as a percentage of the earth's gravitational pull, will exceed 0.10g in 250 years. According to the USGS earthquake hazard data, the site-specific maximum horizontal seismic acceleration estimated at a 10 percent probability of exceedance in a 250-year time period is 0.0346g (3.46 percent of the force of gravity). As such, the USGS-derived site-specific horizontal acceleration is lower than the 10 percent of the force of gravity or greater horizontal acceleration required for seismic impact zone classification. Drawing I/IIC-6 in Appendix I/IIC is a USGS seismic impact zone map of Texas. As shown on this drawing, the site is not located within a seismic impact zone. For these reasons, the Camelot Landfill is in compliance with the seismic impact zone location restriction. The seismic impact zone location restriction demonstration is included in Appendix I/IIC.

9.4 Unstable Areas

§330.359 notes that an unstable area is defined to be a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of a landfill's structural components responsible for preventing releases from the landfill: unstable areas can include poor foundation conditions, areas susceptible to mass movement, and karst terrains. As discussed in Appendix I/IIC, Section 10, the bottom liner is largely founded within a the Shale Strata that will provide an excellent foundation layer, the final cover system is designed to withstand the predicted differential settlement, the stability analysis shows that each landfill component will be stable and no mass movements will occur. Due to the absence of massive bedded limestone in the near surface beneath the facility, there is no potential for karst development to occur.

3-23-12



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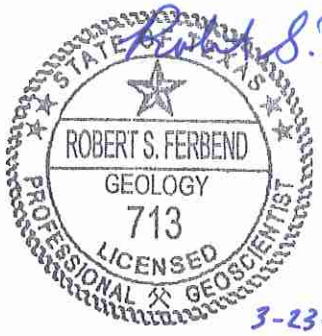
3-23-12



3-23-12

10 GROUNDWATER AND SURFACE WATER STATEMENT

10.1 Groundwater Statement

This section addresses §330.61(k).

Although not classified as a regional aquifer, groundwater that occurs in the Alluvial Strata is the uppermost aquifer for groundwater monitoring purposes. The facility's uppermost aquifer groundwater flows west and south toward the Elm Fork Trinity River. The uppermost aquifer is discussed in Sections 2 and 3 of Part III, Appendix IIIG.

Based on information obtained from area water well logs, expansion borehole WB-4, and presented in Figure IIIG-C-12 in Appendix IIIG, there is a minimum of 40 feet of low permeability Shale Strata separating the proposed expansion area sump EDE of 387 ft-msl elevation from the top of the underlying Woodbine Strata. Table 3-4 in Appendix IIIG of Part III indicates the low permeability Shale Strata have an arithmetic mean vertical hydraulic conductivity of 2.5×10^{-8} cm/sec. The elevations of the top of the Woodbine Strata are presented in Figure IIIG-C-12 of Part III. According to Harden, et al. (2004), Woodbine groundwater in this area flows to the east-southeast. Due to the very low Shale Strata hydraulic conductivity, the two water-bearing zones are not hydraulically connected.

10.2 Surface Water Statement

The 469.62-acre Camelot Landfill permit boundary is located approximately two miles south of Lake Lewisville. The Elm Fork Trinity River forms the southern boundary of the site. Midway Branch, a tributary of the Elm Fork, flows along the east side of the permit boundary.

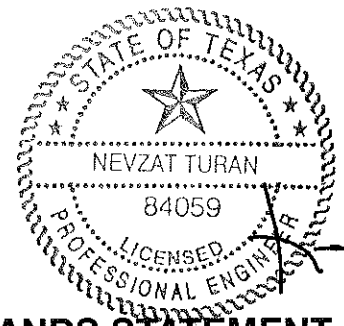
Lake Lewisville is one of the largest man made surface water impoundments in Texas with a 46.24 square mile (25,592 acres) surface area at the crest elevation of the Lake Lewisville Dam. The Lake Lewisville watershed encompasses approximately 1,660 square miles. The total drainage area of the Elm Fork (which includes Prairie Creek and Stewart Creek) downstream of the Lake Lewisville Dam and upstream of the permit boundary is approximately 1,674 square miles.

The local drainage basin, which includes the permit boundary and offsite areas discharging onto or directly receiving flow from the permit boundary, is 2.82 square miles (0.17 percent of the Elm Fork's drainage basin upstream of the site). The majority of the area within the permit boundary discharges south or west into the Elm Fork. A smaller

portion of the area within the permit boundary drains east into Midway Branch and ultimately discharges into the Elm Fork approximately 200 feet southeast of the permit boundary. As discussed in Section 4 of Appendix IIIF – Surface Water Drainage Plan, the existing drainage conditions at the permit boundary, will not be adversely altered by the proposed development.

For the proposed expansion, the final cover system will include erosion control structures to effectively minimize erosion of final cover soils. The proposed drainage system also includes a perimeter channel system and detention ponds that will convey stormwater collected from the landfill area to one of three detention ponds to be attenuated before being discharged into the Elm Fork of the Trinity River or Midway Branch. The perimeter channels have been designed to carry the 25-year storm event to the detention ponds. The detention ponds have been designed to release the collected stormwater at a rate that is consistent with the existing permitted drainage conditions.

The facility has been designed to prevent discharge of pollutants into waters of the State or waters of the United States, as defined by the Texas Water Code and the Federal Clean Water Act, respectively. Camelot Landfill has a current Texas Pollution Discharge Elimination System (TPDES) multi-sector general permit (MSGP) for industrial activity as stipulated under Section 402 of the Clean Water Act and under Chapter 26 of the Texas Water Code, the TPDES program. A copy of the multi-sector permit is included in Parts I/II, Appendix I/IIG. Any stormwater that has become contaminated by contact with the working face or with leachate will be handled in accordance with Appendix IIIC – Leachate and Contaminated Water Management Plan. The facility maintains a current Stormwater Pollution Prevention Plan prepared consistent with the provisions of TPDES MSGP TXR050000. Given the above, the applicant understands and is in full compliance with TPDES under the Clean Water Act, Section 402, as amended.



3-23-12

11 FLOODPLAINS AND WETLANDS STATEMENT

11.1 Floodplains Statement

As noted in Section 10.2 (Surface Water Statement), the Elm Fork Trinity River forms the southern boundary of the site and Midway Branch, a tributary of the Elm Fork, flows along the east side of the permit boundary.

This section addresses §330.61(m).

The development of the site will involve the placement of fill within the 100-year floodplain. Figure I/II-11.1 compares the existing permitted site condition (TCEQ Permit No. 1312A) and the effect the proposed revision to the site development plan will have on the 100-year floodplain under TCEQ Permit No. 1312B. As discussed in Part III, Appendix IIIO – Floodplain Information, flood storage will be created to offset the flood storage consumed by the proposed landfill expansion. The site is located within the Trinity River corridor and a Trinity River Corridor Development Certificate (CDC) has been obtained from the City of Lewisville and the USACE for the continued development of the landfill. In addition, a CLOMR has also been obtained from FEMA to allow for the proposed development within the 100-year floodplain. The CDC and CLOMR permit applications and permits are included in Part III, Appendix IIIO, and represent the approvals required to develop the site so that the waste disposal area will be protected from the 100-year floodplain. Figure I/II-11.2 shows the revised limits of the 100-year floodplain shown on the revised Flood Insurance Rate Map (FIRM) included in the approved FEMA CLOMR request.

Compliance with the floodplain location restrictions is further discussed in Appendix I/IIC (each of the 4 items listed under §330.63(c)(2)(D) are addressed in Appendix I/IIC, Section 4).

11.2 Wetlands Statement

The area within the proposed expanded permit boundary of the Camelot Landfill was evaluated for compliance with wetlands provisions, including the determination and identification requirements in 30 TAC §330.61(m)(2) and (3) and the wetlands location restriction in 30 TAC §330.553(b). The expanded landfill unit at the Camelot Landfill will not be located in wetlands and development of the site will comply with the wetlands location restriction.

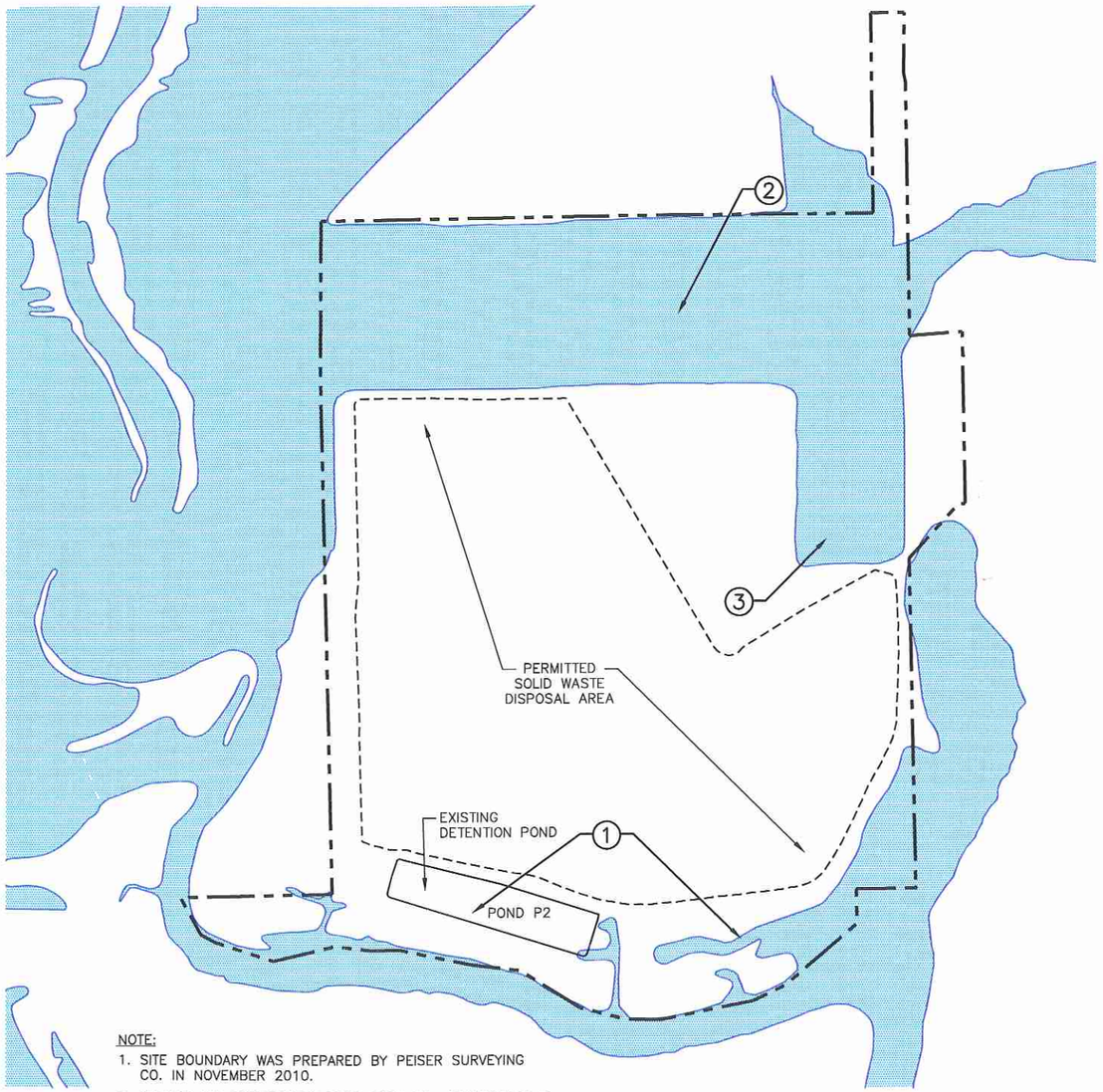
A waters of the U.S. and wetlands determination/delineation was performed by Goshawk Environmental Consulting, Inc. Their September 17, 2010 report is included in Appendix I/IIB, beginning at page I/IIB-135 (other wetlands materials, including correspondence with the USACE, are also included in Appendix I/IIB). The report identified waters of the U.S. and wetlands, both jurisdictional and non-jurisdictional, located within the proposed expanded permit boundary. These features are shown on Parts I/II, Figures I/II-11.3 and I/II-11.4.

The only jurisdictional wetlands on the site are located in the northeastern portion of the expanded permit boundary, north and east of proposed detention pond P1, in an area of the site not proposed for development. As noted on Figure I/II-11.4, two stormwater management facilities are proposed to be constructed near or within stream channels identified as Section 404 jurisdictional areas. The two structures are (1) a 25-foot-wide concrete and gabion-lined spillway and (2) gabion mattresses that will control erosion from stormwater flow from a drainage letdown. The construction of these stormwater management facilities is authorized by Nationwide Permit No. 43. No other aspect of the proposed site development will require Department of the Army authorization under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899.

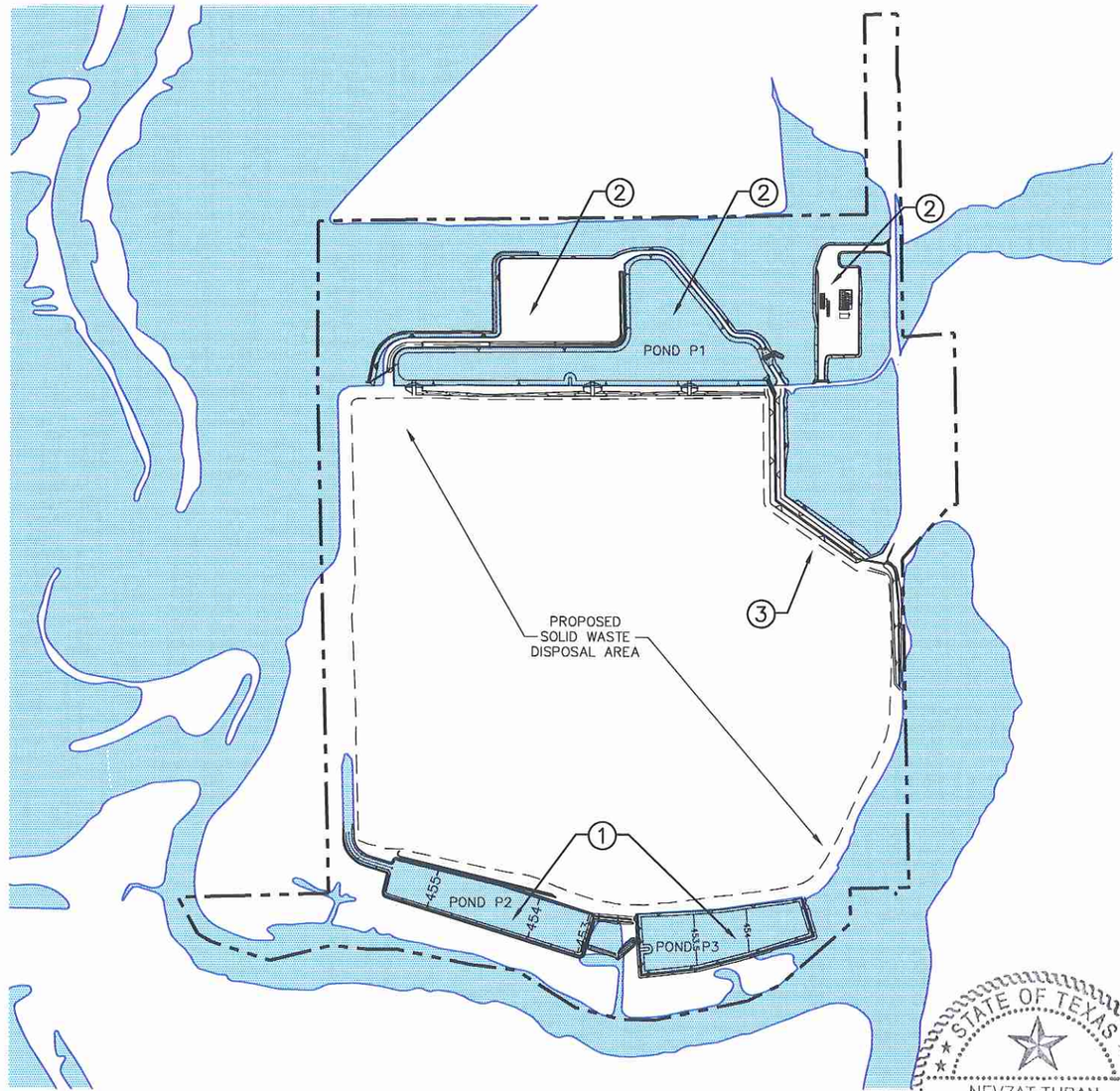
As shown on Figure I/II-11.4, approximately 5.9 acres of non jurisdictional wetlands were identified within the proposed expanded permit boundary, including approximately 5.5 acres located within the existing permit boundary. No USACE permit is required for development of these 5.5 acres of non jurisdictional wetlands, located in areas of the site previously excavated for soil borrow and temporary water storage. Development of the site will continue to include the use, reconfiguration, removal and/or relocation of, and the removal of water from and placement of soil in these and similar excavated areas in advance of expansion of the landfill unit.

Consistent with the goal set out in Title 30 TAC §330.553(b)(4), the site has been designed to include the creation of more than 30 acres of stormwater detention ponds that will function similar to wetland areas. As shown on Figure I/II-11.4, vegetation will be established in the detention ponds, which will retain water because of their relatively flat bottom grades.

EXISTING PERMIITED CONDITION



PROPOSED CONDITION



NOTE:

1. SITE BOUNDARY WAS PREPARED BY PEISER SURVEYING CO. IN NOVEMBER 2010.
2. FLOODPLAIN REPRODUCED FROM FIRM NO. 48121C0565 G, EFFECTIVE DATE APRIL 18, 2011.

CHANGES FROM EXISTING PERMITTED TO THE PROPOSED CONDITION

(1) ADDITION OF DETENTION POND, POND P3. THE SOUTHWEST POND (POND P2) WAS CONSTRUCTED AS AUTHORIZED BY THE CLOMR APPLICATION (CASE NO. 02-06-1950R APPROVED BY FEMA ON NOVEMBER 18, 2002 FOR THE EXISTING PERMITTED SITE). THE SOUTHEAST POND (POND P3) WILL FUNCTION SIMILAR TO THE PREVIOUSLY-PERMITTED SOUTHWEST POND.

(2) NORTHERN AREA DEVELOPMENT. TO ALLOW FOR THE DEVELOPMENT OF FACILITIES TO SUPPORT THE OPERATION OF THE LANDFILL, THIS PROJECT INCLUDES THE REMOVAL OF TWO AREAS FROM THE FLOODPLAIN IN THE NORTHERN PORTION OF THE SITE. THESE TWO AREAS WILL BE USED FOR (1) OFFICES AND MAINTENANCE FACILITIES, INCLUDING ACCESS ROADS AND (2) A 16-ACRE AREA THAT WILL BE USED TO SUPPORT OPERATIONS, SUCH AS EQUIPMENT STORAGE, A CITIZEN CONVENIENCE CENTER, ENTRANCE FACILITIES, ACCESS ROADS, AND/OR A WOOD WASTE PROCESSING AREA.

(3) REMOVAL OF NORTHEAST AREA FROM FLOODPLAIN TO ALLOW FOR THE CONTINUED DEVELOPMENT OF THE LANDFILL. THIS AREA IS PROPOSED TO BE REMOVED FROM THE INEFFECTIVE FLOW AREA OF THE 100-YEAR FLOODPLAIN.

N

0 500 1000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- 100-YEAR FLOODPLAIN

STATE OF TEXAS
NEVZAT TURAN
84059
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 1-1-FLOODPLAIN COMP.DWG

DRAWN BY: VRS
DESIGN BY: CRM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

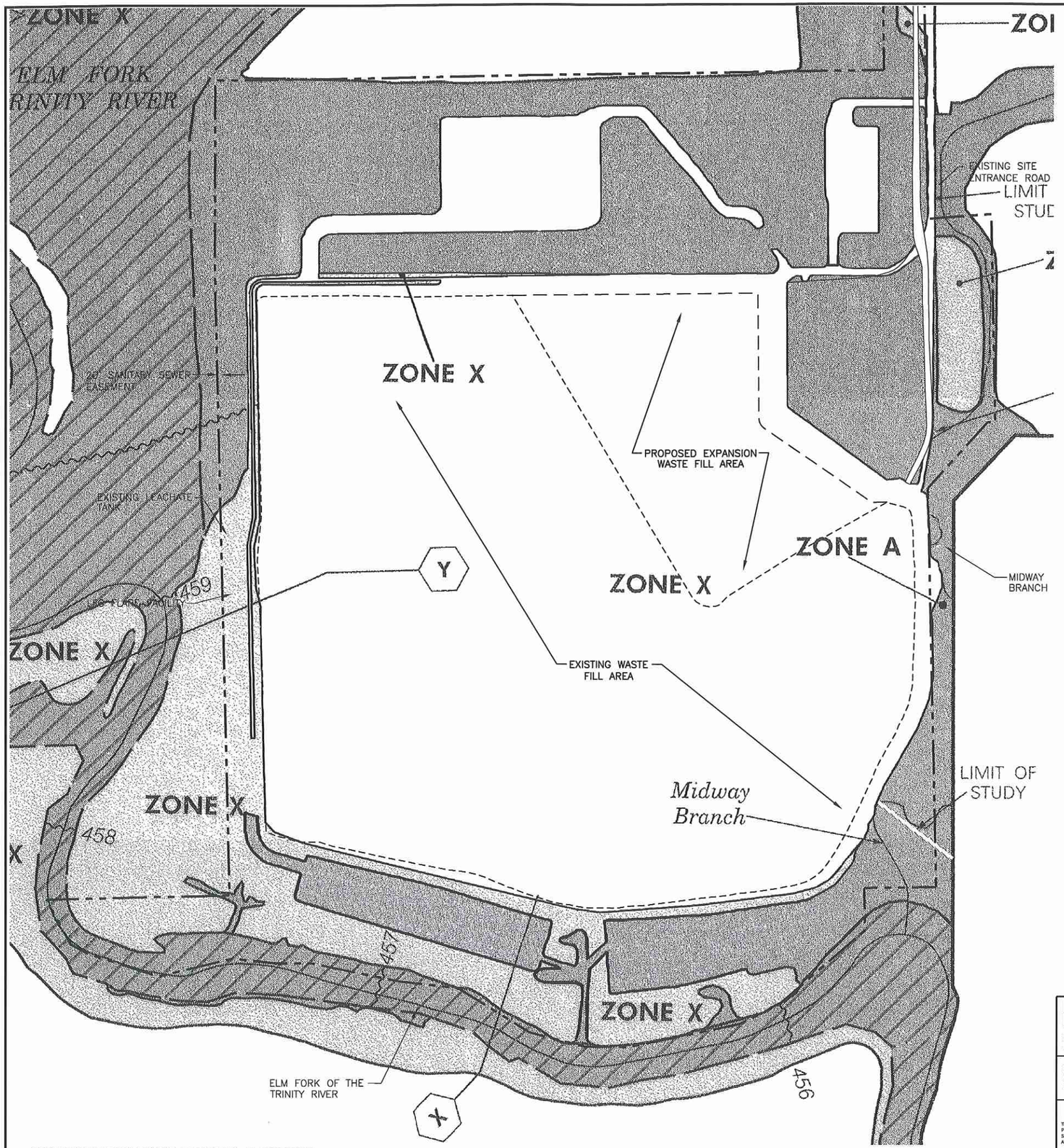
MAJOR PERMIT AMENDMENT
FLOODPLAIN CONDITION COMPARISON

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1/II-11.1



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.

N

0 300 600

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE

NOTE:

1. PORTIONS OF FLOODPLAIN AND FLOODWAY BOUNDARIES WERE REPRODUCED FROM FEMA FIRM NUMBER 48121C0565 G, EFFECTIVE DATE APRIL 18, 2011. THE REVISED FLOODPLAIN LIMITS ARE REPORDUCED FROM THE FEMA APPROVED CLOMR REQUEST DATED JUNE 2011 (PREPARED BY WEAVER BOOS CONSULTANTS).
2. PERMIT BOUNDARY WAS PREPARED BY PEISER SURVEYING CO. IN NOVEMBER 2010.

STATE OF TEXAS
NEVZAT TURAN
84059
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- ☐ FOR INFORMATION PURPOSES ONLY
- ☒ FOR PERMITTING PURPOSES ONLY
- ☐ ISSUED FOR CONSTRUCTION
- ☐ CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 11.2-REVISED FIRM.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

REUSE OF DOCUMENTS

PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

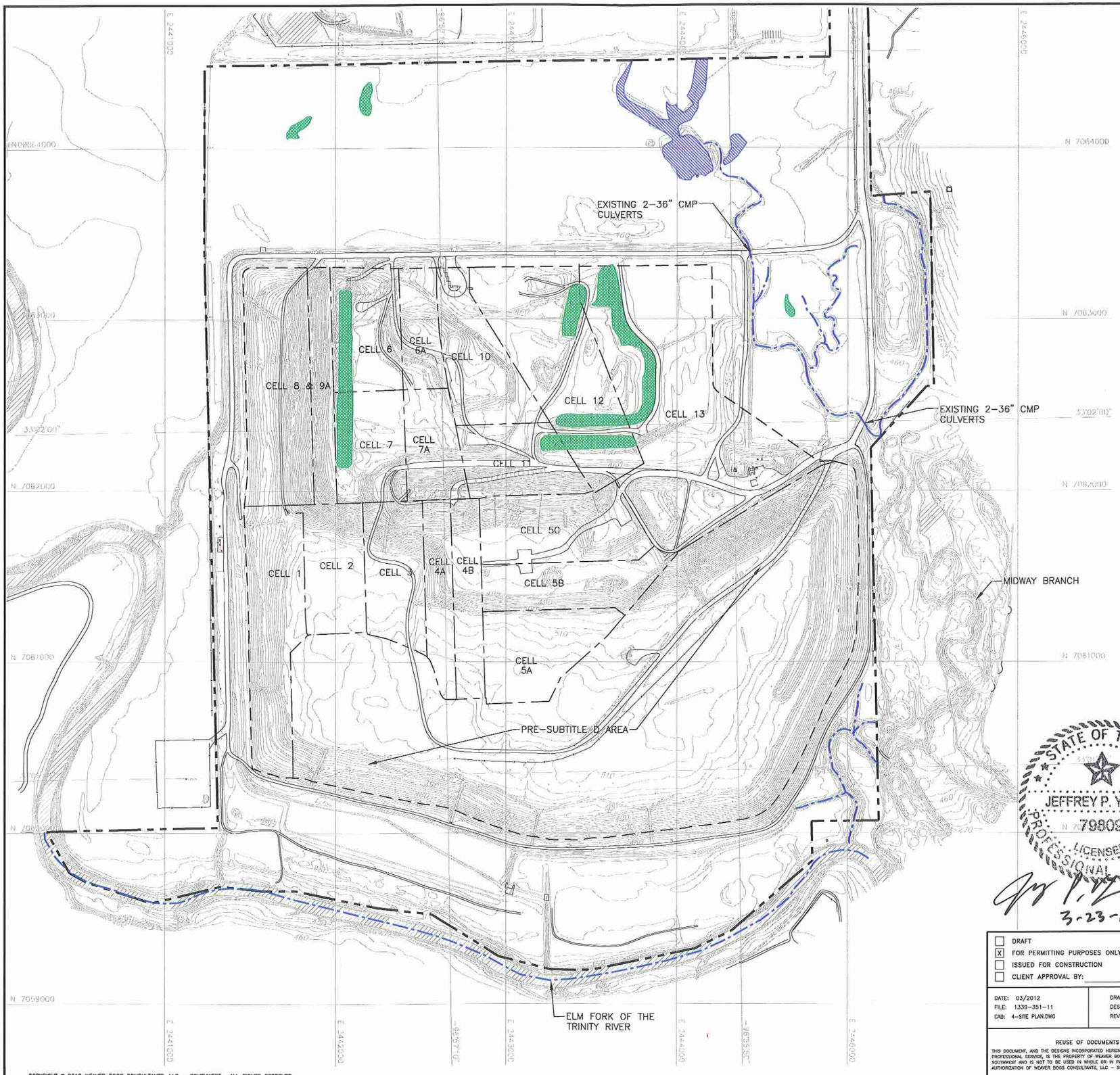
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT REVISED FLOOD INSURANCE RATE MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1/II-11.2



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- USACE SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 3)
- USACE SECTION 404 JURISDICTIONAL WETLANDS
- SECTOR BOUNDARY
- NON–JURISDICTIONAL WETLANDS

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN NOVEMBER 2010.
3. SECTION 404 JURISDICTIONAL WATERS OF THE U.S. AND WETLANDS REPRODUCED FROM PRELIMINARY SECTION 404 JURISDICTIONAL DETERMINATION REPORT PREPARED BY GOSHAWK ENVIRONMENTAL CONSULTING, INC (SEPTEMBER 17, 2010).

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] DRAFT
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339–351–11
CAD: 4–SITE PLAN.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT WETLAND LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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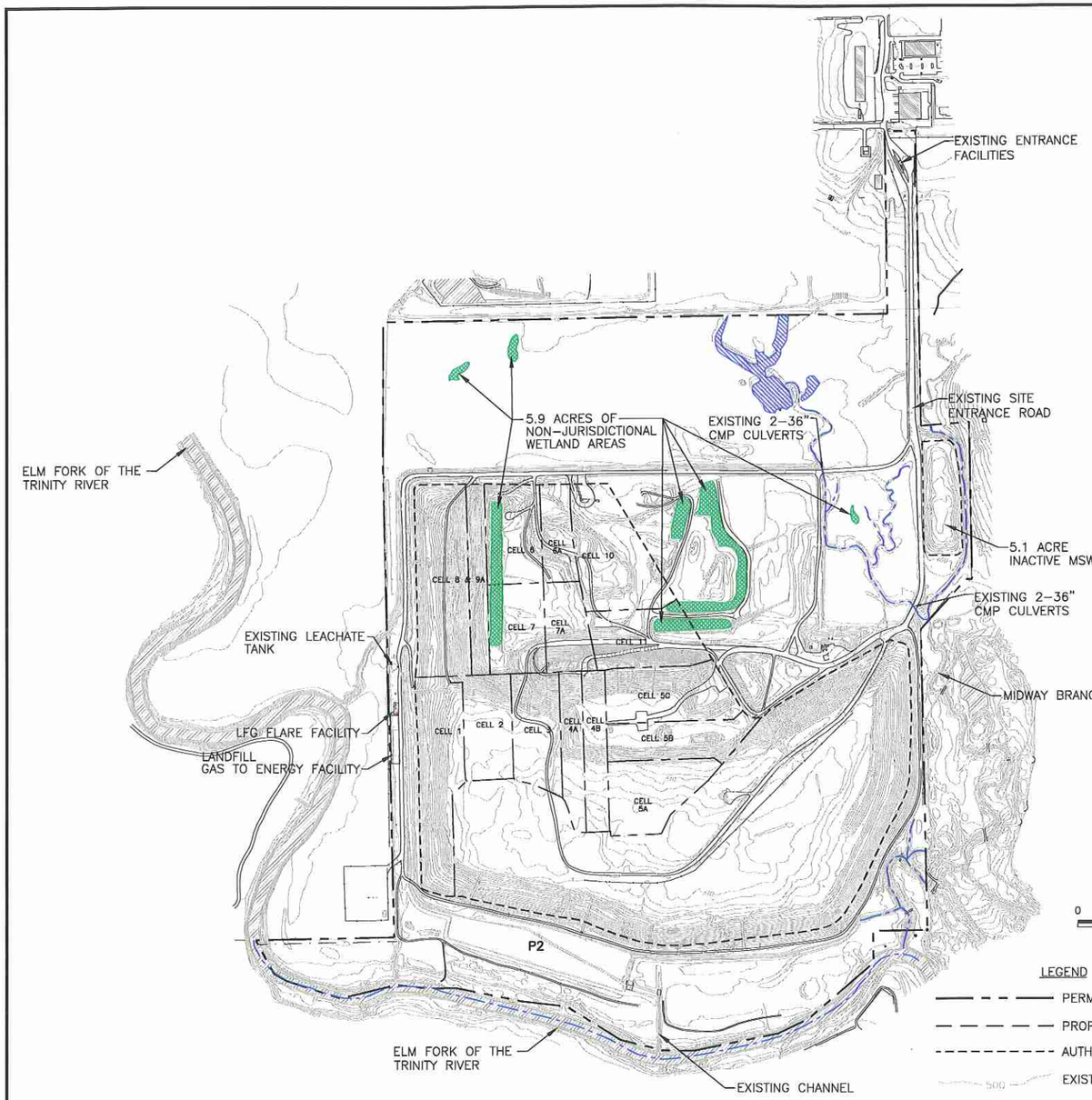
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II–11.3



PERMITTED SITE PLAN

PROPOSED LANDFILL COMPLETION PLAN

0 500 1000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- 600 REGRADED BUFFER ZONE (GREENFIELD/OPEN SPACE) AREA
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- P1 DETENTION POND DESIGNATION
- USACE SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 3)
- USACE SECTION 404 JURISDICTIONAL WETLANDS
- NON-JURISDICTIONAL WETLAND
- NON-JURISDICTIONAL WETLAND MITIGATION AREAS

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN NOVEMBER 2010.
3. SECTION 404 JURISDICTIONAL WATERS OF THE U.S. AND WETLANDS REPRODUCED FROM PRELIMINARY SECTION 404 JURISDICTIONAL DETERMINATION REPORT PREPARED BY GOSHAWK ENVIRONMENTAL CONSULTING, INC (SEPTEMBER 17, 2010).

STATE OF TEXAS
JEFFREY P. YOUNG
79809
PROFESSIONAL ENGINEER
LICENSED
3-27-12

- [ ] DRAFT
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 5-COMPARISON.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

REUSE OF DOCUMENTS
THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC - SOUTHWEST AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC - SOUTHWEST.

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

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GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE I/II-11.4

12 PROTECTION OF ENDANGERED SPECIES

This section addresses §330.61(n).

A written request regarding endangered or threatened species or their critical habitat with respect to the site was sent to the U.S. Fish and Wildlife Service (FWS) and the Texas Parks and Wildlife Department (TPWD). Correspondence with the FWS and TPWD is included in Appendix I/IIB.

In addition, a site specific threatened and endangered species habitat assessment was completed by Goshawk Environmental Consulting, Inc. in September 2010 (refer to the TPWD and FWS tabs in Appendix I/IIB). This study concluded that the area within the landfill permit boundary does not provide habitat for and would not likely be occupied by any federally listed and state listed threatened and endangered species.

Therefore, it is concluded that the expansion of the Camelot Landfill will not result in the destruction or adverse modification of the critical habitat of any threatened or endangered species, or cause or contribute to the taking of any threatened or endangered species.

Given the above, the facility is in compliance with all applicable federal, state, and local laws regarding threatened or endangered species.

13 LEGAL DESCRIPTION

A legal description of the 469.62-acre permit boundary is included on the following pages. The area is shown on the attached drawing and legal description.

This section addresses §330.59(d)(1).

The area within the permit boundary is owned by the City of Farmers Branch and Camelot Landfill TX, LP. Current ownership records for the property may be found in the Denton County Real Property records.

14 PROPERTY OWNER AFFIDAVITS

Property owner affidavits from the City of Farmers Branch and Camelot Landfill TX, LP, with attached legal descriptions, are included on the following pages.

This section addresses §330.59(d)(2).

STATE OF TEXAS §
COUNTY OF DALLAS §

PROPERTY OWNER'S AFFIDAVIT

On this day, Gary D. Greer appeared before me, the undersigned notary public, and after I administered an oath to him, upon his oath he said:

"My name is Gary D. Greer. I am City Manager of the City of Farmers Branch, Texas ("the City") and I am authorized to make the following statements on behalf of the City.

The City is the owner of certain real property in Denton County, Texas, including the tract(s) described in Exhibit A attached hereto ("the Property"), which the City is requesting be included within the permitted area of its Camelot Landfill municipal solid waste landfill facility ("the Facility"), pursuant to amendment of Texas Commission on Environmental Quality Permit No. MSW-1312A.

The City hereby acknowledges that the State of Texas may hold the property owner of record either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the Facility on the Property.

The City hereby acknowledges that the owner of the Property has the responsibility to file in the deed records of Denton County an affidavit to the public advising that the Property 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 on the Property, and to file a final recording upon completion of disposal operations and closure of the landfill units on the Property in accordance with 30 TAC §330.19.

The City hereby acknowledges 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 of the Facility for the purpose of inspection and maintenance."

Gary D. Greer

SWORN TO AND SUBSCRIBED before me by Gary D. Greer, City Mgr. on the 26th day of March, 2012.

NATALIA H. DAVIS NOTARY PUBLIC STATE OF TEXAS EXPIRES 5-14-2013

Natalia H. Davis
Notary Public

EXHIBIT A
City of Farmers Branch Tract

Being all that certain 450.32 acre tract or parcel of land situated in the Patrick O'Leary Survey, Abstract No. 974, the R.H. Barksdale Survey, Abstract No. 46, the H. Harper Survey, Abstract No. 605, the P. Higgins Survey, Abstract No. 525, the S. Hayden Survey, Abstract N. 537, and the A.J. Chowning Survey, Abstract No. 1638, Denton County, Texas, being more particularly described as follows:

BEGINNING at the southwest corner of Lot 1, Block A of Farmers Branch Camelot Landfill Addition, an addition to the City of Lewisville, as recorded in Document No. 2009-129, of the Plat Records of Denton County, Texas;

THENCE North 01 deg. 55 min. 25 sec. East, a distance of 1054.06 feet to a point for corner;

THENCE South 88 deg. 58 min. 19 sec. East, a distance of 3,658.86 feet to a point for corner;

THENCE North 00 deg. 58 min. 02 sec. East, a distance of 1273.40 feet to a point for corner;

THENCE North 00 deg. 42 min. 51 sec. East, a distance of 45.33 feet to a point for corner;

THENCE South 89 deg. 17 min. 09 sec. East, a distance of 220.23 feet to a point for corner;

THENCE South 01 deg. 21 min. 32 sec. West, a distance of 48.25 feet to point for corner;

THENCE South 02 deg. 06 min. 48 sec. West, a distance of 354.23 feet to a point for corner;

THENCE North 89 deg. 20 min. 46 sec. West, 31.33 feet to a point for corner;

THENCE South 00 deg. 53 min. 13 sec. West, a distance of 1730.38 feet to a point for corner;

THENCE South 25 deg. 58 min. 41 sec. West, a distance of 287.07 feet to a point for corner;

THENCE North 88 deg. 42 min. 52 sec. West, a distance of 522.92 feet to a point for corner;

THENCE South 1 deg. 14 min. 34 sec. West, a distance of 1121.66 feet to a point for corner;

THENCE South 89 deg. 16 min. 42 sec. East, a distance of 664.37 feet to a point for corner;

THENCE North 1 deg. 13 min 24 sec. East, a distance of 1373.63 feet to a point for corner;

THENCE North 87 deg. 33 min. 13 sec. East, a distance of 375.60 feet a point for corner;

THENCE South 00 deg. 38 min. 00 sec. West, a total distance of 1135.31 feet to a point for corner;

THENCE North 88 deg. 23 min. 57 sec. West, a distance of 42.08 feet to a point for corner;

THENCE South 44 deg. 07 min. 51 sec. West, a distance of 487.22 feet to a point for corner;

THENCE South 00 deg. 29 min. 20 sec. West, a distance of 2175.70 feet to a point for corner,

THENCE North 88 deg. 58 min. 21 sec. West, a distance of 394.00 feet to a point for corner;

THENCE South 00 deg. 29 min. 20 sec. West, a distance of 230.00 feet to a point for corner in the approximate centerline of Elm Fork of Trinity River, said point being the most southerly southeast corner of said Lot 1, Block A, Farmers Branch Camelot Landfill Addition;

THENCE along the common line of said Lot 1, Block A, Farmers Branch Camelot Landfill Addition, and Lot 2 of D/FW Recycling & Disposal Facility Addition, an addition to the City of Lewisville, Denton County, Texas according to the plat thereof recorded in Cabinet L, Page 346, of aforesaid Plat Records, and along the approximate centerline of said Elm Fork of Trinity River as follows:

South 51 deg. 01 min. 49 sec. West, a distance of 623.06 feet to a point for corner;
South 65 deg. 47 min. 32 sec. West, a distance of 239.43 feet to a point for corner;
South 80 deg. 05 min. 38 sec. West, a distance of 622.76 feet to a point for corner;
North 87 deg. 53 min. 29 sec. West, a distance of 232.31 feet to a point for corner;
North 73 deg. 57 min. 44 sec. West, a distance of 316.66 feet to a point for corner;
North 56 deg. 18 min. 20 sec. West, a distance of 463.78 feet to a point for corner;
North 81 deg. 23 min. 24 sec. West, a distance of 322.39 feet to a point for corner;
North 76 deg. 32 min. 03 sec. West, a distance of 493.32 feet to a point for corner;
North 88 deg. 31 min. 36 sec. West, a distance of 197.16 feet to a point for corner;
North 82 deg. 08 min. 34 sec. West, a distance of 237.74 feet to a point for corner;
South 78 deg. 06 min. 25 sec. West, a distance of 417.73 feet to a point for corner;
North 70 deg. 27 min. 39 sec. West, a distance of 407.54 feet to a point for corner;
North 59 deg. 22 min. 22 sec. West, a distance of 105.48 feet to a point for corner;
North 26 deg. 55 min. 54 sec. West, a distance of 277.90 feet to a point for corner, said point being the most westerly southwest corner of said Lot 1, Block A, Farmers Branch Camelot Landfill Addition;

THENCE South 89 deg. 38 min. 10 sec. East, a distance of 1003.88 feet to a point for corner;

THENCE North 00 deg. 24 min. 20 sec. East (basis of bearing), a distance of 3395.38 feet to the POINT OF BEGINNING and containing 450.32 computed acres of land more or less.

STATE OF _____ §
COUNTY OF _____ §

PROPERTY OWNER'S AFFIDAVIT

On this day, Nicholas Stefkovich appeared before me, the undersigned notary public, and after I administered an oath to him, upon his oath he said:

"My name is Nicholas Stefkovich. I am Authorized Agent of Allied Waste Landfill Holdings, Inc. and I am authorized to make the following statements on behalf of Allied Waste Landfill Holdings, Inc. and Camelot Landfill TX, LP.

Allied Waste Landfill Holdings, Inc. is the general partner of Camelot Landfill TX, LP.

Camelot Landfill TX, LP is the owner of certain real property in Denton County, Texas, including the tract described in Exhibit A attached hereto ("the Property"), which Camelot Landfill TX, LP has authorized the City of Farmers Branch, Texas to include within the permitted area of its Camelot Landfill municipal solid waste landfill facility ("the Facility"), pursuant to modification of or amendment to Texas Commission on Environmental Quality Permit No. MSW-1312A.

Camelot Landfill TX, LP hereby acknowledges that the State of Texas may hold the property owner of record either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the Facility on the Property.

Camelot Landfill TX, LP hereby acknowledges that the owner of the Property has the responsibility to file in the deed records of Denton County an affidavit to the public advising that the Property 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 on the Property, and to file a final recording upon completion of disposal operations and closure of the landfill units on the Property in accordance with 30 TAC §330.19.

Camelot Landfill TX, LP hereby acknowledges 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 of the Facility for the purpose of inspection and maintenance."

Nicholas Stefkovich

SWORN TO and SUBSCRIBED before me by Nicholas Stefkovich on the 28th day of February, 2012.

Robyn A Mota
Notary Public

ROBYN A. MOTA
Notary Public, State of Texas
My Commission Expires
JANUARY 21, 2013

EXHIBIT A
Camelot Landfill TX, LP Tract

Being a portion of a called 34.696 acre tract of land (Tract 1) situated in the S. Hayden Survey, Abstract Number 537, The P. Higgins Survey, Abstract Number 525, The A. Chowing Survey, Abstract Number 1638, and The P. O'Leary Survey, Abstract Number 974, Denton County, Texas, as described in deed to Camelot Landfill TX, LP as recorded in Volume 4383, Page 742 of the Real Property Records of Denton County, Texas, being all of a called 19.87 acre tract as described in deed to Odelle Barfknecht as recorded in Volume 1321, Page 503 of said Real Property Records.

Said tract of land consists of parcels with Denton Central Appraisal District Property IDs 19239 (Geographic ID A0974A-000-0005-000) and 19465 (Geographic ID A0525A-000-0014-0000) and Denton County Tax Assessor-Collector Accounts 19239DEN (APD A0974A-000-0005-000) and 19465DEN (APD A0525A-000-0014-0000), also described as follows, based on a December 2011 boundary survey by Peiser Surveying, LLC:

COMMENCING at a 1/2 inch iron rod found with "RPLS 3688" cap found for the most northerly northwest corner of said Tract 1, same being the most northerly northeast corner of that certain called 102.58 acre tract of land to City of Farmers Branch, by deed recorded in Volume 4382, Page 15, said Deed Records, same being in the south line of NARCO Addition, an addition to the City of Lewisville, Denton County, Texas, according to the plat thereof recorded in Cabinet G, Page 135, Plat Records, Denton County, Texas;

THENCE South 01 deg. 21 min. 32 sec. West, along the common line of said Tract 1, and said City of Farmers Branch tract, a distance of 48.25 feet to a 1/2 inch iron rod found for an angle point;

THENCE South 02 deg. 06 min. 48 sec. West, continuing along the common line of said Tract 1, and said City of Farmers Branch tract, a distance of 354.23 feet to a 1/2 inch iron rod found with "RPLS 3688" cap found for an internal ell corner of said Tract 1, same being an external ell corner of said City of Farmers Branch tract, same being the POINT OF BEGINNING;

THENCE South 09 deg. 47 min. 37 sec. East, through the interior of said Tract 1, passing a 5/8 inch iron rod found for the most northerly northwest corner of Lot 1, Block A, First Broadcasting Addition, an addition to the City of Lewisville, Denton County, Texas, according to the plat thereof recorded in Cabinet V, Page 937, aforesaid Plat Records, and continuing along the common line of said Tract 1, and said Lot 1, a total distance of 60.90 feet to a 1/2 inch iron rod found for an angle point;

THENCE South 00 deg. 43 min. 55 sec. West, along the common line of said Tract 1, and said Lot 1, passing the northwest corner of Corporate Drive (an 80' right-of-way, as dedicated on said First Broadcasting Addition), and continuing along the common line of said Tract 1, and the west line of said Corporate Drive, passing at a distance of 817.73 feet a 1/2 inch iron rod found, and continuing passing the southwest corner of said Corporate Drive, same being the northwest corner of Lot 1, Block B, said First Broadcasting Addition, and continuing along the common line of said Tract 1, and said Lot 1, Block B, a total distance of 1671.60 feet to a 1/2 inch iron rod found for a southeast corner of said Tract 1, same being the southwest corner of said Lot 1,

Block B, same being in a north line of Lot 1, Block A, Farmers Branch Camelot Landfill Addition, an addition to the City of Lewisville, Denton County, Texas, according to the plat thereof recorded in Document No. 2009-129, said Plat Records;

THENCE along the common line of said Tract 1, and said Lot 1, Block A, Farmers Branch Landfill Addition as follows:

South 87 deg. 33 min. 13 sec. West, a distance of 26.35 feet to a 1/2 inch iron rod found with "RPLS 3688" cap found for an internal ell corner of said Tract 1, same being a northwest corner of said Lot 1, Block A, Farmers Branch Landfill Addition;

South 01 deg. 13 min. 24 sec. West, a distance of 1373.63 feet to a 1/2 inch iron rod found from which a 1/2 inch iron rod found with "Kadleck 3825" cap bears North 02 deg. 26 min. 08 sec. East, 19.59 feet, said corner being the most southerly southeast corner of said Tract 1, same being an internal ell corner of said Lot 1, Block A, Farmers Branch Landfill Addition;

North 89 deg. 16 min. 42 sec. West, a distance of 664.37 feet to a 1/2 inch iron rod found with "Kadleck 3825" cap for the southwest corner of said Tract 1, same being an internal ell corner of said Lot 1, Block A, Farmers Branch Landfill Addition;

North 01 deg. 14 min. 34 sec. East, a distance of 1121.66 feet to a 3/8 inch iron rod found for the most westerly northwest corner of said Tract 1, same being a northeast corner of said Lot 1, Block A, Farmers Branch Landfill Addition, same being in the south line of aforesaid City of Farmers Branch tract;

THENCE along the common line of said Tract 1, and said City of Farmers Branch tract as follows:

South 88 deg. 42 min. 52 sec. East, a distance of 522.92 feet to a 1/2 inch iron rod found with "RPLS 3688" cap found for an angle point in the south line of City of Farmers Branch tract;

North 25 deg. 58 min. 41 sec. East, passing at a distance of 179.92 feet a 1/2 inch iron rod found, and continuing a total distance of 287.07 feet to a 1/2 inch iron rod found with "RPLS 3688" cap found for an angle point;

North 00 deg. 53 min. 13 sec. East, a distance of 1730.38 feet to a PK Nail found from which a PK Nail found bears South 87 deg. 34 min. 59 sec. East, 1.11 feet, said corner being a northwest corner of said Tract 1;

South 89 deg. 20 min. 46 sec. East, a distance of 31.33 feet to the POINT OF BEGINNING and containing 841,130 square feet or 19.31 acres of computed land, more or less.

15 LEGAL AUTHORITY

The City of Farmers Branch was incorporated in the state of Texas in 1946 and operates under the Charter form of government. A copy of the City's Charter is included in Appendix I/IIF. Under Texas law, the City has the responsibility to provide for the management of solid waste generated by residences and businesses.

This section addresses §330.59(e).

16 EVIDENCE OF COMPETENCY

16.1 Solid Waste Sites

The existing landfill is the only solid waste site currently operated by the City of Farmers Branch. However, as discussed in Section 3.1, the City also owns the inactive landfill located north of the existing site (TCEQ Permit No. MSW-946) and a closed landfill located within the city limits of Farmers Branch (TCEQ Permit No. 1049). The operation of the Camelot Landfill is under the direction of the City Manager.

This section addresses §330.59(f).

The City of Farmers Branch is the permittee and site operator of the Camelot Landfill facility and is responsible for overall operation of the facility. Pursuant to an agreement with the City, Camelot Landfill TX, LP is the contract operator of the landfill. Camelot Landfill TX, LP is an indirect, wholly-owned subsidiary of Republic Services (Republic). Republic is a Delaware corporation qualified to do business in Texas. Republic owns, operates, or maintains a financial interest in the facilities identified in Tables 16-1 and 16-2. A listing of the state regulatory agencies for these facilities is provided in Table 16-3. Republic acquires, operates and develops nonhazardous waste disposal facilities on a national basis and is one of the largest providers of municipal waste services in the United States. Republic is a Delaware corporation whose shares are publicly traded on the New York stock exchange. As documented in Republic's 2010 Annual Report, no person or entity owns 20 percent or more of the company.

16.2 Camelot Landfill Key Personnel

16.2.1 City of Farmers Branch

The key personnel involved in the management and operations of the Camelot Landfill are listed below.

Gary D. Greer, City of Farmers Branch, City Manager

The City Manager is the Chief Executive Officer of the City organization, responsible directly for the Finance, Communications, and Economic Development Departments and indirectly for all other departments. Mr. Greer is the signatory for this application.

Shane Davis, Solid Waste Administrator

The landfill operation and the administration of the operating contract with Republic are under the direction of Mr. Shane Davis and the Public Works Department's office.

16.2.2 Contract Operator (Camelot Landfill TX, LP)

The key personnel involved in the management and operations of the Camelot Landfill are listed below.

Robert Boucher, South Region Senior Vice President

Mr. Boucher has ultimate management and oversight responsibilities for all Republic hauling and disposal operations within the South Region, which is composed of Texas, Louisiana, Mississippi, Alabama, Georgia, Arkansas, Florida, Tennessee, and Puerto Rico.

Nicholas Stefkovich, North Texas Area President

Mr. Stefkovich is responsible for all hauling, transfer stations, and landfill operations in the North Texas area. Responsibilities include financial planning and environmental compliance, as well as other management responsibilities. Also, he oversees operations; sales and marketing; and finance for Republic's landfills, transfer stations, recycling, and waste collection operations.

Robert C. Cox, DFW Post-Collection General Manager

Mr. Cox has over 15 years of experience in permitting, engineering, environmental compliance, construction management and operation of MSW landfills and has served in key management positions within the solid waste industry. Mr. Cox currently has the responsibility of managing six landfills in Republic's DFW area. Generally, Mr. Cox's responsibilities include management of all operational aspects of the landfills, such as engineering, construction, environmental compliance, equipment maintenance, operational strategy, safety programs, financial planning and budgeting. Additionally, Mr. Cox plays a key role in securing new permits and permit expansions, and he assists with community relations, as well as customer development. He has a Texas Class A license for MSW Landfill Management and Operations.

Marcos Elizondo, Director of Engineering and Environmental Management

Mr. Elizondo is responsible for the engineering management, regulatory coordination, and environmental compliance of Republic's facilities within the South Region. He has numerous years of experience in environmental engineering related projects, which includes Texas MSW facilities.

Eduardo Choquis, Area Environmental Manager

Mr. Choquis has management and oversight responsibilities for environmental compliance at Republic's landfills, transfer stations, and hauling facilities in the North Texas area. Mr. Choquis has primary responsibility for permitting projects at the Camelot Landfill.

Larry Bressman, Landfill Manager

Mr. Bressman is responsible for the daily operations of the Camelot Landfill. His work includes oversight of hourly workers, equipment maintenance, construction management, and operations compliance. Mr. Bressman has a Texas Class A license for MSW Landfill Management and Operations. Mr. Bressman has 20 years of experience in managing municipal solid waste landfills (including landfilling and earthmoving experience).

16.3 Equipment

The equipment listed in Part IV, Site Operating Plan – Table 3.1 is used to operate this site. Additional or different units of equipment may be provided as necessary to enhance operational efficiency. Other equivalent types of equipment may be substituted for this equipment on an as-needed basis.

Table 16-1
Texas Solid Waste Facilities
Republic Services, Inc.
(as of November 2009)

Name & Location	Permit Type & No.	Dates of Operation [1]
NORTH TEXAS AREA		
Camelot Landfill Denton County	Type 1, MSW No. 1312A	Dec. 1979 to present
ECD Landfill Ellis County	Type 1, MSW No. 1745B	1988 to present
Fort Worth Regional Landfill Tarrant County	Type 1, MSW No. 464A	Mar. 1987 to Oct. 1995 (CLOSED)
Hutchins Landfill Dallas County	Type 1, MSW No. 1236A	CLOSED in 1992
Camelot Landfill Denton County	Type 1, MSW No. 1312A	1988 to present
Lewisville Landfill Denton County	Type 1V, MSW No. 1749B	1986 to present
Mexia Landfill Limestone County	Type 1, MSW No. 1558A	1983 to present
Mill Creek Landfill Tarrant County	Type 1, MSW No. 208A	1973 to Nov. 2001 (CLOSED)
City of Fort Worth Southeast Landfill Tarrant County	Type 1, MSW No. 218B	1976 to present
Trinity Oaks Landfill Dallas County	Type 1, MSW No. 556	1976 to Nov. 2002 (CLOSED)
Fort Worth Transfer Station Tarrant County	Type V, MSW No. 2275A	2001 to present
Greenwood Farms Landfill Smith County	Type 1, MSW No. 1972A	Sept. 1988 to present
Henderson LF Rusk County	Type 1, MSW No. 159	Closed in 1986
Pinehill Landfill Gregg County	Type 1, MSW No. 1327B	Dec. 1987 to present
Pleasant Oaks Landfill Titus County	Type 1, MSW No. 797A	1960 to present
Royal Oaks Landfill Cherokee County	Type 1, MSW No. 1614A	Dec. 1988 to present
City of Arlington Landfill Tarrant County	Type 1, MSW No. 358A	March 14, 1978, to present
Brazos Transfer Station Parker County	Type 5TS, MSW No. 2356	April 7, 2008 (pending)
CSC Landfill Ellis County	Type 1, MSW No. 1209B	July 15, 1999, to present

Table 16-1 (Continued)
Texas Solid Waste Facilities
Republic Services, Inc.
(as of November 2009)

Name & Location	Permit Type & No.	Dates of Operation [1]
NORTH TEXAS AREA (CONTINUED)		
Tolar Transfer Station Hood County	Type 5TS, MSW No. 40162	March 23, 2004, to present
RE Wolfe Enterprise of TX Landfill McLennan County	Type 1, MSW No. 1316	June 27, 1979, to January 4, 1993 (CLOSED)
Maloy Landfill Hunt County	Type 1, MSW No. 1195A	January 23, 1979, to present
WEST TEXAS AREA		
Abilene Regional Landfill Jones County	Type 1, MSW No. 1469A	1983 to present
Quail Canyon Landfill Lubbock County	Type 1, MSW No. 987A	1977 to 1992 (CLOSED)
Southwest Landfill Randall County	Type 1, MSW No. 1663B	1985 to present
El Centro Landfill Nueces County	Type 1, MSW No. 2267	2003 to present
Kerrville Landfill Kerr County	Type 1, MSW No. 1506A	1984 to present
Pinn Road 1 Landfill Bexar County	Type 1 and IV, MSW No. 92	Type 1: 1975 to April 1986; revised to Type 1V to Sept. 1991 (CLOSED)
Pinn Road 2 Landfill Bexar County	Type 1, MSW No. 14	Jul. 1975 to 1994 (CLOSED)
Rio Grande Valley Landfill Hidalgo County	Type 1, MSW No. 1948	Jan. 19, 1994, to present
Sinton Landfill San Patricio County	Type 1, MSW No. 242A	Sept. 8, 1972, to present
Sunset Farms Landfill Travis County	Type 1, MSW No. 1447	May 17, 1982, to present
Tessman Road Landfill Bexar County	Type 1, MSW No. 1410B	1981 to present
BFI Killeen TS Bell County	Registration No. 40209	Nov. 9, 2004 to present
BFI Corpus Christi Recyclery Nueces County	Registration No. 65019	July 31, 2002 to present
BFI Burnet TS Burnet County	Registration No. 40035	Aug. 17, 1994 to present
Elliott Landfill Nueces County	Type 1, MSW No. 423A	March 14, 1989 to present
La Gloria Ranch Landfill Hidalgo County	Type 1, MSW No. 2348	May 24, 2007, to present
Charter Waste Landfill Ector County	Type 1, MSW No. 2158A	May 26, 1992, to present

Table 16-1 (Continued)
Texas Solid Waste Facilities
Republic Services, Inc.
(as of November 2009)

Name & Location	Permit Type & No.	Dates of Operation [1]
HOUSTON AREA		
Blue Ridge Landfill Fort Bend County	Type 1, MSW No. 1505	Dec. 10, 1990, to present
Galveston County Landfill Galveston County	Type 1, MSW No. 1149A	January 14, 1971, to present
Golden Triangle Landfill Jefferson County	Type 1, MSW No. 2027	May 24, 1991, to present
Gulf West Landfill Chambers County	Type 1, MSW No. 39039	March 1991 to present
Holmes Road Landfill Harris County	Type 1, MSW No. 38 (N ½) & MSW No. 377 (S ½)	CLOSED in 1978
McCarty Road Landfill Harris County	Type 1, MSW No. 261B	1972 to present
Port Arthur Landfill Jefferson County	Type 1, MSW No. 1815	CLOSED in 1985
Whispering Pines Landfill Harris County	Type 1, MSW No. 1193	Jan. 1, 1984, to present
Houston Northwest TS Harris County	Type 5TS, MSW No. 1092	Jan. 12, 1999 to present
BFI Galveston County TS Galveston County	Registration No. 1680	Oct. 4, 1989 to present
La Porte LF Harris County	Type 1, MSW No. 1765	Closed in 1988
Total Roll-Offs TS Washington County	Registration No. 40173	Sept. 4, 2001 to present
BFI Sealy TS Austin County	Registration No. 40025	April 19, 1995 to present
Victoria Landfill Victoria County	Type 1, MSW No. 1522A	Nov. 15, 1982, to present
North County Landfill Galveston County	Type 4, MSW No. 1849B	April 24, 1998, to present
Houston Southeast TS Harris County	Type 5TS, MSW No. 1074	December 22, 1983, to present
Houston Southwest TS Harris County	Type 5TS, MSW No. 1091	November 23, 1977, to present
Brazoria Recycling Center Brazoria County	Type 5TS, MSW No. 2235	December 21, 1993, to present
City of El Campo CCS Wharton County	Type 5CC, MSW No. 120025	March 17, 2009, to present

[1]This list includes the approximate dates of operation of the facility. This includes the previous owner/operators of certain facilities prior to the facility being acquired by Republic Services, Inc., or its subsidiaries.

Table 16-2
List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
As of November 2009

Facility Name	Location		Facility Type	Dates of Operation[a]
Mobile TS	Mobile	AL	TS	June 1980 to Present
Marshall County TS	Albertville	AL	TS	March 1999 to Present
Andalusia TS	Andalusia	AL	TS	April 2000 to Present
BFI Waste Services of Anniston / Albertville TS	Albertville	AL	TS	June 2003 to Present
Little Creek TS	Guin	AL	TS	December 1999 to Present
BFI Waste Services of Greenville	Greenville	AL	TS	December 1993 to Present
BFI Huntsville MRF	Huntsville	AL	MRF	December 1975 to Present
Prattville C&D Landfill	Prattville	AL	LF	November 2004 to Present
Prattville Transfer Station	Prattville	AL	TS	December 1999 to Present
BFI Athens TS	Athens	AL	TS	December 1999 to Present
BFI Selma TS	Selma	AL	TS	May 1995 to Present
Brundidge LF	Brundidge	AL	LF	May 2000 to Present
Chilton Landfill	Clanton	AL	CLF	Closed
Sand Valley LF	Collinsville	AL	LF	May 2000 to Present
Greenville TS	Greenville	AL	TS	December 1993 to Present
Morris Farms LF	Hillsboro	AL	LF	June 1996 to Present
Pineview LF	Dora	AL	LF	March 1993 to Present
Talledaga TS	Lincoln	AL	TS	December 1999 to Present
Timberlands LF	Brewton	AL	LF	August 1993 to Present
Willow Ridge LF	Haleyville	AL	LF	May 2000 to Present
Bella Vista Hauling & TS	Bella Vista	AR	TS	August 1996 to Present
Model Fill LF	Little Rock	AR	LF	February 1991 to Present
7th Street TS	Phoenix	AZ	TS	*
7th Street MRF	Phoenix	AZ	MRF	*
Central Arizona Transfer	Queen Creek	AZ	TS	December 1999 to Present
Cave Creek Transfer Station	Phoenix	AZ	TS	December 1999 to Present
Aztec Waste	Phoenix	AZ	TS	December 1999 to Present
Apache Junction LF	Apache Junction	AZ	LF	October 1993 to Present
Cactus Landfill	Eloy	AZ	LF	December 2004 to Present
Chandler LF Services	Chandler	AZ	LF	August 1982 to Present
Cocopah Landfill	Somerton	AZ	CLF	Closed
Copper Mountain LF	Wellton	AZ	LF	June 2000 to Present
La Paz County LF	Parker	AZ	LF	November 1993 to Present
Lake Havasu LF Services	Lake Havasu	AZ	LF	May 1997 to Present
Mesa TS	Queen Creek	AZ	TS	*
Mohave Valley LF	Fort Mohave	AZ	LF	October 1995 to Present
Paradise Waste TS	Phoenix	AZ	TS	January 1998 to Present
Allied Waste Transfer Services of Page	Page	AZ	TS	April 1997 to Present
Queen Creek LF	Queen Creek	AZ	CLF	Closed
Southwest Regional LF	Buckeye	AZ	LF	December 1994 to Present
Suburban Transfer	Yuma	AZ	TS	April 2000 to Present
Seagull Sanitation Systems	Avalon	CA	LF	April 2001 to Present
West Contra Costa Sanitary Landfill (WCCSL)	Richmond	CA	LF	Closed
Barrett Junction Burn Site	Dulzura	CA	LF	July 2000 to Present
Boulevard Burn Site	Boulevard	CA	LF	*
Campo Burn Site	Campo	CA	LF	July 2000 to Present
ECDC LF Group - Northwest	San Francisco	CA	LF	*
ECDC LF Group - Southwest	Newport Beach	CA	LF	*
Julian Burn Site	Julian	CA	LF	Closed
Palomar Mountain Burn Site	Palomar Mountain	CA	LF	Closed
Ranchita Burn Site	Ranchita	CA	LF	August 1995 to Present
Viejas Burn Site	Alpine	CA	LF	Closed
Independent Trucking	Stockton	CA	TS	*
American Waste TS	San Carlos	CA	TS	April 1998 to Present
Bel-Art TS	Gardena	CA	TS	May 1995 to Present
Del Norte Regional Recycling and Transfer Station	Oxnard	CA	TS	June 1999 to Present
LA Consolidated East LA Transfer Station	Los Angeles	CA	TS	*
West County Resource Recovery	Richmond	CA	TS	*
Vallecito TS	Julian	CA	TS	December 1999 to Present
Sunshine Summit TS	Warner Springs	CA	TS	December 1999 to Present
Ocotillo Wells TS	Borrego Springs	CA	TS	December 1999 to Present
French Camp LF	Stockton	CA	CLF	Closed
Central LA Recycling and Transfer Station	Los Angeles	CA	TS	December 1999 to Present
Azusa Land Reclamation	Azusa	CA	CLF	Closed
Vasco Road LF	Livermore	CA	LF	December 1999 to Present
BFI Compton TS	Compton	CA	TS	September 1989 to Present
BFI Falcon TS	Wilmington	CA	TS	July 1997 to Present
BFI Mussel Rock TS	Daly City	CA	TS	January 1995 to Present
BFI Pescadero TS	Pescadero	CA	TS	December 1996 to Present
BFI Rice Road MRF	Fresno	CA	MRF	February 1990 to Present
BFI Rice Road TS	Fresno	CA	TS	February 1990 to Present
BFI San Carlos TS	San Carlos	CA	TS	June 1968 to Present
Allied Waste Transfer of San Mateo County	San Carlos	CA	TS	June 1968 to Present
Borrego Springs LF	Borrego Springs	CA	LF	October 1997 to Present
Chateau Fresno LF	Fresno	CA	CLF	Closed
Chestnut Avenue LF	Fresno	CA	CLF	Closed
Contra Costa Transfer	Martinez	CA	TS	March 1994 to Present
Devlin Road TS & Recycling Facility	American Canyon	CA	TS	February 1994 to Present
Elder Creek Recovery and Trash Station	Sacramento	CA	TS	May 2000 to Present
Elder Creek Recovery and Trash Station	Sacramento	CA	MRF	May 2000 to Present
Forward LF	Manteca	CA	LF	March 1973 to Present
Allied Imperial LF	Imperial	CA	LF	April 2000 to Present
Keller Canyon LF	Pittsburgh	CA	LF	September 1991 to Present
Newby Island LF	Milpitas	CA	LF	August 1987 to Present
Otay LF	Chula Vista	CA	LF	October 1997 to Present
Ox Mountain LF	Half Moon Bay	CA	LF	June 1987 to Present
Palomar TS	Carlsbad	CA	TS	November 1997 to Present
Ramona LF	Ramona	CA	LF	October 1997 to Present
Ranchita TS	Ranchita	CA	TS	Closed
Allied Waste Recyclery of San Mateo County	San Carlos	CA	MRF	October 1991 to Present
Sunshine Canyon LF	Sylmar	CA	LF	March 1955 to Present
Sycamore Canyon LF	Santee	CA	CLF	Closed
The Recyclery at Newby Island	Milpitas	CA	MRF	August 1987 to Present
Valley Environmental MRF	El Centro	CA	MRF	June 2000 to Present
BFI Glenwood Springs TS	Glenwood Springs	CO	TS	December 1999 to Present
Denver Regional LF South	Erie	CO	LF	December 1999 to Present
Fountain LF	Fountainville	CO	LF	December 1999 to Present

Table 16-2
List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
As of November 2009

Facility Name	Location		Facility Type	Dates of Operation[a]
Washington Street TS	Denver	CO	TS	December 1999 to Present
BFI Glenwood Springs TS	Glenwood Springs	CO	TS	December 1991 to Present
Greeley TS	Greeley	CO	TS	November 1995 to Present
Boulder LF	Boulder	CO	CLF	Closed
Basalt TS	Basalt	CO	TS	January 1999 to Present
Denver Regional LF North	Erie	CO	CLF	Closed
Foothills LF	Golden	CO	LF	September 1992 to Present
Grand Junction Recyclery	Grand Junction	CO	MRF	February 1982 to Present
Jeffco 1 LF		CO	CLF	Closed
Tower LF	Commerce City	CO	LF	November 1982 to Present
ADS of Connecticut - Stratford	Stratford	CT	TS	December 1999 to Present
PM Services Transfer	Hartford	CT	TS	December 1999 to Present
Capitol Recycling & Brokerage	Hartford	CT	MRF	November 1990 to Present
BFI Consolidated TS	WASHINGTON	DC	TS	
BFI Waste Services of Washington (Consolidated TS)	Washington	DC	TS	September 1994 to Present
545 Landfill	Winter Garden	FL	LF	*
Cedar Trail Landfill	Bartow	FL	LF	*
Nine Mile Road	St. Augustine	FL	LF	*
Metro Recycling	Tampa	FL	TS	*
Envirocycle	Ft. Lauderdale	FL	MRF	*
Rocket Blvd Material Recovery Facility	Orlando	FL	MRF	*
Southland Recycling Services	Jacksonville	FL	MRF	*
Buckeye Landfill (CLOSED TO PUBLIC)	Perry	FL	LF	December 1999 to Present
BFI Sarasota TS	Sarasota	FL	TS	December 1999 to Present
Delta Lakefill	Pompano Beach	FL	LF	December 1999 to Present
Key West Recyclery	Key West	FL	MRF	December 1999 to Present
Miami Beach TS	Miami Beach	FL	TS	December 1999 to Present
Pensacola TS	Pensacola	FL	TS	December 1999 to Present
Royal Oaks Ranch C&D LF	Titusville	FL	CLF	Closed
Tall Pines Recycling	W Palm Beach	FL	MRF	December 1999 to Present
BFI Pasco Recyclery	New Port Richey	FL	MRF	Closed
Pensacola TS	Pensacola	FL	TS	January 1990 to Present
BFI Pensacola Recyclery	Pensacola	FL	MRF	January 1990 to Present
BFI Tampa Bay Recyclery	Clearwater	FL	MRF	December 1986 to Present
Cone Road LF C&D	Tampa	FL	LF	March 1991 to Present
Delta Dade TS	Miami	FL	TS	December 1998 to Present
Ft. Lauderdale MRF	Davie	FL	MRF	December 1991 to Present
FL Walton TS	Ft. Walton Beach	FL	TS	April 2002 to Present
Jacksonville MRF	Jacksonville	FL	MRF	October 1978 to Present
Jones Road LF (C&D)	Jacksonville	FL	LF	October 1989 to Present
McKay Bay TS	Tampa	FL	TS	December 2001 to Present
Miami MRF	Miami	FL	MRF	March 1990 to Present
Miami TS	Miami	FL	TS	March 1990 to Present
Nassau LF (C&D)	Callahan	FL	LF	August 2002 to Present
BFI Sarasota Recyclery	Sarasota	FL	MRF	September 1990 to Present
Broadhurst Environmental	Screven	GA	LF	*
Highway 78 C&D Landfill	Monroe	GA	LF	*
Oak Grove LF	Winder	GA	LF	*
Pine Ridge Recycling	Griffin	GA	LF	*
Savannah Regional Landfill	Port Wentworth	GA	LF	*
Speedway LF	Winder	GA	LF	*
Swift Creek Environmental	Macon	GA	LF	*
Evans Co. Transfer Station	Claxton	GA	TS	*
Lee Transfer Station	Austell	GA	TS	*
Mauldin Drive Transfer Station	Alpharetta	GA	TS	*
Newnan Transfer Station	Winder	GA	TS	*
BFI Fayette County TS	Fayetteville	GA	TS	December 1999 to Present
Inland Paper & Packaging LF	Rome	GA	LF	October 2001 to Present
NORTH GEORGIA TRANSFER STATION	Rome	GA	TS	December 1999 to Present
SSES Newnan	Newman	GA	TS	December 1999 to Present
Tifton TS	Tifton	GA	TS	December 1999 to Present
BFI East Point TS	E. Point	GA	TS	January 1996 to Present
BFI Marble Mill TS	Marietta	GA	TS	August 1991 to Present
BFI Smyrna TS	Smyrna	GA	TS	January 1991 to Present
BFI Waste Services of Atlanta/Smyrna TS	Smyrna	GA	TS	January 1991 to Present
East DeKalb LF (C&D)	Lithonia	GA	LF	January 1992 to Present
Fayette County LF (C&D)	Fayetteville	GA	CLF	Closed
Gateway LF	Ringgold	GA	CLF	Closed
Golden Waste Disposal/Tifton TS	Tifton	GA	TS	June 1998 to Present
Hickory Ridge LF	Conley	GA	LF	September 1992 to Present
Richland Creek LF	Buford	GA	LF	November 1995 to Present
Roberts Road LF	Fayetteville	GA	CLF	Closed
Southern States TS	Thomaston	GA	TS	July 1996 to Present
Southern States TS	Columbus	GA	TS	December 1993 to Present
Taylor County LF	Mauk	GA	LF	September 1997 to Present
Wallis Road LF	Atlanta	GA	CLF	Closed
Delaware Transfer Station	Manchester	IA	TS	December 1999 to Present
Hawkeye TS	Clinton	IA	TS	December 1999 to Present
Dubuque MRF	Dubuque	IA	MRF	December 1995 to Present
Hawkeye Disposal	Clinton	IA	TS	July 1998 to Present
Hawkeye Disposal	Maquoketa	IA	TS	January 1999 to Present
Boise TS	Boise	ID	TS	December 1999 to Present
C.C. LF	Danville	IL	LF	*
Southern Illinois Regional Landfill	DeSoto	IL	LF	*
Suburban Warehouse	Riverdale	IL	LF	*
AWS - Northlake TS	Northlake	IL	TS	*
Marion TS	Marion	IL	TS	*
Sparta TS	Sparta	IL	TS	*
Alliance Waste Services - Rockford	Belleville	IL	TS	December 1999 to Present
Alliance Waste Services - Rockford MRF	Rockford	IL	MRF	December 1999 to Present
Bloomington TS	Bloomington	IL	TS	December 1999 to Present
Bond County Landfill	Greenville	IL	LF	October 2003 to Present
Dukane TS	W Chicago	IL	TS	December 1999 to Present
Evanston TS	Evanston	IL	TS	December 1999 to Present
Kankakee Quarry	Momence Township	IL	CLF	Closed
LandComp LF	Ottawa	IL	LF	November 2002 to Present
Litchfield-Hillsboro LF	Litchfield	IL	LF	November 1998 to Present

Table 16-2
List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
As of November 2009

Facility Name	Location		Facility Type	Dates of Operation[a]
Loop Recycling #1	Chicago	IL	MRF	December 1999 to Present
Melrose Park Transfer Station	Melrose Park	IL	TS	December 1999 to Present
Palatine MRF	Palatine	IL	MRF	December 1999 to Present
Planet Resources	Chicago	IL	MRF	December 1999 to Present
Robbins Transfer Station	Robbins	IL	TS	December 1999 to Present
Rolling Meadows TS	Rolling Meadows	IL	TS	December 1999 to Present
Southern Illinois TS (Metropolis)	Metropolis	IL	TS	December 1999 to Present
Speelman TS	Chicago	IL	TS	December 1999 to Present
Spoon Ridge LF	Fairview	IL	LF	July 1999 to Present
Tri-State MRF	Northlake	IL	MRF	December 1999 to Present
Urbana TS	Urbana	IL	TS	December 1999 to Present
Zion LF - Site 1A	Zion	IL	LF	December 1999 to Present
Zion LF, Site 1 - Phase B	Zion	IL	CLF	Closed
Zion LF, Site 2 (Old)	Zion	IL	LF	December 1999 to Present
34th Street Sorting Center	Chicago	IL	MRF	February 2003 to Present
Bloomington TS	Bloomington	IL	TS	November 1997 to Present
Apollo TS	Momence	IL	TS	April 1996 to Present
Belleville LF	Belleville	IL	CLF	Closed
BFI Elk Grove Recyclery	Elk Grove Village	IL	MRF	February 1996 to Present
BFI Quad Cities LF - Phase 1/2	Milan	IL	CLF	Closed
BFI Quad Cities LF - Phase 3	Milan	IL	CLF	March 1983 to Present
Brickyard Disposal	Danville	IL	LF	November 1995 to Present
Brickyard Unit #1	Danville	IL	CLF	Closed
Calumet TS	Chicago	IL	TS	May 1997 to Present
Urbana TS	Urbana	IL	TS	February 1998 to Present
Citiwaste TS (C&D Only)	Joliet	IL	TS	March 1996 to Present
City of Paris TS	Paris	IL	TS	December 1998 to Present
Congress Development Company	Hillside	IL	LF	March 1974 to Present
D&L Disposal	Greenville	IL	TS	April 1996 to Present
Davis Junction LF	Davis Junction	IL	CLF	Closed
Dixon/GROP LF No. 2	Dixon	IL	CLF	Closed
Environtech LF	Morris	IL	LF	December 1986 to Present
Envotech LF	Litchfield	IL	LF	April 1996 to Present
ERC / Coles County LF	Charleston	IL	LF	June 2000 to Present
Green TS	Crestwood	IL	TS	June 1981 to Present
Herrin TS	Herrin	IL	TS	May 1994 to Present
Illini Recycling	Champaign	IL	MRF	April 1995 to Present
Illinois LF	Hoopeston	IL	LF	December 1991 to Present
Illinois Valley Recycling	Ottawa	IL	MRF	July 2000 to Present
Illinois Waste System LF	Milford	IL	CLF	Closed
Jersey Sanitation LF	Jerseyville	IL	CLF	Closed
K&H Disposal	Donovan	IL	CLF	Closed
Lee County LF	Dixon	IL	LF	October 1997 to Present
Livingston LF	Pontiac	IL	LF	August 2001 to Present
Loop Recycling (64th Street)	Chicago	IL	MRF	August 1998 to Present
Loop Recycling (Laflin Street)	Chicago	IL	MRF	September 1994 to Present
Loop Transfer (Laflin Street)	Chicago	IL	TS	August 1998 to Present
Loop Transfer (64th Street)	Chicago	IL	TS	August 1998 to Present
Mallard Lake LF	Hanover Park	IL	CLF	Closed
McCook TS	McCook	IL	TS	September 1996 to Present
McLean County LF	Bloomington	IL	LF	November 1997 to Present
Medill Sorting Center	Chicago	IL	MRF	February 2003 to Present
Midtown TS	Chicago	IL	TS	June 1982 to Present
Modern LF (Belleville) (MIG/DEWANE)	Belleville	IL	CLF	Closed
New Age Recycling	Danville	IL	MRF	October 1988 to Present
North Chicago LF	North Chicago	IL	CLF	Closed
Northwest Sorting Center	Chicago	IL	MRF	February 2003 to Present
Okaw Valley Recycling	Sullivan	IL	MRF	April 1999 to Present
Planet Recovery	Chicago	IL	TS	January 1992 to Present
Planet Recovery MRF	Chicago	IL	MRF	January 1992 to Present
RCS LF	Jerseyville	IL	LF	January 1993 to Present
Roxana LF	Edwardsville	IL	LF	October 1985 to Present
Roxana MRF	Edwardsville	IL	MRF	October 1985 to Present
Saline County LF	Harrisburg	IL	LF	May 1999 to Present
Sangamon Valley LF	Springfield	IL	LF	November 1999 to Present
Shred-All Recycling	Chicago	IL	TS	December 1995 to Present
Shred-All Recycling & Transfer	Chicago	IL	TS	September 1997 to Present
Shred-All TS	Chicago	IL	TS	December 1995 to Present
South Barrington LF	South Barrington	IL	CLF	Closed
Streator Area LF	Streator	IL	LF	December 1991 to Present
Upper Rock Island LF	East Moline	IL	LF	October 1994 to Present
Watts-Springfield Unit 1 LF	Springfield	IL	CLF	Closed
Wayne County LF	Fairfield	IL	LF	June 1997 to Present
National Serv-All Landfill	Fort Wayne	IN	LF	*
Sycamore Ridge Landfill	Pimento	IN	LF	*
Wabash Valley Landfill	Wabash	IN	LF	*
Advantage Transfer Station	Huntingburg	IN	TS	*
Circle City Recycling	Indianapolis	IN	TS	*
National Serv-ALL/Scott TS	Shipshewana	IN	TS	*
National Serv-ALL TS	Auburn	IN	TS	*
Vincennes TS	Vincennes	IN	TS	*
C.A.R.E.	Fort Wayne	IN	MRF	*
EAST CHICAGO COMPOST	East Chicago	IN	MRF	*
Republic Services - Langsdale Recycling	Indianapolis	IN	MRF	*
Blackfoot LF	Winslow	IN	LF	December 1999 to Present
Clinton County Landfill	Frankfort	IN	LF	May 2004 to Present
Illiana Transfer Station - Crown Point	Crown Point	IN	TS	December 1999 to Present
Illiana Transfer Station III	Crown Point	IN	TS	December 1999 to Present
Key Waste MRF	Culver	IN	MRF	December 1999 to Present
Koester TS	Evansville	IN	TS	December 1999 to Present
Metropolitan Landfill	Albany	IN	CLF	Closed
County Line LF	Argos	IN	LF	April 1994 to Present
Illiana Waste Transfer Station I	Schererville	IN	TS	January 1994 to Present
Illiana Waste Transfer Station II	East Chicago	IN	TS	February 2002 to Present
Illiana Waste Transfer Station IV	Lake Station	IN	TS	August 1998 to Present
Kosciusko County LF	Claypool	IN	LF	February 1998 to Present
Lake County C&D LF	Lowellville	IN	LF	June 1988 to Present

Table 16-2
List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
As of November 2009

Facility Name	Location		Facility Type	Dates of Operation*
Laubascher Meadow LF	Evansville	IN	LF	October 1982 to Present
Newton County Development LF	Brook	IN	LF	February 1996 to Present
Ooms Brothers TS	DeMotte	IN	TS	December 1994 to Present
Springfield Environmental C&D LF	Mt Vernon	IN	LF	April 2000 to Present
Tri-County TS	Covington	IN	TS	June 1994 to Present
Finney County LF	Garden City	KS	CLF	Closed
American Disposal Services - Galena	Galena	KS	TS	February 1996 to Present
Forest View Landfill	Kansas City	KS	CLF	Closed
Resource Recovery LF	Cherryvale	KS	LF	April 1986 to Present
Wheatland LF	Columbus	KS	LF	March 1997 to Present
Dozit Company	Morganfield	KY	LF	October 1993 to Present
Epperson Waste Disposal	Williamstown	KY	LF	March 1992 to Present
Ohio County Balefill	Beaver Dam	KY	LF	*
Tri-K Landfill	Stanford	KY	LF	April 1992 to Present
Valley View Landfill	Sulpher	KY	LF	August 1999 to Present
Blue Grass Waste Alliance	Lexington	KY	TS	February 2003 to Present
CSI Covington TS	Covington	KY	TS	*
CWI of Kentucky - Paducah TS	Paducah	KY	TS	June 2003 to Present
Daviess County Solid Waste	Owensboro	KY	TS	June 2002 to Present
Dozit Company - Henderson Transfer	Henderson	KY	TS	*
Ohion County Balefill - City of Hopkinsville	Hopkinsville	KY	TS	*
Kennedy Road (merged w/ div 993)	Lexington	KY	TS	December 1999 to Present
Louisville Recyclery	Louisville	KY	MRF	December 1999 to Present
Mother Earth LF	Louisville	KY	LF	December 1999 to Present
Bath County TS	Owingsville	KY	TS	May 2000 to Present
Benson Valley LF	Frankfort	KY	LF	July 2002 to Present
BFI Danville	Danville	KY	TS	May 2000 to Present
BFI Elizabethtown TS	Elizabethtown	KY	TS	September 1990 to Present
Blue Ridge LF	Irvine	KY	LF	May 2000 to Present
Green Valley LF	Ashland	KY	LF	March 2000 to Present
Morehead LF	Morehead	KY	LF	May 2000 to Present
Stevens Dispos-All	Danville	KY	TS	May 2000 to Present
St. John Pickup Station	Laplace	LA	TS	December 1999 to Present
Sugarmill TS	Broussard	LA	TS	December 1999 to Present
Area 90 LF	Avondale	LA	CLF	Closed
Baton Rouge MRF	Baton Rouge	LA	MRF	December 1999 to Present
BFI Shreveport MRF	Shreveport	LA	MRF	February 2000 to Present
Carlyss LF	Carlyss	LA	CLF	Closed
CECOS - Calcasieu	Sulphur	LA	CLF	Closed
Colonial LF	Sorrento	LA	LF	November 1984 to Present
Crescent Acres LF	New Orleans	LA	CLF	Closed
East St. Charles LF	Kenner	LA	CLF	Closed
Geismar LF	Darrow	LA	CLF	Closed
Hackberry LF	Hackberry	LA	CLF	Closed
Jefferson Davis LF	Welsh	LA	LF	July 1989 to Present
New Orleans MRF	Metairie	LA	MRF	May 1974 to Present
North Baton Rouge LF	Zachary	LA	LF	November 1993 to Present
Siegen Lane LF	Baton Rouge	LA	CLF	Closed
Webster Parrish LF	Minden	LA	LF	February 2000 to Present
West Saint Charles LF	Boutte	LA	CLF	Closed
White Oaks LF	Monroe	LA	CLF	Closed
Woodland Hills LF	Sulphur	LA	CLF	Closed
Woolworth Road LF	Keithville	LA	LF	October 1986 to Present
Auburn Transcyclery	Auburn	MA	TS	December 1999 to Present
Cambridge TS	Cambridge	MA	TS	December 1999 to Present
Holliston LF	Holliston	MA	LF	December 1999 to Present
Holliston TS	Holliston	MA	TS	December 1999 to Present
Allied Waste Services of MA, LLC	Peabody	MA	TS	May 1997 to Present
BFI Brockton Recyclery	Brockton	MA	MRF	October 1984 to Present
BFI Howard TS	Roxbury	MA	TS	December 1976 to Present
BFI Waste Services of Tyngsboro	Tyngsboro	MA	TS	February 1993 to Present
Chicopee LF	Chicopee	MA	CLF	Closed
East Bridgewater LF	East Bridgewater	MA	CLF	Closed
Fall River LF	Fall River	MA	LF	March 1983 to Present
Halifax LF	Halifax	MA	CLF	Closed
McNamara Transfer	Springfield	MA	TS	July 1995 to Present
Oak Bluff - Tisbury	Oakbluffs	MA	TS	May 1993 to Present
Oak Bluff - Tisbury	Oakbluffs	MA	MRF	May 1993 to Present
BFI Peabody TS	Peabody	MA	TS	August 1990 to Present
Plainville LF	Plainville	MA	CLF	Closed
Randolph LF	Randolph	MA	CLF	Closed
Honey-Go-Run Reclamation	Perry Hall	MD	LF	*
BFI Elkridge Recyclery	Elkridge	MD	MRF	December 1999 to Present
Millenium	Baltimore	MD	MRF	December 1999 to Present
BFI Baltimore Processing Center	Baltimore	MD	MRF	July 1996 to Present
BFI Waste Services of Baltimore	Baltimore	MD	TS	December 1994 to Present
ERCA - Norris Farms LF	Baltimore	MD	CLF	Closed
BFI Hagerstown Recyclery	Hagerstown	MD	MRF	December 1981 to Present
Montgomery County	Derwood	MD	CLF	Closed
Oaks LF	Laytonsville	MD	CLF	Closed
Quarantine LF	Baltimore	MD	CLF	Closed
Solley Road LF	Glen Burnie	MD	CLF	Closed
Maine Organics - Ops & Trucking	Unity	ME	MRF	December 1999 to Present
New England Organics	Falmouth	ME	MRF	December 1999 to Present
Carleton Farms LF	Carleton	MI	LF	*
Forest Lawn Landfill	Three Oaks	MI	LF	April 1993 to Present
Republic Services of Northern MI - Whitefeather LF	Pinconning	MI	LF	August 2002 to Present
Coldwater TS	Coldwater	MI	TS	*
Reliable Disposal of S. Haven	South Haven	MI	TS	May 2002 to Present
Republic Services - Cork Street TS	Kalamazoo	MI	TS	October 1999 to Present
Arbor Hills LF	Northville	MI	CLF	Closed
Arbor Hills Recyclery	Northville	MI	MRF	December 1999 to Present
B & R TS	Redford	MI	TS	December 1999 to Present
BFI of Western Michigan	Kalamazoo	MI	TS	December 1999 to Present
Detroit TS	Detroit	MI	TS	December 1999 to Present
Ford Assembly Plants TS	Wayne	MI	TS	December 1999 to Present
Kalamazoo Recylery	Kalamazoo	MI	MRF	December 1999 to Present

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List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
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Facility Name	Location		Facility Type	Dates of Operation*
KVG LF	Climax	MI	LF	December 1999 to Present
Schaefer Road TS	Dearborn	MI	TS	December 1999 to Present
SMDA TS	Roseville	MI	TS	December 1999 to Present
Utica Ford TS	Utica	MI	TS	December 1999 to Present
Adrian LF	Adrian	MI	CLF	Closed
Adrian LF	Adrian	MI	LF	January 1997 to Present
Kalamazoo TS	Kalamazoo	MI	TS	December 1999 to Present
C & C LF	Marshall	MI	LF	June 1982 to Present
Central Sanitary LF	Pierson	MI	LF	February 1996 to Present
Citizens Disposal LF	Grand Blanc	MI	LF	October 1988 to Present
Community Recycling Services	Muskegon	MI	MRF	June 2003 to Present
Dinverno MRF	Detroit	MI	MRF	January 1988 to Present
Hillsdale TS	Hillsdale	MI	TS	December 1996 to Present
Lyon Development LF	New Hudson	MI	CLF	Closed
Manistee County LF	Manistee	MI	LF	May 1989 to Present
Oakland Heights Development	Auburn Hills	MI	LF	March 1997 to Present
Ohio Demo LF (C&D Only)	Toledo	MI	LF	August 1972 to Present
Ottawa County Farms LF	Coopersville	MI	LF	September 2000 to Present
Rockwood LF	Newport	MI	LF	August 1997 to Present
Sauk Trail Hills LF	Canton	MI	LF	December 1983 to Present
Southfield Transfer Station	Southfield	MI	TS	December 1997 to Present
Sunset Waste Services - Hamilton	Hamilton	MI	TS	April 1999 to Present
Tri-City TS	Kalamazoo	MI	TS	December 1999 to Present
Vienna Junction LF	Erie	MI	LF	August 1999 to Present
Hennepin Transfer, Inc.	Inver Grove Heights	MN	TS	*
Eden Prairie Recyclery	Eden Praire	MN	MRF	December 1999 to Present
Mall of America	Bloomington	MN	MRF	December 1999 to Present
Minden Transfer Station	St Cloud	MN	TS	December 1999 to Present
Woodlake LF	Medina	MN	CLF	Closed
BFI Brooklyn Park TS	Brooklyn Park	MN	TS	December 1999 to Present
BFI Flying Cloud TS	Eden Praire	MN	TS	March 1972 to Present
BFI Hennepin TS	Burnsville	MN	TS	March 1990 to Present
BFI Waste Services of the Twin Cities	Brooklyn Park	MN	TS	December 1999 to Present
BFI Waste Services of the Twin Cities	Inver Grove Heights	MN	MRF	April 1988 to Present
BFI Waste Services of Twin Cities	Minneapolis	MN	MRF	September 1992 to Present
Blaine TS	Blaine	MN	TS	December 2001 to Present
Flying Cloud LF	Eden Praire	MN	CLF	Closed
Bloomington TS	Bloomington	MN	TS	November 1997 to Present
Bloomington TS	Bloomington	MN	MRF	November 1997 to Present
Pine Bend LF	Inver Grove Heights	MN	LF	April 1991 to Present
Southwest Regional Sanitary LF	Jasper	MO	LF	March 2007 to Present
CWI - Potosi Transfer Station	Cadet	MO	TS	*
CWI of Missouri (Potosi)	Potosi	MO	TS	*
Bridgeton Transfer Station	Bridgeton	MO	TS	December 1999 to Present
Jefferson City TS	Jefferson City	MO	TS	December 1999 to Present
New Madrid	Dexter	MO	TS	December 1999 to Present
Saint Louis Recyclery	St Louis	MO	MRF	December 1999 to Present
Springfield Recyclery	Springfield	MO	MRF	December 1999 to Present
St Louis Waste TS	St Louis	MO	TS	December 1999 to Present
American Disposal Services - Ozarks	Springfield	MO	TS	February 1975 to Present
American Disposal Services - Reeds Spring	Reeds Spring	MO	TS	February 1975 to Present
American Disposal Services - Springfield	Springfield	MO	TS	February 1975 to Present
Backridge LF	LaGrange	MO	LF	December 1990 to Present
Bridgeton LF	Bridgeton	MO	LF	November 1985 to Present
Butler County LF Authority	Poplar Bluff	MO	LF	July 1980 to Present
Cass County TS	Harrisonville	MO	TS	Closed
Courtney Ridge LF	Sugar Creek	MO	LF	August 2000 to Present
Ellis-Scott LF	Clinton	MO	CLF	Closed
Jackson LF	Jackson	MO	CLF	Closed
Jackson TS	Jackson	MO	TS	October 1995 to Present
Jefferson City LF	Jefferson City	MO	LF	January 1998 to Present
Johnson County LF	Warrensburg	MO	CLF	Closed
Lamar LF (CLOSED SITE)	Lamar	MO	CLF	Closed
Lemons East Sanitary LF	Dexter	MO	LF	December 1992 to Present
Lemons LF West	Dexter	MO	CLF	Closed
Jefferson City TS	Jefferson City	MO	TS	January 1983 to Present
Midwest LF	Lonedell	MO	CLF	Closed
Missouri City LF	Liberty	MO	CLF	Closed
Missouri Pass LF	Maryland Heights	MO	CLF	Closed
Mo Pass (Yard Waste Transfer Station)	Maryland Heights	MO	TS	January 1988 to Present
Modern TS	Osage Beach	MO	TS	April 1999 to Present
Platteo LF	Parkville	MO	CLF	Closed
Prairieview Regional Waste Facility	Lamar	MO	LF	May 1997 to Present
Redbird LF	Arnold	MO	CLF	Closed
Show-Me Regional LF	Warrensburg	MO	LF	May 1991 to Present
Southeast LF	Kansas City	MO	CLF	Closed
St Louis TS	St. Louis	MO	TS	May 1986 to Present
St. Louis Jeffco LF	Arnold	MO	CLF	Closed
Wayne County LF	Greenville	MO	CLF	Closed
BFI Biloxi Recyclery	Biloxi	MS	MRF	December 1999 to Present
BFI Biloxi TS	Biloxi	MS	TS	December 1999 to Present
BFI Vicksburg TS	Vicksburg	MS	TS	December 1999 to Present
MAGNOLIA C&D LF	Klin	MS	LF	September 2005 to Present
Pleasant Hills LF	Olive Branch	MS	LF	July 1999 to Present
Three Rivers LF	Pontotoc	MS	LF	December 1999 to Present
BFI Marks TS	Marks	MS	TS	January 1994 to Present
BFI Waste Services of Hattiesburg	Hattiesburg	MS	TS	May 1993 to Present
BFI Waste Services of the Gulf Coast	Vancleave	MS	MRF	December 1999 to Present
BFI Biloxi TS	Biloxi	MS	TS	December 1999 to Present
Big River LF	Leland	MS	LF	October 1987 to Present
Gulf Pines LF	Biloxi	MS	CLF	Closed
Little Dixie LF	Ridgeland	MS	LF	August 1999 to Present
Missoula Recycling	Missoula	MT	MRF	*
BFI Waste Services of Missoula	Missoula	MT	MRF	December 1999 to Present
Bozeman Recycle Now	Bozeman	MT	MRF	December 1999 to Present
Great Falls	Great Falls	MT	MRF	December 1999 to Present
Helena	Helena	MT	MRF	December 1999 to Present

Table 16-2
List of Republic Services, Inc. Solid Waste Sites in States Other Than Texas
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Facility Name	Location		Facility Type	Dates of Operation[2]
Billings Recycling	Billings	MT	MRF	June 2004 to Present
BFI Waste Services of Billings	Billings	MT	MRF	August 1994 to Present
Missoula LF	Missoula	MT	LF	March 1971 to Present
BFI Waste Services of Missoula	Missoula	MT	MRF	December 1999 to Present
East Carolina Environmental	Autander	NC	LF	*
Foothills Environmental	Lenoir	NC	LF	*
Upper Piedmont Environmental	Rougemont	NC	LF	*
Uwharrie Environmental	Mt. Gilead	NC	LF	*
Bishop Road TS	Greensboro	NC	TS	*
GDS - Conover MRF	Conover	NC	TS	*
Moore County TS	Aberdeen	NC	TS	*
Overdale Road TS	Winston-Salem	NC	TS	*
Richmond County	Rockingham	NC	TS	*
BFI Waste Services of Winston-Salem	Winston Salem	NC	MRF	December 1999 to Present
CCC - Charlotte	Charlotte	NC	TS	December 1999 to Present
Fayetteville TS	Fayetteville	NC	TS	December 1999 to Present
Sampson County LF	Roseboro	NC	LF	December 1999 to Present
Anson County LF	Polkton	NC	LF	April 2000 to Present
BFI Raleigh Recyclery	Raleigh	NC	MRF	December 1990 to Present
Cary TS	Cary	NC	TS	July 1994 to Present
Charlotte Motor Speedway LF	Concord	NC	LF	December 1986 to Present
City of Durham TS	Durham	NC	TS	October 1997 to Present
Holly Springs LF	Holly Springs	NC	LF	May 1991 to Present
Holly Springs LF	Holly Springs	NC	CLF	Closed
Lake Norman LF	Stanley	NC	LF	November 1998 to Present
Randolph County TS	Asheboro	NC	TS	January 1998 to Present
Rocky Mount TS	Rocky Mountain	NC	TS	August 1999 to Present
Yadkin County TS	Yadkinville	NC	TS	September 1993 to Present
NENSWC LF	Clarkson	NE	LF	December 1999 to Present
Fremont LF	Fremont	NE	CLF	Closed
Norfolk LF	Norfolk	NE	CLF	Closed
MA/NH/VT Organics Operations	Chichester	NH	MRF	December 1999 to Present
BFI Hooksett Recyclery	Hooksett	NH	MRF	November 1990 to Present
ECDC LF Group - Mid Atlantic	Tinton Falls	NJ	LF	*
A.R.T.S. Recycling	Linden	NJ	MRF	December 1999 to Present
Garofalo Recycling & T/S	Cresskill	NJ	TS	December 1999 to Present
Mount Laurel	Mt Laurel	NJ	TS	December 1999 to Present
A.M.S. Transfer Station	Linden	NJ	TS	January 1999 to Present
Di Rese TS	Tenafly	NJ	TS	January 1984 to Present
Fairview Street TS	Fairview	NJ	TS	February 1995 to Present
Garofalo TS	Garfield	NJ	TS	January 2000 to Present
Giordano Recycling	Port Newark	NJ	MRF	January 1997 to Present
Giordano Recycling	Port Newark	NJ	MRF	January 1997 to Present
Monroe Township LF	Monroe	NJ	CLF	Closed
Pedricktown LF	Pedricktown	NJ	CLF	Closed
Pelham LF	Pelham	NJ	CLF	Closed
Pinelands Park LF	Egg Harbor	NJ	CLF	Closed
South Brunswick	Monmouth	NJ	CLF	Closed
Apex Regional LF	Las Vegas	NV	LF	*
Laughlin LF	Laughlin	NV	LF	*
Cheyenne TS & Environmental Technologies	North Las Vegas	NV	TS	*
R.S. of S Nevada Recycle Center	North Las Vegas	NV	MRF	*
ECDC Logistics Office Northeast	Harrison	NY	LF	*
Staten Island TS	Staten Island	NY	TS	*
Bronx TS	Bronx	NY	TS	December 1999 to Present
Brooklyn TS	Brooklyn	NY	TS	December 1999 to Present
Champion TS	Bayshore	NY	TS	December 1999 to Present
Hempstead TS	Merrick	NY	TS	December 1999 to Present
Menands Transfer Station	Menands	NY	TS	December 1999 to Present
Scott Avenue MRF	Brooklyn	NY	MRF	December 1999 to Present
Scott Avenue TS C&D	Brooklyn	NY	TS	December 1999 to Present
Shepherd Avenue MRF	Brooklyn	NY	MRF	December 1999 to Present
Amsterdam LF	Fort Johnson	NY	CLF	Closed
BFI Schenectady TS	Schenectady	NY	TS	April 1993 to Present
BFI Southside TS	Depew	NY	TS	April 1975 to Present
Buffalo Recyclery	Buffalo	NY	MRF	February 1993 to Present
ERCA - Niagra Falls	Niagara Falls	NY	CLF	Closed
Fox Island TS	Port Chester	NY	TS	Closed
Hicksville MRF	Hicksville	NY	MRF	August 1997 to Present
Land Reclamation LF	Depew	NY	CLF	Closed
Mamaroneck TS	Mamaroneck	NY	TS	January 2000 to Present
Metro Enviro	Croton on the Hudson	NY	TS	March 2000 to Present
Mt. Kisco TS	Mt Kisco	NY	TS	August 1978 to Present
Niagara LF	Tonawanda	NY	CLF	Closed
Pine Avenue LF	Niagara Falls	NY	LF	January 1983 to Present
Recycling Industries Paper Division	Mamaroneck	NY	MRF	January 2000 to Present
Scott Avenue TS MSW	Brooklyn	NY	TS	June 1996 to Present
Setas TS	Holtsville	NY	TS	October 1989 to Present
Stanley Avenue TS	Brooklyn	NY	TS	June 1996 to Present
Thames Street TS	Brooklyn	NY	TS	October 1996 to Present
Watertown LF	Felts Mills	NY	CLF	Closed
Countywide R & D Landfill	East Sparta	OH	LF	*
Pine Grove Landfill	Amanda	OH	LF	*
Vienna Junction LF	Toledo	OH	LF	*
Ohio Demo LF (C&D Only)	Toledo	OH	LF	*
CSI Waste Services - Evansdale	Evansdale	OH	TS	*
National Serv-All Van Wert	Van Werl	OH	TS	*
Shelby County TS	Sidney	OH	TS	*
AWS Akron Recyclery	Akron	OH	MRF	December 1999 to Present
ERCA - Aber Road	Williamsburg	OH	CLF	Closed
Goshen Transfer	New Philadelphia	OH	TS	December 1999 to Present
Sandusky TS	Sandusky	OH	TS	January 1978 to Present
Bigfoot Run LF	Morrow	OH	CLF	Closed
Bobmeyer Road Demolition	Fairfield	OH	CLF	Closed
Bowers Phase II TS	Vickery	OH	TS	December 1990 to Present
Carbon Limestone LF	Lowellville	OH	LF	January 1999 to Present
Carbon Limestone TS	Lowellville	OH	TS	January 1999 to Present

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Facility Name	Location		Facility Type	Dates of Operation[a]
Celina LF	Celina	OH	LF	December 1991 to Present
Cherokee Run LF	Bellefontaine	OH	LF	December 1997 to Present
Citrus LF	Malvern	OH	CLF	Closed
City of Amherst TS	Amherst	OH	TS	October 1998 to Present
CLD LF	Salem	OH	LF	January 1995 to Present
County Environmental Landfill of Wyandot	Carey	OH	LF	September 1996 to Present
Delaware TS	Delaware	OH	TS	February 1998 to Present
Duck Creek LF	Zanesville	OH	CLF	Closed
East Palestine LF	East Palestine	OH	CLF	Closed
Ford Road LF	Elyria	OH	CLF	Closed
Glenwillow LF	Glenwillow	OH	CLF	Closed
Glenwillow TS	Glenwillow	OH	TS	June 1996 to Present
Lorain Cnty Resource Recovery	Oberlin	OH	MRF	March 1992 to Present
Lorain Cnty Resource Recovery	Oberlin	OH	TS	March 1992 to Present
Lorain County II LF	Oberlin	OH	CLF	Closed
Lorain County LF	Oberlin	OH	LF	July 1986 to Present
Mansfield Transcyclery	Mansfield	OH	MRF	January 1999 to Present
Richland County TS	Mansfield	OH	TS	January 1999 to Present
Marion TS	Marion	OH	TS	Closed
Muskingum LF	Zanesville	OH	CLF	Closed
Oakland Marsh LF	Shiloh	OH	CLF	Closed
Ottawa County LF	Port Clinton	OH	LF	February 1974 to Present
Parris LF	Paris Township	OH	CLF	Closed
Robertsville C&D LF	Robertsville	OH	CLF	Closed
Ross Brothers TS	Mt Vernon	OH	TS	September 1996 to Present
Warner Hill LF	Garfield Heights	OH	CLF	Closed
Williams County LF	Bryan	OH	LF	December 1987 to Present
Willowcreek LF	Atwater	OH	CLF	Closed
Moore TS	Moore	OK	TS	December 1999 to Present
Stillwater Recycling	Stillwater	OK	MRF	October 2004 to Present
Stillwater Sanitary Landfill	Stillwater	OK	LF	October 2004 to Present
51 St LF	Broken Arrow	OK	CLF	Closed
Alderson Regional LF	Alderson	OK	LF	September 1991 to Present
Broken Arrow LF	Broken Arrow	OK	LF	Closed
Canadian Valley LF	Shawnee	OK	CLF	May 1984 to Present
Clinton TS	Clinton	OK	TS	November 1993 to Present
BFI Cushing TS	Cushing	OK	TS	June 1986 to Present
Fillsand LF	Oklahoma City	OK	CLF	Closed
Newcastle LF	Newcastle	OK	LF	June 1997 to Present
Oklahoma City MRF	Oklahoma City	OK	MRF	July 1993 to Present
Perkins LF	Perkins	OK	CLF	Closed
Pocasset LF	Pocasset	OK	LF	June 1997 to Present
Porter LF	Porter	OK	LF	September 1998 to Present
Southeast (OKC) LF	Oklahoma City	OK	LF	June 1955 to Present
Talala LF	Talala	OK	CLF	Closed
Weatherford TS	Weatherford	OK	TS	June 1997 to Present
Agri-Tech of Oregon	Albany	OR	LF	*
Albany - Lebanon Sanitation	Albany	OR	LF	*
Peiffer Real Estate	Corvallis	OR	LF	*
Allied Waste Transportation Services	Woodburn	OR	TS	December 1999 to Present
Coffin Butte LF	Corvallis	OR	LF1	January 2000 to Present
Klamath Regional Disposal	Grants Pass	OR	TS	December 1999 to Present
BFI Metro Central TS & MRF	Portland	OR	MRF	June 1990 to Present
BFI Metro Central TS & MRF	Portland	OR	TS	June 1990 to Present
BFI Metro South TS	Oregon City	OR	TS	May 1982 to Present
Bio-Med of Oregon	Corvallis	OR	MRF	December 1999 to Present
Capitol Recycling & Disposal	Salem	OR	TS	June 1997 to Present
Grants Pass TS	Grants Pass	OR	TS	December 1999 to Present
Source Recycling	Albany	OR	MRF	July 1983 to Present
Valley Landfills Process and Recovery Center	Monmoth	OR	MRF	January 1997 to Present
Valley Landfills, Inc.	Monroe	OR	TS	January 1987 to Present
Valley View Landfill, Inc.	Corvallis	OR	LF	December 1991 to Present
Willamette Resources	Wilsonville	OR	MRF	October 1990 to Present
Willamette Resources TS	Wilsonville	OR	TS	October 1990 to Present
Modern Landfill	York	PA	LF	August 1997 to Present
McCusker/Osborne Transfer	Chester	PA	TS	*
Quickway Transfer Station	Philadelphia	PA	TS	*
BFI Philadelphia TS	Philadelphia	PA	TS	December 1999 to Present
Conestoga Landfill	Morgantown	PA	LF	July 1999 to Present
Philadelphia Recyclery	Philadelphia	PA	MRF	December 1999 to Present
BFI River Road TS	Conshohocken	PA	TS	November 1990 to Present
BFI TRC TS	Philadelphia	PA	TS	December 1986 to Present
BFI Waste Services of Bucks - Mont	Fountainville	PA	MRF	December 1998 to Present
BFI Waste Services of Philadelphia	Philadelphia	PA	MRF	April 1993 to Present
BFI Waste Services of Philadelphia	Philadelphia	PA	TS	April 1993 to Present
County Environmental LF	Leaper	PA	CLF	Closed
Forestlawn LF	Clearfield	PA	CLF	Closed
Greenridge Reclamation LF	Scottdale	PA	LF	August 2001 to Present
Imperial LF	Imperial	PA	LF	May 1973 to Present
King of Prussia Recyclery	King of Prussia	PA	MRF	December 1999 to Present
Mon Valley LF	Charleroi	PA	CLF	Closed
BFI North Smithfield TS	N Smithfield	RI	TS	December 1999 to Present
Blackstone Valley Regional T/S	Pawtucket	RI	TS	December 1999 to Present
Standard Waste Services	Block Island	RI	TS	December 1999 to Present
BFI Waste Services of Rhode Island	North Smithfield	RI	TS	April 2001 to Present
Rose Hill Regional TS	South Kingstown	RI	TS	September 1999 to Present
Pepperhill C&D/Industrial Landfill	North Charleston	SC	LF	*
Spring Grove Landfill	North Charleston	SC	LF	*
Union County MSW Landfill	Enoree	SC	LF	*
Greenville TS	Duncan	SC	TS	December 1999 to Present
Anderson Regional LF	Belton	SC	LF	December 1997 to Present
Cherokee TS	Gaffney	SC	TS	August 1998 to Present
Ft. Mill TS	Ft. Mill	SC	TS	August 2001 to Present
Greer TS	Greer	SC	TS	December 2000 to Present
Jedburg LF	Jedburg	SC	CLF	Closed
Laurens County TS	Clinton	SC	TS	April 2000 to Present
Lee County LF	Bishopville	SC	LF	June 1997 to Present

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Facility Name	Location		Facility Type	Dates of Operation*
Newberry County TS	Newberry	SC	TS	December 1993 to Present
Northeast Sanitaryl LF	Eastover	SC	LF	November 1996 to Present
White Street TS	Anderson	SC	TS	June 1993 to Present
Northwest Tenn Disposal	Union City	TN	LF	*
Paris Landfill Station	Paris	TN	LF	*
Covington Waste	Covington	TN	TS	*
McKenzie Transfer Station	McKenzie	TN	TS	*
BFI Knoxville MRF	Knoxville	TN	MRF	December 1999 to Present
Chattanooga Transfer Station	Chattanooga	TN	TS	December 1999 to Present
JACKSON MADISON COUNTY C&D LANDFILL	Jackson	TN	LF	January 2006 to Present
JACKSON MADISON COUNTY LF	Jackson	TN	LF	January 2006 to Present
Memphis Recyclery	Memphis	TN	MRF	December 1999 to Present
Monroe County TS	Vonore	TN	TS	December 1999 to Present
AAA C&D TS	Nashville	TN	TS	August 1994 to Present
AAA M.S.W.	Nashville	TN	TS	August 1994 to Present
Carter Valley LF	Churchill	TN	LF	July 1985 to Present
Estill Springs TS	Estill Springs	TN	TS	January 1995 to Present
Fayetteville TS	Fayetteville	TN	TS	April 1995 to Present
Middle Point LF	Murfreesboro	TN	LF	October 1989 to Present
North Shelby LF	Millington	TN	LF	March 1997 to Present
Pulaski TS	Pulaski	TN	TS	May 1995 to Present
Safety Lights C&D LF	Memphis	TN	CLF	Closed
South Shelby LF	Memphis	TN	LF	May 1995 to Present
Sykes Road LF	Millington	TN	CLF	Closed
Twin Oaks LF	Knoxville	TN	CLF	Closed
Geneva Transfer Station	Salt Lake City	UT	TS	December 1999 to Present
Salt Lake City Transfer Station	Salt Lake City	UT	TS	December 1999 to Present
Utah County Recyclery (CLOSED)	Lindon	UT	MRF	December 1999 to Present
WASATCH REGIONAL LANDFILL	Salt Lake City	UT	LF	August 2005 to Present
BFI Salt Lake Recyclery	Salt Lake City	UT	MRF	March 1985 to Present
ECDC Environmental	East Carbon	UT	LF	December 1997 to Present
Washington County LF	St. George	UT	LF	July 1993 to Present
623 Landfill	Rockville	UT	LF	*
BFI Lorton Recyclery	Lorton	VA	MRF	December 1999 to Present
Norfolk Solid Waste TS	Norfolk	VA	TS	December 1999 to Present
Berryville LF	Berryville	VA	CLF	Closed
BFI Fluvanna Transcyclery	Fluvanna	VA	TS	November 1994 to Present
BFI Culpeper TS	Culpeper	VA	TS	May 1999 to Present
Roanoke TS	Roanoke	VA	TS	March 1994 to Present
BFI Goodwin TS	Yorktown	VA	TS	September 1999 to Present
BFI Westmoreland County TS	Montross	VA	TS	April 1994 to Present
Brunswick Waste Mgmt Facility	Lawrenceville	VA	LF1	November 1996 to Present
Fredricksburg TS	Fredricksburg	VA	TS	May 1994 to Present
King and Queen Sanitary LF	Little Plymouth	VA	LF	April 1993 to Present
Old Dominion LF	Richmond	VA	LF	October 1992 to Present
Richmond LF	Richmond	VA	CLF	Closed
Roanoke Recyclery	Roanoke	VA	MRF	March 1994 to Present
Telegraph Road LF	Lorton	VA	CLF	Closed
Tidewater TS	Chesapeake	VA	TS	February 1985 to Present
Rockingham LF	Rockingham	VT	CLF	Closed
Roosevelt Associates	West Roosevelt	WA	LF	*
Roosevelt Intermodal	Roosevelt	WA	LF	*
B Z Comers Drop Box	Husum	WA	TS	December 1999 to Present
Black River Transfer	Renton	WA	TS	December 1999 to Present
Dallesport Drop Box TS	Dallesport	WA	TS	January 1990 to Present
Ferry County TS	Republic	WA	TS	October 1997 to Present
Goldendale Drop Box TS	Goldendale	WA	TS	December 1999 to Present
Othello TS	Othello	WA	TS	July 1995 to Present
Pend Oreille, Central County TS	Usk	WA	TS	December 1994 to Present
Pend Oreille, South County TS	Newport	WA	TS	December 1994 to Present
Rabanco Intermodal, Ltd.	Husum	WA	TS	August 1993 to Present
Rabanco Recycling Co.	Seattle	WA	MRF	January 1988 to Present
Rabanco Recycling Co.	Seattle	WA	TS	January 1985 to Present
Black River Transfer	Renton	WA	TS	August 1991 to Present
Recomp of Washington / RDC Ferndale	Ferndale	WA	TS	October 1998 to Present
Ritzville TS	Ritzville	WA	TS	May 1995 to Present
Roosevelt Regional Ash Monofill	Roosevelt	WA	LF	June 1990 to Present
Roosevelt Regional MSW LF	Roosevelt	WA	LF	June 1990 to Present
Kestrel Hawk Landfill	Racine	WI	LF	*
Mallard Ridge Landfill	Delavan	WI	LF	*
Allied Waste Services of Hayward	Hayward	WI	TS	December 1999 to Present
BFI Park Falls TS	Park Falls	WI	TS	December 1999 to Present
Germantown	Germantown	WI	TS	December 1999 to Present
Kenosha Recyclery	Kenosha	WI	MRF	December 1999 to Present
Muskego	Muskego	WI	TS	December 1999 to Present
West Allis TS	West Allis	WI	TS	December 1999 to Present
BFI Siren TS	Webster	WI	TS	June 1993 to Present
BFI Waste Services of Northwest Wisconsin	Park Falls	WI	TS	December 1994 to Present
Lake Area (Permit #2054) LF	Sarona	WI	CLF	Closed
Lake Area (Permit #3144) LF	Sarona	WI	CLF	Closed
Lake Area (Permit #3474) LF	Sarona	WI	LF	March 1998 to Present
Troy Area LF	East Troy	WI	CLF	Closed
Fairmont MRF	Fairmont	WV	MRF	December 1999 to Present
Short Creek LF	Short Creek	WV	LF	December 1999 to Present
Sycamore LF	Hurricane	WV	LF	June 2001 to Present
West Bank Sanitation	Jackson	WY	TS	January 2001 to Present
Campo Sur LF	Ponce	PR	LF	*
Ponce LF	Ponce	PR	LF	*
Salinas LF	Salinas	PR	LF	*
BFI Catano TS	Catano	PR	TS	December 1999 to Present
Cidra TS	Cidra	PR	TS	*

LF = Active Landfill; CLF = Closed Landfill; TS = Transfer Station; MRF = Material Recovery Facility

* This list includes the approximate dates of operation of the facility. This includes the previous owners/operators of certain facilities prior to the facility being acquired by Republic Services, Inc., or its subsidiaries.

* Initial date of ongoing operation is not clear from site records.

Table 16-3
Regulatory Agencies for Republic Services, Inc. Solid Waste Sites

Alabama Department of Environmental Management (ADEM)
P. O. Box 301463, Montgomery, AL 36130-1463

Arizona Department of Environmental Quality (ADEQ)
1100 West Washington Street, Phoenix, AZ 85007-2935

Arkansas Department of Environmental Quality (ADEQ)
Solid Waste Management Division
5301 North Shore Drive, North Little Rock, AR 72118-5317

California Integrated Waste Management Board (CIWMB)
Cal-EPA Building
1001 I Street, P.O. Box 4025, Sacramento, CA 95812-4025

Colorado Department of Public Health and Environment (CDPHE)
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South, Denver, CO 80246-1530

Connecticut Department of Environmental Protection (CDEP)
Materials and Waste Management
79 Elm Street, Hartford, CT 06106-5127

District Department of the Environment (DDOE)
51 N Street, NE 6th Floor, Washington, DC 20002

Florida Department of Environmental Protection (FDEP)
3900 Commonwealth Blvd., M.S. 49, Tallahassee, FL 32399

Georgia Department of Natural Resources
Environmental Protection Division (EPD)
2 Martin Luther King, Jr. Drive, Suite 1152 East Tower, Atlanta, GA 30334

Idaho Department of Environmental Quality (IDEQ)
1410 North Hilton, Boise, ID 83706

Illinois Environmental Protection Agency (IEPA)
1021 North Grand Avenue East, P.O. Box 19276, Springfield, IL 62794-9276

Indiana Department of Environmental Management (IDEM)
Indiana Government Center North
100 North Senate Avenue; Indianapolis, IN 46204-2251

Iowa Department of Natural Resources (IDNR)
502 East 9th Street, Des Moines, IA 50319-0034

Kansas Department of Health and Environment (KDHE)
Charles Curtis State Office Building
1000 Southwest Jackson, Topeka, KS 66612

Kentucky Energy and Environment Cabinet
Division of Waste Management, Department for Environmental Protection
200 Fair Oaks Lane, Frankfort KY 40601

Louisiana Department of Environmental Quality (LDEQ)
602 North Fifth Street, Baton Rouge, LA 70802

Maine Department of Environmental Protection (MDEP)
17 State House Station, Augusta, ME 04333-0017

Maryland Department of the Environment (MDE)
1800 Washington Boulevard, Baltimore, MD 21230

Massachusetts Department of Environmental Protection (MDEP)
One Winter Street, 2nd Floor, Boston, MA 02108

Michigan Department of Environmental Quality (MDEQ)
Waste Management Division
Constitution Hall, 525 West Allegan Street, P.O. Box 30473, Lansing, MI 48909-7973

Minnesota Pollution Control Agency (MPCA)
520 Lafayette Road North, St. Paul, MN 55155-4194

Mississippi Department of Environmental Quality (MDEQ)
Solid Waste Policy, Planning, and Grants Branch
515 East Amite Street, Jackson, MS 39201

Missouri Department of Natural Resources (MDNR)
Waste Management Program, Division of Environmental Quality
P.O. Box 176, Jefferson City, MO 65102

Montana Department of Environmental Quality (MDEQ)
1520 East Sixth Avenue, P.O. Box 200901, Helena, MT 59620-0901

Nebraska Department of Environmental Quality (NDEQ)
1200 "N" Street, Suite 400, P.O. Box 98922, Lincoln, NE 68509

Nevada Division of Environmental Protection (NDEP)
901 South Stewart Street, Suite 4001, Carson City, NV 89701-5249

Table 16-3 (Continued)
Regulatory Agencies for Republic Services, Inc. Solid Waste Sites

New Hampshire Department of Environmental Services (NHDES)
Waste Management Division
29 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095

New Jersey Department of Environmental Protection (NJDEP)
401 East State Street, 7th Floor, East Wing, P.O. Box 402, Trenton, NJ 08625-0402

New York State Department of Environmental Conservation (NYSDEC)
Division of Solid and Hazardous Materials
625 Broadway, Albany, NY 12233-1010

North Carolina Department of Environment and Natural Resources (NCDENR)
1601 Mail Service Center, Raleigh, NC 27699-1601

Ohio Environmental Protection Agency (OEPA)
Division of Solid & Infectious Waste Management
50 West Town Street, Suite 700, Columbus, OH 43215

Oklahoma Department of Environmental Quality (ODEQ)
707 North Robinson, Oklahoma City, OK 73102

Oregon Department of Environmental Quality (ODEQ)
Waste Prevention and Management Division
811 Southwest Sixth Ave., Portland, OR 97204-1390

Pennsylvania Department of Environmental Protection (PDEP)
Rachel Carson State Office Building
400 Market Street, Harrisburg, PA 17101

Rhode Island Department of Environmental Management (RIDEM)
235 Promenade St., Providence, RI 02908-5767

South Carolina Department of Health and Environmental Control (SCDHEC)
2600 Bull St., Columbia, SC 29201

Tennessee Department of Environment and Conservation (TDEC)
401 Church St., L&C Tower, Nashville, TN 37243-0435

Utah Department of Environmental Quality (UDEQ)
Division of Solid and Hazardous Waste
288 North 1460 West, 4th Floor, P. O. Box 144880, Salt Lake City, UT 84114-4880

Table 16-3 (Continued)
Regulatory Agencies for Republic Services, Inc. Solid Waste Sites

Vermont Department of Environmental Conservation (DEC)
Waste Management Division
103 South Main Street, West Office Building, Waterbury, VT 05671-0404

Virginia Department of Environmental Quality (VDEQ)
629 East Main Street, P.O. Box 1105, Richmond, VA 23218

Washington State Department of Ecology
P. O. Box 47600, Olympia, WA 98504-7600

West Virginia Department of Environmental Protection (WVDEP)
Division of Water and Waste Management
601 57th Street SE, Charleston, WV 25304

Wisconsin Department of Natural Resources (WDNR)
101 South Webster Street, P.O. Box 7921, Madison, WI 53707-7921

Puerto Rico Department of Natural and Environmental Resources
P.O. Box 366147, San Juan, Puerto Rico 00936

17 REQUEST FOR VOLUNTARY REVOCATION OF TCEQ PERMIT NO. MSW-946

As shown on Figure I/II-3.1, the permit boundary will be expanded to the north by adding 118.5 acres to the existing 350.77-acre permit boundary. The area within the proposed permit boundary expansion includes an inactive municipal solid waste permit area (TCEQ Permit No. MSW-946). The current permittee of TCEQ Permit No. MSW-946 is the City of Farmers Branch. This permit was originally issued by the TCEQ on March 15, 1979 to the Town of Highland Park.

The 102.58-acre property and the permit were transferred to the City of Farmers Branch in 2000. A copy of the permit transfer is included in Appendix I/IIH. The permitted facility has never been developed; however, the record for this permit does indicate some waste filling occurred after the site was acquired by Highland Park in 1967 (refer to Section 3.1 for additional information). As discussed in Section 2.1, the historic waste fill within this tract will be relocated to the 236.8-acre waste disposal area prior to the development of the North Detention Pond.

The City of Farmers Branch requests that Permit No. MSW-946 be revoked upon approval of this permit amendment application, as the majority of the 102.58-acre permit boundary of TCEQ Permit No. MSW-946 will be incorporated into the 469.62 acre permit boundary of TCEQ Permit No. 1312B. A request for voluntary revocation of TCEQ Permit No. MSW-946 is included on page I/II-17-2.

REQUEST FOR VOLUNTARY REVOCATION OF TCEQ PERMIT NO. MSW-946

TO THE EXECUTIVE DIRECTOR OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

I, Gary D. Greer, representing the
(name of permit/registration holder)

City of Farmers Branch, hereby request that Permit No. MSW-946 be
(name and title of permit/registration holder=s representative)

revoked upon approval of the April 2011 application for major amendment to Permit No. MSW-1312A. The permit was transferred by the Texas Commission on Environmental Quality (TCEQ) or its predecessor agency to the City of Farmers Branch on April 4, 2000 for the
(name of permit/registration holder) *(date issued)*

operation of a Type I facility in Denton County. This facility is an inactive facility and
(type of facility)

was never operated under Permit No. MSW-946, and the City of Farmers Branch does not intend to develop the site or begin operations under Permit No. MSW-946.

I understand that by requesting the revocation of Permit No. MSW-946, the

City of Farmers Branch waives all right to notice and a hearing. The Executive
(name of permit/registration holder)

Director of the TCEQ, or his authorized representative, may revoke the permit without a public hearing or any commission action, pursuant to Title 30 Texas Administrative Code, Chapter 305, Section 305.67, and Chapter 330, Sections 330.71(i) and 330.465(b).

Submitted by: Gary D Greer 3/26/12
*(signature of permit/registration holder's representative)** *(date)*

Mailing address: 13000 William Dodson Parkway
Farmers Branch, TX 75234

Telephone no.: 972-247-3131

* Please include verification of signatory's authority to represent the permitholder.

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

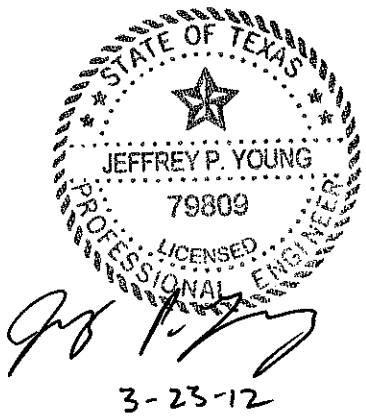
MAJOR PERMIT AMENDMENT APPLICATION

APPENDIX I/IIA
FACILITY LAYOUT MAPS

Prepared for

City of Farmers Branch

March 2012



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

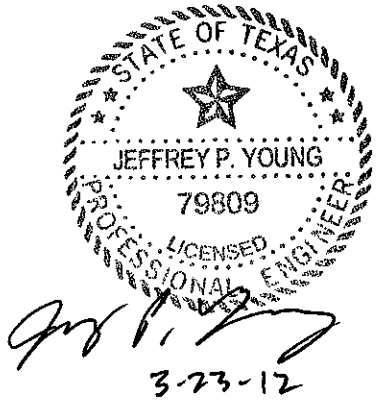
WBC Project No. 1339-351-11-02-6A

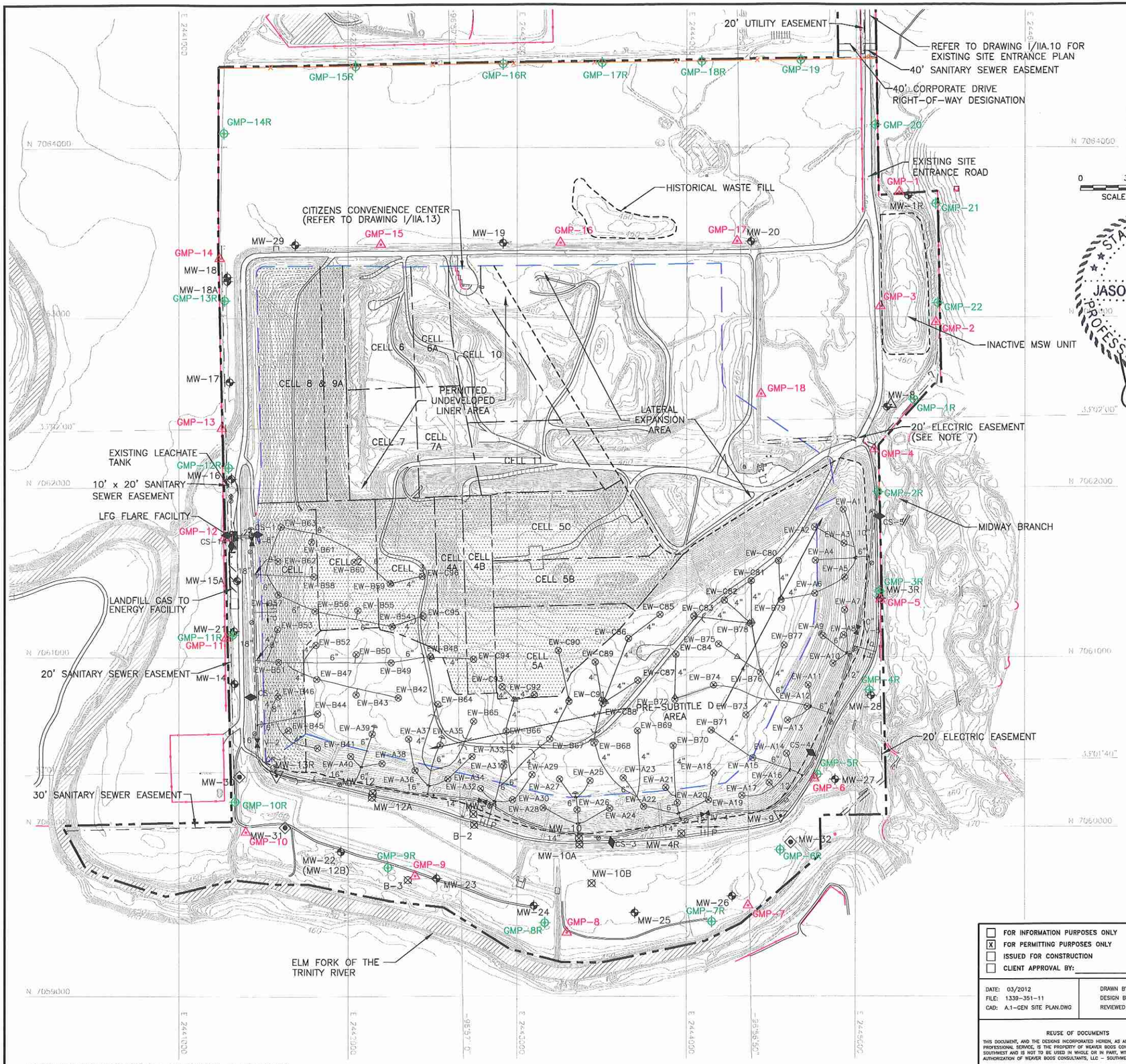
This document is intended for permitting purposes only.

CONTENTS

DRAWING I/IIA.1	General Site Plan
DRAWING I/IIA.2	Sector Development Sequence
DRAWING I/IIA.3	Typical Section A
DRAWING I/IIA.4	Sector Development Plan I
DRAWING I/IIA.5	Sector Development Plan II
DRAWING I/IIA.6	Sector Development Plan III
DRAWING I/IIA.7	Sector Development Plan IV
DRAWING I/IIA.8	Landfill Completion Plan
DRAWING I/IIA.9	Excavation/Overliner Plan
DRAWING I/IIA.10	Existing Site Entrance Plan
DRAWING I/IIA.11	Future Site Entrance Plan
DRAWING I/IIA.12	Access Control Plan
DRAWING I/IIA.13	Citizens Convenience Center Plan
DRAWING I/IIA.14	Citizens Convenience Center Details

This appendix addresses §330.61(d).





STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- EASEMENT
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- MW-13R EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL
- EW-A15 EXISTING LFG EXTRACTION WELL
- EXISTING SUBTITLE D COMPOSITE LINED AREA
- EXISTING FENCE
- PROPOSED FENCE
- SITE BENCHMARK (SEE NOTE 3)

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010. THE PERMIT BOUNDARY FOR TCEQ PERMIT NO. MSW-1312A IS SHOWN ON FIGURE I/II-3.1.
3. SITE BENCHMARK INFORMATION IS LISTED BELOW.

SITE BENCHMARK INFORMATION

MONUMENT	NORTHING	EASTING	ELEVATION (FT-MSL)
1	7062483.83	2445210.12	455.46

BENCHMARK WAS ESTABLISHED ON AUGUST 13, 2004. ELEVATION IS BASED ON NAVD 88.

4. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON DRAWINGS I/IIA.4 THROUGH I/IIA.7.
5. UNAUTHORIZED ACCESS TO THE EXISTING FILL AREA AND ENTRANCE FACILITIES IS CONTROLED WITH PERIMETER FENCING (MINIMUM 4-FOOT HIGH, 3-STRAND BARBED WIRE FENCE), GATED ENTRANCE, AND NATURAL BARRIERS (DENSE FOLIAGE, VEGETATION, AND ELM FORK OF THE TRINITY RIVER). REFER TO DRAWING I/IIA.12 FOR MORE INFORMATION.
6. A VARYING 20-FOOT AND 30-FOOT SANITARY SEWER EASEMENT IS LOCATED ALONG THE WESTERN SIDE OF THE PERMIT BOUNDARY. A 10-FOOT BY 20-FOOT SANITARY SEWER EASEMENT IS LOCATED ON THE WESTERN SIDE OF THE PERMIT BOUNDARY. A 20-FOOT ELECTRICAL EASEMENT IS LOCATED ALONG THE EASTERN SIDE OF THE PERMIT BOUNDARY. A 40-FOOT RIGHT-OF-WAY DEDICATION AND A 40-FOOT SANITARY SEWER EASEMENT CROSS THE NORTHERN PORTION OF THE PERMIT BOUNDARY. A 20-FOOT UTILITY EASEMENT IS LOCATED IN THE NORTHEAST PORTION OF THE SITE NEAR THE EXISTING ENTRANCE FACILITIES. REFER TO PARTS I/II, FIGURE I/II-B.1 FOR THE LOCATION OF THE EXISTING EASEMENT.
7. THIS 20-FOOT ELECTRICAL EASEMENT PROVIDES ELECTRICITY TO THE TEMPORARY MAINTENANCE AREA. THE EASEMENT WILL BE ABANDONED PRIOR TO DEVELOPMENT IN THIS AREA.

- [ ] FOR INFORMATION PURPOSES ONLY
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.1-GEN SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

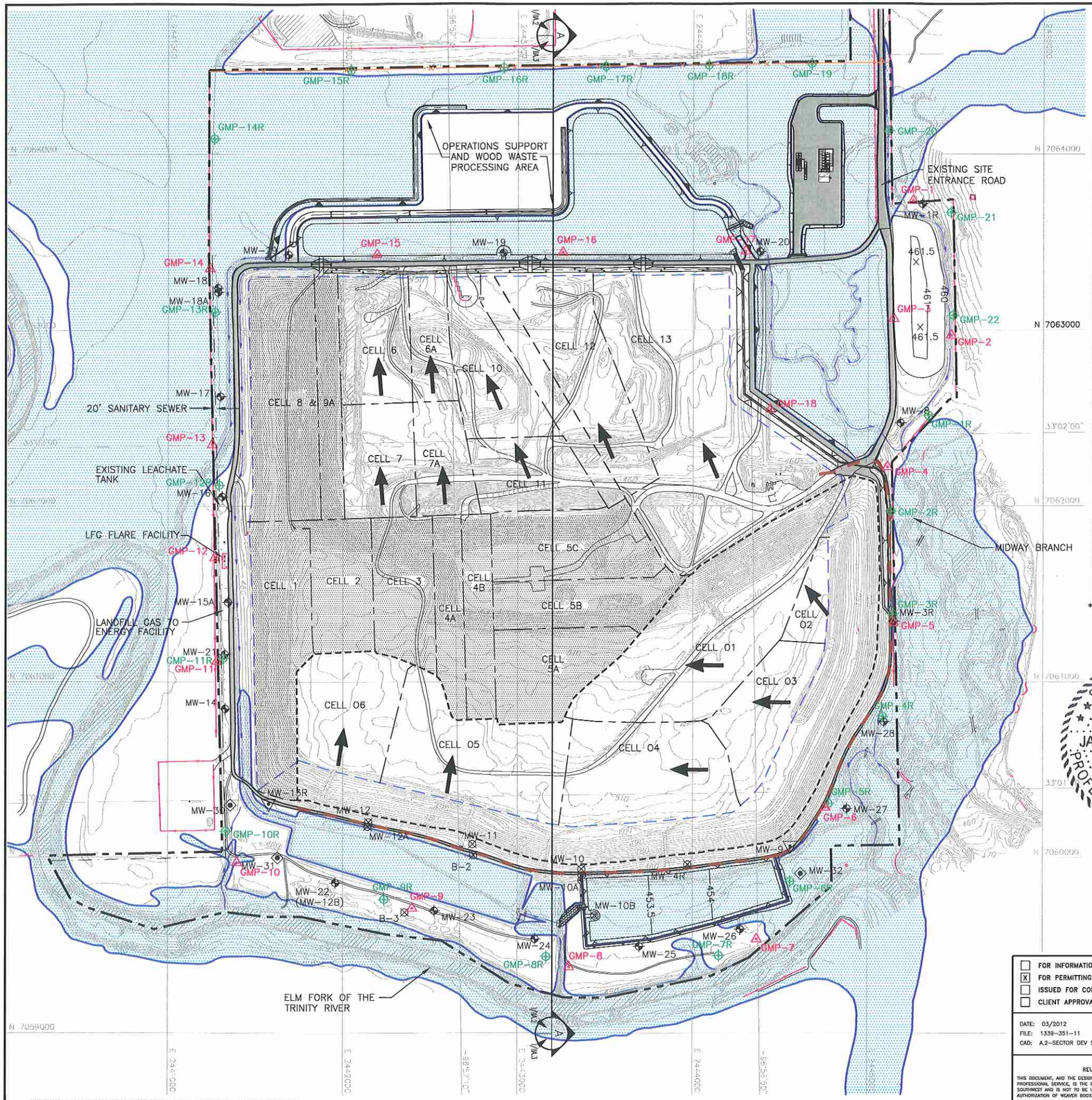
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT GENERAL SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.1



0 300 600
SCALE IN FEET

CELL SUMMARY			
CELL	MAX LENGTH (FT)	MAX WIDTH (FT)	AREA (ACRES)
SUBTITLE D AREA			
1	761	346	10.34
2	759	473	6.25
3	897	351	6.67
4A	1166	164	4.12
4B	1168	170	4.54
5A	539	833	7.41
5B	320	1092	6.55
5C	466	1018	8.56
8	1384	408	12.18
9A	1381	134	4.24
6	730	408	6.69
6A	708	265	3.75
7	649	412	6.11
7A	649	369	4.72
10	922	557	7.45
11	429	730	6.30
12	1188	645	14.80
13	1674	1086	27.69
PRE-SUBTITLE D AREA*			
01	891	571	19.88
02	725	532	2.05
03	858	880	6.55
04	647	995	11.85
05	744	1049	12.78
06	767	641	8.62

*APPROXIMATLEY 26.70 ACRES OF PRE-SUBTITLE D AREA WILL NOT BE LINED WITH OVERLINER.

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- AUTHORIZED PRE-SUBTITLE D LIMIT OF WASTE
- AUTHORIZED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 600 — REGRADED BUFFER ZONE AREA
- CELL BOUNDARY
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- MW-13R — EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 — PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 — EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 — PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 — OBSERVATION WELL
- EXISTING SUBTITLE D COMPOSITE LINED AREA
- EXISTING FENCE
- PROPOSED FENCE
- FILL DIRECTION (SEE NOTE 3)
- 100-YEAR FLOODPLAIN (SEE NOTE 8)
- PERIMETER ACCESS ROAD
- 3H:1V SLOPE (TYPICAL)
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. CELL DESIGNATIONS INDICATE GENERAL PROGRESSION OF LANDFILL OPERATIONS. FILL DIRECTION ARROWS INDICATE GENERAL DIRECTION OF FILL WITHIN A CELL.
4. TYPICAL CROSS SECTION PROVIDED IN DRAWING I/IIA.3. ADDITIONAL SECTION INFORMATION PROVIDED IN APPENDIX IIIA-B - LANDFILL UNIT CROSS SECTIONS.
5. SEE DRAWINGS I/IIA.4 THROUGH I/IIA.7 FOR DETAILED SECTOR DEVELOPMENT PLANS.
6. WIDTH OF THE BUFFER ZONE BETWEEN THE LIMITS OF WASTE AND THE PERMIT BOUNDARY VARIES; HOWEVER, THE BUFFER ZONE IS A MINIMUM OF 50 FEET FOR EXISTING FILL AREAS AND 125 FEET FOR THE NEWLY PERMITTED AIRSPACE. REFER TO APPENDIX I/IIC FOR MORE INFORMATION REGARDING BUFFER ZONES.
7. EACH CELL, INCLUDING THE PRE-SUBTITLE D FILL AREA, WILL ACCEPT MUNICIPAL SOLID WASTE RESULTING FROM, OR INCIDENTAL TO, MUNICIPAL, COMMUNITY, COMMERCIAL, INSTITUTIONAL, RECREATIONAL AND INDUSTRIAL ACTIVITIES, INCLUDING GARBAGE, PUTRESCIBLE WASTES, RUBBISH, ASHES, BRUSH, STREET CLEANINGS, DEAD ANIMALS, ABANDONED AUTOMOBILES, CONSTRUCTION-DEMOLITION WASTE, YARD WASTE, CLASS 2 NON-HAZARDOUS INDUSTRIAL SOLID WASTE, CLASS 3 NON-HAZARDOUS INDUSTRIAL SOLID WASTE, AND CERTAIN SPECIAL WASTES.
8. FLOODPLAIN INFORMATION IS INCLUDED IN APPENDIX IIIO.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.2-SECTOR DEV SEQ.DWG

DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SECTOR DEVELOPMENT SEQUENCE

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

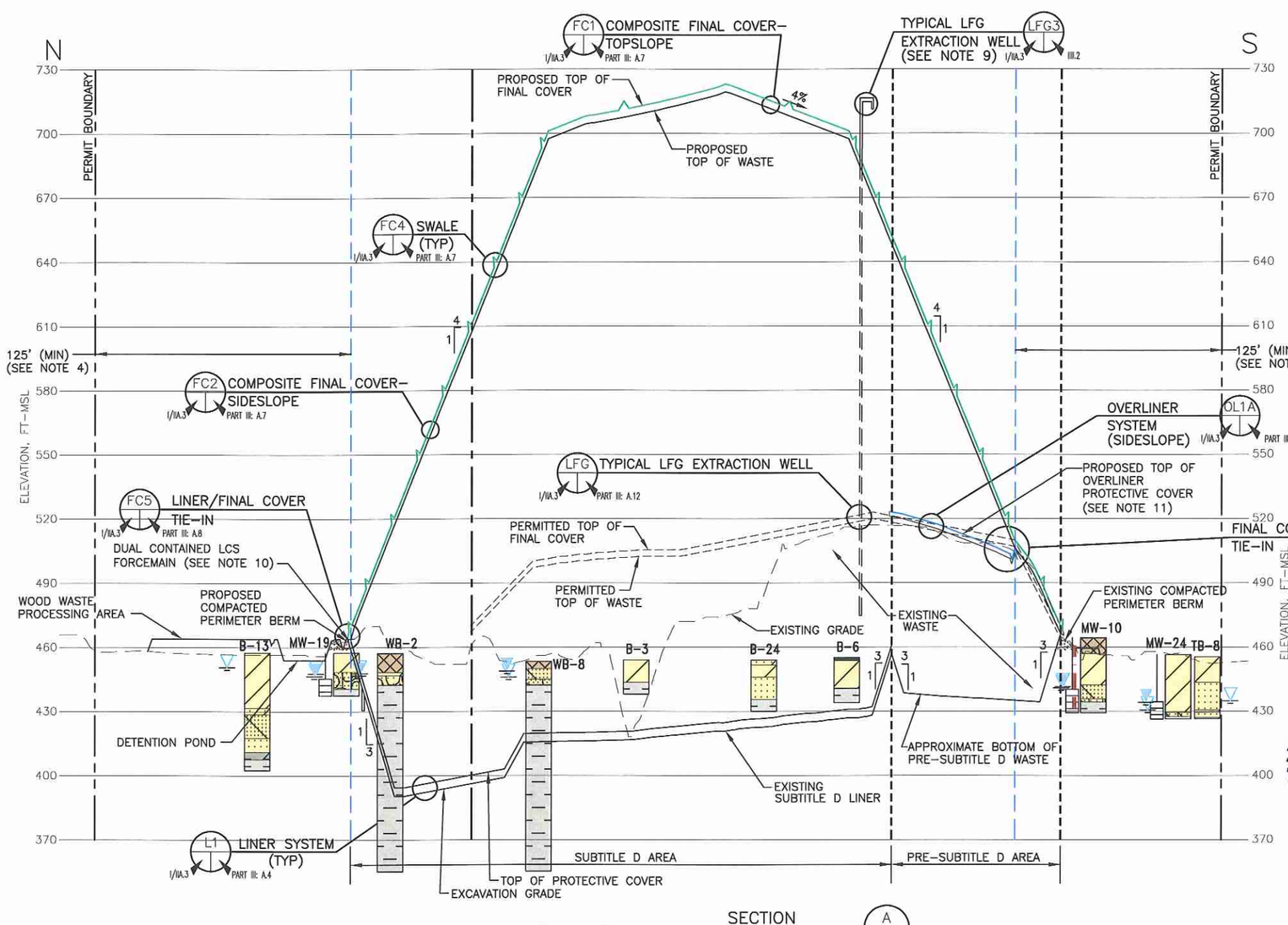
Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

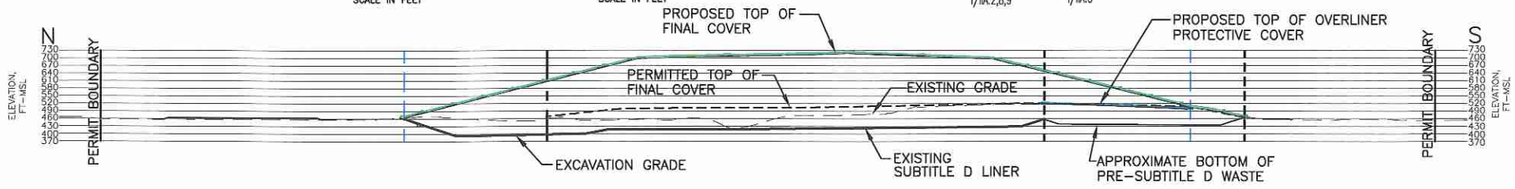
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.2



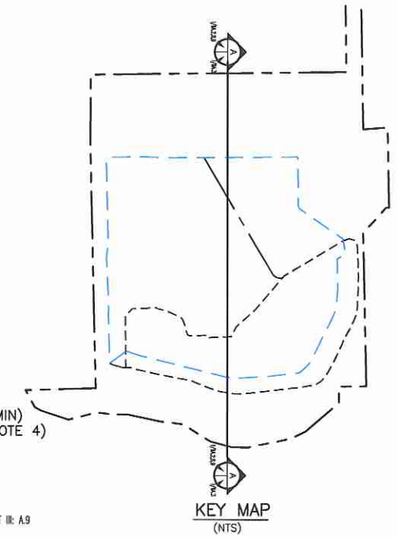
SECTION (EXAGGERATED VERTICAL SCALE) A — I/IIA.2,8,9 / I/IIA.3

0 300 600 SCALE IN FEET HORIZONTAL; 0 30 60 SCALE IN FEET VERTICAL



SECTION (1H:1V) A — I/IIA.2,8,9 / I/IIA.3

0 300 600 SCALE IN FEET



LEGEND

- PERMIT BOUNDARY
- AUTHORIZED PRE–SUBTITLE D LIMIT OF WASTE
- AUTHORIZED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- EXISTING GRADE
- TOP OF WASTE
- TOP OF FINAL COVER
- EXISTING PERMITTED FINAL COVER
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- CLAY AND SILTY CLAY
- EARTHEN FILL
- SAND
- SANDY CLAY
- CLAYEY GRAVEL
- GRAVEL
- GRAVELLY SAND
- UNWEATHERED SHALE
- SANDY GRAVEL
- WEATHERED SHALE
- SILTY SAND
- STATIC GROUNDWATER LEVEL AS DESCRIBED ON BORING LOG
- GROUNDWATER AT THE TIME OF DRILLING (ATD)

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PREPARED BY METROPOLITAN AERIAL SURVEYS FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010.
2. REFER TO APPENDIX IIIA–A FOR LINER, OVERLINER, LEACHATE COLLECTION, AND FINAL COVER SYSTEM DETAILS.
3. SEE APPENDIX IIIG FOR BORING DATA. BORINGS PROJECTED INTO THE LINE OF SECTION. SEE DRAWING B.1 FOR LOCATION.
4. AS SHOWN IN APPENDIX I/IIC, THE BUFFER ZONES VARY AROUND THE PERIMETER OF THE SITE, BUT IN NO CASE ARE THEY LESS THAN 50–FEET FOR EXISTING WASTE. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND THE LATERAL EXPANSION IS AT LEAST 125–FEET. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND NEWLY PERMITTED (PERMIT NO. 1312B) WASTE DISPOSAL AIRSPACE IS AT LEAST 125–FEET.
5. REFER TO APPENDIX IIII, FOR DETAILS OF THE LANDFILL GAS MANAGEMENT PLAN.
6. DRAINAGE DESIGN INFORMATION IS PROVIDED IN APPENDIX IIIF–SURFACE WATER DRAINAGE PLAN.
7. MINIMUM EXCAVATION ELEVATION AT LCS SUMPS IS 387 FT–MSL. MAXIMUM TOP OF FINAL COVER ELEVATION IS 725 FT–MSL.
8. STATIC GROUNDWATER ELEVATIONS AND GROUNDWATER AT TIME OF DRILLING NOT REPORTED IN ALL BOREHOLES.
9. LOCATIONS OF TYPICAL LFG EXTRACTION WELLS CAN BE FOUND IN APPENDIX IIII.
10. REFER TO APPENDIX IIIC FOR LEACHATE COLLECTION SYSTEM (LCS) FORCEMAIN INFORMATION.
11. REFER TO APPENDIX IIIA–A FOR THE OVERLINER DESIGN THAT WILL BE INSTALLED OVER THE PRE–SUBTITLE D AREA.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339–351–11
CAD: A.3–SECTION A.DWG
DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

REUSE OF DOCUMENTS

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

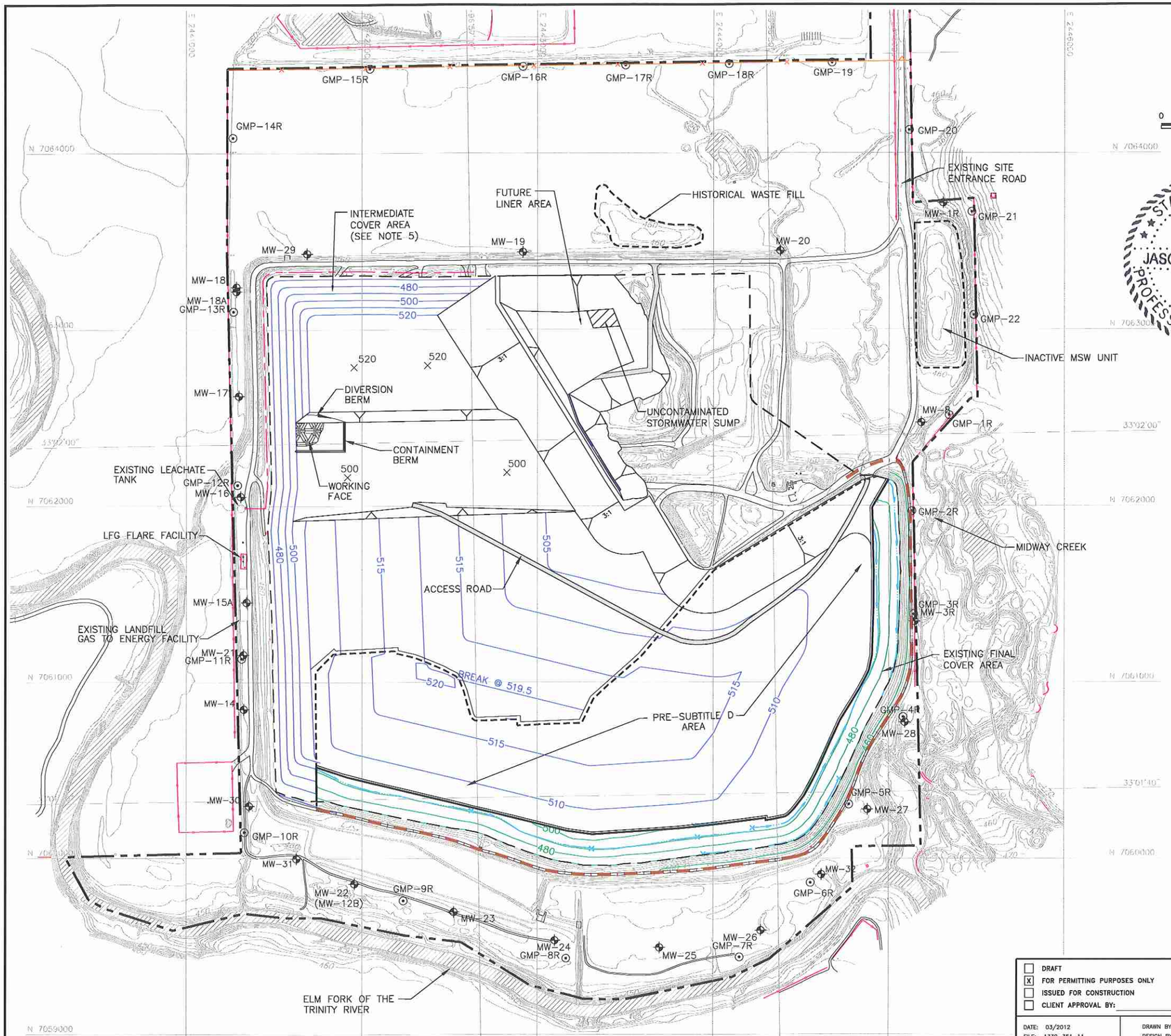
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TYPICAL SECTION A

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIA.3



0 300 600
SCALE IN FEET

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- AUTHORIZED LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 400 — PROPOSED FINAL COVER CONTOUR
- DRAINAGE SWALE
- 560 — PROPOSED INTERMEDIATE COVER CONTOUR (SEE NOTE 5)
- LEACHATE FORCEMAIN
- EXISTING FENCE
- PROPOSED FENCE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- GMP-13 — EXISTING LANDFILL GAS MONITORING PROBE

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIC–LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN FOR CONTAMINATED WATER RUN-ON/RUN-OFF BERM DESIGN INFORMATION.
4. THE SECTOR DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS. THE LOCATION OF THE ALL-WEATHER ACCESS ROAD FROM THE LANDFILL HAUL ROAD TO THE ACTIVE AREA WILL BE DETERMINED DURING SITE OPERATIONS.
5. INTERMEDIATE COVER CONSISTS OF A 12-INCH THICK SOIL LAYER. REFER TO PART IV – SITE OPERATING PLAN FOR ADDITIONAL SOIL COVER REQUIREMENTS.
6. LANDFILL HAUL ROAD WILL BE SURFACED WITH CRUSHED STONE TO PROVIDE ALL-WEATHER ACCESS.
7. REFER TO APPENDIX IIIF–SURFACE WATER DRAINAGE PLAN FOR THE EROSION AND SEDIMENTATION CONTROL PLAN. DRAINAGE STRUCTURES ARE SHOWN AS THE SITE DEVELOPS. ADDITIONALLY BMPs WILL BE USED TO CONTROL EROSION AS NEEDED.
8. MAXIMUM SLOPE ON THE TEMPORARY ACCESS ROAD IS 10%.
9. REFER TO APPENDIX IIII FOR LANDFILL GAS MANAGEMENT PLAN.
10. UNCONTAMINATED STORMWATER THAT HAS NOT COME INTO CONTACT WITH WASTE WILL BE COLLECTED IN SUMPS AND PERIODICALLY REMOVED FROM EXCAVATED AREAS BY PUMPING TO PERIMETER DRAINAGE CHANNELS OR USED IN SITE OPERATIONS (E.G., DUST CONTROL, COMPACTING, ETC.).
11. TEMPORARY CHUTES AND SWALES WILL BE PLACED OVER THE INTERMEDIATE COVER AREA TO MINIMIZE EROSION AND HELP ESTABLISH VEGETATION FOR INTERMEDIATE COVER AREAS THAT WILL NOT RECEIVE WASTE OR FINAL COVER WITHIN 180 DAYS AFTER PLACEMENT (REFER TO APPENDIX IIIF-G FOR MORE INFORMATION). MULCH, HYDROSEEDING OR SIMILAR METHODS WILL BE USED TO ESTABLISH VEGETATION OVER THE INTERMEDIATE COVER AREAS. SWALE AND LETDOWN SPACING WILL MEET THE REQUIREMENTS OF THE EROSION CONTROL PLAN INCLUDED IN APPENDIX IIIF-G.
12. REFER TO APPENDIX IIIC–LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN APPENDIX IIIC-D FOR LEACHATE STORAGE TANK DETAILS.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

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FILE: 1339-351-11
CAD: A.4-SEQUENCE.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JAE

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

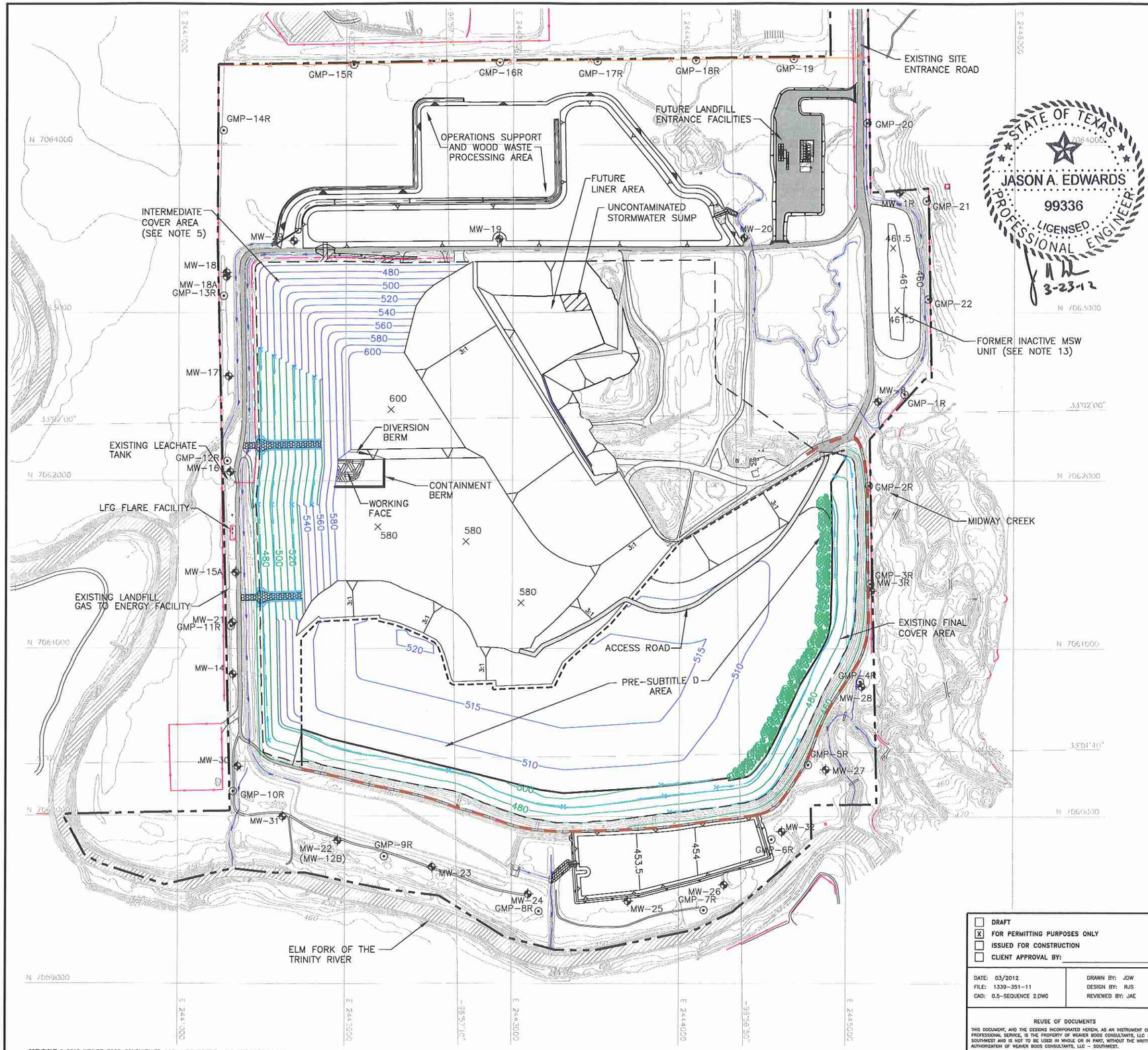
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SECTOR DEVELOPMENT PLAN I

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIA.4



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- PROPOSED FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- PROPOSED INTERMEDIATE COVER CONTOUR (SEE NOTE 5)
- REGRADED BUFFER ZONE AREA
- LEACHATE FORCEMAIN
- EXISTING FENCE
- PROPOSED FENCE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- GMP-13 EXISTING LANDFILL GAS MONITORING PROBE

N

0 300 600
SCALE IN FEET

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN FOR CONTAMINATED WATER RUN-ON/RUN-OFF BERM DESIGN INFORMATION.
4. THE SECTOR DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS. THE LOCATION OF THE ALL-WEATHER ACCESS ROAD FROM THE LANDFILL HAUL ROAD TO THE ACTIVE AREA WILL BE DETERMINED DURING SITE OPERATIONS.
5. INTERMEDIATE COVER CONSISTS OF A 12-INCH THICK SOIL LAYER. REFER TO PART IV - SITE OPERATING PLAN FOR ADDITIONAL SOIL COVER REQUIREMENTS.
6. LANDFILL HAUL ROAD WILL BE SURFACED WITH CRUSHED STONE TO PROVIDE ALL-WEATHER ACCESS.
7. REFER TO APPENDIX IIIF-SURFACE WATER DRAINAGE PLAN FOR THE EROSION AND SEDIMENTATION CONTROL PLAN. DRAINAGE STRUCTURES ARE SHOWN AS THE SITE DEVELOPS. ADDITIONALLY BMPs WILL BE USED TO CONTROL EROSION AS NEEDED.
8. MAXIMUM SLOPE ON THE TEMPORARY ACCESS ROAD IS 10%.
9. REFER TO APPENDIX IIII FOR LANDFILL GAS MANAGEMENT PLAN.
10. UNCONTAMINATED STORMWATER THAT HAS NOT COME INTO CONTACT WITH WASTE WILL BE COLLECTED IN SUMPS AND PERIODICALLY REMOVED FROM EXCAVATED AREAS BY PUMPING TO PERIMETER DRAINAGE CHANNELS OR USED IN SITE OPERATIONS (E.G., DUST CONTROL, COMPACTING, ETC.).
11. TEMPORARY CHUTES AND SWALES WILL BE PLACED OVER THE INTERMEDIATE COVER AREA TO MINIMIZE EROSION AND HELP ESTABLISH VEGETATION FOR INTERMEDIATE COVER AREAS THAT WILL NOT RECEIVE WASTE OR FINAL COVER WITHIN 180 DAYS AFTER PLACEMENT (REFER TO APPENDIX IIIF-G FOR MORE INFORMATION). MULCH, HYDROSEEDING OR SIMILAR METHODS WILL BE USED TO ESTABLISH VEGETATION OVER THE INTERMEDIATE COVER AREAS. SWALE AND LETDOWN SPACING WILL MEET THE REQUIREMENTS OF THE EROSION CONTROL PLAN INCLUDED IN APPENDIX IIIF-G.
12. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN APPENDIX IIIC-D FOR LEACHATE STORAGE TANK DETAILS.
13. THE WASTE FROM THE INACTIVE MSW UNIT AND THE HISTORICAL WASTE FILL AREA WILL BE RELOCATED PRIOR TO CONSTRUCTION OF THE NORTH POND. REFER TO PART IV-SITE OPERATING PLAN, SECTION 4.25 FOR THE WASTE RELOCATION PLAN.
14. THE FUTURE LANDFILL ENTRANCE FACILITIES MAY BE CONSTRUCTED ANY TIME PRIOR TO THE CONSTRUCTION OF COORPRATE DRIVE ALONG NORTHERN PORTION OF THE PROPERTY.

- [ ] DRAFT
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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: 0.5-SEQUENCE 2.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JAE

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

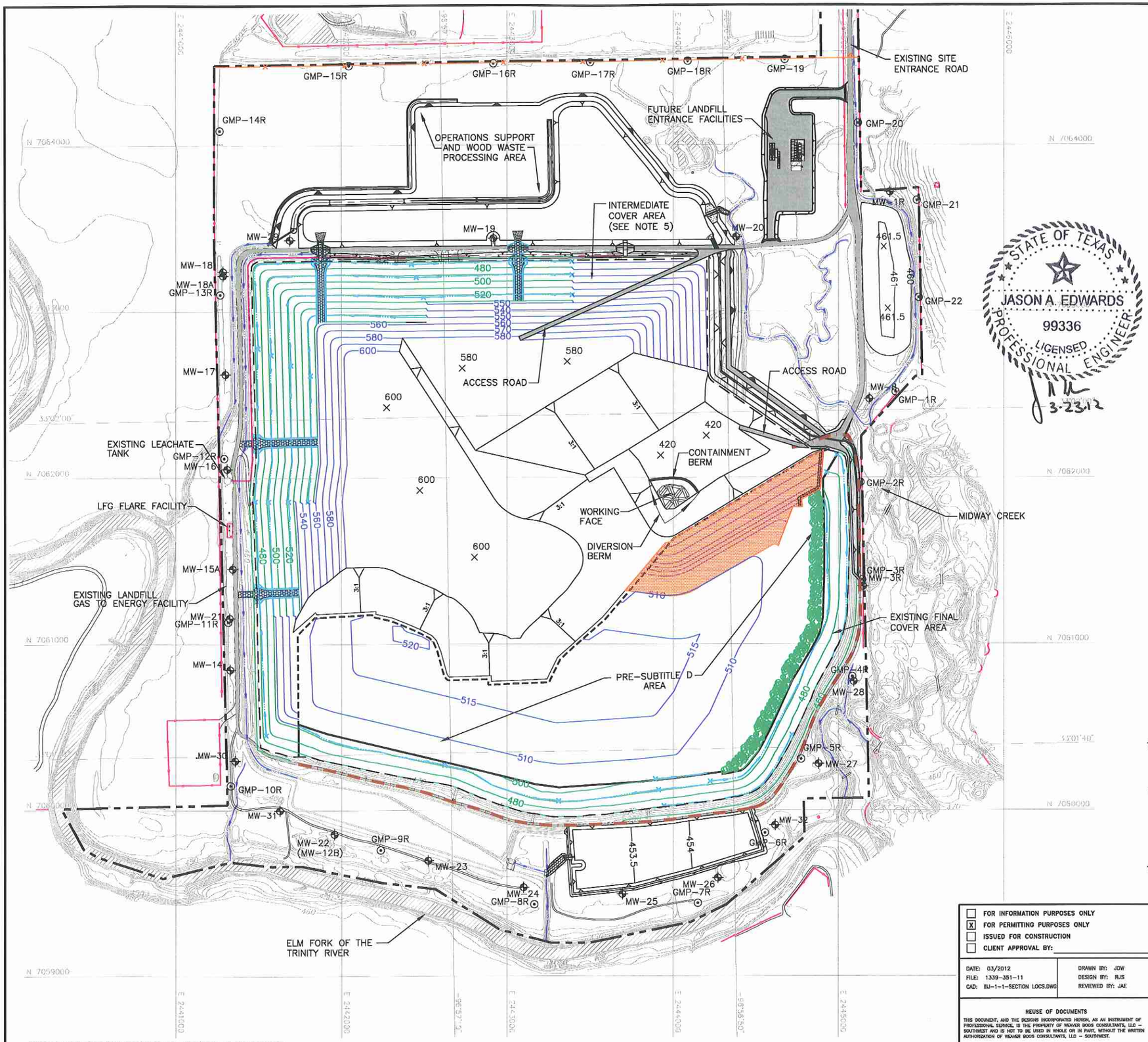
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SECTOR DEVELOPMENT PLAN II

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIA.5



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°03'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 400 — PROPOSED FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- 560 — PROPOSED INTERMEDIATE COVER CONTOUR (SEE NOTE 5)
- 600 — REGRADED BUFFER ZONE AREA
- LEACHATE FORCEMAIN
- EXISTING FENCE
- PROPOSED FENCE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- GMP-13 — EXISTING LANDFILL GAS MONITORING PROBE
- OVERLINER AREA

N

0 300 600
SCALE IN FEET

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN FOR CONTAMINATED WATER RUN-ON/RUN-OFF BERM DESIGN INFORMATION.
4. THE SECTOR DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS. THE LOCATION OF THE ALL-WEATHER ACCESS ROAD FROM THE LANDFILL HAUL ROAD TO THE ACTIVE AREA WILL BE DETERMINED DURING SITE OPERATIONS.
5. INTERMEDIATE COVER CONSISTS OF A 12-INCH THICK SOIL LAYER. REFER TO PART IV - SITE OPERATING PLAN FOR ADDITIONAL SOIL COVER REQUIREMENTS.
6. LANDFILL HAUL ROAD WILL BE SURFACED WITH CRUSHED STONE TO PROVIDE ALL-WEATHER ACCESS.
7. REFER TO APPENDIX IIIF-SURFACE WATER DRAINAGE PLAN FOR THE EROSION AND SEDIMENTATION CONTROL PLAN. DRAINAGE STRUCTURES ARE SHOWN AS THE SITE DEVELOPS. ADDITIONALLY BMPs WILL BE USED TO CONTROL EROSION AS NEEDED.
8. MAXIMUM SLOPE ON THE TEMPORARY ACCESS ROAD IS 10%.
9. REFER TO APPENDIX IIII FOR LANDFILL GAS MANAGEMENT PLAN.
10. UNCONTAMINATED STORMWATER THAT HAS NOT COME INTO CONTACT WITH WASTE WILL BE COLLECTED IN SUMPS AND PERIODICALLY REMOVED FROM EXCAVATED AREAS BY PUMPING TO PERIMETER DRAINAGE CHANNELS OR USED IN SITE OPERATIONS (E.G., DUST CONTROL, COMPACTING, ETC.).
11. TEMPORARY CHUTES AND SWALES WILL BE PLACED OVER THE INTERMEDIATE COVER AREA TO MINIMIZE EROSION AND HELP ESTABLISH VEGETATION FOR INTERMEDIATE COVER AREAS THAT WILL NOT RECEIVE WASTE OR FINAL COVER WITHIN 180 DAYS AFTER PLACEMENT (REFER TO APPENDIX IIIF-G FOR MORE INFORMATION). MULCH, HYDROSEEDING OR SIMILAR METHODS WILL BE USED TO ESTABLISH VEGETATION OVER THE INTERMEDIATE COVER AREAS. SWALE AND LETDOWN SPACING WILL MEET THE REQUIREMENTS OF THE EROSION CONTROL PLAN INCLUDED IN APPENDIX IIIF-G.
12. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN APPENDIX IIIC-D FOR LEACHATE STORAGE TANK DETAILS.

- [ ] FOR INFORMATION PURPOSES ONLY
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: III-1-1-SECTION LOCS.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JAE

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SECTOR DEVELOPMENT PLAN III

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.6

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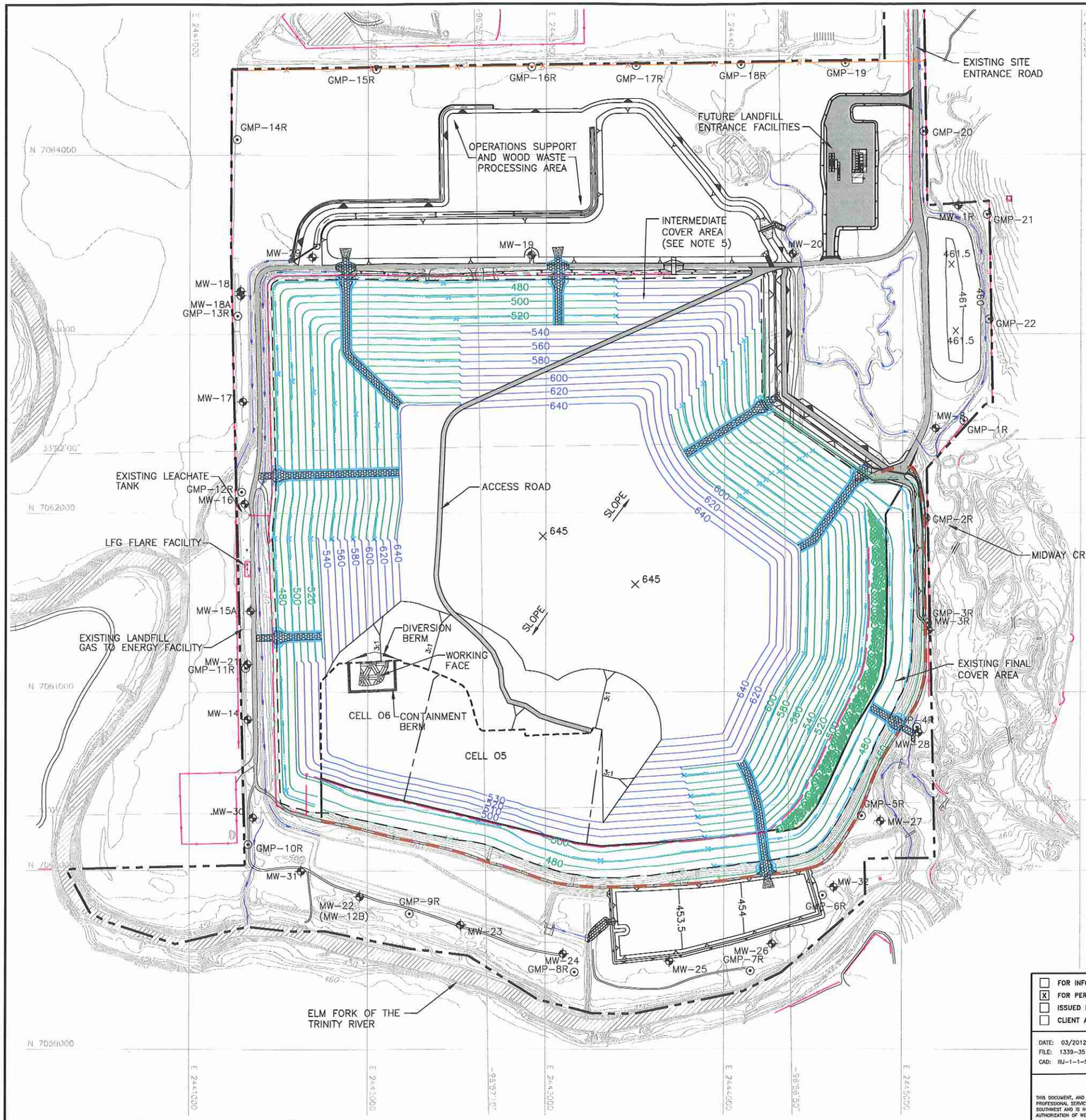

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 600 — REGRADED BUFFER ZONE AREA
- 400 — PROPOSED FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- 560 — PROPOSED INTERMEDIATE COVER CONTOUR (SEE NOTE 5)
- LEACHATE FORCEMAIN
- EXISTING FENCE
- PROPOSED FENCE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- GMP-13 — EXISTING LANDFILL GAS MONITORING PROBE

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN FOR CONTAMINATED WATER RUN-ON/RUN-OFF BERM DESIGN INFORMATION.
4. THE SECTOR DEVELOPMENT SHOWN ON THIS DRAWING SHOWS THE GENERAL SEQUENCE OF FILLING OPERATIONS. THE LOCATION OF THE ALL-WEATHER ACCESS ROAD FROM THE LANDFILL HAUL ROAD TO THE ACTIVE AREA WILL BE DETERMINED DURING SITE OPERATIONS.
5. INTERMEDIATE COVER CONSISTS OF A 12-INCH THICK SOIL LAYER. REFER TO PART IV - SITE OPERATING PLAN FOR ADDITIONAL SOIL COVER REQUIREMENTS.
6. LANDFILL HAUL ROAD WILL BE SURFACED WITH CRUSHED STONE TO PROVIDE ALL-WEATHER ACCESS.
7. REFER TO APPENDIX IIIF-SURFACE WATER DRAINAGE PLAN FOR THE EROSION AND SEDIMENTATION CONTROL PLAN. DRAINAGE STRUCTURES ARE SHOWN AS THE SITE DEVELOPS. ADDITIONALLY BMPs WILL BE USED TO CONTROL EROSION AS NEEDED.
8. MAXIMUM SLOPE ON THE TEMPORARY ACCESS ROAD IS 10%.
9. REFER TO APPENDIX IIII FOR LANDFILL GAS MANAGEMENT PLAN.
10. UNCONTAMINATED STORMWATER THAT HAS NOT COME INTO CONTACT WITH WASTE WILL BE COLLECTED IN SUMPS AND PERIODICALLY REMOVED FROM EXCAVATED AREAS BY PUMPING TO PERIMETER DRAINAGE CHANNELS OR USED IN SITE OPERATIONS (E.G., DUST CONTROL, COMPACTING, ETC.).
11. TEMPORARY CHUTES AND SWALES WILL BE PLACED OVER THE INTERMEDIATE COVER AREA TO MINIMIZE EROSION AND HELP ESTABLISH VEGETATION FOR INTERMEDIATE COVER AREAS THAT WILL NOT RECEIVE WASTE OR FINAL COVER WITHIN 180 DAYS AFTER PLACEMENT (REFER TO APPENDIX IIIF-G FOR MORE INFORMATION). MULCH, HYDROSEEDING OR SIMILAR METHODS WILL BE USED TO ESTABLISH VEGETATION OVER THE INTERMEDIATE COVER AREAS. SWALE AND LETDOWN SPACING WILL MEET THE REQUIREMENTS OF THE EROSION CONTROL PLAN INCLUDED IN APPENDIX IIIF-G.
12. REFER TO APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN, APPENDIX IIIC-D FOR LEACHATE STORAGE TANK DETAILS.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

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FILE: 1339-351-11
CAD: IIIJ-1-1-SECTION LOCS.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JAE

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SECTOR DEVELOPMENT PLAN IV

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.7

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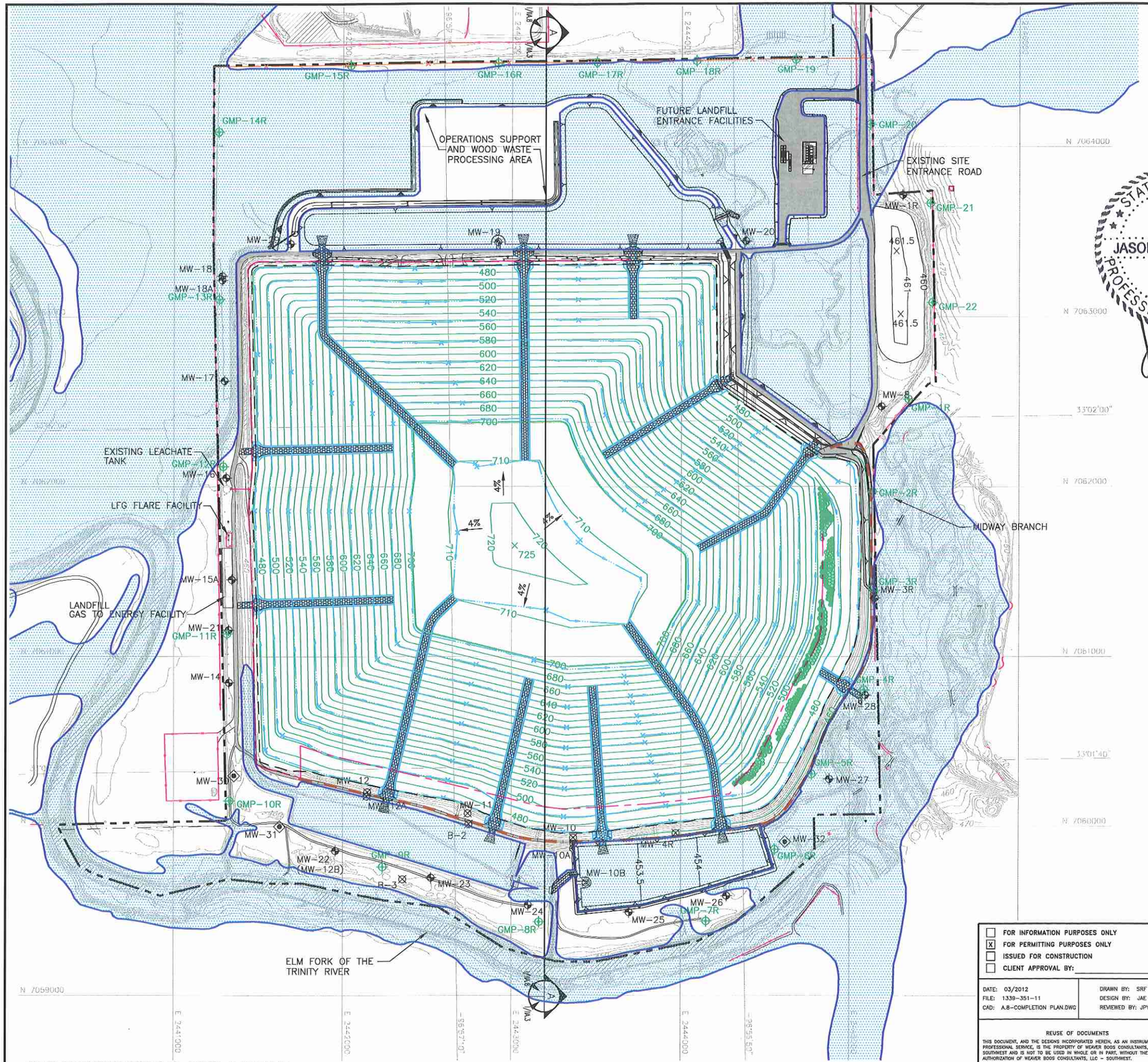

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- FINAL COVER CONTOUR
- REGRADED BUFFER ZONE AREA
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL
- PROPOSED LEACHATE FORCEMAIN
- PROPOSED FENCE
- EXISTING FENCE
- LANDSCAPE BENCH
- 100-YEAR FLOODPLAIN (SEE NOTE 5)
- PERIMETER ACCESS ROAD
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIF-SURFACE WATER DRAINAGE PLAN FOR DRAINAGE DESIGN INFORMATION.
4. MAXIMUM FINAL COVER ELEVATION IS 725 FT-MSL. MAXIMUM TOP OF WASTE ELEVATION IS 721.5 FT-MSL.
5. FLOODPLAIN INFORMATION IS INCLUDED IN APPENDIX IIIO.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

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CAD: A.8-COMPLETION PLAN.DWG

DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

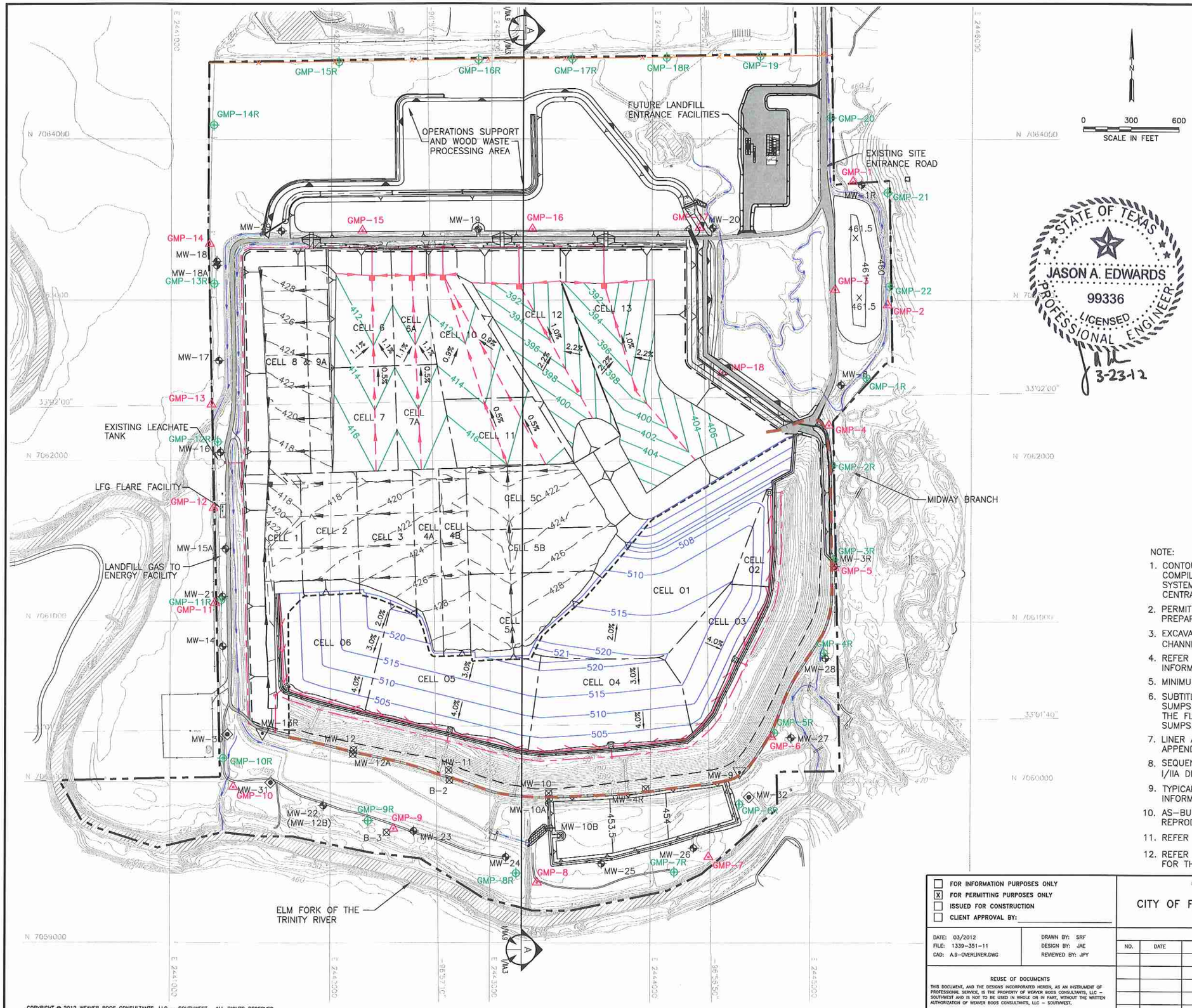
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING 1/IIA.8



STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE (SEE NOTE 2)
- LIMIT OF PRE-SUBTITLE D WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- CELL BOUNDARY
- 398 — EXCAVATION CONTOUR
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- 422 — AS-BUILT TOP OF SUBTITLE D CLAY LINER (SEE NOTE 10)
- 515 — TOP OF OVERLINER CONTOUR
- 600 — REGRADED BUFFER ZONE AREA
- OVERLINER LEACHATE LINE
- LEACHATE LINE
- LEACHATE COLLECTION SUMP
- LEACHATE RISER
- PROPOSED LEACHATE FORCEMAIN
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- MW-13R — EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 — PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 — EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 — PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 — OBSERVATION WELL
- PERIMETER ACCESS ROAD
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. EXCAVATION SLOPES AND SLOPES OUTSIDE THE LIMIT OF WASTE (e.g., CHANNELS) ARE TYPICALLY 3H:1V.
4. REFER TO APPENDIX IIIC FOR LEACHATE FORCEMAIN STORAGE TANK INFORMATION.
5. MINIMUM EXCAVATION ELEVATION AT LCS SUMP IS 387 FT-MSL.
6. SUBTITLE D AREA LCS PIPES SLOPE WITH A MINIMUM OF 0.5% TO SUMPS. LCS LATERAL DRAINAGE SLOPE IS A MINIMUM OF 0.9% ALONG THE FLOW PATH. OVERLINER LCS PIPES SLOPE WITH A MINIMUM 0.6% TO SUMPS.
7. LINER AND LEACHATE COLLECTION SYSTEM DETAILS ARE PRESENTED IN APPENDIX IIIA-A-LINER, OVERLINER AND FINAL COVER SYSTEM DETAILS.
8. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED IN PARTS I/II, APPENDIX I/IIA DRAWINGS I/IIA.4 THROUGH I/IIA.7.
9. TYPICAL CROSS SECTION PROVIDED IN DRAWING I/IIA.3. ADDITIONAL SECTION INFORMATION IS PROVIDED IN APPENDIX IIIA-B - LANDFILL UNIT CROSS SECTIONS.
10. AS-BUILT TOP OF SUBTITLE D CLAY LINER CONTOURS WERE REPRODUCED FROM SLERS FROM 1997 THROUGH 2008.
11. REFER TO APPENDIX IIIF FOR DRAINAGE DESIGN INFORMATION.
12. REFER TO APPENDIX IIIB-OVERLINER POINT OF COMPLIANCE DEMONSTRATION, FOR THE OVERLINER DESIGN FOR THE PRE-SUBTITLE D AREA.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.9-OVERLINER.DWG
DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

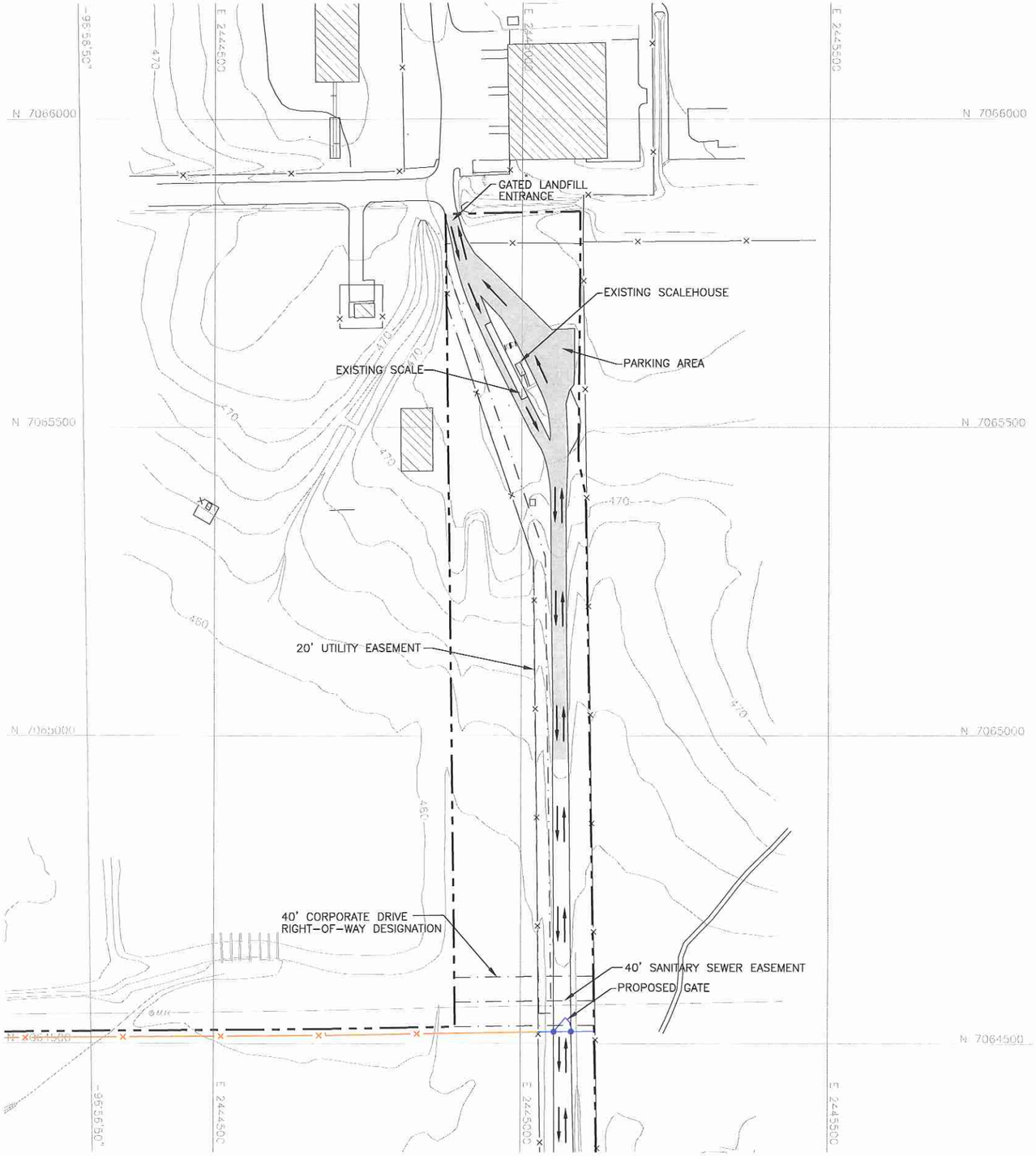
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXCAVATION/OVERLINER PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIA.9



N

0 100 200

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- N 7061000 — STATE PLANE COORDINATE SYSTEM
- -96°56'50" — GEODETIC COORDINATE SYSTEM
- 470 — EXISTING CONTOUR
- EXISTING FENCE
- PROPOSED FENCE (SEE NOTE 3)
- PROPOSED GATE (SEE NOTE 4)
- VEHICLE TRAFFIC DIRECTION
- ASPHALT PAVED AREA
- EASEMENT

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. THE NORTHERN PERIMETER FENCE WILL BE INSTALLED WITHIN SIX MONTHS AFTER TCEQ PERMIT NO. MSW-1312B IS ISSUED.
4. THE PROPOSED GATE WILL BE INSTALLED PRIOR TO CORPORATE DRIVE BEING COMPLETED NORTH OF THE PERMIT BOUNDARY.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.10-ENTRANCE FACILITY.DWG

DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR

CITY OF FARMERS BRANCH

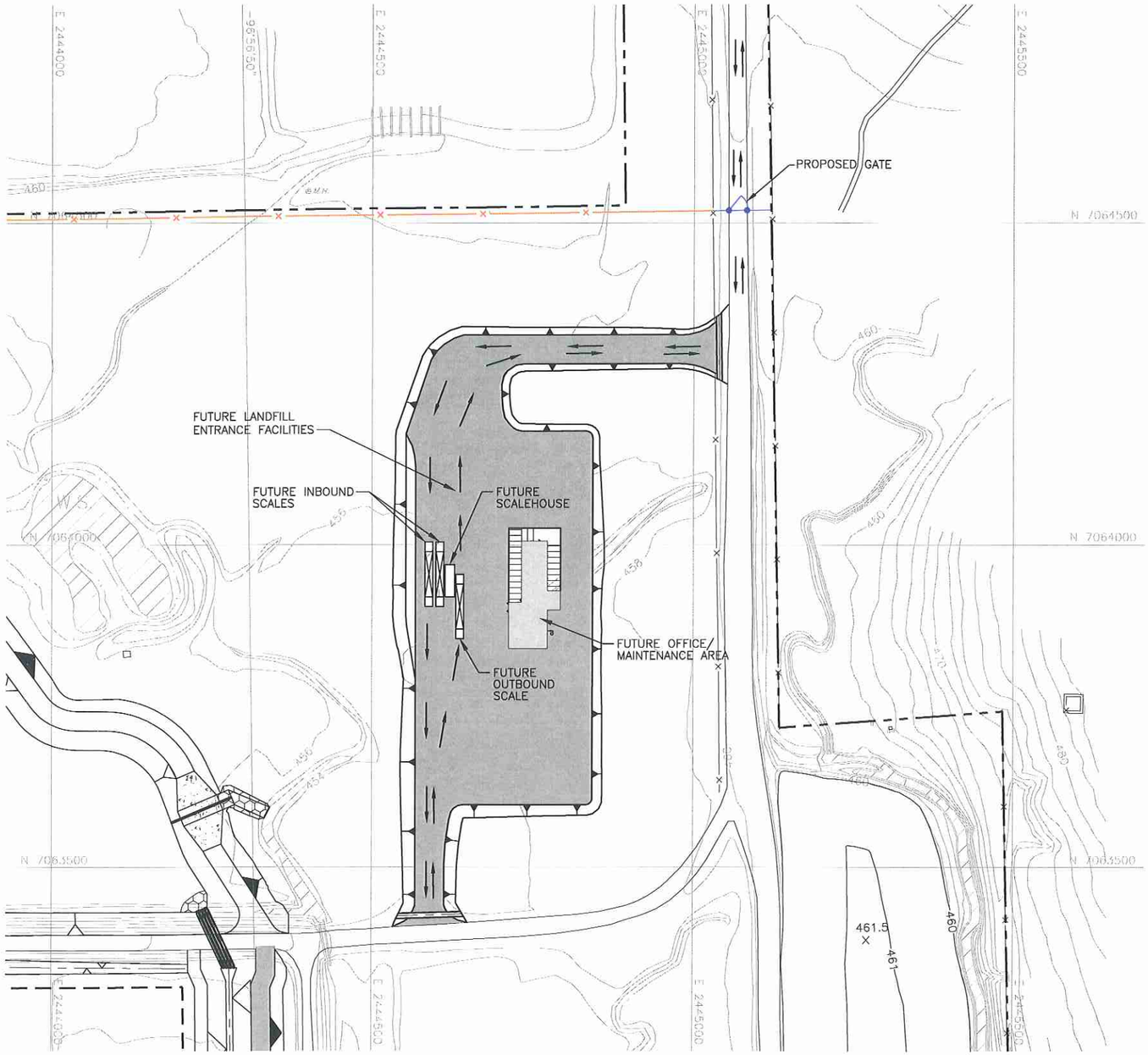
REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXISTING SITE ENTRANCE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING 1/IIA.10



0 100 200
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 96°56'50" — GEODETIC COORDINATE SYSTEM
- 470 — EXISTING CONTOUR
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED GATE
- VEHICLE TRAFFIC DIRECTION
- GABIONS
- ASPHALT/GRAVEL
- 600 — REGRADED BUFFER ZONE AREA

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. CONSTRUCTION OF THE NEW ENTRANCE FACILITIES WILL COMPLETED PRIOR TO CONSTRUCTION OF CORPORATE DRIVE.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.11-ENTRANCE FACILITY.DWG
DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

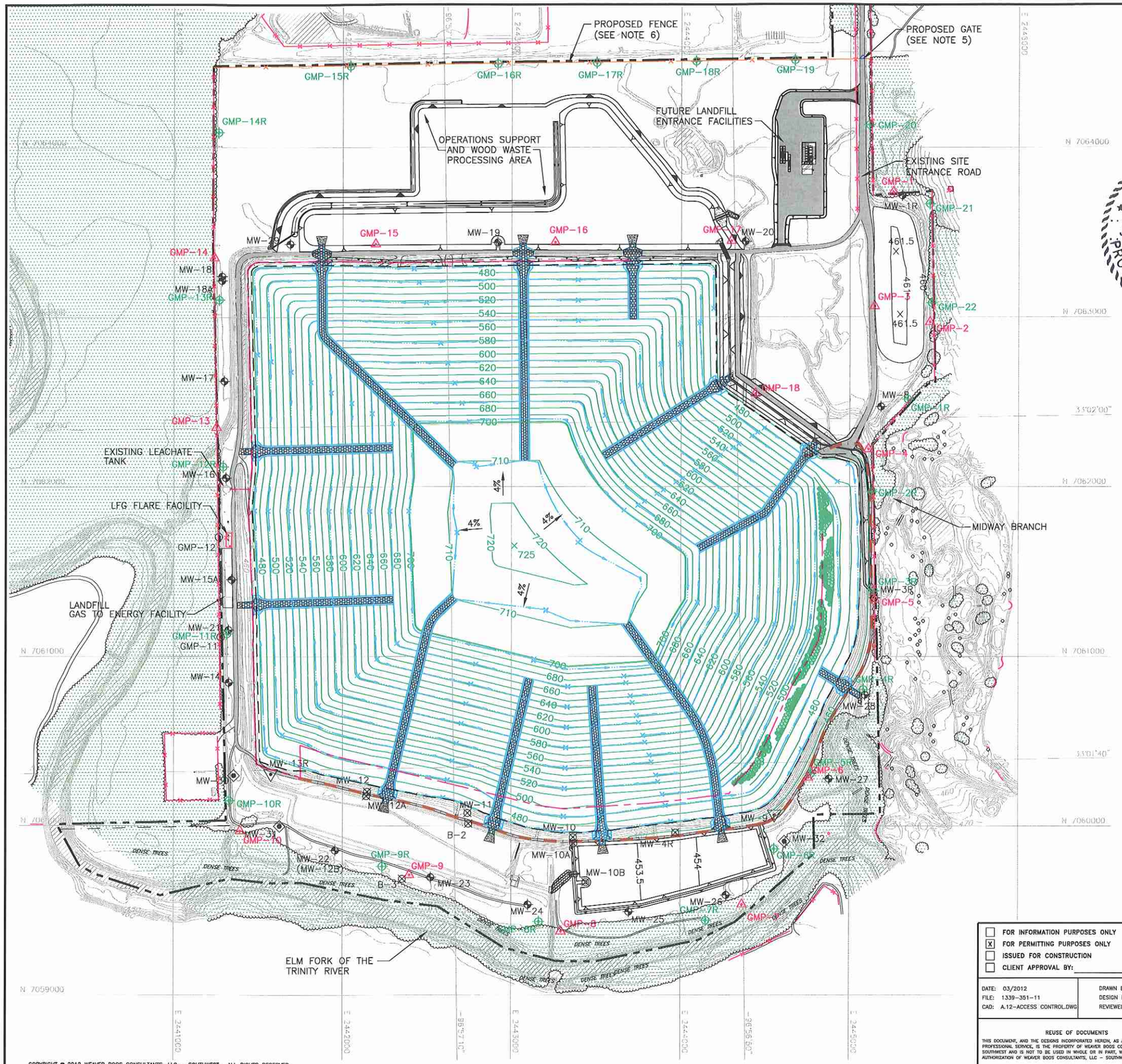
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
FUTURE SITE ENTRANCE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.11



STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- FINAL COVER CONTOUR
- REGRADED BUFFER ZONE AREA
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- MW-8 GROUNDWATER MONITORING WELL
- MW-13R EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL
- EXISTING FENCE
- PROPOSED FENCE (SEE NOTE 6)
- PROPOSED GATE (SEE NOTE 5)
- PROPOSED LEACHATE FORCEMAIN
- LANDSCAPE BENCH
- PERIMETER ACCESS ROAD
- EXISTING TREES

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY PIESER SURVEYING CO. DATED NOVEMBER 2010.
3. ACCESS TO THE SITE WILL BE CONTROLLED BY PERIMETER FENCING (MINIMUM 4-FEET HIGH, 3-STRAND BARBED WIRE FENCE), A GATED ENTRANCE, AND NATURAL BARRIERS (e.g., DENSE FOLIAGE, VEGETATION, AND THE ELM FORK OF THE TRINITY RIVER).
4. ALL THE GROUNDWATER MONITORING WELLS AND LFG MONITORING PROBES ARE LOCATED WITHIN THE PERIMETER FENCE.
5. A NEW GATE WILL BE INSTALLED ONCE CORPORATE DRIVE IS COMPLETED NORTH OF THE PERMIT BOUNDARY.
6. THE NORTHERN PERIMETER FENCE WILL BE INSTALLED WITHIN SIX MONTHS AFTER TCEQ PERMIT NO. MSW-1312B IS ISSUED.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.12-ACCESS CONTROL.DWG

DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

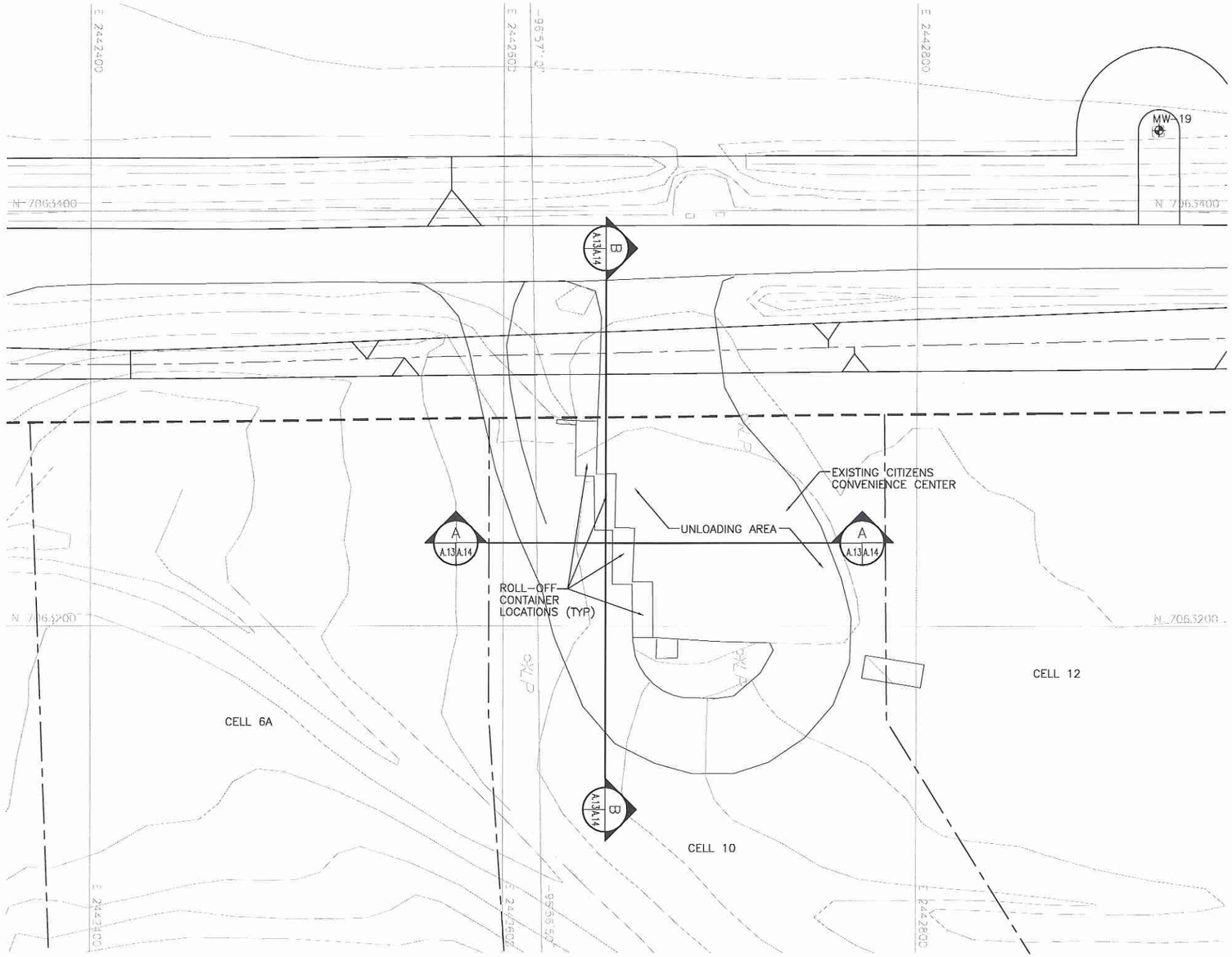
NO.	DATE	DESCRIPTION

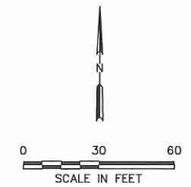
MAJOR PERMIT AMENDMENT ACCESS CONTROL PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.12





LEGEND

- LIMIT OF WASTE
- N 7063200 — STATE PLANE COORDINATE SYSTEM
- -96°57'10" — GEODETIC COORDINATE SYSTEM
- 470 — EXISTING CONTOUR
- CELL BOUNDARY
- MW-19 — GROUNDWATER MONITORING WELL

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 88.
2. THE CITIZENS CONVENIENCE CENTER WILL BE RELOCATED TO THE OPERATIONS SUPPORT AND WOOD WASTE PROCESSING AREA PRIOR TO THE DEVELOPMENT OF CELL 10.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012 | DRAWN BY: SRF
FILE: 1339-351-11 | DESIGN BY: JAE
CAD: A.13-CONVENIENCE CENTER.DWG | REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

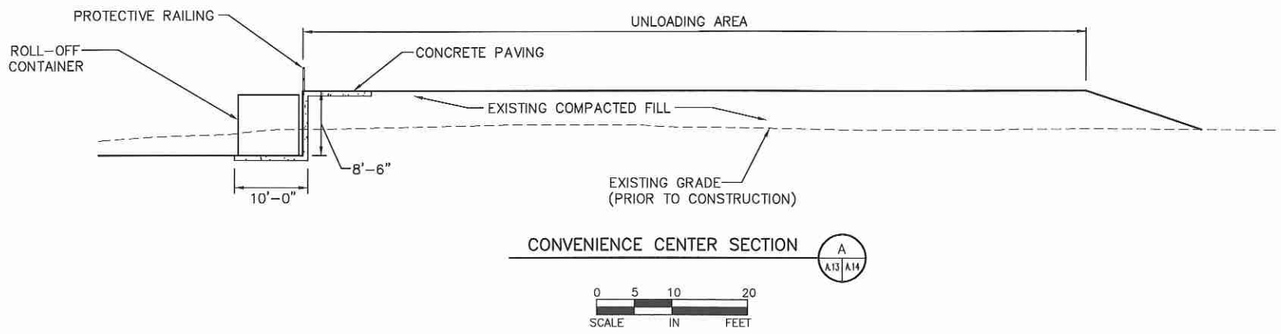
REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
CITIZENS CONVENIENCE CENTER PLAN
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

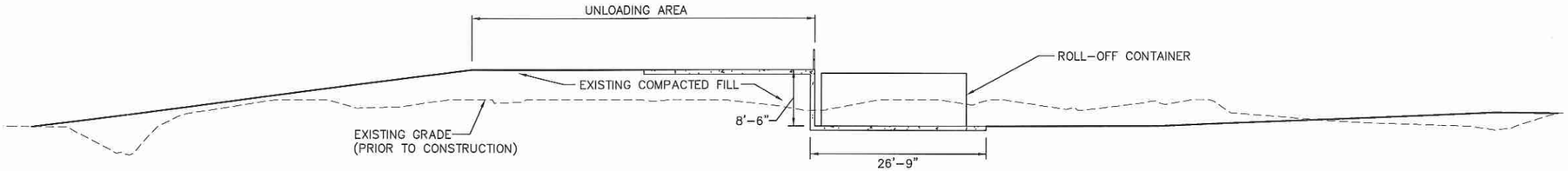
Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.13



CONVENIENCE CENTER SECTION A (A.13 | A.14)

0 5 10 20
SCALE IN FEET



CONVENIENCE CENTER SECTION B (A.13 | A.14)

0 5 10 20
SCALE IN FEET

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

0:\1339\351\EXPANSION 2009\PARTS I-II\A.14-CONVENIENCE CENTER DETAILS.dwg, jwilson, 1:2

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339–351–11
CAD: A.14–DETAILS.DWG

DRAWN BY: SRF
DESIGN BY: JAE
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
CITIZENS CONVENIENCE CENTER DETAILS
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIA.14

APPENDIX I/IIB

DEMONSTRATION OF COORDINATION

- Coordination with Federal Aviation Administration
- Coordination with Texas Historical Commission
- Coordination with Texas Department of Transportation
- Coordination with Texas Parks and Wildlife Department
- Coordination with North Central Texas Council of Governments
- Coordination with U.S. Army Corps of Engineers
- Coordination with U.S. Department of the Interior, Fish and Wildlife Service

COORDINATION WITH FEDERAL AVIATION ADMINISTRATION

CONTENTS

- February 10, 2011, FAA Determination of No Hazard to Air Navigation Letter.
- January 4, 2011, FAA Letter Stating that the Proposed Expansion Provides No Hazard to Air Traffic Due to Birds.
- December 14, 2010, WBC Request for Review Letter Regarding Hazards to Air Navigation and Hazards to Air Traffic Due to Bird Hazards.

FEBRUARY 10, 2011, FAA DETERMINATION OF NO HAZARD TO AIR NAVIGATION LETTER

Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

Aeronautical Study No.
2010-ASW-6942-OE

Issued Date: 02/10/2011

Shane Davis
City of Farmers Branch
13000 William Dodson Parkway
Farmers Branch, TX 75234

**** 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:	Landfill - Camelot Point A
Location:	Lewisville, TX
Latitude:	33-01-53.51N NAD 83
Longitude:	96-57-06.32W
Heights:	297 feet above ground level (AGL)
	770 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:

As a condition to this Determination, the structure is marked and/or lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be completed and returned to this office any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part I)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part II)

See attachment for additional condition(s) or information.
Any height exceeding 297 feet above ground level (770 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

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 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 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.

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 Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (817) 838-1996. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2010-ASW-6942-OE.

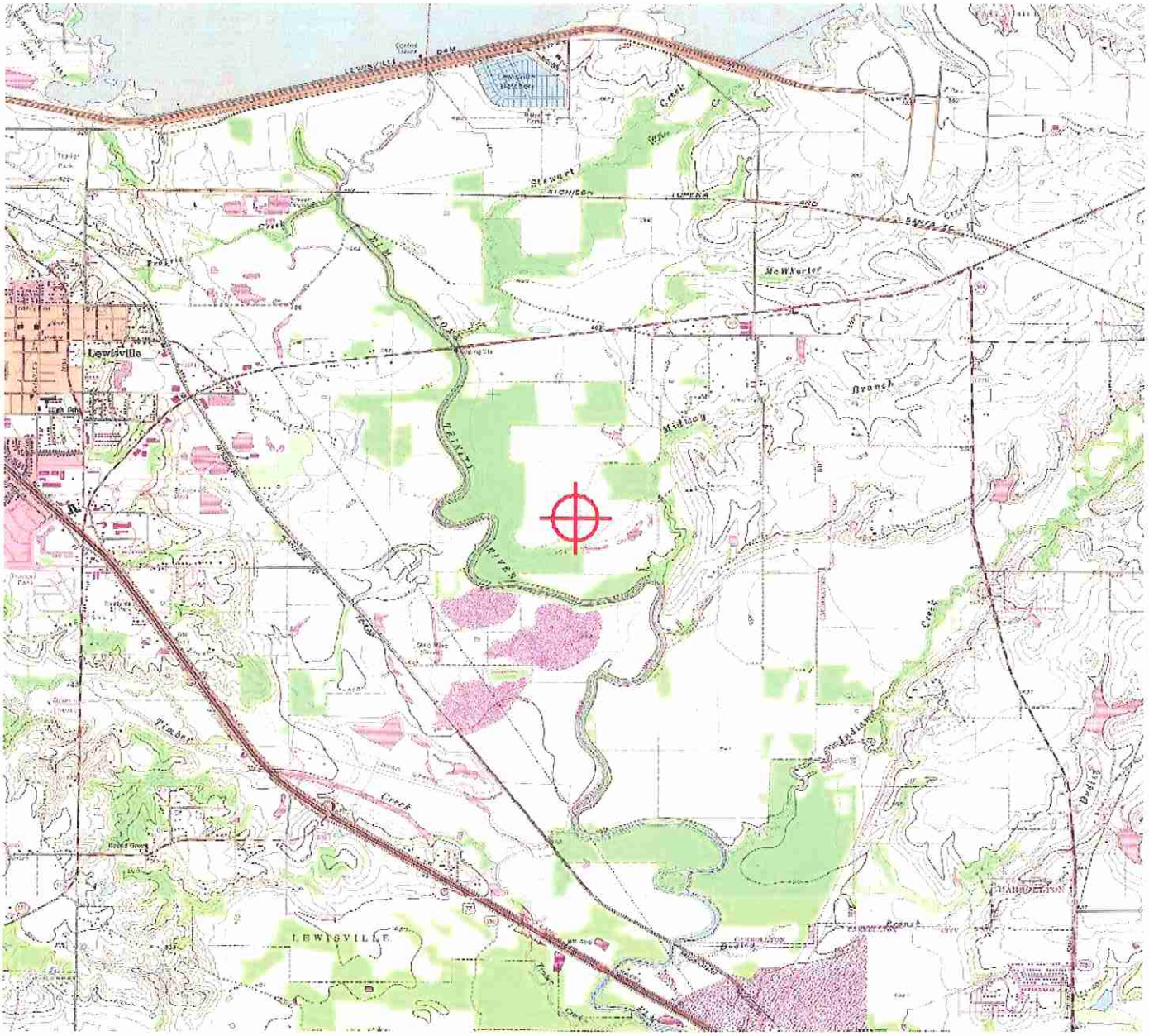
Signature Control No: 134402347-137122132 (DNE)
Bruce Beard
Specialist

Attachment(s)
Additional Information
Map(s)

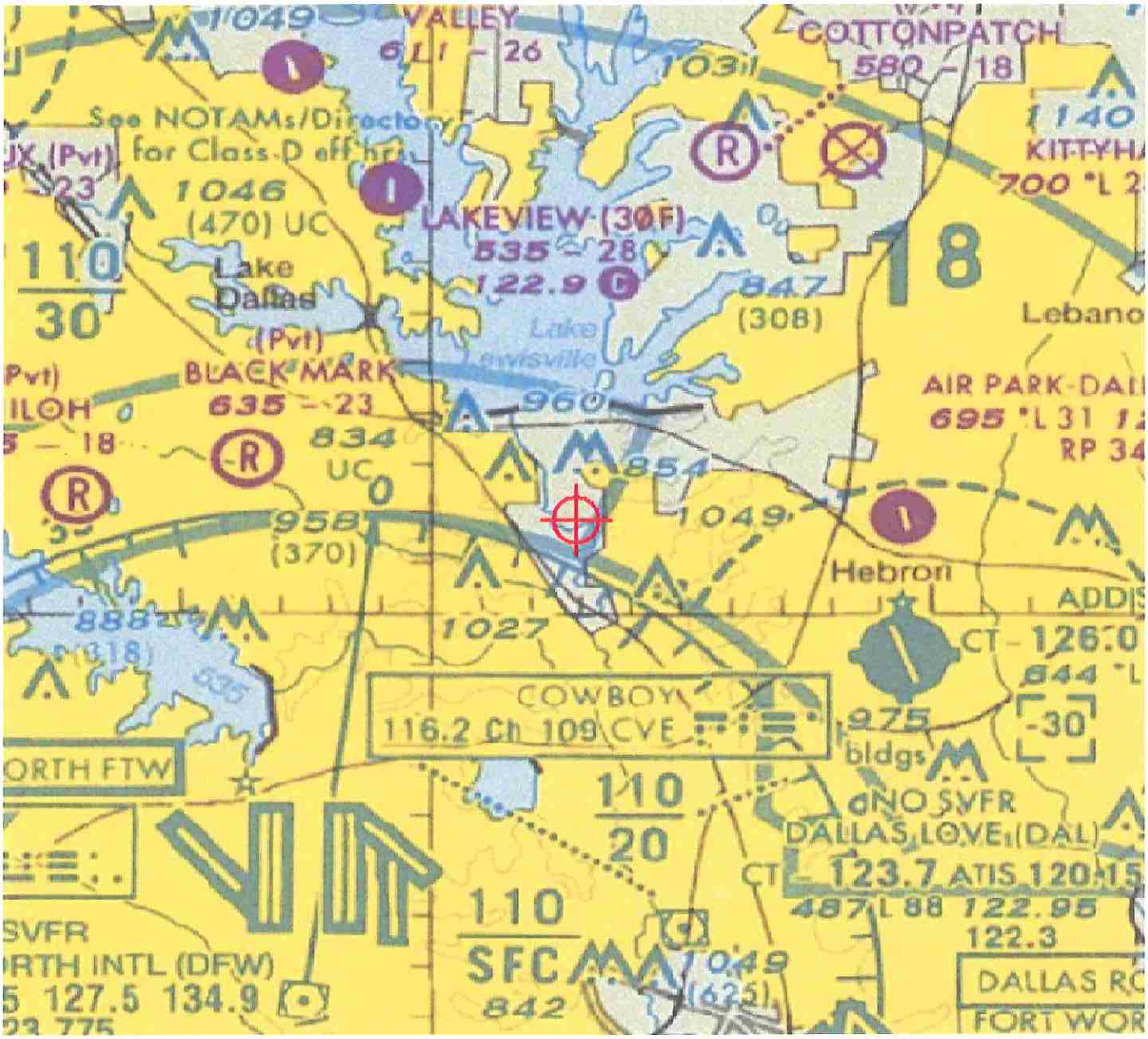
Additional information for ASN 2010-ASW-6942-OE

The requirement for the obstruction lights does not take effect until the landfill begins to exceed a height of 200 feet above the relative ground level.

TOPO Map for ASN 2010-ASW-6942-OE



Sectional Map for ASN 2010-ASW-6942-OE



JANUARY 4, 2011, FAA LETTER STATING THAT THE PROPOSED EXPANSION PROVIDES NO HAZARD TO AIR TRAFFIC DUE TO BIRDS

U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Southwest Region, Airports Division
Safety and Standards Branch

2601 Meacham Boulevard
Fort Worth, Texas 76137

January 4, 2011

Mr. Jeffrey P. Young, P.E.
Senior Engineer
Weaver Boos Consultants
6420 Southwest Boulevard
Suite 206
Fort Worth, TX 76109

Dear Mr. Young:

We have reviewed your December 14, 2010, letter regarding the proposed Camelot Landfill expansion in Denton County, Texas. Based on the information provided, we found no record of any public-use airports within five miles of this site. We have no objection to this landfill from the standpoint of wildlife hazards to aircraft.

The site has been assigned our File No. 2011-05TX. Please refer to this number in any future correspondence regarding this site. Thank you for your coordination.

I can be reached at (817) 222-5656 if you have any questions.

Sincerely,

Faye Nedderman
Executive Technical Assistant
Airports Division

cc: Texas Department of Transportation
Division of Aviation
125 East 11th Street
Austin, TX 78701-2483

DECEMBER 14, 2010, WBC REQUEST FOR REVIEW LETTER REGARDING HAZARDS TO AIR NAVIGATION AND HAZARDS TO AIR TRAFFIC DUE TO BIRD HAZARDS

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

December 14, 2010
Project No. 1339-351-11-02-6A

Ms. Faye Nedderman
Airports Division - Safety and Standards Branch, ASW-620
U.S. Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, Texas 76137-4298

Re: Compliance with Airport Location Restriction
Proposed Camelot Landfill Expansion
Denton County, Texas

Dear Ms. Nedderman:

The purpose of this letter is to demonstrate coordination with the Federal Aviation Administration (FAA), consistent with Texas Administrative Code (TAC) Chapter §330.61(i)(5) and §330.545. This regulation requires that a permit applicant for an amended municipal solid waste facility permit coordinate with the FAA regarding the potential impact of the referenced project to existing airports or air traffic, specifically, §330.545(d) requires the following.

> *"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 shall be critically evaluated to determine if an incompatibility exists."*

Weaver Boos Consultants, LLC–Southwest is in the process of developing a major permit amendment application, on behalf of the City of Farmers Branch, to expand the Camelot Landfill. The existing entrance facilities are located at 580 Huffines Boulevard approximately 1,800 feet south of State Highway 121 Business. To assist you in your determination, please find attached the following information.

- FAA Airport Vicinity Map. As shown, no airports are located within 10,000 feet or 6 miles of the landfill.
- Project Summary and Site Location Maps.
- Proposed Landfill Completion Plan. This plan shows Points A through F, which have been uploaded to the FAA Web page so that an aeronautical study can be performed. Note that the peak elevation of the landfill only occurs at one point

(Point A). However, Points B through F area also set at the maximum landfill elevation to provide a conservative landfill configuration for the aeronautical study.

Please note that the Site Operating Plan includes requirements to maintain the working face of the landfill, where trash is exposed, to as small of an area as practical. Specific working face sizes are listed in the permit documents to minimize the potential of the site to attract birds. In addition, the site has a bird abatement program that incorporates the use of pyrotechnic devices or other bird control measures to minimize the bird population at the site.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

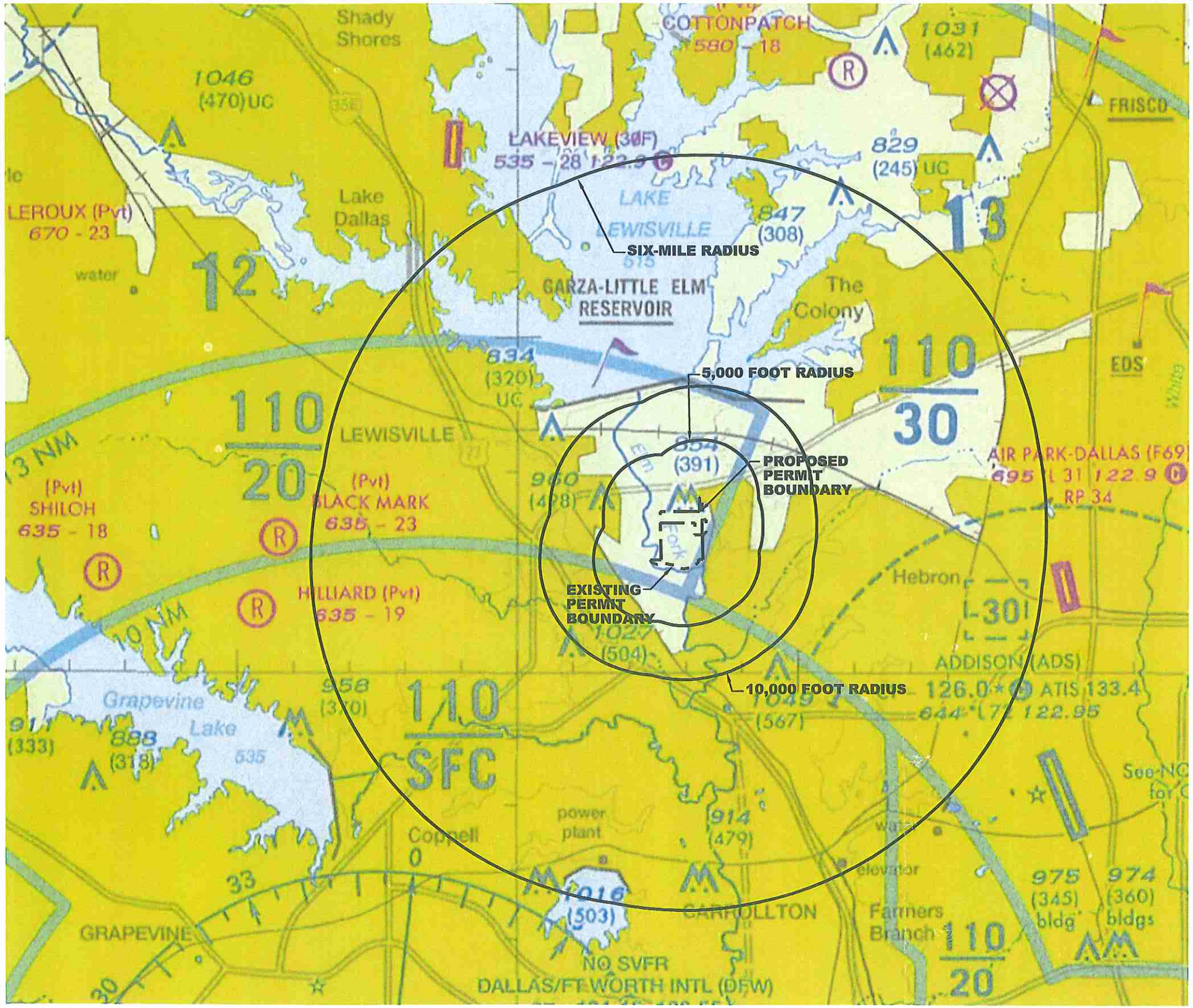
Sincerely,
Weaver Boos Consultants, LLC–Southwest

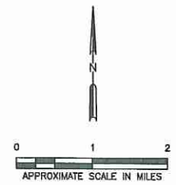
Jeffrey P. Young, P.E.
Senior Engineer

Attachments: FAA Airport Vicinity Map
Project Summary and Site Location Maps
Landfill Completion Plan with Aeronautical Study Points

cc: Doug E. Felix, FAA Traffic Organization
Shane Davis, City of Farmers Branch

FAA AIRPORT VICINITY MAP





AIRPORTS

Other than hard-surfaced runways — Seaplane Base

Hard-surfaced runways 1500 ft. or greater

Open dot within hard-surfaced runway configuration indicates approximate VOR, VOR-DME, or VORTAC location.

All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.

ADDITIONAL AIRPORT INFORMATION

Private "(Pvt)" - Non-public use having emergency or landmark value.

Military - Other than hard-surfaced. All military airports are identified by abbreviations AFB, NAS, AAF, etc. For complete airport information consult DOD FLIP.

Heliport Selected — Unverified — Abandoned - paved having landmark value, 3000 ft. or greater — Ultralight Flight Park Selected

Services-fuel available and field tended during normal working hours depicted by use of ticks around basic airport symbol. (Normal working hours are Mon thru Fri 10:00 A.M. to 4:00 P.M. local time.) Consult A/FD for service availability at airports with hard-surfaced runways 1500 ft. or greater.

☆ Rotating airport beacon in operation Sunset to Sunrise.

TOPOGRAPHIC INFORMATION

Roads

Road Markers

Railroad

Bridges And Viaducts

Power Transmission Lines

Aerial Cable

Landmark Feature - stadium, factory, school, golf course, etc.

Outdoor Theatre

Lookout Tower P-17 (Site Number) 618 (Elevation Base of Tower)

CG Coast Guard Station

Race Track

Tank - water, oil or gas

Oil Well — Water Well

Mines And Quarries

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.)

NOTE:

1. THIS MAP REPRODUCED FROM THE FAA DALLAS–FORT WORTH SECTIONAL AERONAUTICAL CHART DATED SEPTEMBER 2010.
2. NO AIRPORTS ARE PRESENT WITHIN 10,000 FEET OF THE PERMIT BOUNDARY. THE NEAREST AIRPORT IS ADDISON AIRPORT.

I/IIB-15

[X] FOR INFORMATION PURPOSES ONLY
[ ] FOR PERMITTING PURPOSES ONLY
[ ] ISSUED FOR CONSTRUCTION
[ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 5-AIRPORT.DWG

DRAWN BY: SRF
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

FAA AIRPORT VICINITY MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL DOWNERS GROVE, IL — FORT WORTH, TX (817) 735-9770 — GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL

DRAWING 1

PROJECT SUMMARY AND SITE LOCATION MAPS

Project Summary

Camelot Landfill Expansion
Denton County, Texas

Introduction

The City of Farmers Branch is in the process of developing a major permit amendment application to expand the Camelot Landfill. This landfill expansion project will provide long-term disposal capacity for solid waste that is generated in the area. The permit application will be submitted to the Texas Commission on Environmental Quality (TCEQ). The application will undergo a detailed review by the TCEQ before the operating permit for this facility is issued.

The objective of this summary is to provide an overview of the proposed landfill expansion. The following subsections detail information regarding the owner and operator of the site, general site information, and a summary of the proposed site design.

Owner/Operator Information

The Camelot Landfill is owned by the City of Farmers Branch and operated by Camelot Landfill TX, LP. Camelot Landfill TX, LP, is a subsidiary of Republic Services, Inc. (Republic). Republic is one of the leading providers of solid waste services in the nation. Republic provides nonhazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the country.

Site Information

The following drawings are attached to this summary.

- Figure 1 – Site Location Map. This drawing shows the site location on a standard TxDOT county highway map.
- Figure 2 – General Topographic Map. This drawing shows the current landfill and waste disposal area on a USGS map.
- Figure 3 – Aerial Photograph. This figure details the existing and proposed landfill expansion area on an aerial photograph.
- Figure 4 – Existing Site Plan. This plan highlights the existing and proposed landfill expansion area on a detailed site topographic map.
- Figure 5 – Existing and Proposed Landfill Completion Plan. This plan provides a comparison between the existing permitted landfill and the proposed changes to the landfill completion plan.

Site History

The Camelot Landfill is an existing 351-acre Municipal Solid Waste (MSW) landfill (TCEQ Permit No. 1312A). The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended before the site opened to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A). The site was upgraded to Subtitle D standards in 1996.

The Camelot Landfill is located in southeastern Denton County and is easily accessed from area population centers via State Highway 121 Business. The service area includes Denton, Dallas, Collin, and Tarrant counties.

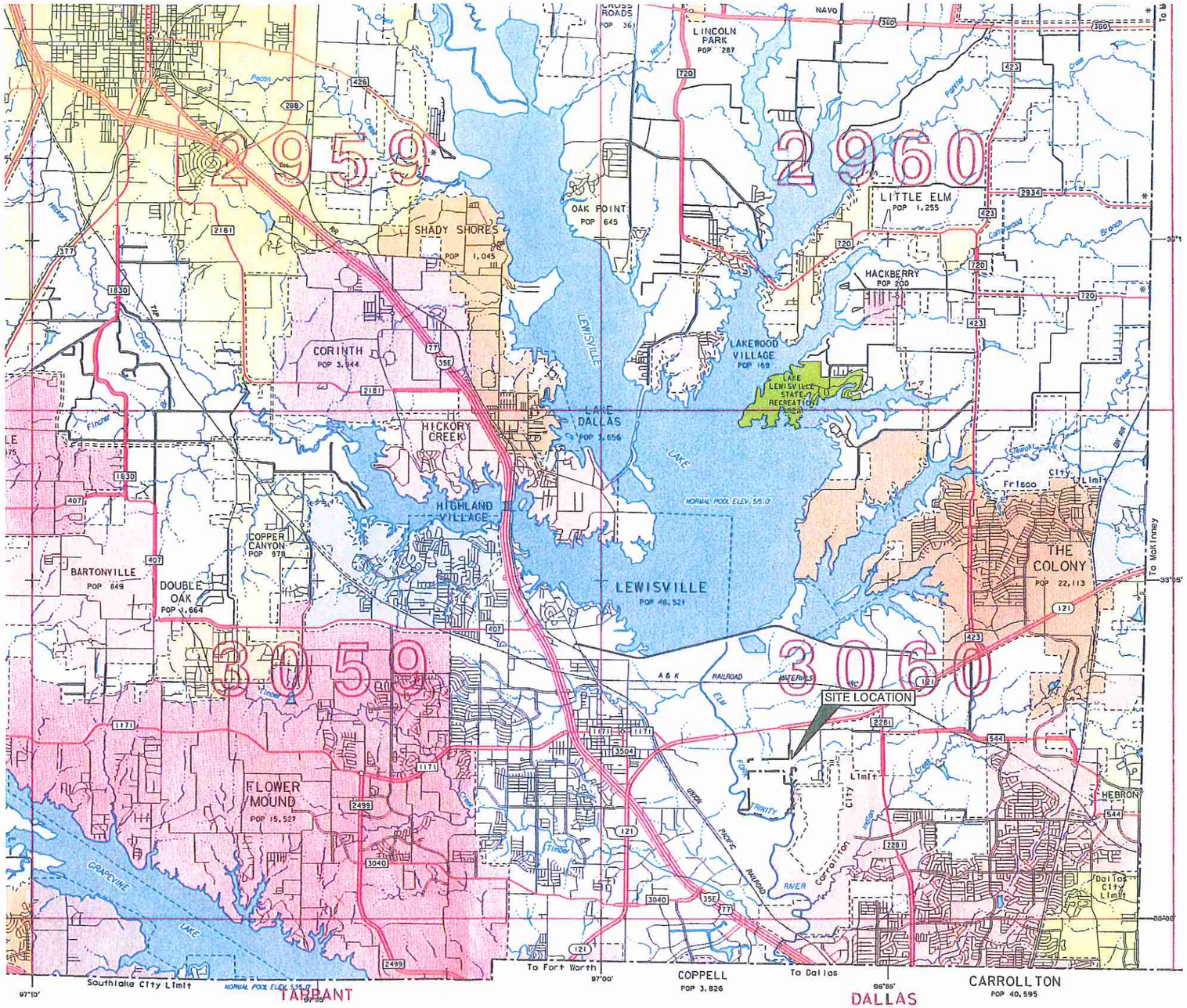
Design Summary

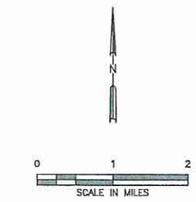
The following information presents a summary of the design and operations for the proposed Camelot Landfill expansion.

- The Camelot Landfill is an existing municipal solid waste landfill facility (TCEQ Permit No. MSW 1312A). The existing landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant counties.
- With this expansion, the existing 350.77-acre permit boundary will be increased by approximately 118.85 acres to 469.62 acres. The limits of waste will expand by 38.5 acres from approximately 198.3 acres to approximately 236.8 acres.
- Accepted wastes will remain consistent with the current municipal solid waste landfill permit. The facility will accept municipal solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities; municipal solid waste resulting from construction and demolition activities; Class 2 and Class 3 nonhazardous industrial solid waste; and certain special wastes as permitted by the TCEQ.
- Access to the site will be provided via the existing site access road at Huffines Boulevard. Based on travel patterns of existing landfill traffic, vehicles bound for the landfill will access the site using State Highway 121 Business and Huffines Boulevard.
- A liner and final cover system that meets all regulatory requirements will be used for constructing the solid waste containment system. The design objective of the containment system (final cover, liner, and leachate management system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. Leachate that is removed from the landfill is either recirculated or transported to an offsite, permitted treatment facility. The construction procedures of the liner and final cover systems follow strict TCEQ approved quality control and quality assurance procedures, which are

verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the TCEQ before solid waste is placed in the landfill.

- To control landfill gas emissions and minimize the potential for subsurface migration, a landfill gas (LFG) collection and control system (GCCS) has been installed at the site. The collection system currently consists of vertical extraction wells and collection piping throughout the waste mass. The collected LFG is conveyed to an LFG-to-energy (LFGTE) facility, which is owned by a third party energy developer. Any excess LFG not used by the LFGTE facility will be directed to the existing flare for combustion. The existing system will be expanded to incorporate the currently permitted but undeveloped waste fill footprint and the expansion area. Routine monitoring of the GCCS is performed to verify the efficiency of the GCCS to collect and control generated LFG.
- To verify that the highest level of environmental protection is maintained, the following landfill monitoring systems are provided:
  - Groundwater Monitoring System. The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened to monitor groundwater quality. The water samples are tested at an offsite laboratory.
  - Gas Monitoring System. The purpose of the landfill gas monitoring system is to verify that landfill gas does not migrate off site. Landfill gas probes are placed along the perimeter of the permit boundary.
  - These monitoring systems are sampled and tested periodically. The results are filed with the TCEQ and are public record.
- Site Operations. The site will be operated by properly trained personnel. A detailed site operating plan will be included in the permit amendment application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with TCEQ regulations. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis to ensure the site is in compliance with state regulations.

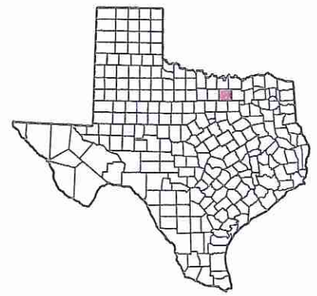




LEGEND

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY



KEY TO COUNTIES

GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

I/IIB-20

- [X] FOR INFORMATION PURPOSES ONLY
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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 1-SITE LOC MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

REUSE OF DOCUMENTS

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

SITE LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants

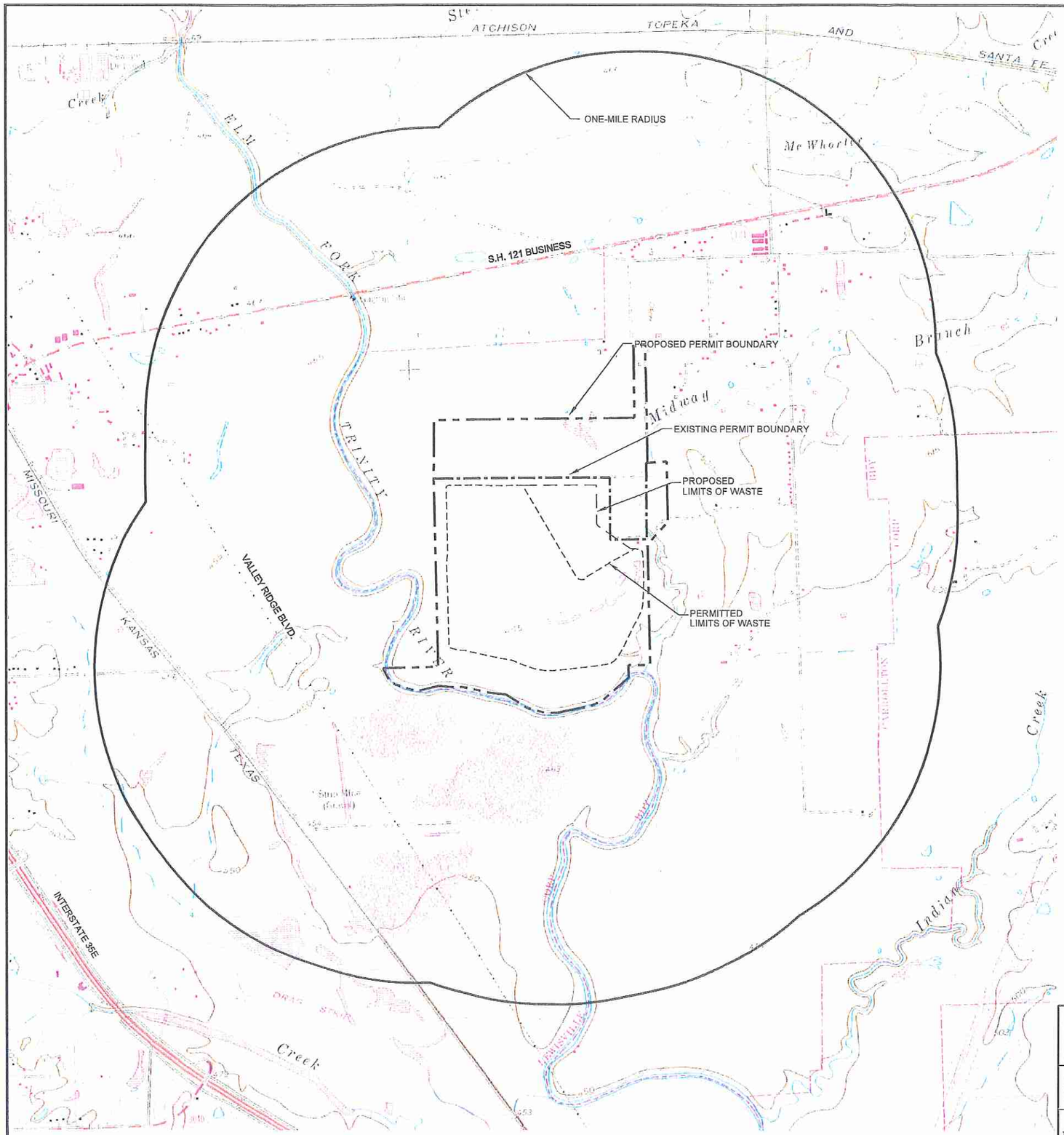
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1



0:\1339\351\EXPANSION 2009\COORDINATION LETTER\2-TOPOGRAPHIC MAP.dwg, 12/13/2010 9:43:25 AM, jwilson, 1:2

N

0 1000 2000
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMITS OF WASTE
- PROPOSED LIMITS OF WASTE

LEWISVILLE EAST, TEX.
1960
PHOTOREVISED 1981

CARROLLTON, TEX.
NW/4 CARROLLTON 15' QUADRANGLE
N3252.5—W9652.5/7.5
1959

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

NOTES:

1. SITE LOCATION BASE MAP ADAPTED FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS ABOVE.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-21

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DATE: 12/2010
FILE: 1339-351-11
CAD: 2-GEN. TOPO. MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

GENERAL TOPOGRAPHIC MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-8770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2

N

0 500 1000
SCALE IN FEET

LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-22

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 3-AERIAL.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

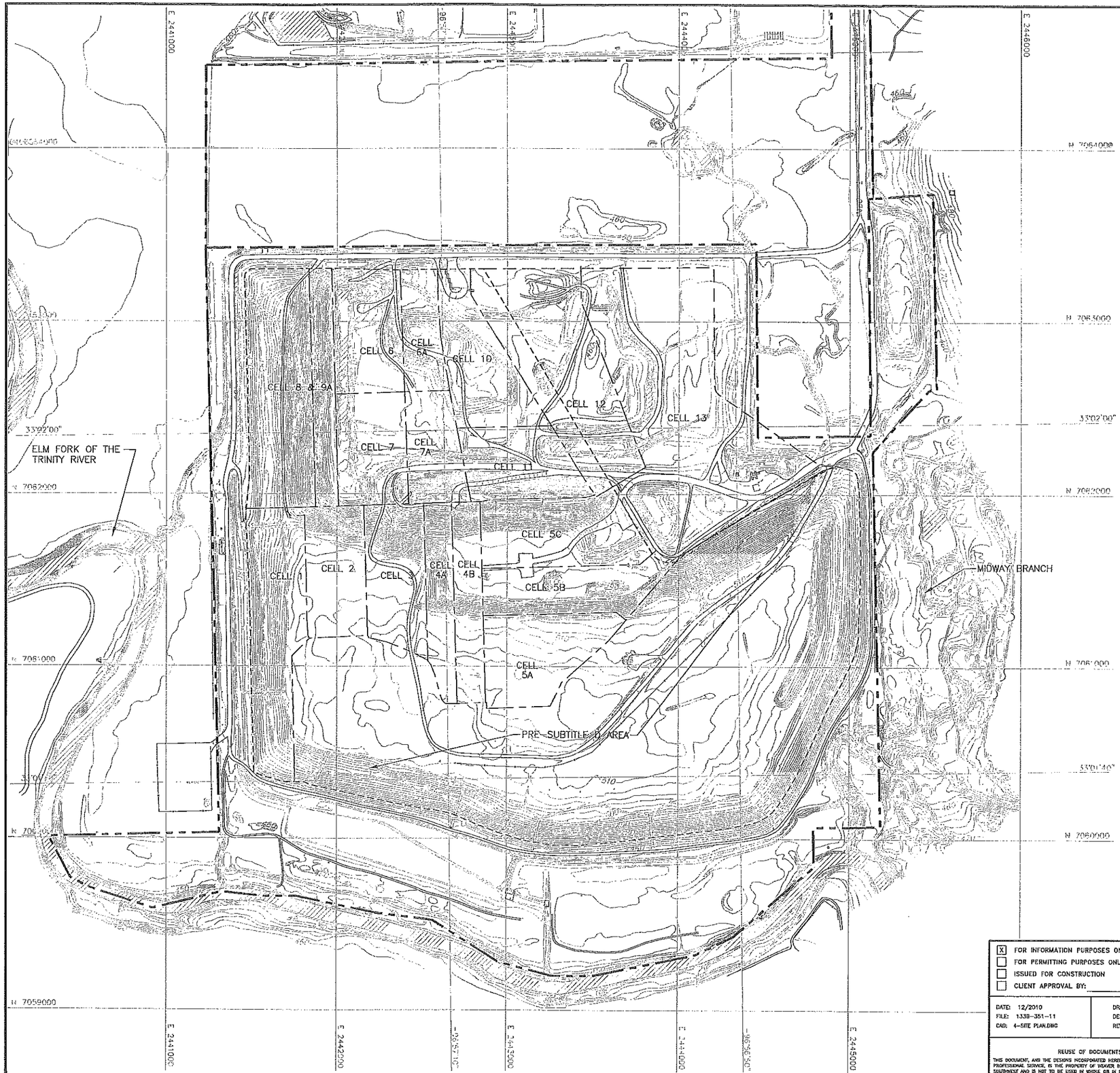
AERIAL PHOTOGRAPHY

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



0 300 600
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- EXISTING LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-23

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DATE: 12/2010
FILE: 1339-351-11
CAD: 4-SITE PLAN.DWG
DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

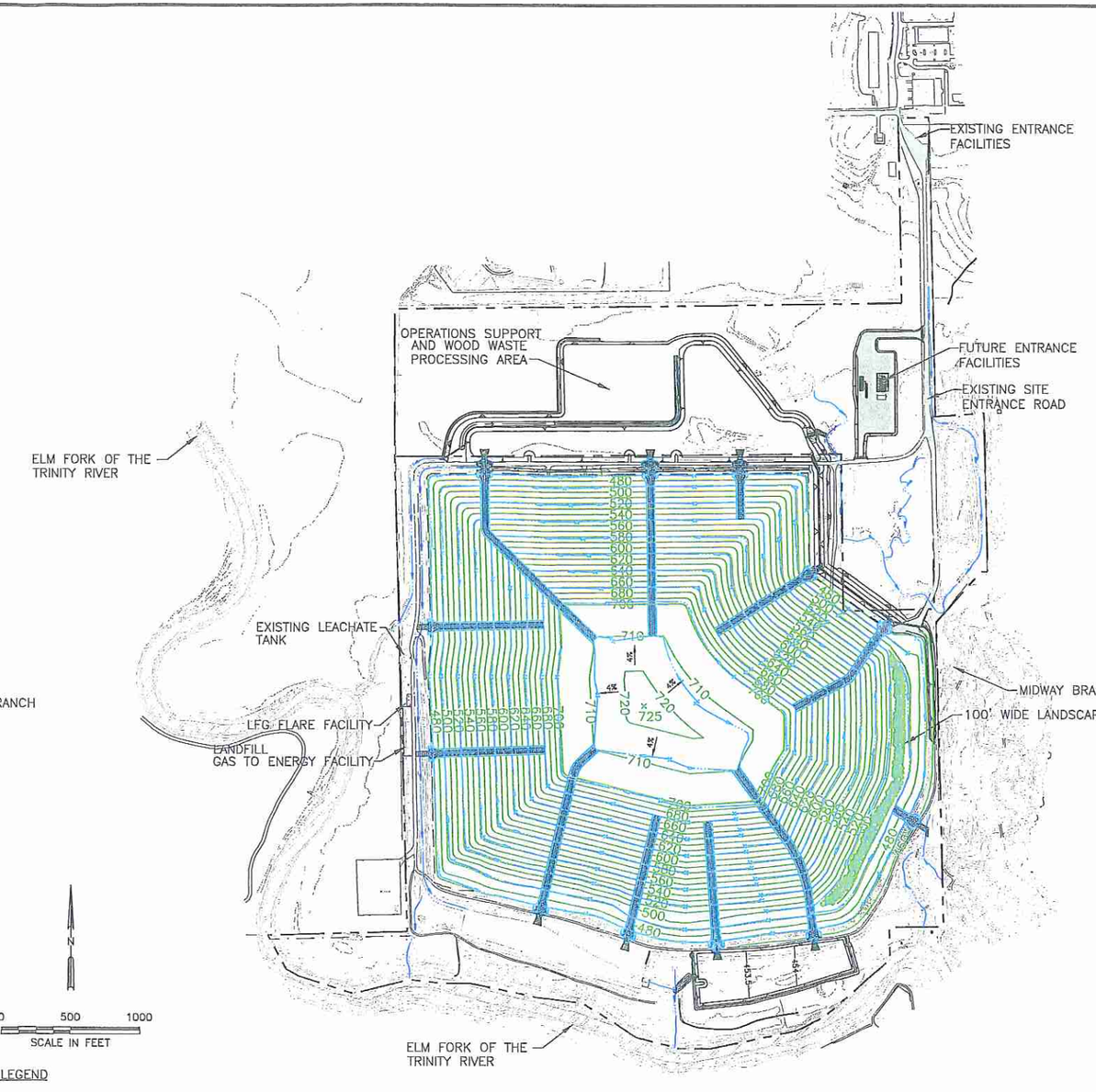
SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4

PERMITTED LANDFILL COMPLETION PLAN



PROPOSED LANDFILL COMPLETION PLAN

N

0 500 1000

SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE
- 530 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-24

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 5-COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

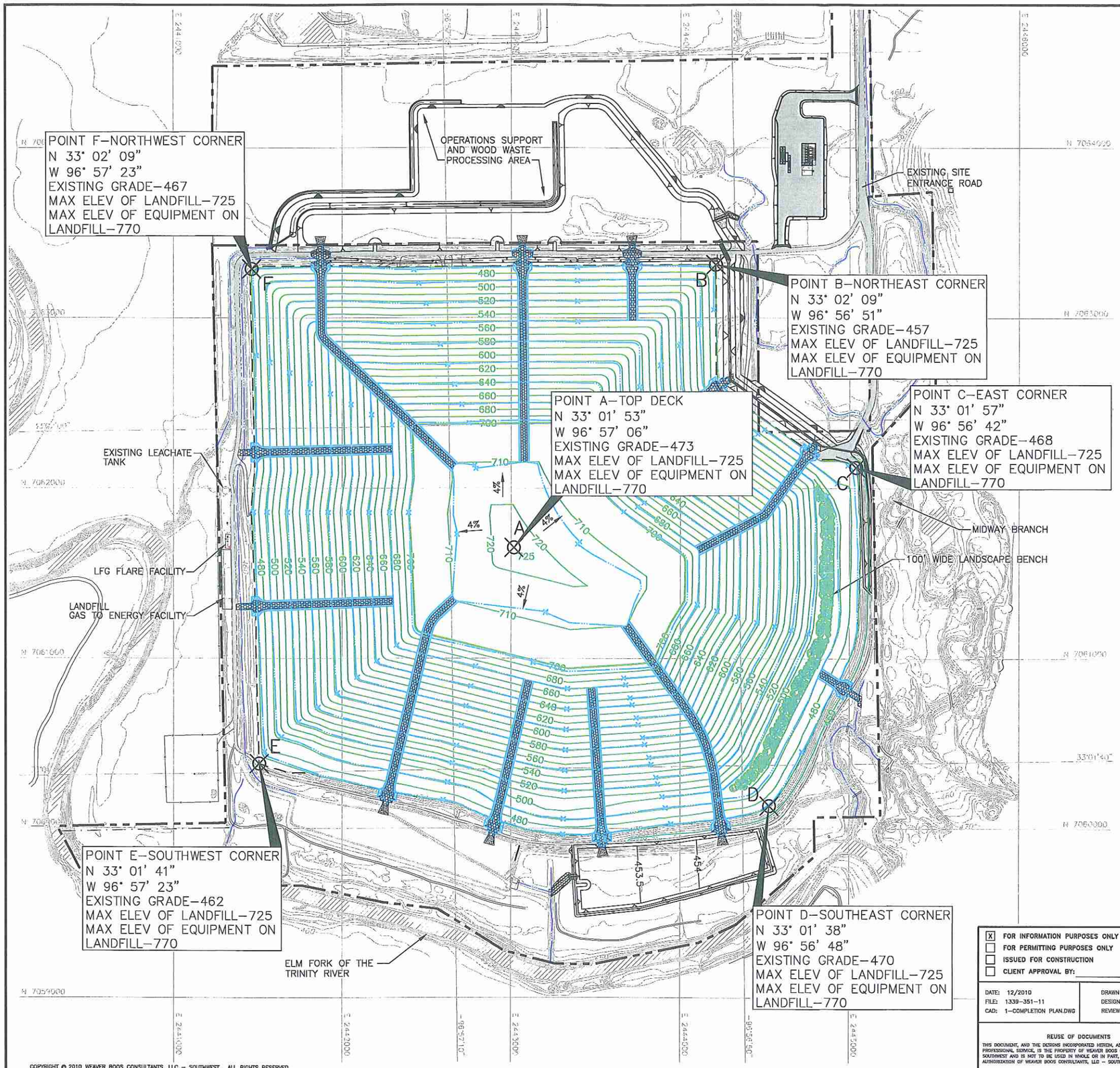
EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

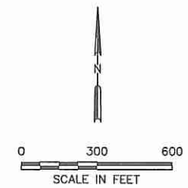
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5

LANDFILL COMPLETION PLAN WITH AERONAUTICAL STUDY POINTS





LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISITNG PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 600 — FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- A — ANALYSIS POINT ON FAA FORM 7460 (SEE NOTE 3)

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.
3. NOTE THAT THE MAXIMUM ELEVATION OF THE LANDFILL AT EACH POINT CONSIDERED ASSUMES THE MAXIMUM ELEVATION OF THE LANDFILL. THE ELEVATION LISTED (770 FT–MSL) ACCOUNTS FOR LANDFILL EQUIPMENT THAT MAY BE USED ON TOP OF THE LANDFILL ON A TEMPORARY BASIS (E.G., A 45–FOOT HIGH DRILL RIG THAT WILL INSTALL LANDFILL GAS RECOVERY WELLS).

I/IIB-26

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DATE: 12/2010 | DRAWN BY: SRF
FILE: 1339–351–11 | DESIGN BY: MDM
CAD: 1–COMPLETION PLAN.DWG | REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\FAA\1–COMPLETION PLAN.dwg, 12/14/2010 5:19:19 PM, cmarsh, 1:2

COORDINATION WITH TEXAS HISTORICAL COMMISSION

CONTENTS

- March 23, 2011, THC Conclusion that No Historic Properties Are Affected by the Landfill.
- March 15, 2011, WBC Request Letter Requesting THC Concurrence that No Historic Properties Are Affected by the Landfill.

MARCH 23, 2011, THC CONCLUSION THAT NO HISTORIC PROPERTIES ARE AFFECTED BY THE LANDFILL

WEAVER BOOS CONSULTANTS LLC SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

DRAFT REPORT
ACCEPTABLE

NO HISTORIC PROPERTIES AFFECTED
PROJECT MAY PROCEED
by William A. Martin
for Mark Wolfe
State Historic Preservation Officer
Date 3/23/11
Track#

RECEIVED
MAR 16 2011
TEXAS HISTORICAL COMMISSION

RECEIVED
MAR 16 2011
DIVISION OF ARCHITECTURE

March 15, 2011
Project No. 1339-351-11-02-4B.2

Mr. Adam Alsobrook
Texas Historical Commission
Archeology Division
P.O. Box 12276
Austin, Texas 78711-2276

Re: Impact to Cultural Resources Determination
Proposed Camelot Landfill Major Permit Amendment
Denton County, Texas

Dear Mr. Oaks:

The purpose of this letter, submitted on behalf of the City of Farmers Branch, is to demonstrate coordination with the Texas Historical Commission, consistent with Title 30 Texas Administrative Code (TAC) §330.61(o). This regulation requires that a permit applicant for an expansion of a municipal solid waste facility coordinate with the Texas Historical Commission regarding the potential impact of the referenced project to the cultural resources of the State of Texas.

Weaver Boos Consultants, LLC–Southwest is preparing a permit amendment application, under contract with the City of Farmers Branch, to authorize future expansion of the Camelot Landfill located in Denton County, Texas. The existing permit boundary will be expanded by approximately 119 acres. The existing permitted waste disposal area will be expanded laterally about 38.5 acres and the landfill will also be expanded vertically. To assist you in your determination, please find enclosed the following information.

- An Archaeological Survey completed by AR Consultants, Inc. (ARC).
- A project summary and various site location maps that provide additional details for the proposed project.

As noted in the attached Archaeological Survey, a detailed site investigation was completed under Texas Antiquities Permit Number 5830. In summary, the investigation found no evidence of pre-historic occupation in the study area and ARC recommends that no additional cultural resource investigations are warranted.

Please note that the municipal solid waste permit documents will include a request that if cultural material that may have a cultural resource value is uncovered during site

development, the Texas Historical Commission will be notified and construction stopped in that area immediately until proper investigations can be completed.

To verify compliance with §330.61(o), we will need to include a letter from the Texas Historical Commission within the permit application. A determination of the potential impact of the project to the Cultural Resources of the State of Texas is requested.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Attachment 1 – Cultural Resource Survey
Attachment 2 –Project Summary and Site Location Maps

cc: Shane Davis, City of Farmers Branch

MARCH 15, 2011, WBC REQUEST LETTER REQUESTING THC CONCURRENCE THAT NO HISTORIC PROPERTIES ARE AFFECTED BY THE LANDFILL

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

March 15, 2011
Project No. 1339-351-11-02-4B.2

Mr. Adam Alsobrook
Texas Historical Commission
Archeology Division
P.O. Box 12276
Austin, Texas 78711-2276

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Proposed Camelot Landfill Major Permit Amendment
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Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Attachment 1 – Cultural Resource Survey
Attachment 2 –Project Summary and Site Location Maps

cc: Shane Davis, City of Farmers Branch

ATTACHMENT 1

CULTURAL RESOURCE SURVEY

AR Consultants, Inc.

Archaeological and Environmental Consulting
11020 Audelia Road, Suite C105, Dallas, Texas 75243-9085
Phone: (214) 368-0478
Fax: (214) 221-1519
E-mail: arcdigs@aol.com

ARCHAEOLOGICAL SURVEY

FOR THE PROPOSED

CAMELOT LANDFILL EXPANSION

DENTON COUNTY, TEXAS

Texas Antiquities Permit Number 5830

Cameron Turley, BS
Nick Coleman, BA
and
Rebecca Shelton, MA,
Principal Investigator

Submitted to:

WEAVER BOOS CONSULTANTS
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109

Prepared by:

AR CONSULTANTS, INC.
11020 Audelia Road, Suite C105
Dallas, Texas 75243-9085

Cultural Resources Report 2011-04
February 24, 2011

I/IIB-35

HISTORIC BUILDINGS ARCHAEOLOGY NATURAL SCIENCES

ARCHAEOLOGICAL SURVEY

FOR THE PROPOSED

CAMELOT LANDFILL EXPANSION

DENTON COUNTY, TEXAS

Texas Antiquities Permit Number 5830

Cameron Turley, BS
Nick Coleman, BA
and
Rebecca Shelton, MA,
Principal Investigator

Submitted to:

WEAVER BOOS CONSULTANTS
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109

Prepared by:

AR CONSULTANTS, INC.
11020 Audelia Road, Suite C105
Dallas, Texas 75243-9085

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ABSTRACT

The City of Farmers Branch intends to expand the existing Camelot Landfill in Denton County, Texas. The landfill expansion areas encompass approximately 118.85 acres within a 469.62 acre permit area on the east side of the Elm Fork of the Trinity River south of Lewisville Lake. The existing and active landfill occupies the 350.77 remaining permit acres. AR Consultants, Inc. conducted an intensive pedestrian survey and shovel testing of the proposed expansion area on December 17, 2010 and January 4, 2011. Trenching in the flood plain was performed on January 26, 2011. Investigations found no evidence of prehistoric occupation in the floodplain or on the upland edge. A structure plotted in the project area was not found and was determined to have been completely destroyed. Consequently, ARC recommends that further cultural resource investigations are unwarranted and that the Texas Historical Commission concur. If buried cultural deposits are discovered during the landfill expansion, work in the area should cease immediately and the Texas Historical Commission should be notified.

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INTRODUCTION

The City of Farmers Branch intends to expand the existing Camelot Landfill in Denton County, Texas. The landfill expansion areas encompass approximately 118.85 acres within a 469.62 acre permit area on the east side of the Elm Fork of the Trinity River south of Lewisville Lake. The 469.62 acres includes the existing permit boundary and the proposed permit boundary (Figure 1). The landfill expansion will be excavated below grade and a liner will be installed, and then fill will proceed.

Weaver Boos Consultants, which is developing a major permit amendment application for submittal to the Texas Commission on Environmental Quality (TCEQ) to authorize future expansion of the Camelot Landfill, contracted with AR Consultants, Inc. (ARC) to conduct the cultural resource investigations of the landfill. The purpose of the archival research and archaeological survey was to determine if cultural resources had been recorded or were present within the 469.62 acre permit boundary area, and, if present, make recommendations about their significance and how they might be impacted by construction.

Because the City of Farmers Branch is a political subdivision of the State of Texas, a Texas Antiquities Permit was required for this project and permit number 5830 was issued for this project. Section 106 of the National Historic Preservation Act of 1966 also applies to the environmental permitting. Other relevant federal legislation includes the Clean Water Act, as amended (PL92500), the National Environmental Act of 1969 (PL-90-190), and the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291).

This report was written in accordance with the guidelines adopted by the Texas Historical Commission, Archeology Division, and developed by the Council of Texas Archeologists (n.d.). The following report contains a brief description of the natural environment, the cultural history of North Central Texas, and a summary of previous archaeological investigations in the area as known from published sources. This is followed by the research design and methodology. The description of the results of the field investigation constitutes the majority of the report. The last chapter presents recommendations that arise from the study. A list of references cited and an appendix containing shovel test information concludes the report.

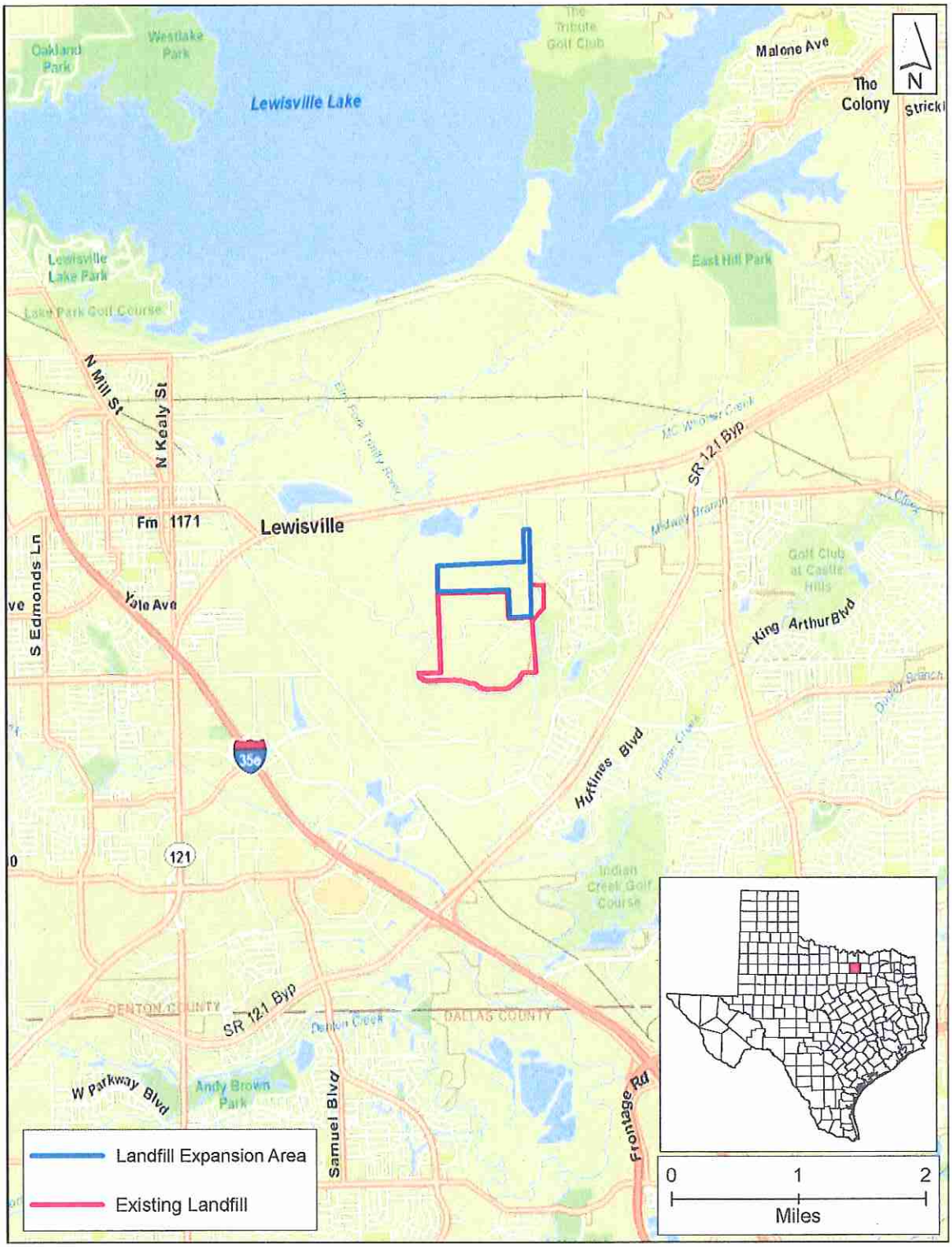

Figure 1. Camelot Landfill Project area shown on a section of ESRI's street map, Denton County.

Administrative Information:

Sponsor:	City of Farmers Branch
Project Engineers:	Weaver Boos Consultants
Review Agency:	Archeology Division of the Texas Historical Commission
Principal Investigator:	Rebecca Shelton, MA
Field Crew:	Rebecca Shelton, Nick Coleman, Cameron Turley and Cody S. Davis
Field Work Dates:	December 17, 2010; January 4 and 26, 2011
Area Surveyed:	approximately 119
Sites Recorded	
Prehistoric:	None
Historic:	None

NATURAL SETTING

The landfill lies in the Blackland Prairies near the Eastern Cross Timbers ecotone (Bureau of Economic Geology 1996). The Blackland Prairie is associated with an outcropping of Upper Cretaceous marine chalks, marls, and shales from which the black soil is derived. Level to gently rolling topography populated by tall grasses like little and big bluestem would have largely defined the prairie in its native state. Wooded bottomlands and isolated woodland clumps provide contrast to the dominant grassland. Denton County is drained by the Elm Fork of the Trinity River and several major creeks. Average rainfall is approximately 33 inches while the average temperature ranges from 34 degrees in January to 96 degrees in July (Odom 2010).

The landfill is underlain primarily by Quaternary-aged alluvium composed of silt, sand, clay and gravel in the floodplain of the Elm Fork of the Trinity River (Bureau of Economic Geology 1991). The soil atop the northern fluviate terrace formations is the Frio-Ovan association, of well to moderately well-drained, level, slowly permeable, bottomland floodplain soils (Ford and Pauls 1980: General Soils Map). Specific soils include occasionally flooded Ovan and Trinity clays, Bastrop fine sandy loam, and Crockett fine sandy loam (Ford and Pauls 1980: Sheet 47). The Frio and Trinity clays constitute the floodplain of the Elm Fork and across which Midway Branch flows through the eastern edge of the landfill. The Bastrop fine sandy loam constitutes the terrace deposits above the floodplain, while the Crockett fine sandy loam marks the smooth upland slopes encountered in the northern extreme of the landfill.

A consensus about the paleoenvironmental conditions of North-Central Texas over the past 12,000 years has not been reached. Discussions by Prikryl (1993), Ferring (1990), Humphrey and Ferring (1994) and Brown (1998) offer disparate interpretations based on different analytical approaches. The following discussion relies heavily on Ferring's investigations and focuses upon the past two thousand years. Correlating periods of rapid alluviation with higher precipitation and slow alluviation with drier conditions, Ferring has concluded that the Late Holocene [5000 yr B.P. to the present] was a wet period with moderate alluviation, except for a dry period between 2000 to 1000 yr B.P. [A.D. 1-1000]. It was during this dry period that the West Fork Paleosol was established on the stable surfaces of the river meanders along the Upper Trinity and its tributaries. This interpretation is supported by changing patterns seen in stable isotope analysis. Brown (1998) offers a different interpretation based on isotopic analyses of mussel shells from a prehistoric site (41DL270) on Denton Creek. He concludes that the period from 1500 to 2500 yr B.P. was cooler and/or wetter and that before and after that time period, the environment was warmer and drier. He points out, however, that this interpretation may only be applicable for the Elm Fork tributary and not the region.

CULTURAL HISTORY

The history and prehistory of Denton County are summarized in several reports prepared by the University of North Texas (Lebo and Brown 1990; Brown and Lebo 1991; Ferring and Yates 1997). The most commonly used chronology for the region was established by Prikryl (1990) which divides the Late Prehistoric, the time from the use of the bow and pottery to the Historic Native American period, into two periods: Late Prehistoric I (A.D. 700 to 1300) and Late Prehistoric II (A.D. 1300 to 1600) (Table 1).

Table 1. Temporal framework of North Central Texas modeled after Prikryl.

Historic European	A.D. 1800 to Present
Historic Native American	A.D. 1600 to A.D. 1850
Late Prehistoric II	A.D. 1300 to A.D. 1600
Late Prehistoric I	A.D. 700 to A.D. 1300
Late Archaic	2,000 B.C. to A.D. 700
Middle Archaic	4,000 B.C. to 2,000 B.C.
Early Archaic	6,000 B.C. to 4,000 B.C.
Paleoindian	ca. 11,000 B.C. to 6,000 B.C.

Prehistoric Native American occupation in Denton County began at least 10,000 years ago as attested to by the presence of distinctively shaped dart points (Crook and Harris 1957; Bever and Meltzer 2007) at the Lewisville site and the Aubrey Clovis site (Ferring 2001). Moreover, artifact collectors report the presence of Clovis, Folsom, Scottsbluff and other Paleo-Indian points from the surface of sites in the region. The presence of exotic, non-local lithic resources indicates that these early people traveled to territory where higher quality lithics were available, or were involved in a system of raw material trading. These early people hunted now extinct large game, but probably also foraged off the land.

The subsequent Archaic period lasted from 7,000-6,000 B.C. to as late as A.D. 700-800. The Archaic peoples lived throughout the county, with particular focus along the major and minor stream valleys where they were able to hunt and gather native foods. Large Archaic sites are generally located on terraces or ridges that overlook the Elm Fork of the Trinity River. Smaller lithic scatters have been recorded in upland areas throughout the county. These sites appear to be Archaic in age, but few have been thoroughly studied. Dart points, grinding stones, fire-cracked rock, and scrapers are common artifacts found at Archaic sites. The earliest Archaic peoples continued using exotic cherts for dart points, but, as time passed, there was a shift toward the use of locally available quartzite for chipped stone tools. These materials are described as Uvalde Gravels (Menzer and Slaughter 1971).

During Late Prehistoric I, a small amount of pottery appears at the Baggett Branch site, 41DL149 (Prikryl and Perttula 1995:189). Dated between A.D. 1000 to 1300, some pottery recorded at sites in North Central Texas has similarities to Caddoan pottery to the

east, but was locally manufactured. Genuine Caddoan and Jornada Mogollon ceramics also occur at sites in North Central Texas (Prikryl and Perttula 1995:189). Arrowheads appear about this same time, signaling the bow and arrow's introduction to the hunting toolkit. In addition, houses were found at the Cobb-Pool site, 41DL148 (Peter and McGregor 1988:140). Fritz (1993) mentions the use of corn for food in North Central Texas during this time and Todd (1999) suggests that the presence of mussel shell hoes in North Central Texas indicates some form of farming.

It has been suggested that the climate was drier during the Late Prehistoric II. Bison may have been relied upon for subsistence more than in Late Prehistoric I times. The presence of bison-scapula hoes, especially in northern North Central Texas, suggests an increase in horticulture. This concept is supported by the location of sites along sandy terraces instead of the floodplain area where Late Prehistoric I sites are found. Also, pottery similar to Nocona Plain has been recorded at sites in North Central Texas dating to this time period (Prikryl 1990:80).

At the end of the Late Prehistoric periods, there appears to have been a general abandonment of the North Central Texas area (Skinner 1988). Yet to the north, along the Red River in Montague and Cooke Counties and across Red River in Oklahoma, there is both archaeological and ethnographic evidence of historic Taovayas, Wichitas, and Yscanis Indians (Bell, Jelks and Newcomb 1967; John 1992:204). Since the Spanish could not subdue these tribes, they made them their allies with promises of help against the Osages.

There is tantalizing evidence found on the Trinity River in Dallas County of a possible visit by Spanish explorer Hernando de Soto (Bruseth 1992). Artifacts found consist of a chain-mail gauntlet, a halberd, and a spur. Current research, however, seems to indicate that Anglo settlers were the first non-Indians to settle in North Central Texas.

The first established European settlement in Denton County began before the mid-1800s with the establishment of the Peter's Colony after Texas gained independence. These early settlers were farmers who selected bottomland along the Elm Fork of the Trinity (Bridges 1978). Denton became the county seat in 1856. Commercial farming was not important until after the Civil War, and the early settlers were essentially self-sufficient. Besides the plants and animals they grew, wild varieties were commonly consumed. By 1875, cotton, corn, and wheat were the main cash crops. Up to half of these crops were grown by tenant farmers who either paid rent to the land owner for their house, tools, and seed or by tenants who gave the landowner a third of the grain and a quarter of the cotton or other cash crops. By the turn of the century, all of the major communities were established and some had passed away.

Previous Investigations

The most comprehensive archaeological investigations in Denton County and in proximity to the study area are those undertaken at Lake Lewisville, located approximately two miles to the north. Stephenson (1949) originally surveyed the Garza-Little Elm Reservoir, now known as Lake Lewisville. Twenty-seven sites were recorded, though it should be noted that this initial survey focused upon recording prehistoric sites and incorporated little subsurface testing, therefore no historic sites were recorded. During dam construction, what became know as the Lewisville site (41DN72) was found during a borrow pit excavation on a terrace 70 feet above the Elm Fork of the Trinity River. Between 1951 and 1957, 21 hearths were discovered as well as Late Pleistocene faunal remains and a Clovis point. The site dated to approximately 37,000 years BP, but this date has been questioned, as later testing indicated that lignite contaminated the dated samples. A revised date of circa 12,000 years BP has been more recently attributed to the site (Crook and Harris 1957, 1961; Banks 2010).

Nunley (1973) and students from Richland College surveyed the lake edge and recorded 58 historic and prehistoric sites for the USACE. The University of North Texas conducted an archaeological survey of approximately 14,000 acres of shoreline and recorded or relocated 66 prehistoric and 85 historic sites, many of which had originally been recorded by Stephenson and Nunley (Lebo and Brown 1990). Sites ranged in age from the Archaic to 1950, and were recorded in a number of settings, including the floodplains, terraces adjacent to drainages, upland, slopes and the ridge tops of the upland edge (Lebo and Brown 1990: Table 6.1). Thirty-nine of the sites, almost all of which were in the settings above the floodplain, were recommended for further testing, including backhoe trenching, which was done the next year (Brown and Lebo 1991). Of the 39 sites, five were then recommended for intensive testing, including both further trenching and excavation units, which was done in 1997 (Ferring and Yates 1998). Studies continue to be carried out at the lake to the present day, with a large area survey conducted there in 2009 by Brockington and Associates, Inc. (TASA 2011).

Numerous smaller projects have been undertaken near the landfill as well. AR Consultants, Inc. conducted a survey of the Lewisville Athletic Complex located less than a mile to the west of the study area, directly across and within the floodplain of the Elm Fork (Todd 2006). Though 6 shovel tests and 13 backhoe trenches were excavated, no cultural resources were located during the survey, likely due to the location of the Complex within the frequently flooded floodplain adjacent to the channel (Todd 2006: 17). Approximately one mile to the south, ARC surveyed and tested along Hebron Parkway in 1992 (Skinner 1992). During the survey, a prehistoric shell lens site (41DN488) was recorded on the west side of the Elm Fork, though no further testing was done due to the area being heavily disturbed by initial construction. However, additional extensive testing on the east bank of the Elm Fork failed to find any buried cultural resources.

AR Consultants, Inc. has also conducted a number of surveys in the uplands and upland edges surrounding the study area. These include a 1996 survey of the Prairie Creek

Interceptor pipeline route (Trask, Whorton and Skinner 1996), a survey along Office Creek (Skinner 2002), and a survey of the Baruch 116 development tract (Todd 2003). Though these surveys achieved generally negative results, the historic site 41DN523 was recorded during the Baruch 116 survey, and consists of a partially collapsed, multi-structure homestead that likely dates to the mid-20th century. AR Consultants, Inc. performed a survey of the Valley Ridge Boulevard extension north of the proposed landfill (Coleman, Turley, and Davis 2010). The Valley Ridge Boulevard survey recorded 41DN576, an early to mid 20th century historic site consisting of house and garage foundations, a well, septic tank, and trash scatter.

A search of the Texas Archeological Sites Atlas (TASA) indicates that eight sites are present within one mile of the 469.62 acre study area (TASA 2011). This includes three sites that were recorded during the numerous investigations undertaken at Lake Lewisville: 41DN30, 41DN39, and 41DN486. Site 41DN30, which sits at the confluence of Stewart and McWhorter Creeks was recorded by Stephenson in 1949, and consists of a lithic scatter of debris that he speculated to be a Henrietta Focus site. It was rerecorded in 1973 by Nunley. 41DN39, recorded by Harris in 1951, consisted of a prehistoric lithic scatter and a historic house site. Though relocated by Nunley, the site could not be found in 2009 during a survey of Lewisville Lake, and is believed to have been destroyed. 41DN486 was recorded during the 2009 survey, and consists of an early 20th century farmstead with foundation remains and historic domestic artifacts present on the surface. There is no information available for site 41DN242, which is located on a small knoll north of SH 121. 41DN540 is a prehistoric site recorded in 2005 by Lopez Garcia Group during a survey of the DFW Landfill west of the Elm Fork. It features both a shell midden and a hearth, and was likely a mussel shell processing site. There is no information available for sites 41DN333 and 41DN334, which sit southeast of the study area on a ridge on the east bank of the river between an intermittent tributary and Midway Branch. However, it may be reasonably assumed that they are likely prehistoric, given their close proximity to the channel. No NRHP properties, historical markers, neighborhood surveys or cemeteries are located within one mile of the study area. Finally, a review of the Denton County Highway map (Texas State Highway Department 1936) and the USDA Denton County Soils map (1918) located no structure plotted within the study area on either map.

RESEARCH DESIGN & METHODOLOGY

Research Design

Two research questions were developed to address prehistoric and historic archaeological potential within the study area. First, the study area possesses low to moderate potential for encountering prehistoric sites. This is due primarily to the location of the study area mostly within the Elm Fork floodplain. The 1986 survey at Lake Lewisville recorded 66 prehistoric sites, only three of which were in the floodplain (Lebo and Brown 1990: Table 6.1). Additionally, of the three sites recorded, no further action was recommended on two, and only minimal testing was recommended on the third. Stephenson's (1949) work at Lewisville Lake (formerly Lake Dallas), investigated areas that were flooded during the later 1990 survey. The survey showed "villages" to exist on elevations above the floodplain, though some did extend into the floodplain. Stephenson also found infrequent and small temporary occupation sites contained within the floodplain. Potential is higher in the terraces overlooking the floodplain, though this type of setting comprises less than five acres of the study area, and along Midway Creek.

The second question addresses historic site potential in the region. There is relatively low potential for historic sites in the study area. Early farming settlers would select bottomland locations, but later trends removed new homes and farmsteads to higher ground. A review of historic Denton County highway and soil maps of the area showed no structures mapped within the study area. However, a structure on the 1960 (1981 photorevised) Lewisville East, Texas 7.5' USGS map and on more recent aerial photography is shown in the extreme northern portion of the study area at the upland edge. This would place it on the small area of terrace in the study area. The most likely site types for the majority of the area are trash scatters, which could occur near any drainage. The upland edge holds potential for other site types including farmsteads.

Methodology

The field teams walked parallel transects spaced 20 to 30 meters apart in the 118.85 acre expansion area and made field notes about ground exposure, soil types, and disturbed areas. Shovel tests were excavated at intervals of 150 to 300 meters along each transect and where ground visibility was less than 30 percent. Each was excavated to the bottom of the Holocene deposit according to THC standards (n.d). Shovel tests averaged 30 cm in diameter, and were supplemented by an auger. The clay fill from the shovel tests was hand sorted and sandy fill screened through 1/4" hardware mesh to determine if cultural materials were present. Trench profiles were described following the procedures developed by Vogel (2002) and photographs were taken. Soil from trench walls, floors, and backdirt was screened in order to explore for artifacts. Shovel test and trench matrices were also described on the basis of texture and color. The Munsell Soil Color Chart was used to identify the specific soil colors in each test. Shovel test and trench locations were recorded using either a Garmin GPS Map 76 or a Garmin Colorado 400t handheld GPS receiver. Photographs were taken throughout the survey area using a Canon PowerShot SD1100 IS Digital Elph 8.0 mega pixel digital camera.

RESULTS

This chapter is separated into three sections, the first describes the terrain and natural setting of the study area. The results of the survey and trenching follow, and conclusions derived from the results end the chapter. Though shovel tests are described generally within the text, a complete description can be found in Appendix A.

Study Area

The survey area consists of an approximately 118.85 acre tract situated immediately north and east of the current Camelot Landfill property. Two distinct settings are encountered in the study area. These are the level, wooded Elm Fork floodplain, in which the majority of the study area is situated, and the upland edge encountered in the study area's northeastern corner. The landfill expansion tract has been divided into Areas A, B and C for ease of description (Figure 2). The 350.77 remaining permit acres south of the surveyed area are developed as the existing and active Camelot Landfill. The existing landfill operation extends from the southern edges of areas B and C down to the Elm Fork (Figure 3). Landfill operations have been ongoing in this area for 30 years, which negates the need for a detailed survey.

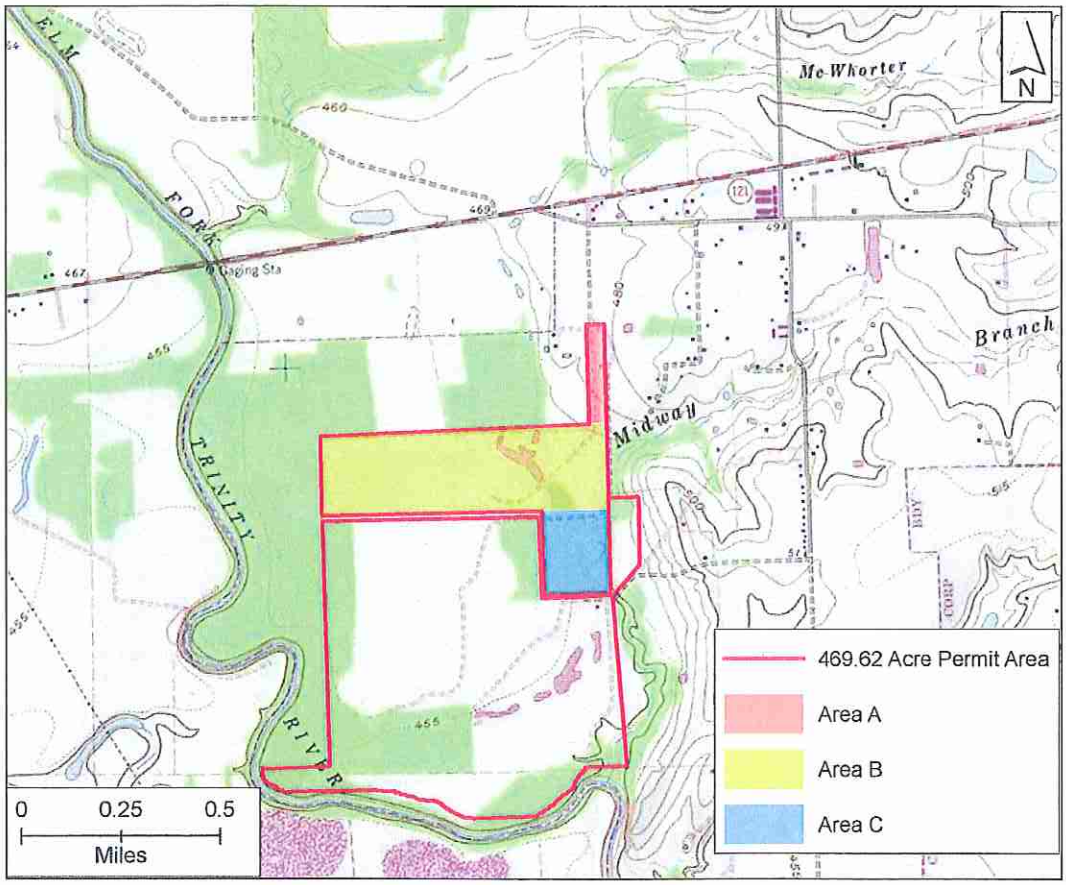

Figure 2. Camelot Landfill survey areas shown on a section of the Lewisville East, TX 7.5' USGS map.

The upland edge setting in Area A features more sloping topography, which rises appreciably to the northeast. Elevations in this setting range between 460' on the edge of the floodplain and 477' msl in the northern end of the study area. This area is far less thickly wooded. Vegetation is much the same as in the floodplain to the south, though tree and undergrowth cover is far less extensive. Ground visibility in the southern portion of the section was below 30 percent, but the northern two-thirds of the upland edge had a visibility of 40 to 80 percent.

The floodplain setting in Areas B and C is heavily wooded, and features generally level terrain, with elevations between 450' and 460' asl. Vegetation consists of plentiful mesquites, scattered pecans, cedar elms, various species of oaks and scattered junipers, with thick understory vegetation including ankle to knee-high prairie grasses, weeds, green briar and poison ivy. Given the abundant vegetation, ground visibility was accordingly poor, and averaged between 0 and 30 percent. However, occasional clearing and other disturbances exposed dark gray clay soil. Topography in the floodplain is gently undulating, with scattered, gentle rises present throughout. Midway Branch, which flows south into the Elm Fork, traces the eastern edge of the property, and a small unnamed tributary of Midway Branch runs through the southeastern portion of the study area (Area C). The landfill development avoids impacts to Section 404 jurisdictional areas in Area C, negating any present concern of sub-surface impact related to landfill activities.

Survey Results

Area A is a narrow section that extends north-south on the west side of the landfill access road. The southern portion of the section is mapped as Ovan clay, floodplain sediment, and the northern section is mapped as Bastrop fine sandy loam and Crockett fine sandy loam. Two shovel tests were placed in the northern two-thirds of Area A within the two mapped soil of the upland edge (Figure 3). Shovel test 01 exposed Crockett soil in the north extreme of the section; the profile recorded was characterized by brown loamy sand to 32 cmbs, strong brown loamy clayey sand to 60 cmbs, and reddish brown to red clayey sand to 85 cmbs. Elevation decreases sharply just south of the shovel test and allowed the survey crew to quickly cut a profile from the slope that showed the edge of the Crockett soil (Figure 4).

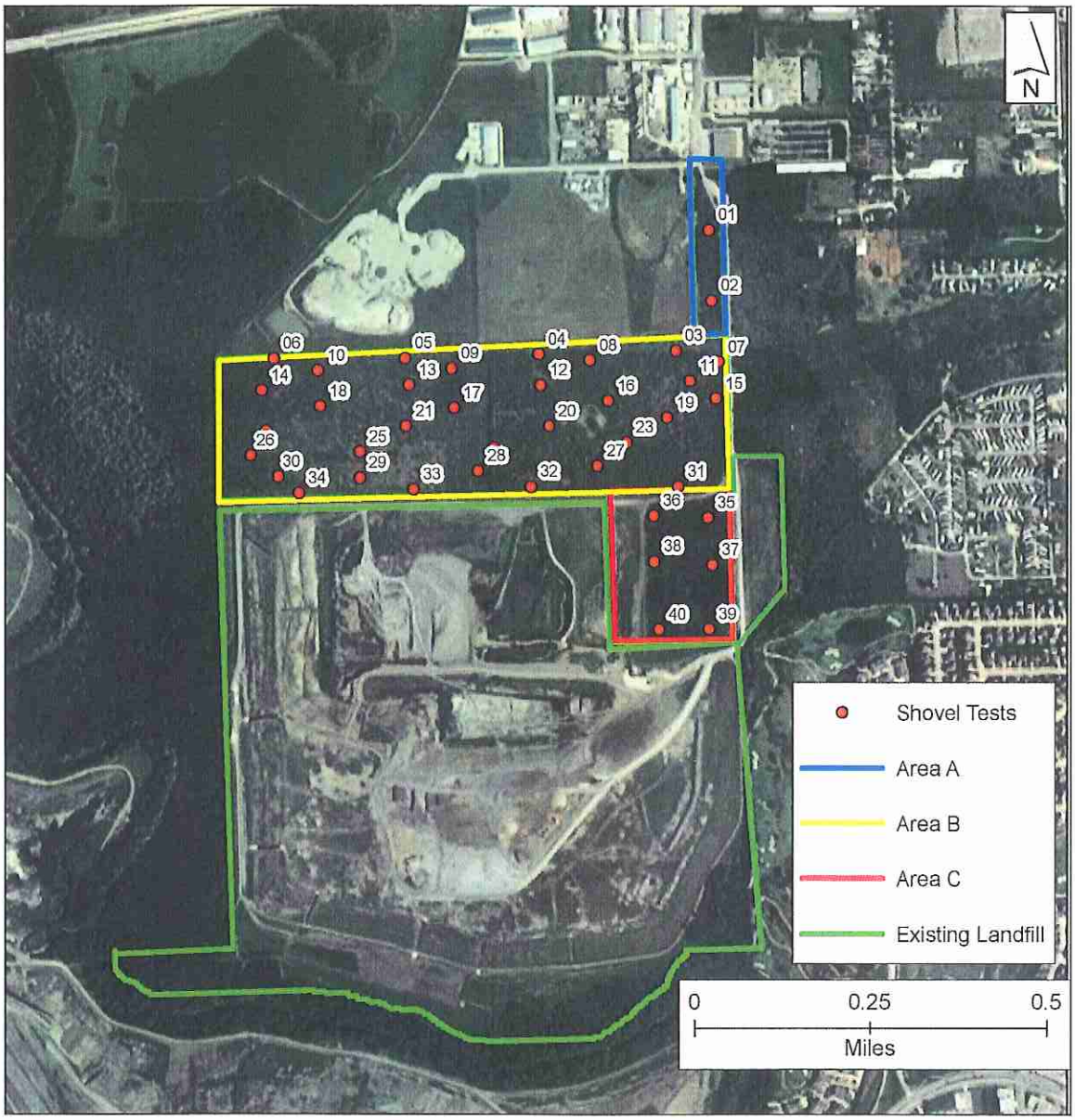

Figure 3. Shovel test locations plotted on a recent aerial photograph.

The next shovel test (ST02), revealed the Bastrop terrace soil. The profile recorded consisted of very dark gray clayey sandy loam to 25 cmbs, strong brown sand to 46 cmbs, clayey loamy sand to 87 cmbs, and very dark gray sandy clay to 95 cmbs. No cultural materials were found in the shovel tests or on the ground surface in Area A. Historic maps and aerials showed a structure at the northern end of Area A, adjacent to the current landfill weigh station. The structure appears to have been removed or destroyed during landfill improvements and a utility shed now sits on the location. A cut-off utility pole that may have once served the structure is all that remains (Figure 5).

Figure 4. Soil profile showing the eroding edge of the Crockett soil in Area A. View is to the east.

Figure 5. An old utility pole near the mapped location of the structure in Area A. View is to the north.

In Area B, shovel tests were excavated on eight parallel, east to west transects spaced 20-30 meters apart. Four shovel tests, placed at 150 to 300 meter intervals, were dug along each transect. A total 32 shovel tests (ST03-ST34) were excavated in Area B. The general subsurface profile found during the testing matched what was expected for the Ovan clay soil. Shovel tests contained dark gray to very dark gray clays or loamy clays over dark grayish brown clays in most of the area, but the southern transects revealed a more mottled, less stratified profile. Many of the shovel tests also contained $CaCO_3$ (trace amounts to 10%) in the lower depths, evidence that the soil is relatively stable. No cultural materials were observed in any of the excavated material or on the ground surface.

The area had been cleared in the past and has recently been left to re-grow as scrub forest, and several invasive species like mesquite account for much of the new vegetation. Survey crews encountered several very large earthen mounds around a constructed stock pond in the eastern half of the area. The mounds are as high as two meters, with diameters up to 30 meters (Figure 6). Presumably, the mounds are either push piles from clearing, construction spoil from the stock pond, or a combination of both. A small, recently constructed shed was encountered south of the pond (Figure 7).

Figure 6. Photograph showing the large mounds near the tank in Area B. View is to the southwest.

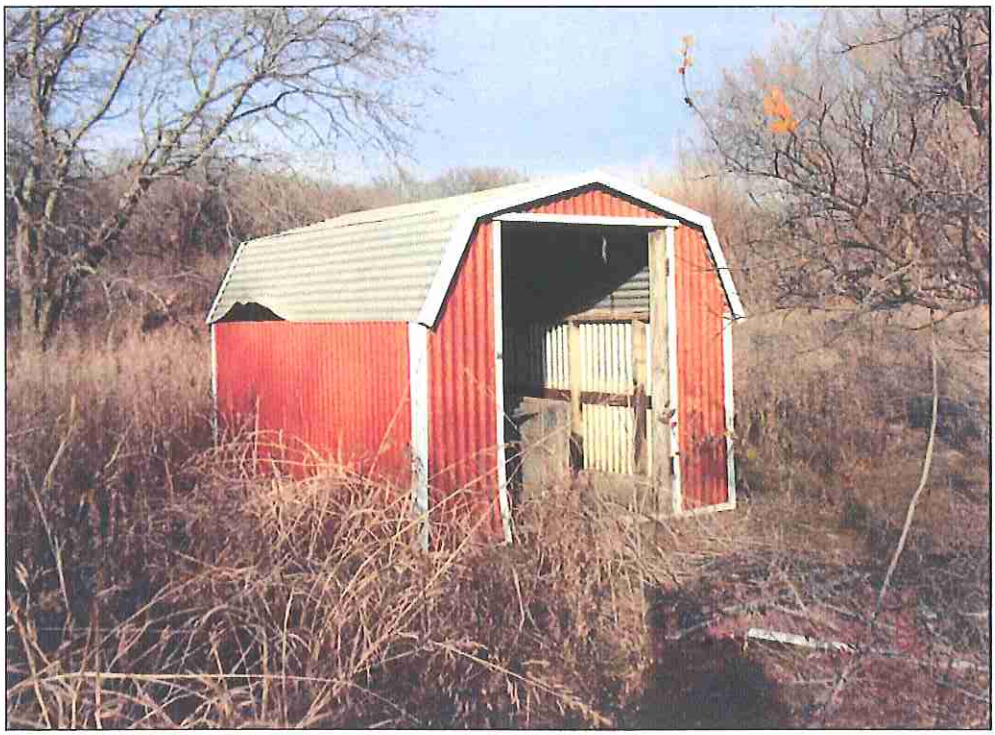

Figure 7. The small modern shed in Area B. View is to the east.

In Area C, shovel tests were evenly distributed throughout the approximately 20-acre tract, with a total of six tests excavated in this area. Five of the tests (ST35-ST39) were in the portion of the section mapped as Ovan clay, and the soil profiles observed were analogous to those found in the southern transects in Area B. The southwest corner of the section is mapped as Trinity clay. Despite the different soil plotted in this corner, shovel test 40 contained a sediment profile that matches those found throughout Area C. No cultural materials were discovered in any of the shovel tests or on the ground surface.

Area C, like Area B, was cleared in the past and left to re-grow as a forest. Growth in this section is more advanced with many large trees and fewer invasive species than in Area B. Midway Branch enters the section in the northeast corner, meanders southwest into the center of the area, and it then turns southeast to exit the corner. The original meander has been channelized from the center of Area C west to the elevated road, then north to parallel the east side of the road (Figure 8). Although the drainage system is modified, the old channel is still easily identifiable on the landscape. Its incision is shallow, no more than 50 cm, and narrow at 1 to 2 meters wide. Area C extends approximately 30 meters west of the elevated road into a recently cleared area where a north to south pipeline has been installed (Figure 9). Ground visibility in this narrow band was above 50 percent and no cultural materials were observed on the surface.

Figure 8. A recent Bing aerial photograph of Area C showing the channelized Midway Branch.

Figure 9. Cleared area and pipeline corridor on the western edge of Area C. View is to the north.

Trenching Results

Four backhoe trenches were excavated in the proposed landfill expansion area, one in Area B (T1) and three in Area C (T2-T4) (Figure 10). Detailed trench descriptions are presented in Table 2.

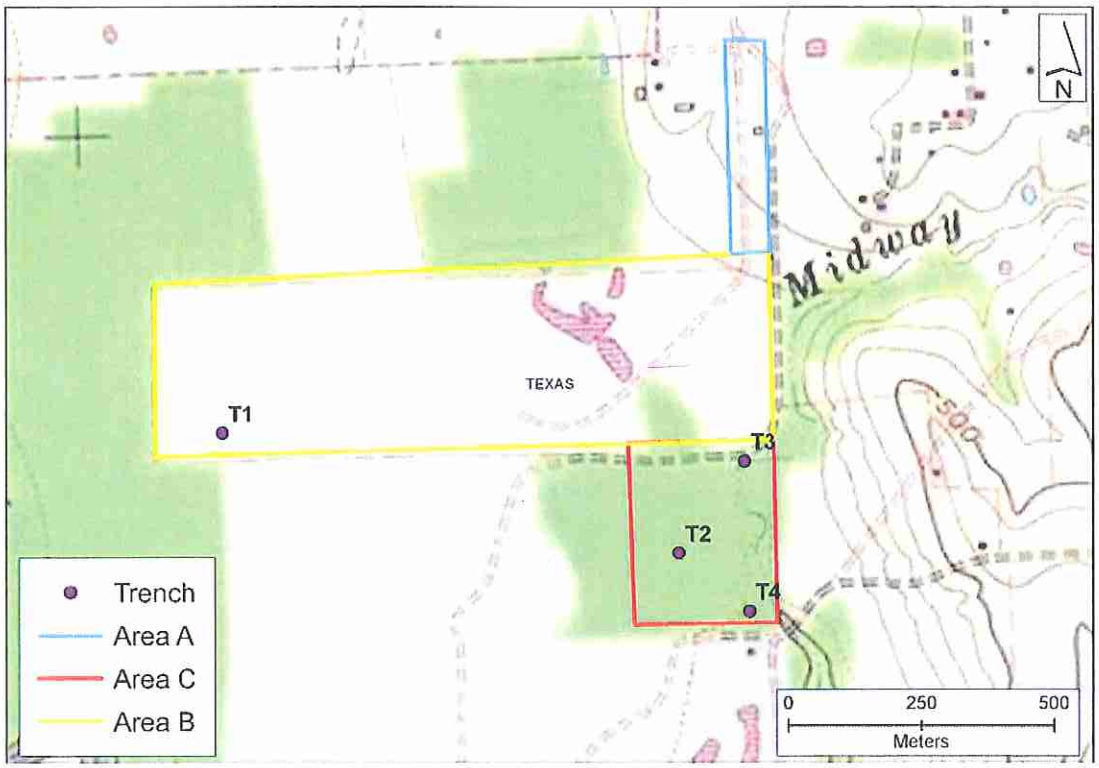

Figure 10. Trench locations shown on a section of the Lewisville East, TX 7.5' USGS map.

Trench T1 was excavated in the southwest section of Area B as a control measure to compare those dug in Area C closer to the drainage. T1 contained a profile of dark gray and grayish brown clays, showing an increase in CaCO3 clasting at depth; this profile with moderately stable deep horizons was typical of what had been expected in this floodplain location (Figure 11). Trenches T2, T3, and T4 were excavated on the west, northeast, and southeast perimeter of Area C respectively. Rain and snow fall prior to trenching inundated much of Area C, prohibiting backhoe excavation in the interior. The three trenches exhibited profiles typical of floodplain settings, although there was some variance between these and the Area B control including an 87 cm layer of construction fill at the top of T4 (Figure 12). The primary variance is related to particle sorting. Matrices in T1 were well sorted, containing uniform clays. In contrast, the matrices of T2 through T4 often contained a small measure of sand and up to 10 percent pea-sized sandstone and quartzite gravel. The disparate matrices observed in the two areas is likely the result of location; that is, trenches T2, T3, and T4 are much closer to Midway Branch and the upland edge to the east where they might be exposed to more energetic hydraulic forces that carry larger particles.

Figure 11. View of the east profile of trench T1.

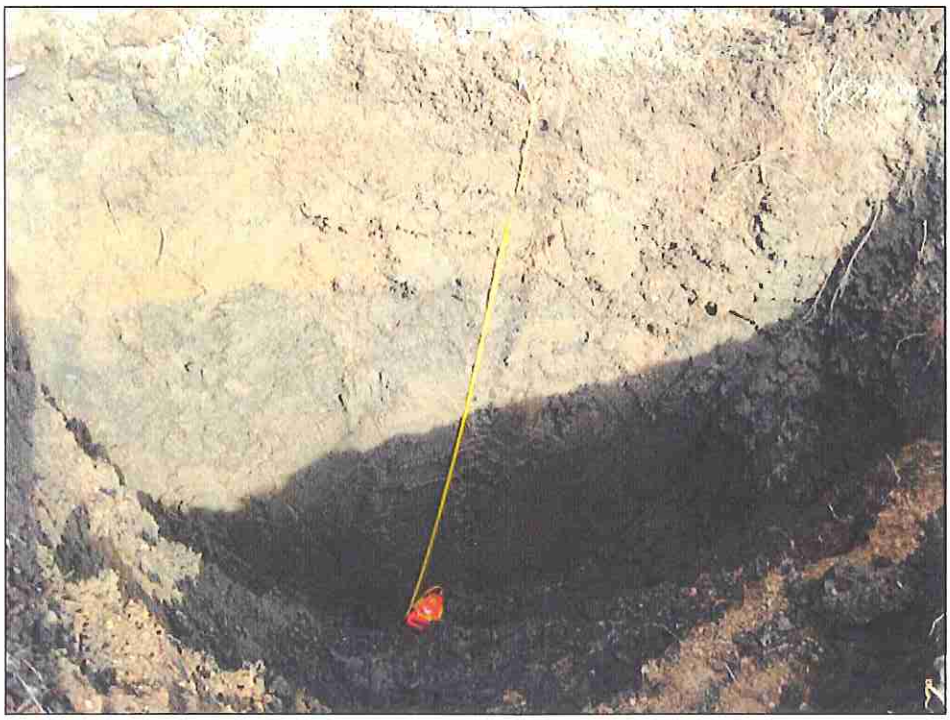

Figure 12. View of the north profile in trench T4. Note the thick layer of construction fill.

Table 2. Trench Descriptions.

Trench	Zone	Depth (cmbs)	Description	Comments
1	1	0-76	10YR3/1 Very dark gray clay. Sub-angular peds, matte linings, weak to moderate structure. Frequent very coarse to very fine roots. Frequent very fine biopores. Trace snail shell fragments. Smooth, gradual boundary.	
	2	76-191	10YR4/2 Dark grayish brown clay. Sub-angular peds, faint matte linings, strong structure. Frequent very fine roots. Trace snail shell fragments. <5% CaCO3 filaments. Smooth, gradual boundary.	
	3	191-226	10YR3/1 Very dark gray clay. Sub-angular peds, faint matte linings, moderate structure. Slick-n-slide surfaces. Few very fine roots. Frequent very fine biopores. 5-10% CaCO3 nodules (~2mm). Smooth, clear boundary.	
	4	226-317	7.5YR3/1 Very dark gray clay. Sub-rounded peds, no linings, strong structure. Few very fine roots. Occasional very fine biopores. Trace snail shell fragments. 5-10% CaCO3 nodules (3-5mm).	
2	1	0-106	10YR3/2 Very dark grayish brown clay. Sub-angular peds, matte linings, moderate structure. Abundant coarse to very fine roots. Few very fine biopores. Trace snail shell fragments. Smooth, gradual boundary.	Occasional root burn throughout.
	2	106-185	10YR3/1 Very dark gray clay. Sub-angular peds, matte linings, weak to moderate structure. Common very fine roots. Few very fine biopores. Trace snail shell fragments. 5% CaCO3 nodules (~5mm). Smooth, diffuse boundary.	Occasional charcoal flecks and root burns, 106-150 cmbs..
	3	185-253	10YR3/2 Very dark grayish brown clay. Sub-angular peds, very faint linings, weak to moderate structure. Very few very fine roots. Common very fine biopores. 5-10% CaCO3 nodules (~5mm). Smooth, gradual boundary.	
	4	253-312	10YR4/2 Dark grayish brown slightly sandy clay (55%) and 10YR4/4 dark yellowish brown slightly sandy clay (45%). Very fine sand. Sub-angular peds, no linings, weak-moderate structure. Very few very fine roots. Common very fine biopores. 3-5% CaCO3 nodules (1-3mm). <5% sandstone gravel (<2cm).	
3	1	0-60	10YR4/2 Dark grayish brown slightly sandy clay. Sub-rounded peds, glossy linings, weak structure. Abundant coarse to very fine roots. Occasional very fine biopores. Trace snail shell fragments. 5-10% pea-sized gravel. Smooth, gradual boundary.	
	2	60-132	10YR4/1 Dark gray clay. Sub-angular peds, glossy linings, weak-moderate structure. Frequent very fine roots. Trace CaCO3 nodules. <5% pea-sized gravel. Smooth, gradual boundary.	Very wet.
	3	132-205	10YR4/2 Dark grayish brown slightly sandy clay. Sub-angular peds, no linings, moderate structure. Few very fine roots. Trace CaCO3 filaments. <5% pea-sized gravel. Smooth, diffuse boundary.	

Trench	Zone	Depth (cmbs)	Description	Comments
3	4	205-320	10YR5/4 Yellowish brown slightly sandy clay. Sub-rounded peds, glossy linings, weak crumbly structure. Slick & slide surfaces. Very few very fine roots. Occasional very fine biopores. <5% CaCO3 nodules (5-30mm).	
4	1	0-87	10YR3/2 Very dark grayish brown loamy clay, 10YR4/2 dark grayish brown loamy clay, 7.5YR4/6 strong brown very clayey sand. Very weak, crumbly structure. Abundant roots. Common very fine biopores. Abundant pea to golf ball sized gravel. Wavy, abrupt boundary.	Construction fill
	2	87-122	10YR3/1 Very dark gray clay. Sub-angular peds, glossy linings, weak-moderate structure. Few very fine roots. Trace snail shell fragments. Trace CaCO3 filaments. Smooth, gradual boundary.	
	3	122-197	10YR3/2 Very dark grayish brown clay. Sub-angular peds, glossy linings, moderate to strong structure. Few very fine roots. Occasional very fine biopores. Trace snail shell fragments. 20-35% CaCO3 nodules (5-20mm). Smooth, diffuse boundary.	
	4	197-266	10YR4/2 slightly sandy clay. Sub-rounded peds, no linings, weak to moderate structure. Few very fine roots. 5-10% pea-sized gravel. 5-10% CaCO3 filaments. Smooth, diffuse boundary.	
	5	266-308	10YR4/3 Brown slightly sandy clay. Sub-rounded peds, no linings, weak to moderate structure. Occasional very fine biopores. Trace snail shell fragments. 10% CaCO3 nodules (5-20mm).	

Conclusions

No prehistoric or historic cultural resources were located during the pedestrian survey of the Camelot Landfill permit boundary area. The results of the survey confirmed the hypotheses presented in the research design that posited the low to moderate archaeological potential of the majority of the survey area. This low potential was a direct result of the landfill's location primarily in the Elm Fork floodplain in which the lack of prehistoric and historic archaeological resources has been paralleled in numerous other studies. The upland edge in Area A was considered to have the highest archaeological potential in the project area, but no evidence of cultural resources was encountered. The extremely small amount of this upland setting within the project area did not afford the survey crew enough area to encounter archaeological resources. Almost all historic elements in this small section were removed by prior improvements.

RECOMMENDATIONS

The purpose of this investigation was to determine if cultural resources were present within the Camelot Landfill permit boundary area, and, if so, to make recommendations on their significance and assess how they might be impacted by construction. No archaeological resources were found during pedestrian survey, shovel testing, or trenching. Based upon the results of this archaeological survey, ARC recommends that further cultural resource investigations are unwarranted in the study area and asks the Texas Historical Commission to agree with our findings. If buried cultural materials are discovered during the construction of the landfill expansion, work should stop in that area immediately and the Archeology Division of the Texas Historical Commission should be notified immediately. Work should not continue until the necessary investigations have been carried out after consultations have been completed.

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APPENDIX A

SHOVEL TEST INFORMATION

ST#	Depth (cm)	Description *	Comments /Artifacts
01	0-5 5-32 32-60 60-85+	Brown (7.5YR4/2) sandy loam Brown (7.5YR4/4) very compact loamy sand Strong brown (7.5YR4/6) compact loamy clayey sand Red (2.5YR4/8) and 40% reddish brown (5YR4/4) compact clayey sand	Negative
02	0-25 25-46 46-87 87-95+	Very dark gray (7.5YR3/1) clayey sandy loam Strong brown (7.5YR5/6) fine sand Dark brown (7.5YR3/2) clayey loamy sand Very dark gray (10YR3/1) sandy clay	Negative
03	0-20 20-35 35-85 85-100+	Very dark grayish brown (10YR3/2) very blocky loamy clay Dark brown (10YR3/3) clay, with 40% strong brown (7.5YR5/8) sand-likely fill Very dark grayish brown slightly loamy clay Dark grayish brown (10YR4/2) clay, with 10% calcium carbonate	Negative
04	0-30 30-70 70-85+	Very dark gray (10YR3/1) clay, with 50% brown (10YR4/3) clay Very dark grayish brown clay Very dark gray clay, with 10% calcium carbonate	Negative
05	0-60 60-75+	Very dark grayish brown clay Very dark grayish brown clay, with 5% calcium carbonate	Negative
06	0-12 12-25 25-70+	Very dark gray clay, with 30% strong brown (7.5YR5/6) sand 20% Very dark gray clay, with 10% strong brown sand, amid 70% quarried fill gravels Very dark gray clay	Negative
07	0-60 60-85+	Dark gray (10YR4/1) loose, loamy clay Dark grayish brown (10YR4/2) slightly sandy clay	Negative
08	0-42 42-80+	Dark grayish brown clay, with 40% dark gray clay Very dark gray slightly sandy clay, with 5% calcium carbonate	Negative
09	0-60+	Very dark grayish brown clay	Negative
10	0-62 62-90+	Very dark gray very crumbly clay Dark grayish brown clay, with 5% calcium carbonate	Negative
11	0-35 35-60 60-70+	Very dark gray (2.5Y3/1) clay Very dark grayish brown (2.5Y3/2) sandy clay Very dark grayish brown sandy clay, with calcium carbonate filaments	Negative
12	0-15 15-45 45-80 80-90+	Olive brown (2.5Y4/2) sandy clay Very dark gray (10YR3/1) clay, mottled with 20% olive brown sandy clay Very dark gray (2.5Y3/1) sandy clay Very dark gray compact sandy clay	Negative
13	0-30 30-45 45-75+	Very dark gray clay Very dark gray, with 20% olive brown sandy clay Very dark gray sandy clay	Negative
14	0-66 66-80 80+	Very dark gray clay Very dark grayish brown (2.5Y3/2)sandy clay Very dark grayish brown sandy clay, with calcium carbonate	Negative
15	0-80+	Very dark grayish brown (10YR3/2) loamy clay. No gravels.	Negative.
16	0-88 88-100+	Very dark grayish brown loamy clay Dark gray (10YR4/1) clay, with 5% calcium carbonate	Negative
17	0-35 35-85 85-100+	Dark gray clay, with 30% brown (10YR5/3) slightly sandy loamy clay Very dark grayish brown (10YR3/2) clay Dark gray clay, with 5% calcium carbonate	Negative. Up to 5% pea-sized gravels
18	0-55 55-93	Dark gray clay, with 30% brown slightly sandy loamy clay Very dark grayish brown clay	Negative. Small

ST#	Depth (cm)	Description *	Comments /Artifacts
	93-100+	Dark gray clay, with 5% calcium carbonate	amount of crushed snail shell
19	0-65 65-85+	Very dark gray (10YR3/1) dry clay Dark gray clay	Negative
20	0-60+	Very dark gray clay	Negative
21	0-50 50+	Very dark gray clay Dark gray clay, with 5% mottles of yellowish red (5YR5/6) clay, and some snail shells	Negative
22	0-65 65-90+	Very dark gray clay Dark gray clay	Negative
23	0-50 50-80+	Very dark gray clay Dark gray clay	Negative
24	0-30 30-80+	Very dark gray clay, with 40% brown (10YR4/3) clay Very dark gray blocky clay, increasingly dry with depth	Negative
25	0-80+	Very dark gray blocky clay	Negative
26	0-30 30-75+	Very dark gray clay, with 30% brown clay Very dark gray (7.5YR3/1) very dry and blocky clay	Negative
27	0-36 36-70+	Gravel fill, with modern trash (plastic bags and clear glass Dark gray clay	Negative
28	0-50 50-60+	Very dark gray (10YR3/1) clay, with 20% strong brown sandy clay Very dark gray clay, with 20% strong brown sandy clay, and trace calcium carbonate	Negative
29	0-28 28-60 60-65+	Very dark gray clay, with 20% strong brown sandy clay Very dark gray compact sandy clay Very dark gray compact sandy clay, with trace calcium carbonate	Negative
30	0-28 28-60 60-65+	Very dark gray loamy clay Very dark gray sandy clay Very dark gray sandy clay, with calcium carbonate	Negative
31	0-75+	Dark grayish brown clay, moister than previous shovel tests, no shell or gravels	Negative.
32	0-65 65-73+	Dark gray clay, with 40% brown (10YR5/3) sandy clay Dark gray clay, with 10% calcium carbonate	Negative
33	0-78 78-73+	Dark gray clay, with 30% brown sandy clay Dark gray clay, with 5% calcium carbonate	Negative
34	0-75 75-83+	Dark gray clay, with 20% brown loamy sandy clay Dark gray clay, with 5% calcium carbonate	Negative
35	0-20 20-75+	Very dark grayish brown clay Very dark gray clay	Negative
36	0-70 70-80+	Very dark gray clay Very dark gray clay, with trace calcium carbonate	Negative
37	0-30 30-70+	Very dark grayish brown clay Very dark gray clay	Negative
38	0-50 50-60+	Very dark gray clay Very dark gray clay, with trace calcium carbonate	Negative
39	0-27 27-60+	Dark gray clay Very dark gray dry, compact clay	Negative
40	0-40 40-70+	Very dark gray clay, moist Very dark gray clay, with trace calcium carbonate	Negative

* Munsell colors listed only the first time encountered

ATTACHMENT 2

PROJECT SUMMARY
AND
SITE LOCATION MAPS

Project Summary

Camelot Landfill Expansion
Denton County, Texas

Introduction

The City of Farmers Branch is in the process of developing a major permit amendment application to authorize future expansion of the Camelot Landfill. This landfill expansion project will provide long-term disposal capacity for solid waste that is generated in the area. The permit application will be submitted to the Texas Commission on Environmental Quality (TCEQ). The application will undergo a detailed review by the TCEQ before the operating permit for this facility is issued.

The objective of this summary is to provide an overview of the proposed landfill expansion. The following subsections detail information regarding general site information and a summary of the proposed site design.

Site Information

The following drawings are attached to this summary.

- Figure 1 – Site Location Map. This drawing shows the site location on a standard TxDOT county highway map.
- Figure 2 – General Topographic Map. This drawing shows the currently permitted and proposed expanded landfill permit boundary on a USGS map.
- Figure 3 – Aerial Photograph. This figure details the currently permitted and proposed expanded landfill permit area on an aerial photograph.
- Figure 4 – Existing Site Plan. This plan highlights the currently permitted and proposed expanded landfill permit area on a detailed site topographic map.
- Figure 5 – Existing and Proposed Landfill Completion Plan. This plan provides a comparison between the currently permitted landfill and the proposed changes to the landfill completion plan.

Site History

The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A). The site was upgraded to Subtitle D standards in 1996.

The Camelot Landfill is located in southeastern Denton County and is easily accessed from area population centers via State Highway 121 Business. The service area includes Denton, Dallas, Collin, and Tarrant counties. The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

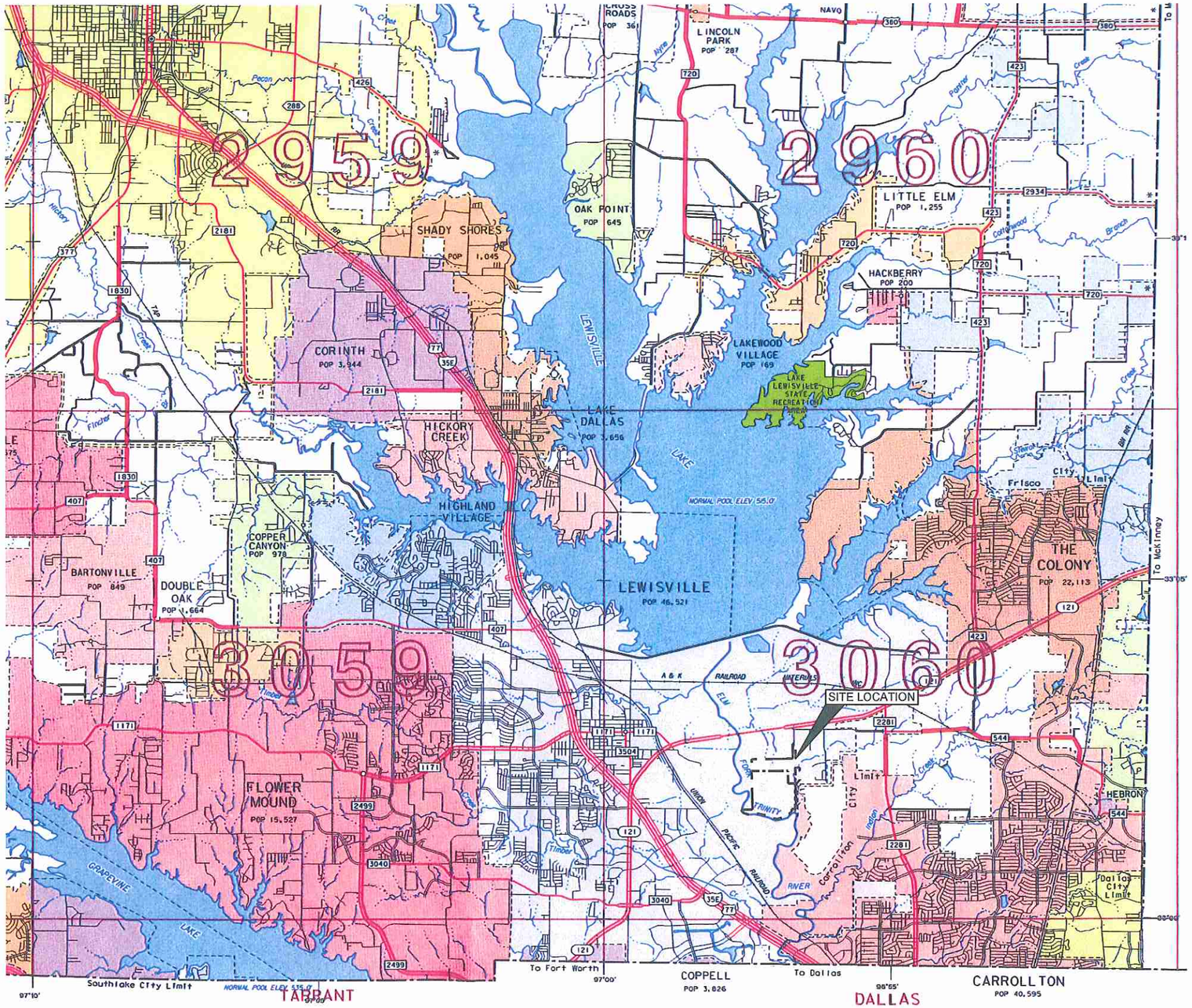
Design Summary

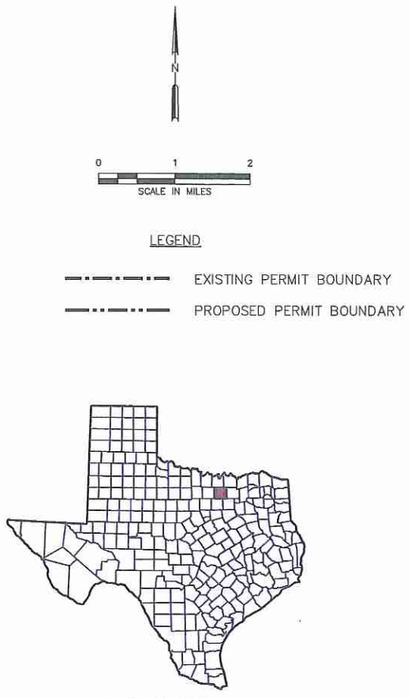
The following information presents a summary of the design and operations for the proposed Camelot Landfill expansion.

- The Camelot Landfill is an existing municipal solid waste landfill facility (TCEQ Permit No. MSW 1312A). The existing landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant counties.
- With this expansion, the existing 350.77-acre permit boundary will be increased by approximately 118.85 acres to 469.62 acres. The authorized limits of waste will expand by 38.5 acres from approximately 198.3 acres to approximately 236.8 acres.
- Accepted wastes will remain consistent with the current municipal solid waste landfill permit. The facility will accept municipal solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities; municipal solid waste resulting from construction and demolition activities; Class 2 and Class 3 nonhazardous industrial solid waste; and certain special wastes as permitted by the TCEQ.
- Access to the site will be provided via the existing site access road at Huffines Boulevard. Based on travel patterns of existing landfill traffic, vehicles bound for the landfill will access the site using State Highway 121 Business and Huffines Boulevard.
- A liner and final cover system that meets all regulatory requirements will be used for constructing the solid waste containment system. The design objective of the containment system (final cover, liner, and leachate management system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. Leachate that is removed from the landfill is either recirculated or transported to an offsite, permitted treatment facility. The construction procedures of the liner and final cover systems follow strict TCEQ approved quality control and quality assurance procedures, which are verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the TCEQ before solid waste is placed in the landfill.
- To control landfill gas emissions and minimize the potential for subsurface migration, a landfill gas (LFG) collection and control system (GCCS) has been installed at the site. The collection system currently consists of vertical extraction wells and collection piping throughout the waste mass. The collected LFG is conveyed to an LFG-to-energy (LFGTE) facility, which is owned by a third party

energy developer. Any excess LFG not used by the LFGTE facility will be directed to the existing flare for combustion. The existing system will be expanded to incorporate the currently permitted but undeveloped waste fill footprint and the expansion area. Routine monitoring of the GCCS is performed to verify the efficiency of the GCCS to collect and control generated LFG.

- To verify that the highest level of environmental protection is maintained, the following landfill monitoring systems are provided:
  - Groundwater Monitoring System. The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened to monitor groundwater quality. The water samples are tested at an offsite laboratory.
  - Gas Monitoring System. The purpose of the landfill gas monitoring system is to verify that landfill gas does not migrate off site. Landfill gas probes are placed along the perimeter of the permit boundary.
  - These monitoring systems are sampled and tested periodically. The results are filed with the TCEQ and are public record.
- Site Operations. The site will be operated by properly trained personnel. A detailed site operating plan will be included in the permit amendment application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with TCEQ regulations. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis to ensure the site is in compliance with state regulations.





GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

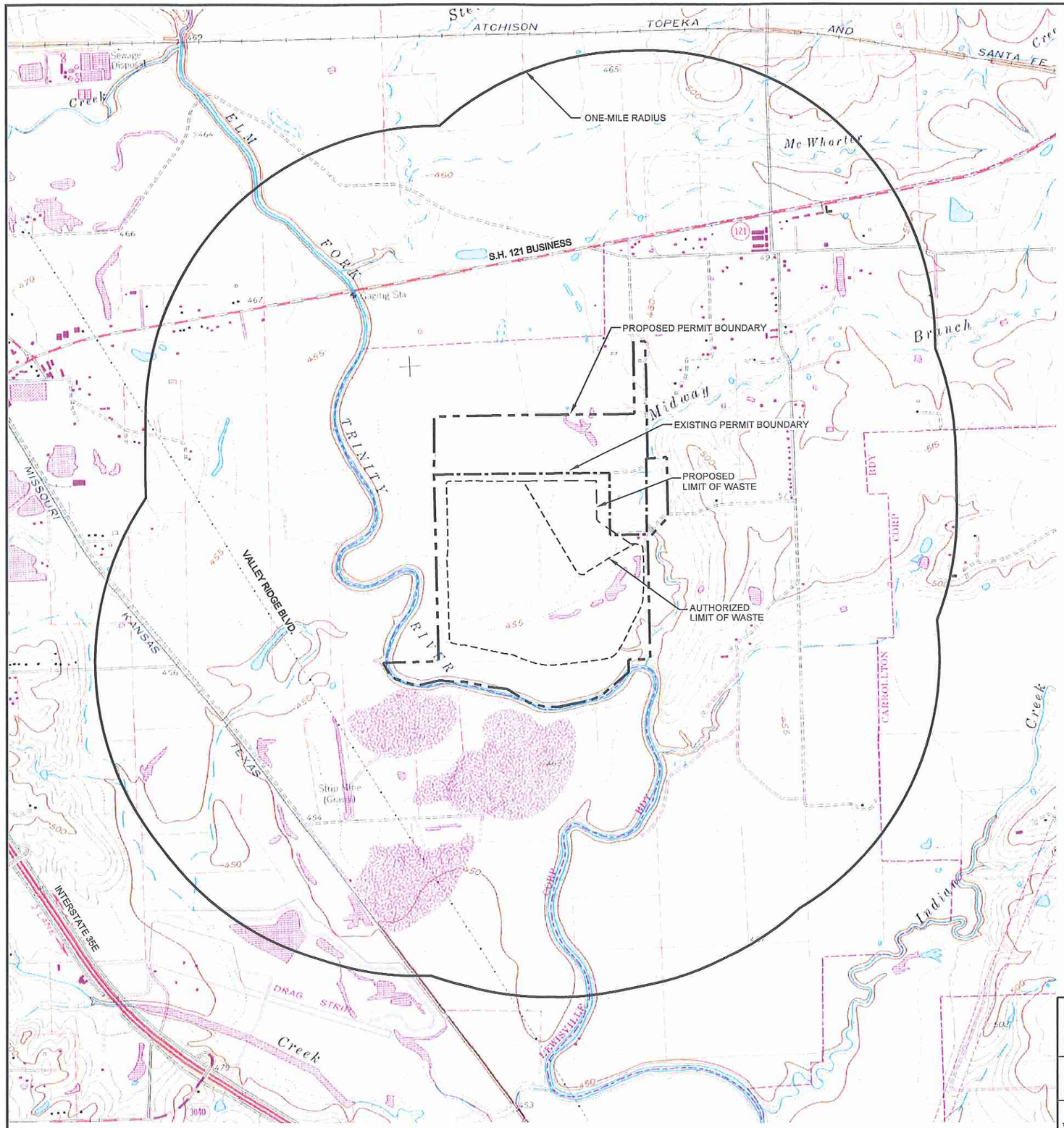
HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

I/IIB-70

[X] FOR INFORMATION PURPOSES ONLY [ ] FOR PERMITTING PURPOSES ONLY [ ] ISSUED FOR CONSTRUCTION [ ] CLIENT APPROVAL BY: _____	PREPARED FOR CITY OF FARMERS BRANCH	SITE LOCATION MAP CAMELOT LANDFILL DENTON COUNTY, TEXAS
DATE: 12/2010 FILE: 1339-351-11 CAD: 1-SITE LOC MAP.DWG DRAWN BY: VRS DESIGN BY: RJS REVIEWED BY: JPY	REVISIONS NO. / DATE / DESCRIPTION	Weaver Boos Consultants TBPE REGISTRATION NO. F-3727
REUSE OF DOCUMENTS THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST.		CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO · FORT WORTH, TX (817) 735-9770 · GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO FIGURE 1



0 1000 2000
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

TEXAS

LEWISVILLE EAST, TEX.
1960
PHOTOREVISED 1981

CARROLLTON, TEX.
1959

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

NOTES:

1. SITE LOCATION BASE MAP ADAPTED FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS ABOVE.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-71

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- [ ] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 2-GEN. TOPO. MAP.DWG
DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

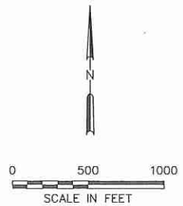
NO.	DATE	DESCRIPTION

GENERAL TOPOGRAPHIC MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2



LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-72

0:\1339\351\EXPANSION 2009\COORDINATION LETTER\3-AERIAL.dwg, jedwards, 1:2

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[ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 3-AERIAL.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

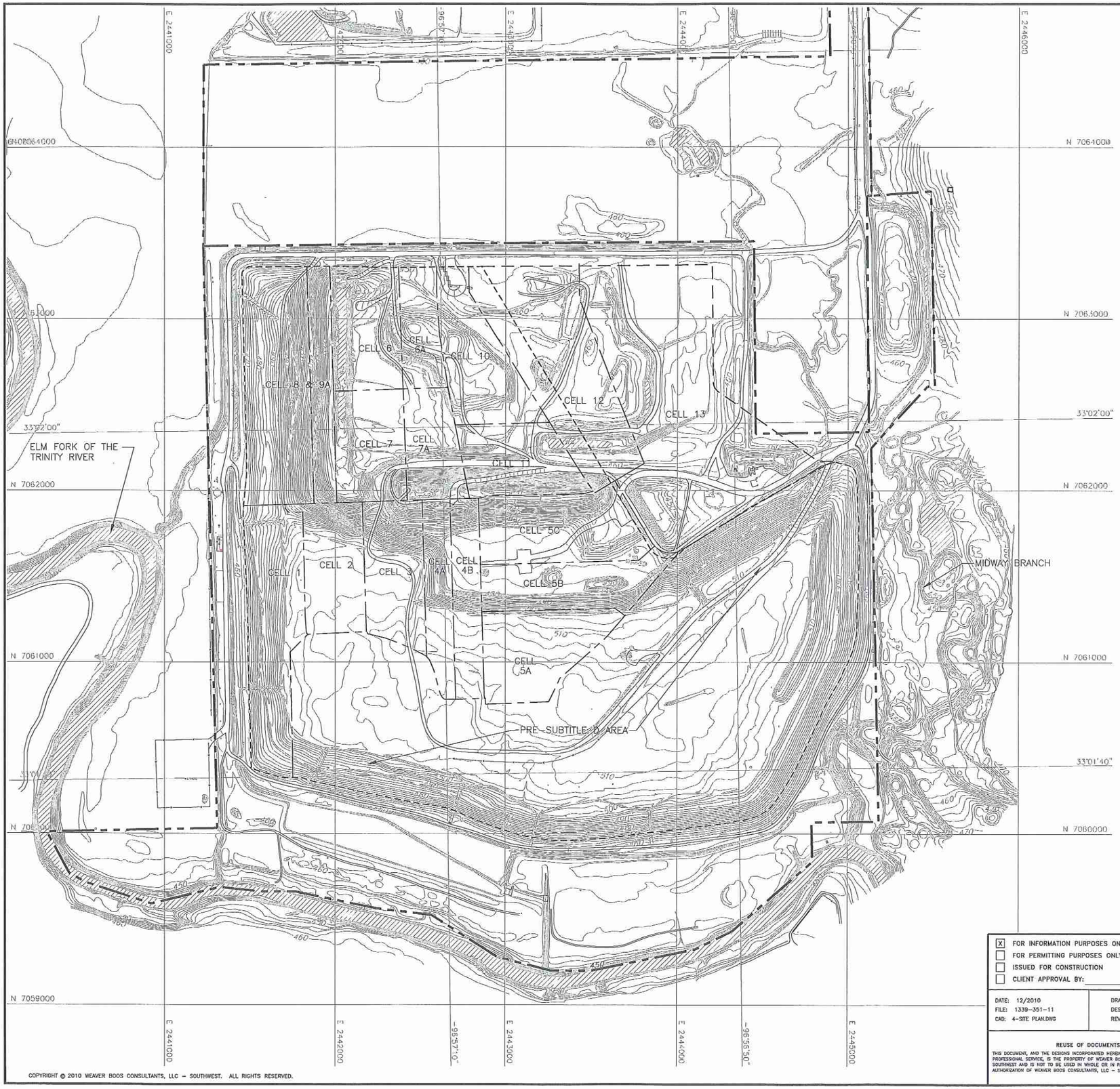
NO.	DATE	DESCRIPTION

AERIAL PHOTOGRAPHY

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



0 300 600
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- 500 EXISTING CONTOUR
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-73

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\4-SITE PLAN.dwg, jedwards, 1:2

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[ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 4-SITE PLAN.DWG
DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

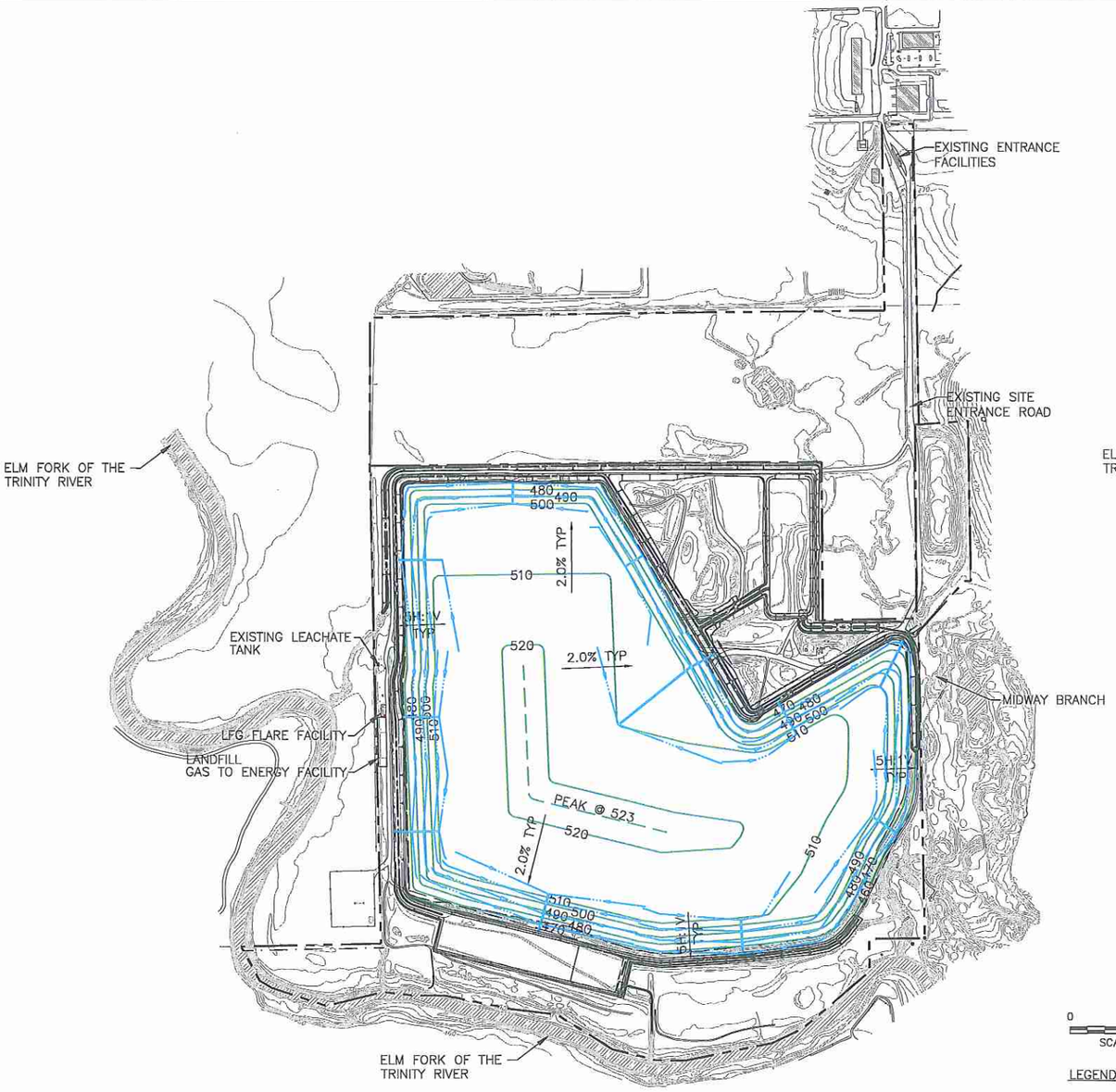
NO.	DATE	DESCRIPTION

SITE PLAN

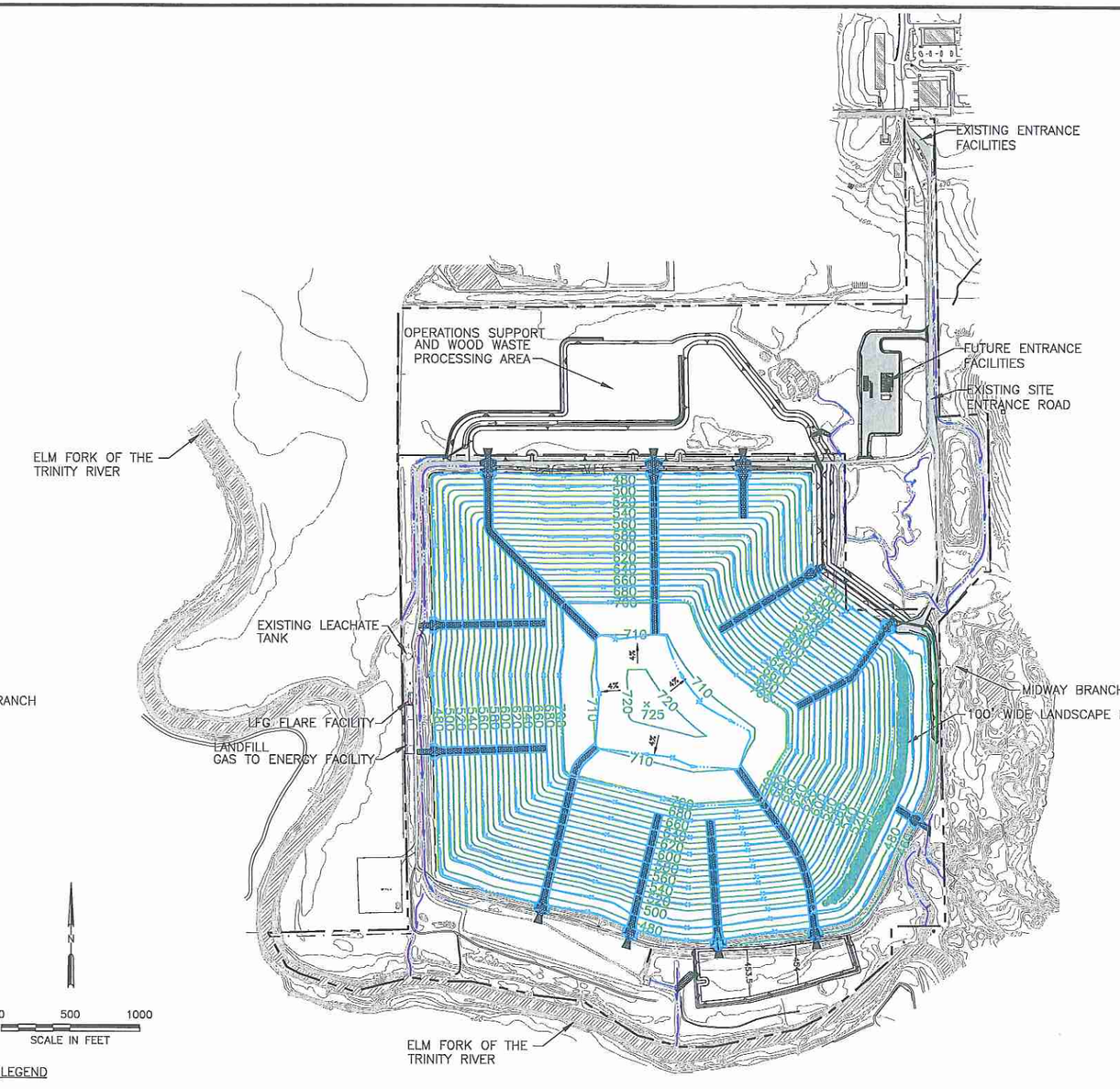
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4



PERMITTED LANDFILL COMPLETION PLAN



PROPOSED LANDFILL COMPLETION PLAN

N

0 500 1000

SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE

NOTE:

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DATE: 12/2010
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CAD: 5-COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\5-COMPARISON.dwg, jedwards, 1:2

COORDINATION WITH TEXAS DEPARTMENT OF TRANSPORTATION

CONTENTS

- June 24, 2011, TxDOT Approval Letter (refer to Appendix I/IID – Traffic Study for more information).

JUNE 24, 2011, TXDOT APPROVAL LETTER (REFER TO APPENDIX I/IID – TRAFFIC STUDY FOR MORE INFORMATION)

Texas Department of Transportation

2624 W. Prairie <> Denton, Texas <> 76201-5117 <> (940) 387-1414

June 24, 2011

Permit Ref: **11-0661 Signal Study**

Charles R. Marsh, P.E.
Weaver Boos Consultants
6420 Southwest Boulevard, Suite 206
Fort Worth, TX 76109

Dear Mr. Marsh:

I have reviewed the traffic study concerning roadway and traffic issues related to the proposed expansion of the Camelot Landfill. Texas Department of Transportation finds no objections with the submitted documentation.

Please, feel free to move forward with the application process.

If any additional information is necessary, please feel free to contact me or Mrs. Tracy L. Beck, P.E. at (940) 387-1414

Sincerely,

Gary Bailey

Gary D. Bailey, P.E.
Area Engineer, TxDOT-Denton Area Office

cc: Tracy L. Beck, P.E.

COORDINATION WITH TEXAS PARKS AND WILDLIFE DEPARTMENT

CONTENTS

- January 13, 2011, TPWD Review Letter.
- December 14, 2010, WBC Request for Review Letter.

JANUARY 13, 2011, TPWD REVIEW LETTER

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

December 14, 2010
Project No. 1339-351-11-02-6A

Ms. Kathy Boydston
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Re: Endangered or Threatened Species Assessment
Proposed Camelot Landfill Expansion
Denton County, Texas

Dear Ms. Boydston:

The purpose of this letter is to demonstrate coordination with the Texas Parks and Wildlife Department, consistent with Title 30 Texas Administrative Code (TAC) §330.61(n)(2). This regulation requires that a permit applicant for an expansion of a municipal solid waste facility coordinate with the Texas Parks and Wildlife Department regarding locations and any specific data relating to endangered and threatened species.

Weaver Boos Consultants, LLC–Southwest is in the process of developing a major permit amendment application, on behalf of the City of Farmers Branch, to expand the Camelot Landfill. The existing permit boundary will be expanded by approximately 118.85 acres from 350.77 acres to 469.62 acres. The existing permitted waste disposal area will be expanded laterally approximately 38.5 acres, and the landfill will also be expanded vertically. To assist you in your determination regarding threatened or endangered species or their critical habitat within or near the referenced project, please find attached (1) a project summary and site location maps and (2) a site specific Threatened and Endangered Species Assessment completed by Goshawk Environmental Consulting, Inc. (September 2010).

The site has operated as a landfill for over 29 years. As shown on the attached drawings, most of the area within the existing landfill permit boundary has been disturbed by earth moving activities (e.g., landfill operations). A site specific Threatened and Endangered Species Site Assessment was completed in September 2010. As discussed in the attached Goshawk Environmental Consulting, Inc. report, the site does not provide habitat for and would not likely be occupied by any federally listed and state listed threatened and endangered species. Goshawk notes that while it is possible that some bird species may utilize the landfill site during migration, use would be transitory in nature and of short

duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

To verify compliance with §330.61(n)(2), we will need to include a review letter from Texas Parks and Wildlife within the permit application. Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Project Summary and Site Location Maps
Goshawk Environmental Consulting, Inc. Threatened and Endangered Species Assessment

cc: Shane Davis, City of Farmers Branch

TEXAS PARKS & WILDLIFE

Based on the project description, the Wildlife Habitat Assessment Program does not anticipate significant adverse impacts to rare, threatened or endangered species, or other fish and wildlife resources.
Signed: Karen B. Hardin
Date: 1-13-2011

DECEMBER 14, 2010, WBC REQUEST FOR REVIEW LETTER

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

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Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Project Summary and Site Location Maps
Goshawk Environmental Consulting, Inc. Threatened and Endangered Species Assessment

cc: Shane Davis, City of Farmers Branch

PROJECT SUMMARY
AND
SITE LOCATION MAPS

Project Summary

Camelot Landfill Expansion
Denton County, Texas

Introduction

The City of Farmers Branch is in the process of developing a major permit amendment application to expand the Camelot Landfill. This landfill expansion project will provide long-term disposal capacity for solid waste that is generated in the area. The permit application will be submitted to the Texas Commission on Environmental Quality (TCEQ). The application will undergo a detailed review by the TCEQ before the operating permit for this facility is issued.

The objective of this summary is to provide an overview of the proposed landfill expansion. The following subsections detail information regarding the owner and operator of the site, general site information, and a summary of the proposed site design.

Owner/Operator Information

The Camelot Landfill is owned by the City of Farmers Branch and operated by Camelot Landfill TX, LP. Camelot Landfill TX, LP, is a subsidiary of Republic Services, Inc. (Republic). Republic is one of the leading providers of solid waste services in the nation. Republic provides nonhazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the country.

Site Information

The following drawings are attached to this summary.

- Figure 1 – Site Location Map. This drawing shows the site location on a standard TxDOT county highway map.
- Figure 2 – General Topographic Map. This drawing shows the current landfill and waste disposal area on a USGS map.
- Figure 3 – Aerial Photograph. This figure details the existing and proposed landfill expansion area on an aerial photograph.
- Figure 4 – Existing Site Plan. This plan highlights the existing and proposed landfill expansion area on a detailed site topographic map.
- Figure 5 – Existing and Proposed Landfill Completion Plan. This plan provides a comparison between the existing permitted landfill and the proposed changes to the landfill completion plan.

Site History

The Camelot Landfill is an existing 351-acre Municipal Solid Waste (MSW) landfill (TCEQ Permit No. 1312A). The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended before the site opened to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A). The site was upgraded to Subtitle D standards in 1996.

The Camelot Landfill is located in southeastern Denton County and is easily accessed from area population centers via State Highway 121 Business. The service area includes Denton, Dallas, Collin, and Tarrant counties.

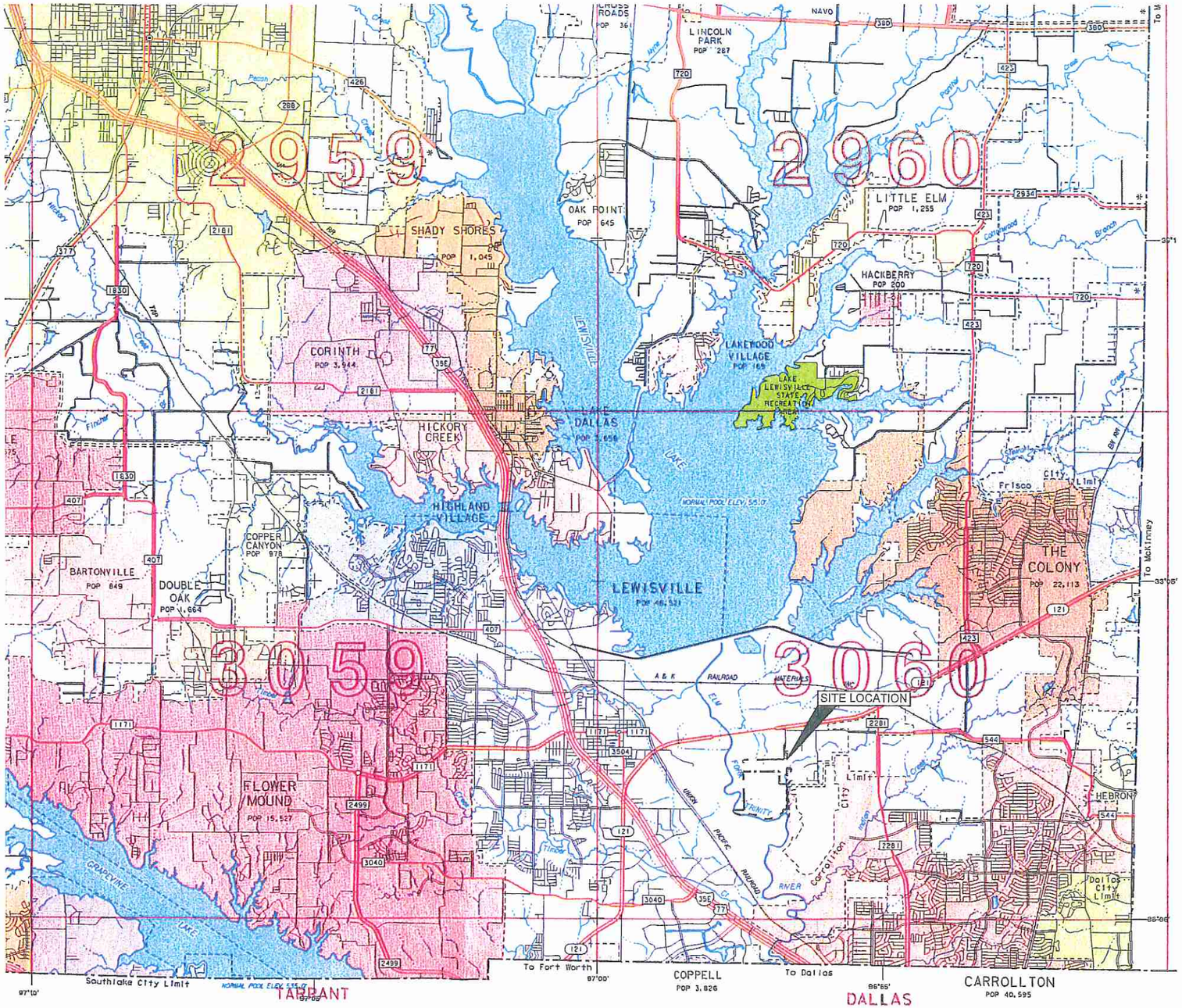
Design Summary

The following information presents a summary of the design and operations for the proposed Camelot Landfill expansion.

- The Camelot Landfill is an existing municipal solid waste landfill facility (TCEQ Permit No. MSW 1312A). The existing landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant counties.
- With this expansion, the existing 350.77-acre permit boundary will be increased by approximately 118.85 acres to 469.62 acres. The limits of waste will expand by 38.5 acres from approximately 198.3 acres to approximately 236.8 acres.
- Accepted wastes will remain consistent with the current municipal solid waste landfill permit. The facility will accept municipal solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities; municipal solid waste resulting from construction and demolition activities; Class 2 and Class 3 nonhazardous industrial solid waste; and certain special wastes as permitted by the TCEQ.
- Access to the site will be provided via the existing site access road at Huffines Boulevard. Based on travel patterns of existing landfill traffic, vehicles bound for the landfill will access the site using State Highway 121 Business and Huffines Boulevard.
- A liner and final cover system that meets all regulatory requirements will be used for constructing the solid waste containment system. The design objective of the containment system (final cover, liner, and leachate management system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. Leachate that is removed from the landfill is either recirculated or transported to an offsite, permitted treatment facility. The construction procedures of the liner and final cover systems follow strict TCEQ approved quality control and quality assurance procedures, which are

verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the TCEQ before solid waste is placed in the landfill.

- To control landfill gas emissions and minimize the potential for subsurface migration, a landfill gas (LFG) collection and control system (GCCS) has been installed at the site. The collection system currently consists of vertical extraction wells and collection piping throughout the waste mass. The collected LFG is conveyed to an LFG-to-energy (LFGTE) facility, which is owned by a third party energy developer. Any excess LFG not used by the LFGTE facility will be directed to the existing flare for combustion. The existing system will be expanded to incorporate the currently permitted but undeveloped waste fill footprint and the expansion area. Routine monitoring of the GCCS is performed to verify the efficiency of the GCCS to collect and control generated LFG.
- To verify that the highest level of environmental protection is maintained, the following landfill monitoring systems are provided:
  - Groundwater Monitoring System. The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened to monitor groundwater quality. The water samples are tested at an offsite laboratory.
  - Gas Monitoring System. The purpose of the landfill gas monitoring system is to verify that landfill gas does not migrate off site. Landfill gas probes are placed along the perimeter of the permit boundary.
  - These monitoring systems are sampled and tested periodically. The results are filed with the TCEQ and are public record.
- Site Operations. The site will be operated by properly trained personnel. A detailed site operating plan will be included in the permit amendment application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with TCEQ regulations. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis to ensure the site is in compliance with state regulations.

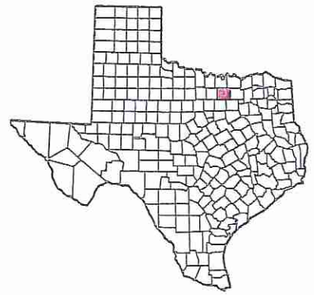


0 1 2
SCALE IN MILES

LEGEND

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY



KEY TO COUNTIES

GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

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PREPARED FOR

CITY OF FARMERS BRANCH

SITE LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

DATE: 12/2010
FILE: 1339-351-11
CAD: 1-SITE LOC MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

REVISIONS

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Weaver Boos Consultants

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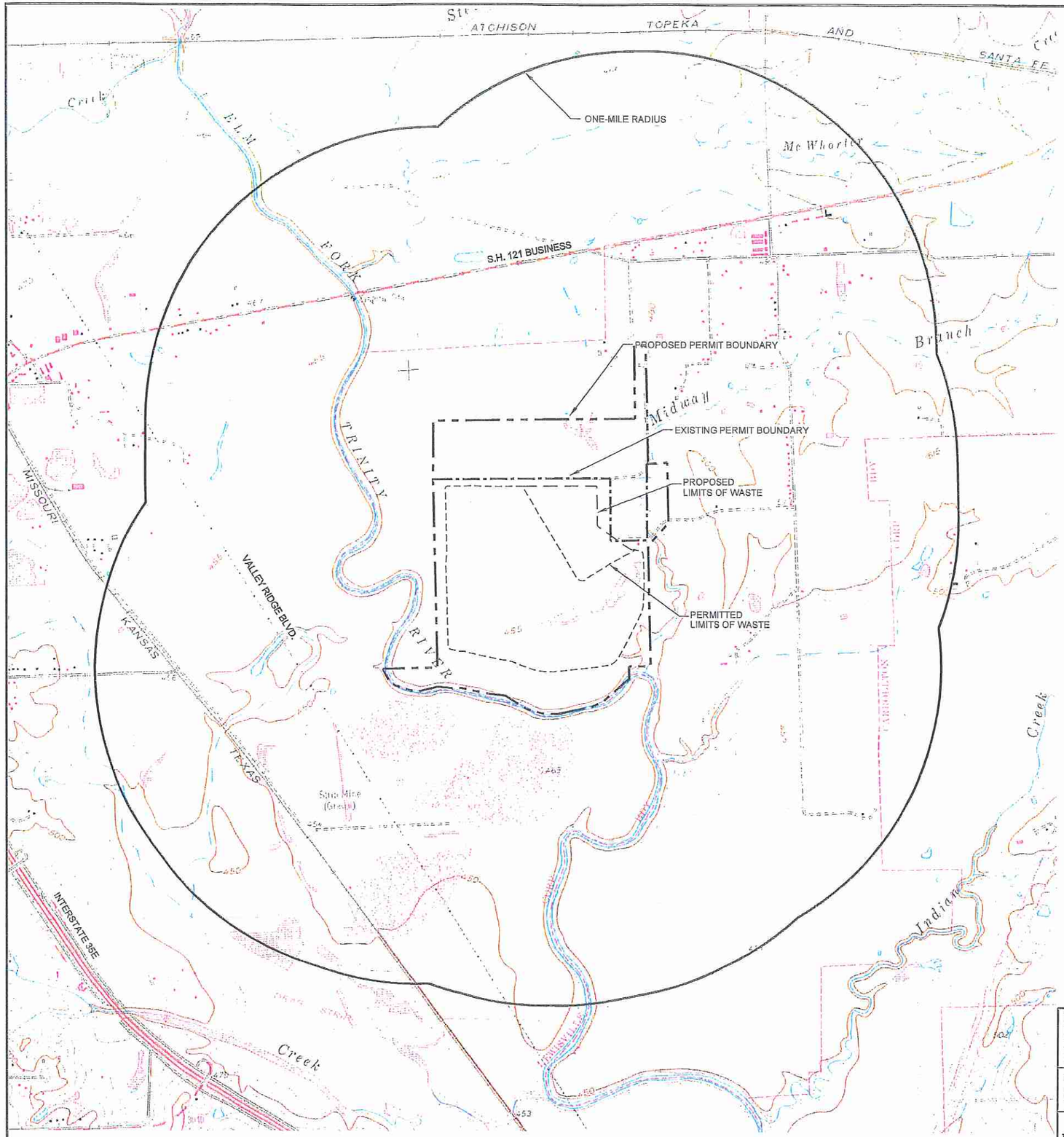
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1



N

0 1000 2000
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMITS OF WASTE
- PROPOSED LIMITS OF WASTE

TEXAS

LEWISVILLE EAST, TEX.
1960
PHOTOREVISED 1974
DMA 4452 I SW-SERIES V882

CARROLLTON, TEX.
NW/4 CARROLLTON 15' QUADRANGLE
N3252.5—W9652.5/7.5
1959
DMA 4552 IV NO-SERIES V882

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
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PREPARED FOR
CITY OF FARMERS BRANCH

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DENTON COUNTY, TEXAS

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(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
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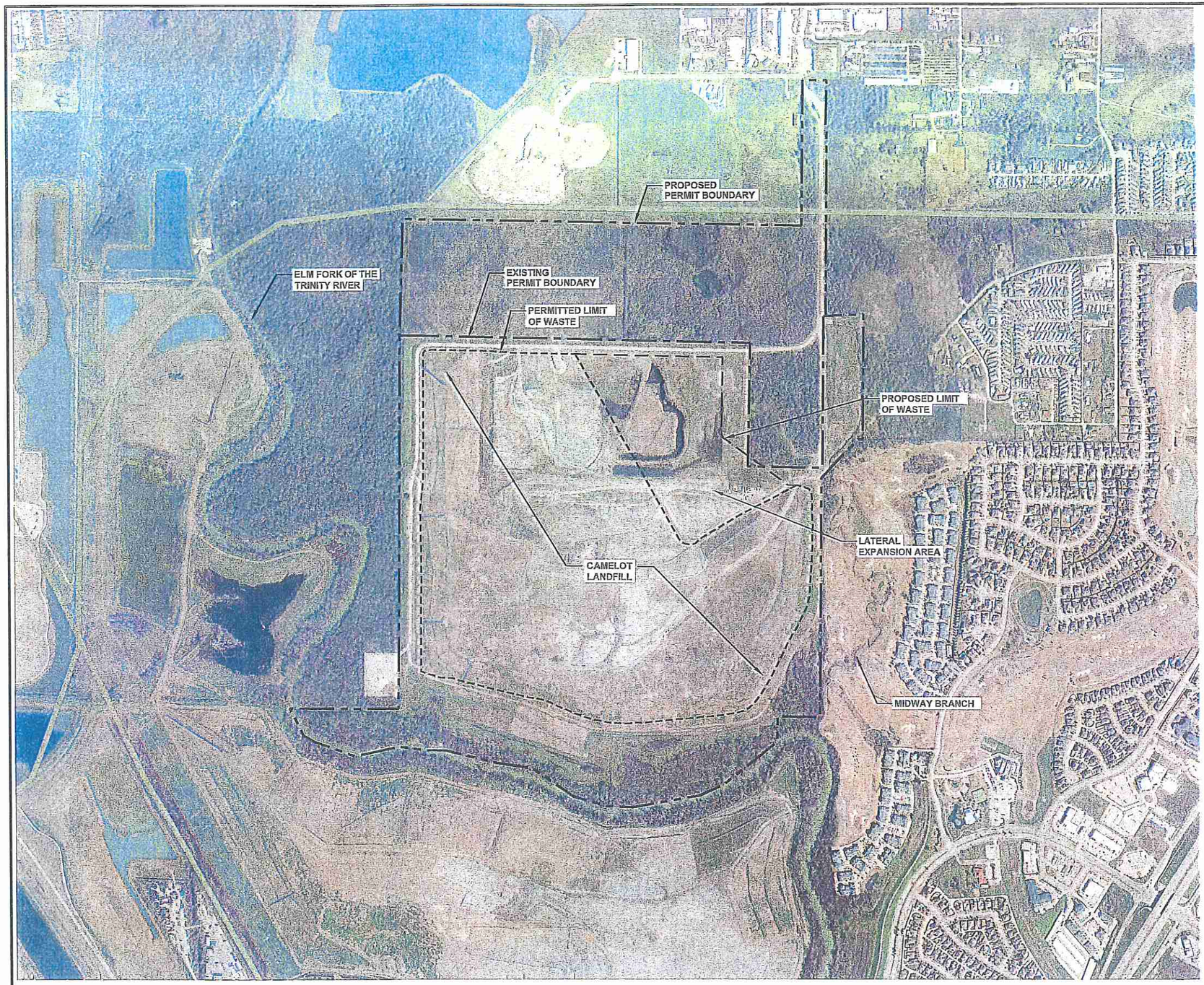
FIGURE 2

G:\1339\351\EXPANSION 2009\COORDINATION LETTER\2-TOPOGRAPHIC MAP.dwg, 12/13/2010 9:43:25 AM, jwilson, 1:2



N

0 500 1000

SCALE IN FEET

LEGEND:

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1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

0:\1339\351\EXPANSION 2009\COORDINATION LETTER\3-AERIAL.dwg, 12/9/2010 11:22:25 AM, jwilson, 1:2

- [X] FOR INFORMATION PURPOSES ONLY
- [ ] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 3-AERIAL.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

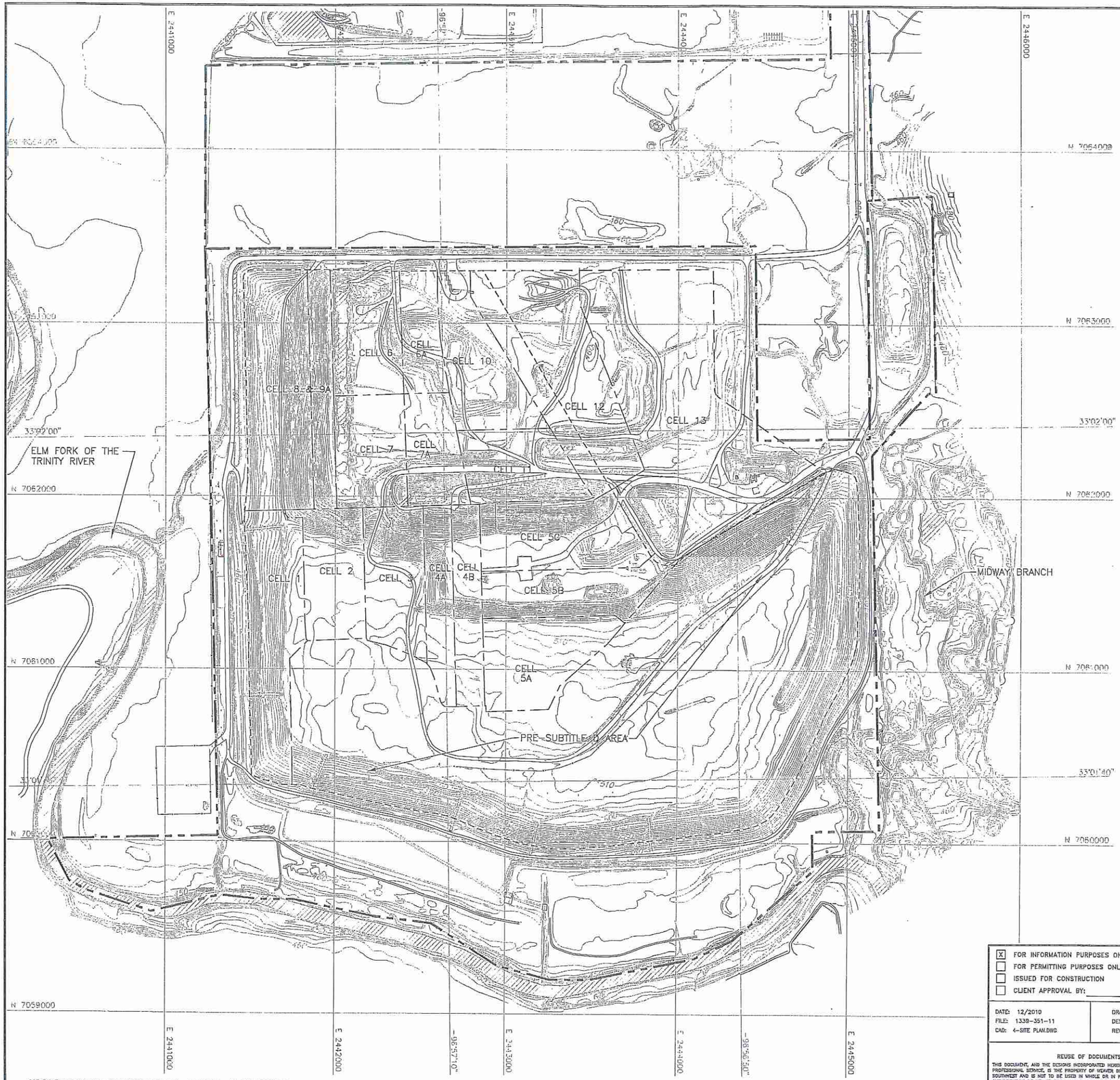
AERIAL PHOTOGRAPHY

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-8770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



0 300 600
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- EXISTING LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-92

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 4-SITE PLAN.DWG
DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

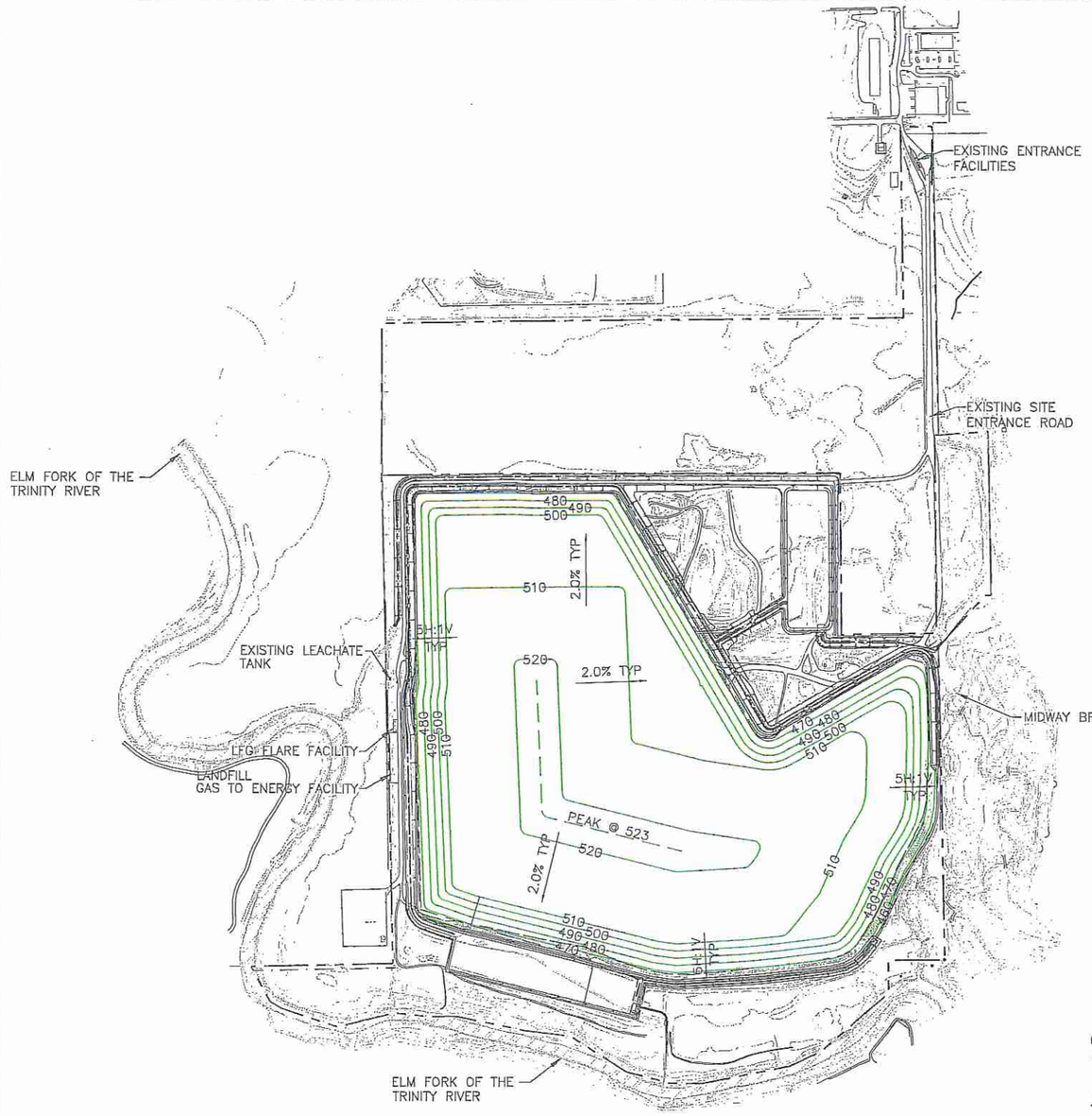
NO.	DATE	DESCRIPTION

SITE PLAN

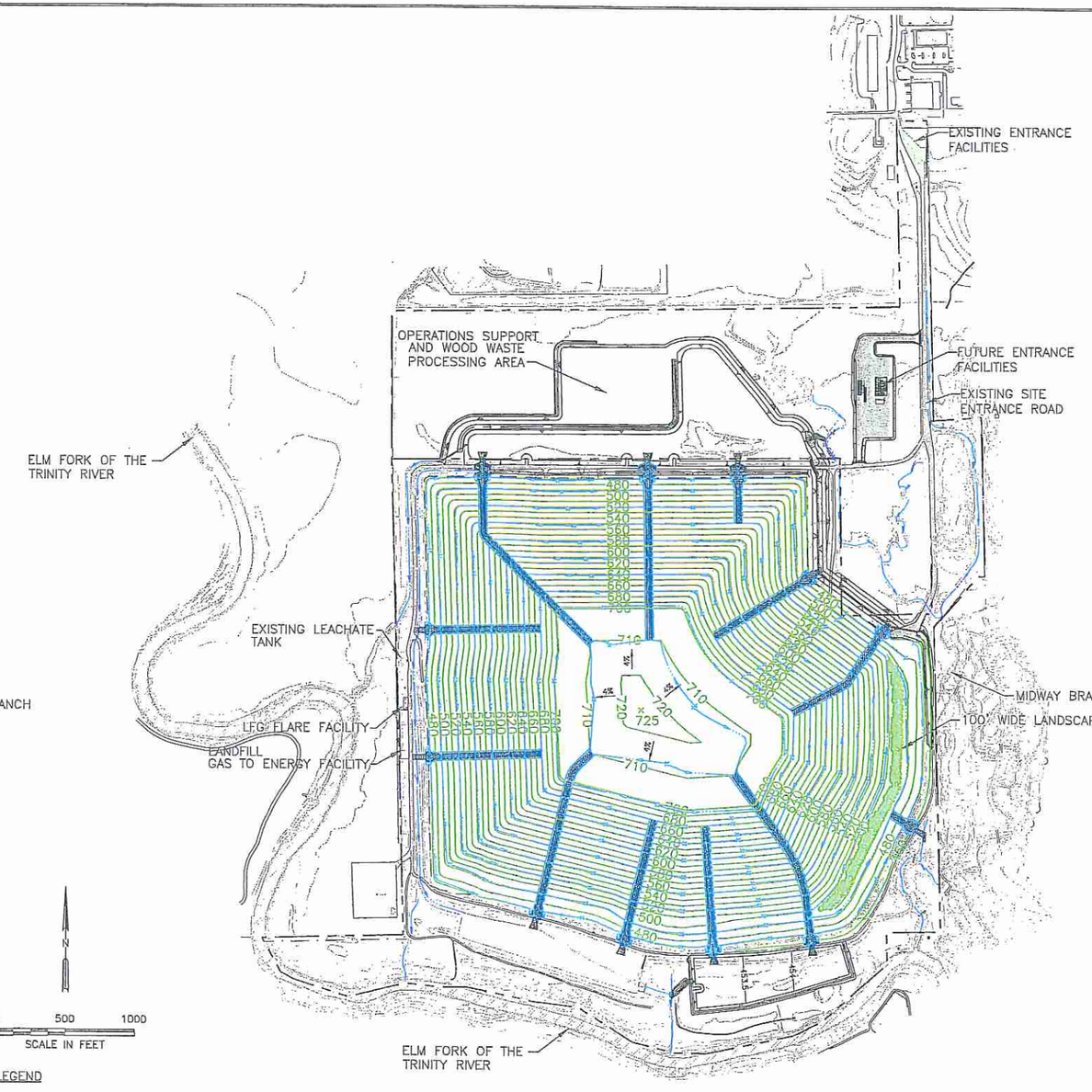
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4



PERMITTED LANDFILL COMPLETION PLAN



PROPOSED LANDFILL COMPLETION PLAN

0 500 1000
SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-93

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 5-COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5

GOSHAWK ENVIRONMENTAL CONSULTING, INC.
THREATENED AND ENDANGERED
SPECIES ASSESSMENT

13 September 2010

Jeffrey Young
Weaver Boos Consultants, LLC-Southwest
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

RE: Threatened and Endangered Species Review
Camelot Landfill
Lewisville, Denton County, Texas
GEC#09-003.TE

Dear Mr. Young:

This letter report provides the results of a threatened or endangered species habitat assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Camelot Landfill in Denton County, Texas. The assessment included a literature review and field reconnaissance effort within the entire 469.6-acre proposed permit boundary.

LITERATURE REVIEW

Literature and agency file searches were conducted to identify the potential occurrence of any federally listed threatened or endangered species or potential habitat on the Camelot Landfill. The review included the US Fish and Wildlife Service (USFWS) threatened and endangered species list, along with the Texas Parks and Wildlife Department (TPWD) Rare, Threatened, and Endangered Species of Texas by County Database and TPWD's Texas Natural Diversity Database (TXNDD).

An Internet search of the USFWS, Southwest Region Ecological Services web site was conducted to identify the potential occurrence of any federally listed threatened or endangered species or potential habitat on the Camelot Landfill. The species listed for Denton County include: bald eagle (*Haliaeetus leucocephalus*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), and whooping crane (*Grus americana*) (attached). The bald eagle has been delisted and is currently being monitored.

The Rare, Threatened, and Endangered Species of Texas by County Database for Detnon County (attached) list was reviewed. Many species on the list are indicated as rare species and are not addressed within this report. Species listed as threatened or endangered by TPWD include: peregrine falcon (*Falco peregrinus*), bald eagle, white-faced ibis (*Plegadis chihi*), whooping crane, wood stork (*Mycteria americana*), red wolf (*Canus rufus*), Louisiana pigtoe (*Pleurobema reddellii*), sandbank pocketbook (*Lampsilis satura*), Texas heelsplitter (*Potamilus amphichaenus*), Texas horned lizard (*Phrynosoma cornutum*), and timber rattlesnake (*Crotalus horridus*). None of the listed species are indicated within the TXNDD as being documented within the limits of the Camelot Landfill or immediate surrounding areas.

P.O. BOX 151525 AUSTIN, TX 78715 PH: 512-203-0484 WWW.GOSHAWKENV.COM

FIELD RECONNAISSANCE

Goshawk conducted a field reconnaissance effort on 2, 3, and 4 September 2009 to assess the site for potential threatened or endangered species habitat. The majority of the land in the surrounding area is currently under industrial use including landfills, mining, and other activities. Most of the area within the Camelot Landfill is currently being used for active landfill operations. There is a narrow native riparian corridor in the southern portion of the site along Elm Fork of the Trinity River. Additionally, some upland woodlands and open prairie exist within the northern quarter of the site.

The active and covered landfill cells are located within the central portion of the Camelot landfill. The active landfill includes areas of bare ground and sparse vegetation along with several excavated borrow pits where soil has been removed and used as part of the landfill activities. The active landfill is mostly sparsely vegetated with common sunflower (*Helianthus annuus*), Johnson grass (*Sorghum halepense*), and Spanish gold (*Grindelia papposa*); however, some portions of the active landfill have a good coverage of Bermuda grass (*Cynodon dactylon*).

The riparian woodlands along the Elm Fork of the Trinity River are dominated by American elm (*Ulmus americana*), cottonwood (*Populus deltoides*), cedar elm (*Ulmus crassifolia*), and bur oak (*Quercus macrocarpa*) trees. The midstory and understory are dominated by Canadian wildrye (*Elymus canadensis*), inland sea oats (*Chasmanthium latifolium*), frostweed (*Verbesina virginica*), green briar (*Smilax bona-nox*), and poison ivy (*Toxicodendron radicans*).

The upland woodlands are fairly uniform with minor differences in vegetative composition. The most common tree species include cedar elm, bois d'arc (*Maclura pomifera*), sugar hackberry (*Celtis laevigata*), and gum bumelia (*Bumelia lanuginosa*) with some areas having a small percentage of honey mesquite (*Prosopis glandulosa*), hawthorn (*Craetagus crus-gralli*), and green ash (*Fraxinus pennsylvanica*). Understory vegetation is typically very dense and consists mostly of Canadian wildrye, hedge-parsley (*Torilis arvensis*), and giant ragweed (*Ambrosia trifida*).

The open prairie community can generally be described as having primarily herbaceous species with a few shrubs and trees creating a very low canopy coverage (<10% coverage). Dominant species include Johnson grass, giant ragweed, and hedge-parsley; however, Mexican hat (*Ratibida columnaris*), Canadian wildrye, common sunflower, sage (*Salvia* sp.), and horsemint (*Monarda citriodora*) were also noted. The trees and shrubs within the open prairie are primarily cedar elm, hawthorn, and gum bumelia.

None of the listed threatened or endangered species were observed on the site during the reconnaissance effort. Additionally, none of the on-site native vegetation exhibits the necessary characteristics to be occupied by any of the federal or state listed species.

DISCUSSION AND FINDINGS

Of all of the potential species listed by the USFWS and TPWD for Denton County, only the bird species and the timber rattlesnake could possibly occur at the site. Use by the bird species would be transitory in nature. An active landfill does not provide typical habitat for any of the listed species and the regular activity at the landfill would typically prevent any of the bird species from utilizing the area for long periods of time. The timer rattlesnake could possibly

utilize the riparian woodland corridor along the Elm Fork of the Trinity River. However, with all the industrial development in the overall area, use by the timber rattlesnake is not highly likely.

Based on this assessment, it is Goshawk's opinion that the site does not provide habitat for and would not likely be occupied by any of the federally listed and state listed threatened and endangered species. While it is possible that some bird species may utilize the site during migration, use would be transitory in nature and of very short duration. Lack of suitable habitat makes the occurrence of these species highly unlikely. No adverse effects to any of the listed species are expected with the continued development of this site.

If you have any questions or desire additional information, please feel free to call me at 512-203-0484.

Sincerely,

Zane N. Homesley
Principal

Attachments

Cc: Jason Edwards, Weaver Boos Consultants, LLC-Southwest

U.S. Fish & Wildlife Service

Endangered Species List

Back to Start

List of species by county for Texas:

Counties Selected: Denton

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Denton County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
bald eagle	*Haliaeetus leucocephalus*	Birds	DM				P
least tern	*Sterna antillarum*	Birds	E				P
piping Plover	*Charadrius melodus*	Birds	E, T				P
whooping crane	*Grus americana*	Birds	E, EXPN				P

DENTON COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Bald Eagle	*Haliaeetus leucocephalus*	DL	T

found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Henslow's Sparrow	*Ammodramus henslowii*		

wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking

Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.

Western Burrowing Owl	*Athene cunicularia hypugaea*		

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

White-faced Ibis	*Plegadis chihi*		T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats

Whooping Crane	*Grus americana*	LE	E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties

Wood Stork	*Mycteria americana*		T

DENTON COUNTY

BIRDS

Federal Status State Status

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

MAMMALS

Federal Status State Status

Plains spotted skunk *Spilogale putorius interrupta*

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Red wolf *Canis rufus* LE E

extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies

MOLLUSKS

Federal Status State Status

Fawnsfoot *Truncilla donaciformis*

small and large rivers especially on sand, mud, rocky mud, and sand and gravel, also silt and cobble bottoms in still to swiftly flowing waters; Red (historic), Cypress (historic), Sabine (historic), Neches, Trinity, and San Jacinto River basins.

Little spectaclecase *Villosa lienosa*

creeks, rivers, and reservoirs, sandy substrates in slight to moderate current, usually along the banks in slower currents; east Texas, Cypress through San Jacinto River basins

Louisiana pigtoe *Pleurobema riddellii* T

streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins

Pistolgrip *Tritogonia verrucosa*

stable substrate, rock, hard mud, silt, and soft bottoms, often buried deeply; east and central Texas, Red through San Antonio River basins

Rock pocketbook *Arcidens confragosus*

mud, sand, and gravel substrates of medium to large rivers in standing or slow flowing water, may tolerate moderate currents and some reservoirs, east Texas, Red through Guadalupe River basins

Sandbank pocketbook *Lampsilis satura* T

small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms; east Texas, Sulfur south through San Jacinto River basins; Neches River

Texas heelsplitter *Potamilus amphichaenus* T

quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins

Wabash pigtoe *Fusconaia flava*

DENTON COUNTY

MOLLUSKS

Federal Status State Status

creeks to large rivers on mud, sand, and gravel from all habitats except deep shifting sands; found in moderate to swift current velocities; east Texas River basins, Red through San Jacinto River basins; elsewhere occurs in reservoirs and lakes with no flow

REPTILES

Federal Status State Status

Texas garter snake *Thamnophis sirtalis annectens*

wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August

Texas horned lizard *Phrynosoma cornutum* T

open, arid and semi-arid regions with sparse vegetation, including grass, 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; breeds March-September

Timber/Canebrake rattlesnake *Crotalus horridus* T

swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto

PLANTS

Federal Status State Status

Glen Rose yucca *Yucca necopina*

Texas endemic; grasslands on sandy soils and limestone outcrops; flowering April-June

COORDINATION WITH NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

NCTCOG Review Request Letter

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

March 28, 2012
Project No. 1339-351-11-02-6A

Mr. Doug Anthony
Environment and Development Planner
North Central Texas Council of Governments
616 Six Flags Drive
Arlington, TX 76011

Re: NCTCOG Conformance Review Request
Major Permit Amendment Application – MSW 1312B
Camelot Landfill

Dear Mr. Anthony:

Consistent with the requirements of Title 30 Texas Administrative Code (TAC) §330.61(p), please find attached a copy of Parts I/II of the referenced major permit amendment application which has been prepared for the City of Farmers Branch. The purpose of the major permit amendment is to allow for the continued development of the existing Camelot Landfill. The existing 198.3-acre waste disposal area will be expanded by 38.5 acres. The existing permit boundary will be expanded by 118.5 acres to 469.62 acres. The maximum permitted final cover elevation will be increased from 523 ft-msl to 725 ft-msl, and the resulting capacity increase is 37,70,00 cubic yards. The continued development of the Camelot Landfill will provide for the long-term disposal needs of the City of Farmers Branch, Denton County, and surrounding communities.

The major permit amendment application was submitted to TCEQ on March 30, 2012. The submittal of Parts I/II of the application to the North Central Texas Council of Governments (NCTCOG) is made pursuant to Title 30 TAC §330.61(p), which reads:

> *"Council of governments and local government review request. The owner or operator shall submit 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. The owner or operator shall also submit documentation that a review letter was requested from any local governments 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."*

We believe that the continued development of the Camelot Landfill is consistent with the NCTCOG Regional Plan for the following reasons:

- The NCTCOG Regional Plan supports the need for landfill facilities as a long-term component of the region's solid waste management program.

- The additional capacity gained by the approval of this expansion project (over 37 million cubic yards) will contribute to meeting the NCTCOG's goal of maintaining 10+ years of disposal capacity in this region.

Your assistance with this matter is appreciated. We also are prepared to make a presentation to the NCTCOG, if requested. Please call if you have any questions or need additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

cc: Shane Davis, City of Farmers Branch

Attachments: Parts I/II, Camelot Landfill Major Permit Amendment Application

COORDINATION WITH U.S. ARMY CORPS OF ENGINEERS

- July 26, 2011, USACE Letter.
- December 15, 2010, WBC Section 404 Jurisdictional Determination and Nationwide Permit 43 Confirmation Letter.

JULY 26, 2011, USACE LETTER

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

REPLY TO
ATTENTION OF

July 26, 2011

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2010-00564, Camelot Landfill

Mr. Jeffrey Young, P.E.
Weaver Boos & Gordon, LLC - Southwest
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109

Dear Mr. Young:

Thank you for your letter received December 16, 2010, concerning a proposal by the City of Farmers Branch to construct two drainage features located at the Camelot Landfill, City of Lewisville, Denton County, Texas. This project has been assigned Project Number SWF-2010-00564. Please include this number in all future correspondence concerning this project.

Under Section 404 of the Clean Water Act the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. USACE responsibility under Section 10 of the Rivers and Harbors Act of 1899 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined this project will involve activities subject to the requirements of Section 404. The USACE based this decision on a preliminary jurisdictional determination that there are waters of the United States on the project site.

We have reviewed this project under the pre-construction notification procedures of Nationwide Permit General Condition 27 (Federal Register, Vol. 72, No. 47, Monday, March 12, 2007, and corrections in Federal Register Vol. 72, No. 99, Tuesday, May 8, 2007). We have determined this project is authorized by Nationwide Permit 43 for Stormwater Management Facilities. To use this permit, the person responsible for the project must ensure the work is in compliance with the specifications and conditions listed on the enclosure. Failure to comply with these specifications and conditions invalidates the authorization and may result in a violation.

Our verification for the construction of this activity under this nationwide permit is valid until March 18, 2012, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit on a regional or national basis. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized provided

the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Our review of this project also addressed its effects on threatened and endangered species. Based on the information provided, we have determined this project will not affect any species listed as threatened or endangered by the U.S. Fish and Wildlife Service within our permit area. However, please note you are responsible for meeting the requirements of General Condition 17 on endangered species.

The permittee must sign and submit to us the enclosed certification that the work, including any proposed mitigation, was completed in compliance with the nationwide permit. The permittee should submit the certification within 30 days of the completion of work.

This permit should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. It does not authorize any damage to private property, invasion of property rights, or any infringement of federal, state, or local laws or regulations.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please refer to our website at http://www.swf.usace.army.mil/regulatory or contact Mr. Frederick Land at the address above or telephone (817) 886-1729.

Please help the Regulatory Program improve its service by completing the survey on the following website: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

for Stephen L. Brooks
Chief, Regulatory Branch

Enclosures

DECEMBER 15, 2010, WBC SECTION 404 JURISDICTIONAL DETERMINATION AND NATIONWIDE PERMIT 43 CONFIRMATION LETTER

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

December 15, 2010
Project No. 1339-351-11-02-6A

Mr. Stephen Brooks, Chief
US Army Corps of Engineers, Fort Worth District
Regulatory Branch – CESWF-PER-R
819 Taylor Street, Room 3A37
Fort Worth, Texas 76102-0300

Re: Section 404 Jurisdictional Determination and Nationwide Permit 43 Confirmation
Camelot Landfill
Denton County, Texas

Dear Mr. Brooks:

The purpose of this letter, submitted on behalf of the City of Farmers Branch, is to (1) obtain a Section 404 Jurisdictional Determination for the Camelot Landfill and (2) confirm that Nationwide Permit No. 43 applies to the construction of two proposed drainage features that will connect drainage structures to Section 404 jurisdictional areas. The Camelot Landfill is an existing municipal solid waste disposal facility (TCEQ Permit No. MSW-1312A). The existing landfill entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

The contact information for this project is listed below.

Applicant	Engineer
City of Farmers Branch 13000 William Dodson Parkway Farmers Branch, TX 75234 (972) 919-2601 Attn: Shane Davis	Weaver Boos Consultants, LLC–Southwest 6420 Southwest Boulevard, Suite 206 Fort Worth, Texas 76109 817-735-9770 Attn: Jeffrey P. Young, P.E.

Weaver Boos Consultants, LLC–Southwest (WBC) is preparing a major permit amendment application, on behalf of the City of Farmers Branch, to expand the Camelot Landfill. This permit amendment application will be submitted to the Texas Commission on Environmental Quality (TCEQ) for review and approval. A Section 404 Jurisdiction Determination from the U. S. Army Corps of Engineers (USACE) will need to be included in the TCEQ permit application.

The following sections of this letter provide (1) a Section 404 jurisdictional determination, and (2) details of the two proposed drainage features that will connect drainage structures to Section 404 jurisdictional areas.

SECTION 404 JURISDICTIONAL DETERMINATION

A jurisdictional determination for the landfill permit boundary was prepared by Goshawk Environmental Consulting, Inc. (Goshawk). Attachment 2 of this letter includes the jurisdictional determination report dated September 17, 2010. The report contains a detailed description of the landfill site. In addition, the figures included in Attachment 1 provide (1) an overview of the site (Figures 1 through 3), (2) a summary of the areas that are believed to be Section 404 jurisdictional areas (Figure 4), (3) a summary of the proposed landfill expansion (Figure 5), and (4) plans for the two proposed drainage features that will connect drainage structures to Section 404 jurisdictional areas (Figures 6 and 7).

As described in the Goshawk report, the Elm Fork of Trinity River forms the meandering southern boundary of the landfill. Midway Branch meanders through eastern portions of the landfill site before draining into the Elm Fork. Additionally, several streams, ponds, wetland areas, and tributaries are located within the northeastern and southeastern portions of the landfill site. All of the tributaries and channels (including the Elm Fork) and the pond or wetland areas directly connected to the tributaries and channels (e.g., Wetlands C and D in the Goshawk report) are likely to be considered jurisdictional waters of the U.S. and be regulated under Section 404 of the Clean Water Act. There are several isolated or temporary wetland areas (e.g., Wetlands A, B, and E and Wetland Pits A, B, C, and D identified in the Goshawk report) believed to be non-jurisdictional areas. These non-jurisdictional wetland areas do not have a direct connection to jurisdictional waters of the U.S. and are considered "isolated."

The proposed landfill expansion has been designed to minimize impacts to Section 404 jurisdictional areas. As shown on Figure 5, the proposed landfill expansion development avoids the existing Section 404 jurisdictional areas. Figures 6 and 7 show the proposed stormwater management structures that will convey runoff to potential waters of the U.S. These two structures are discussed in the following section.

PROPOSED CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES

The two proposed stormwater management structures that are located near or within Section 404 jurisdictional areas are shown on Figures 5, 6, and 7. One is located along the tributary in the northeast portion of the landfill site, (Structure 1) and the second is near Midway Branch on the east side of the site (Structure 2). Structure 1 is a 25-foot-wide concrete and gabion-lined spillway which will convey stormwater from detention pond P1 to the existing creek (refer to Figure 6 in Attachment 1). The spillway will be constructed at a 4:1 (4 feet horizontal to 1 foot vertical) slope down to a gabion-lined channel. This channel will convey flow over the gabions

to the bank of the existing creek. The peak flow from the detention pond is minimal. For example, the peak flow during the 25-year, 24-hour storm event is 29 cfs, which translates to a velocity only 1.67 ft/sec in the gabion-lined channel.

Structure 2 consists of gabion mattresses that will prevent erosion from stormwater flow from a drainage letdown on the southeast portion of the landfill, as shown on Figure 7 of Attachment 1. Concrete energy dissipators will reduce the velocity of stormwater that is conveyed from the letdown to the gabion-lined channel. The gabions will extend to the existing drainage feature shown on Figure 7. The existing drainage feature is a potential jurisdictional area that is approximately 8 feet wide (as noted in the Goshawk report). The top of the gabions, placed within the jurisdictional water, will match the existing channel flowline. The gabion area within the jurisdictional area will be less than 50 square yards (approximately 50 feet long by 8 feet wide).

It is our understanding that the construction of the two structures meets the requirements of Nationwide Permit No. 43. In accordance with Nationwide Permit No. 43, the proposed outfall structures will not result in the loss of waters of the U.S., and there will be no loss of streambed length. It is requested that the USACE confirm that the construction of these structures be covered by Nationwide Permit No. 43.

SUMMARY

We appreciate your cooperation with this important project. The USACE's response letter will be included in the Major Permit Amendment Application that will be submitted to the TCEQ to document that (1) the Elm Fork of the Trinity River, Midway Branch, and Wetlands C and D identified in the Goshawk report are the only Section 404 jurisdictional areas within the site and (2) that Nationwide Permit No. 43 is applicable to the two proposed drainage features that will connect drainage structures to Section 404 jurisdictional areas.

Please call if you have any questions or require additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Attachment 1 – Figures
Attachment 2 – Section 404 Jurisdictional Determination

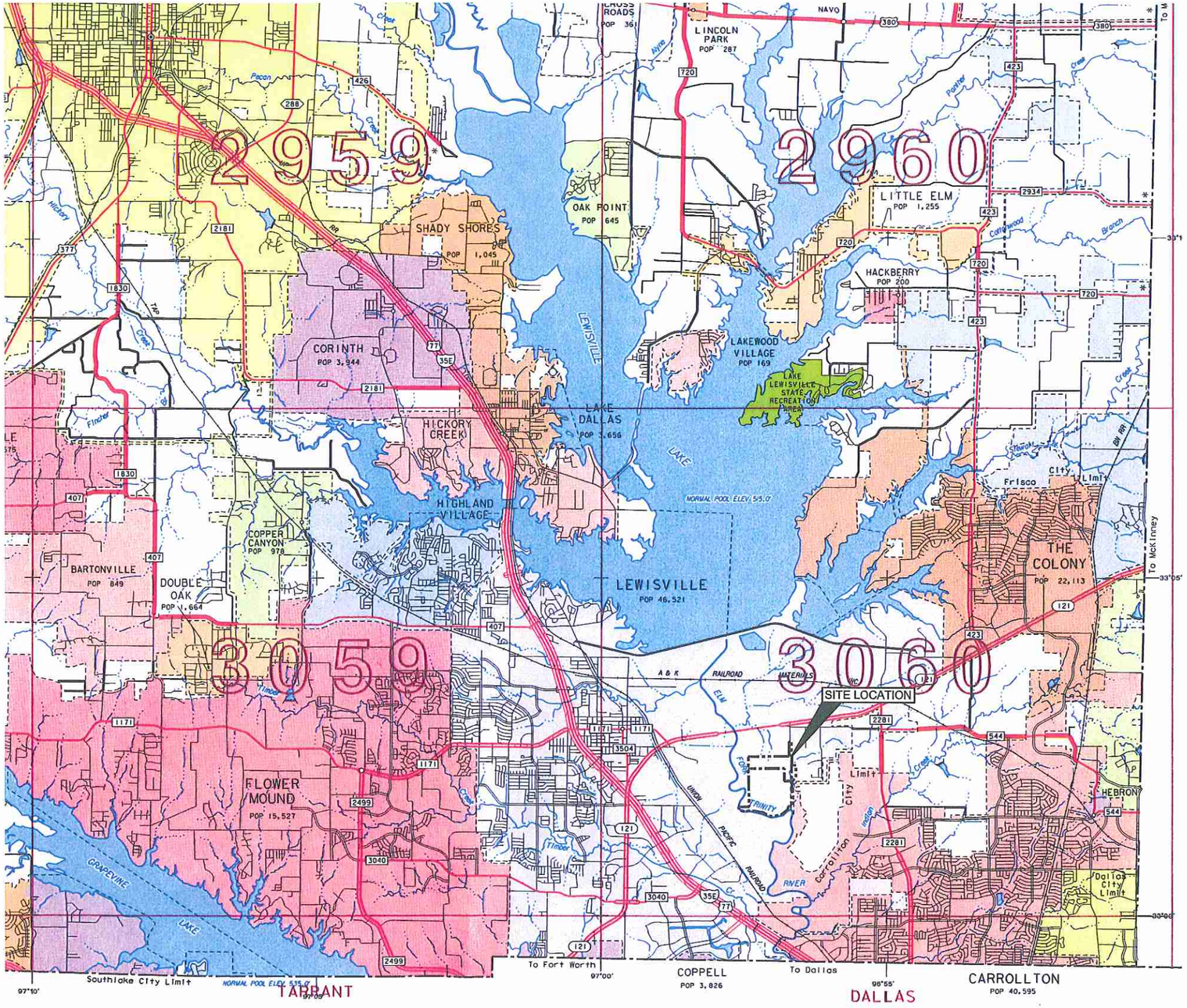
cc: Shane Davis, City of Farmers Branch

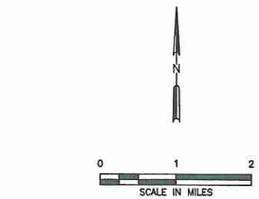
ATTACHMENT 1

FIGURES

LIST OF FIGURES

Figure 1 – Site Location Map
Figure 2 – General Topographic Map
Figure 3 – Aerial Photograph
Figure 4 – Site Plan
Figure 5 – Existing and Proposed Landfill Completion Plan
Figure 6 – Pond P1 Outlet Structure Plan
Figure 7 – East Letdown Structure Plan

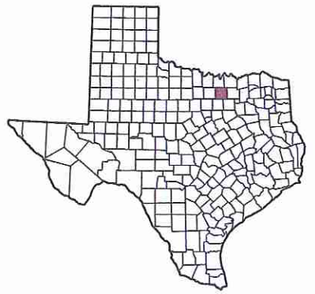




LEGEND

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY



KEY TO COUNTIES

GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

I/IIB-115

NOTE:

1. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

SITE LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

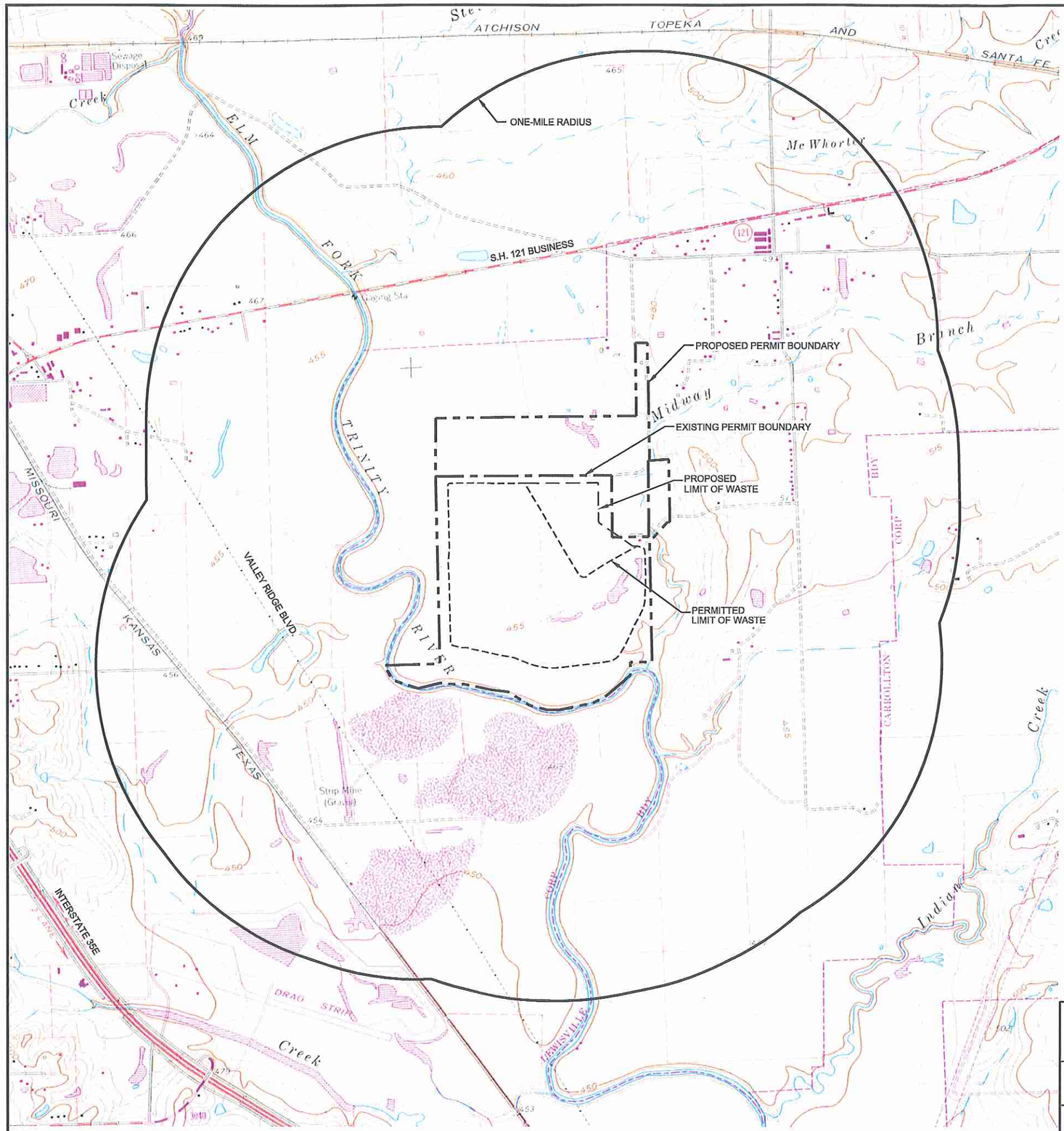
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

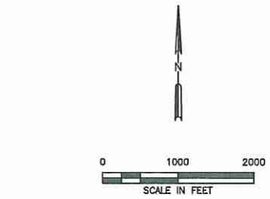
FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\USACE\1-SITE LOCATION MAP.dwg, sford, 1:2





LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

LEWISVILLE EAST, TEX.
N3300–W9652.5/7.5
1960
PHOTOREVISED 1981
DMA 4958 III SW–SERIES V882

CARROLLTON, TEX.
NW/4 CARROLLTON 15 QUADRANGLE
N3252.5–W9652.5/7.5
1959
DMA 6549 IV NW–SERIES V882

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

NOTES:

1. SITE LOCATION BASE MAP ADAPTED FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS ABOVE.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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CITY OF FARMERS BRANCH

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NO.	DATE	DESCRIPTION

GENERAL TOPOGRAPHIC MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\USACE\2-TOPOGRAPHIC MAP.dwg, sford, 1:2

N

0 500 1000

SCALE IN FEET

LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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O:\1339\351\EXPANSION 2009\COORDINATION LETTER\USACE\3-AERIAL.dwg, sford, 1:2

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AERIAL PHOTOGRAPHY

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DENTON COUNTY, TEXAS

Weaver Boos Consultants

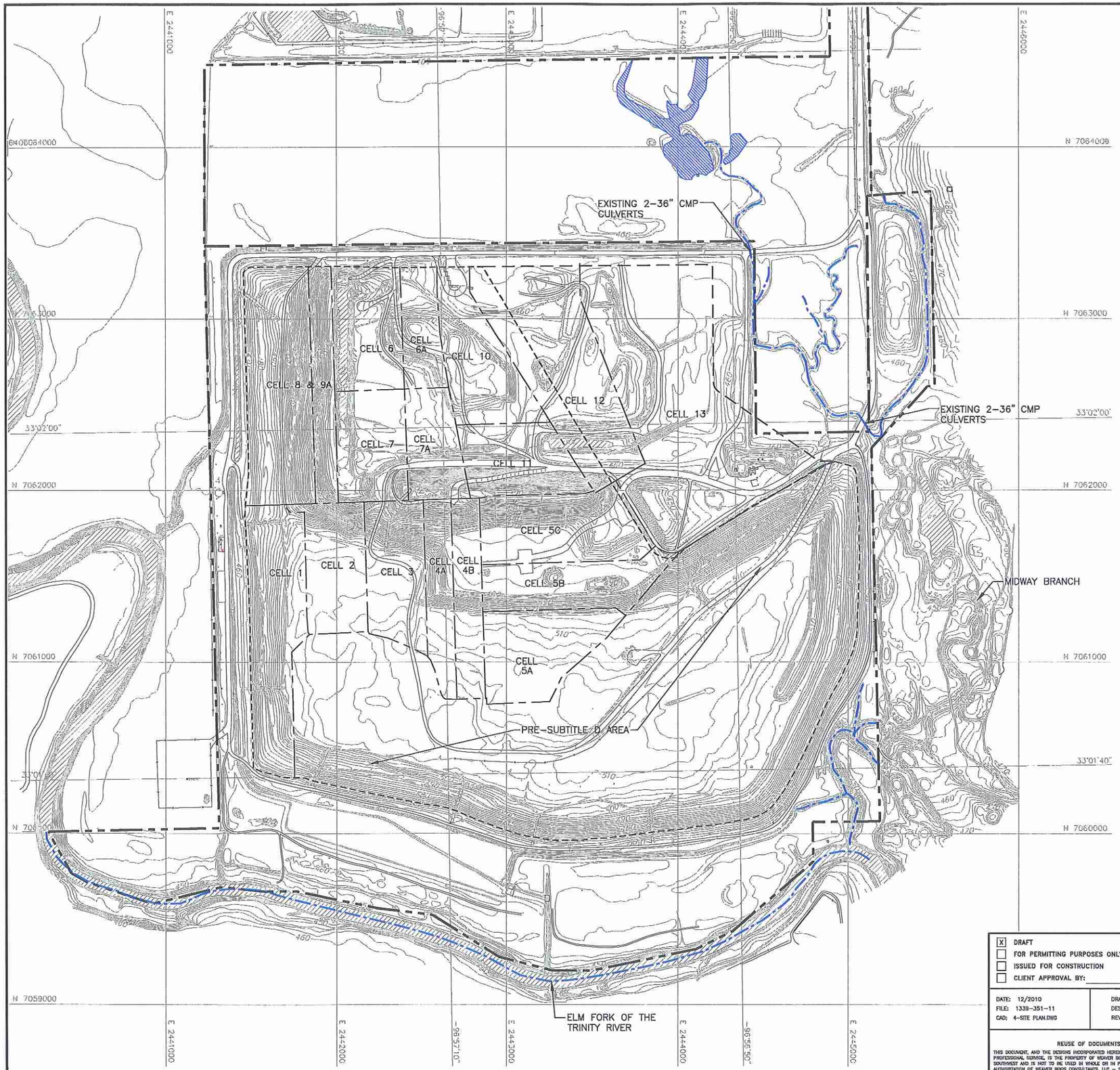
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



0 300 600
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- EXISTING LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 3)
- JURISDICTIONAL WETLANDS
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.
3. SECTION 404 JURISDICTIONAL WATERS OF THE U.S. AND WETLANDS REPRODUCED FROM PRELIMINARY SECTION 404 JURISDICTIONAL DETERMINATION REPORT PREPARED BY GOSHAWK ENVIRONMENTAL CONSULTING, INC (REFER TO ATTACHMENT 2).

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SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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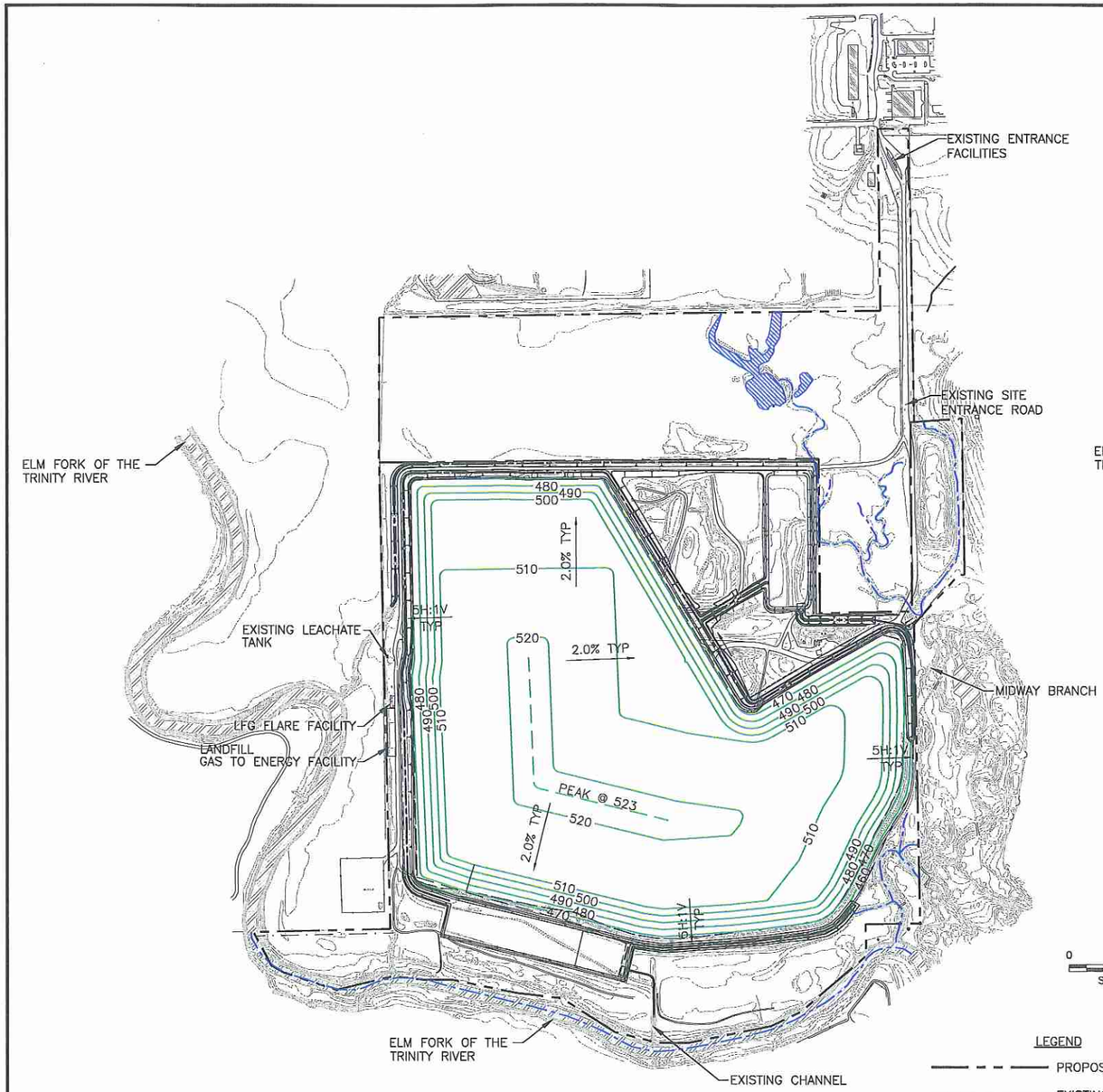
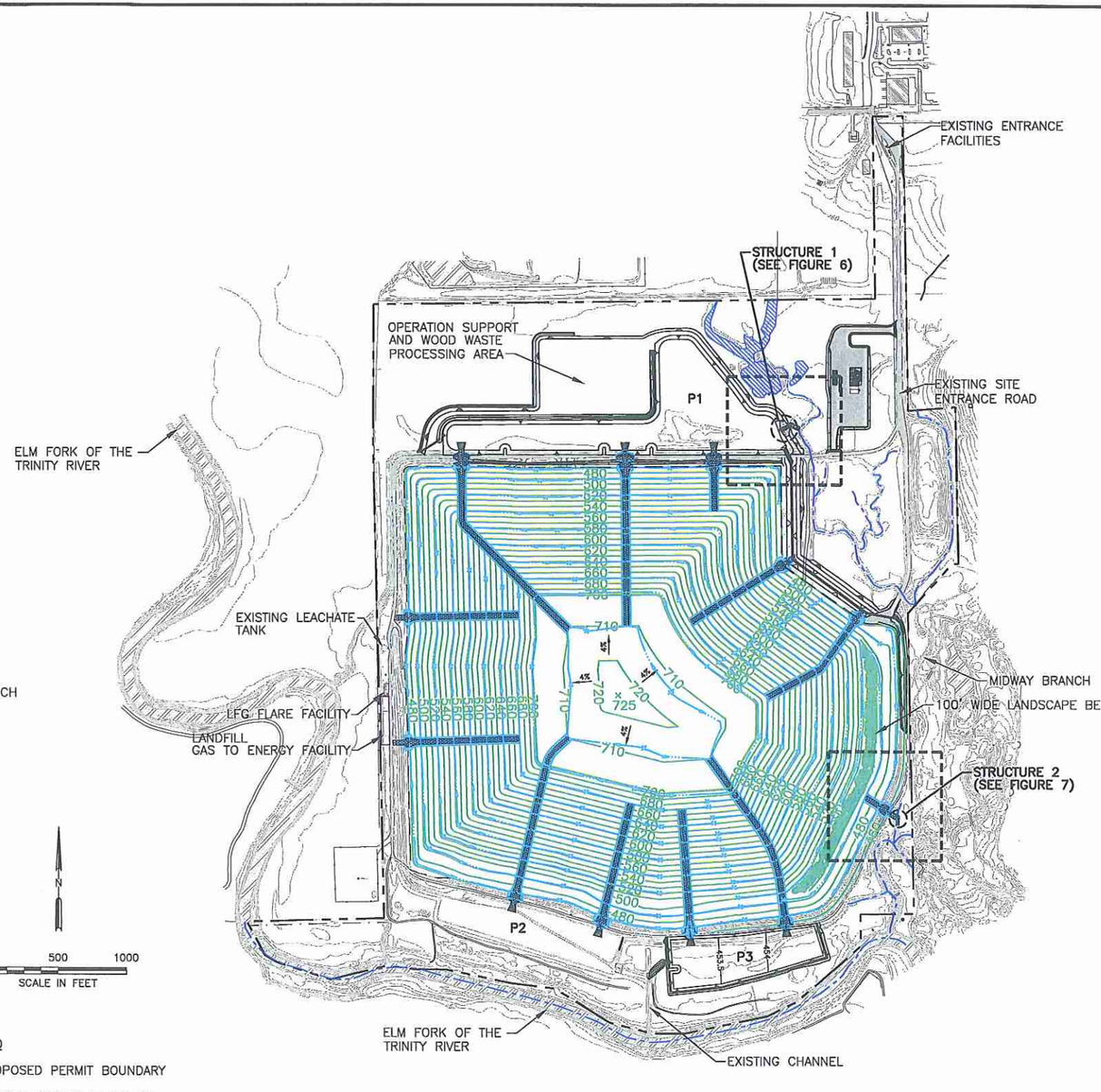
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\USACE\4-SITE PLAN.dwg, sford, 1:2



PERMITTED LANDFILL COMPLETION PLAN



PROPOSED LANDFILL COMPLETION PLAN

0 500 1000
SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- P1 DETENTION POND DESIGNATION
- SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 3)
- JURISDICTIONAL WETLANDS

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.
3. SECTION 404 JURISDICTIONAL WATERS OF THE U.S. AND WETLANDS REPRODUCED FROM PRELIMINARY SECTION 404 JURISDICTIONAL DETERMINATION REPORT PREPARED BY GOSHAWK ENVIRONMENTAL CONSULTING, INC (REFER TO ATTACHMENT 2).

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EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

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DENTON COUNTY, TEXAS

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COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
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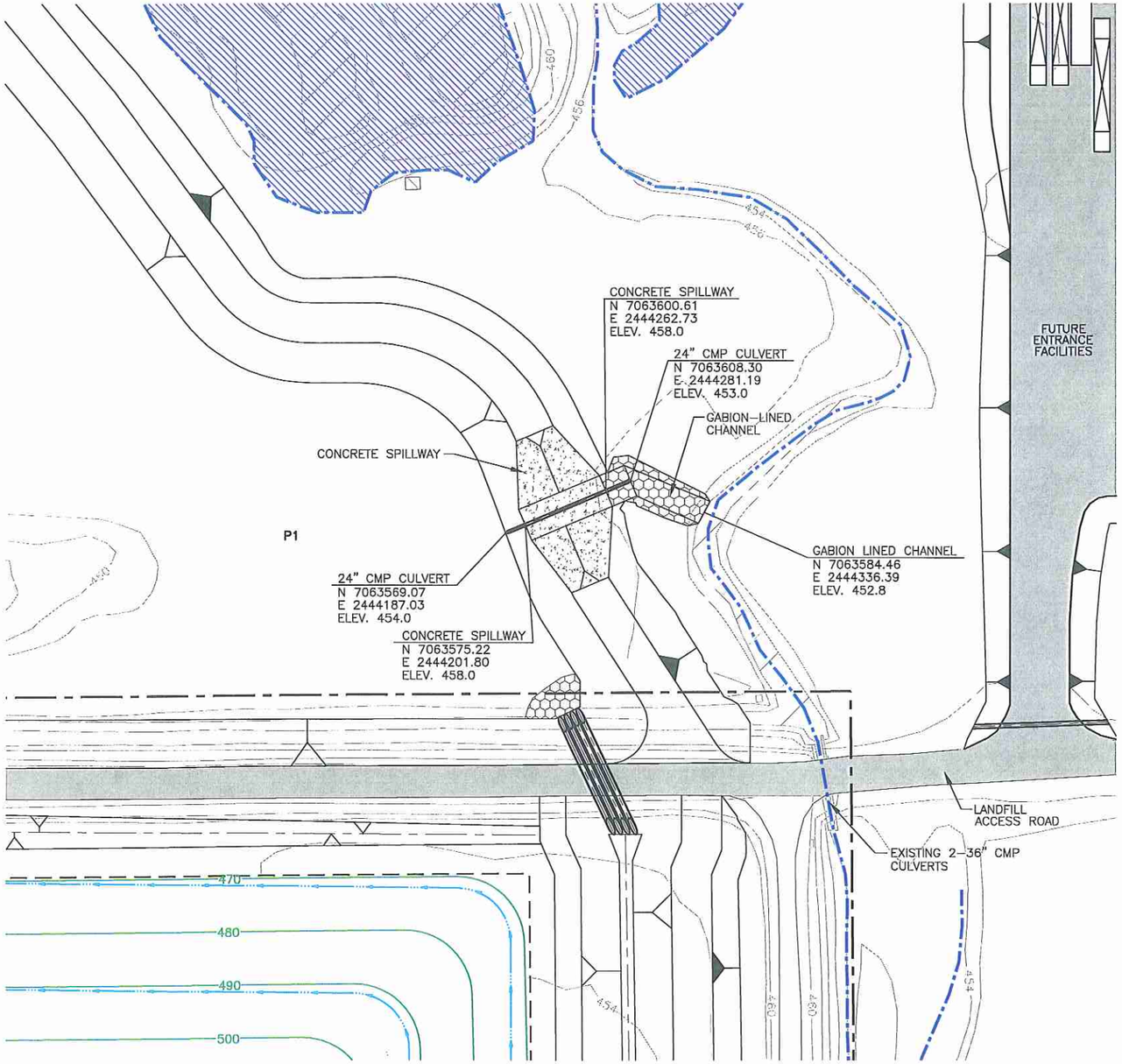
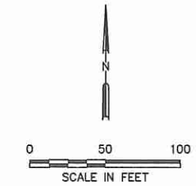
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5





LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE SWALE
- CHANNEL CENTERLINE
- SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 3)
- JURISDICTIONAL WETLANDS
- CUT/FILL INDICATORS

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.
3. SECTION 404 JURISDICTIONAL WATERS OF THE U.S. AND WETLANDS REPRODUCED FROM PRELIMINARY SECTION 404 JURISDICTIONAL DETERMINATION REPORT PREPARED BY GOSHAWK ENVIRONMENTAL CONSULTING, INC (REFER TO ATTACHMENT 2).

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STRUCTURE 1 PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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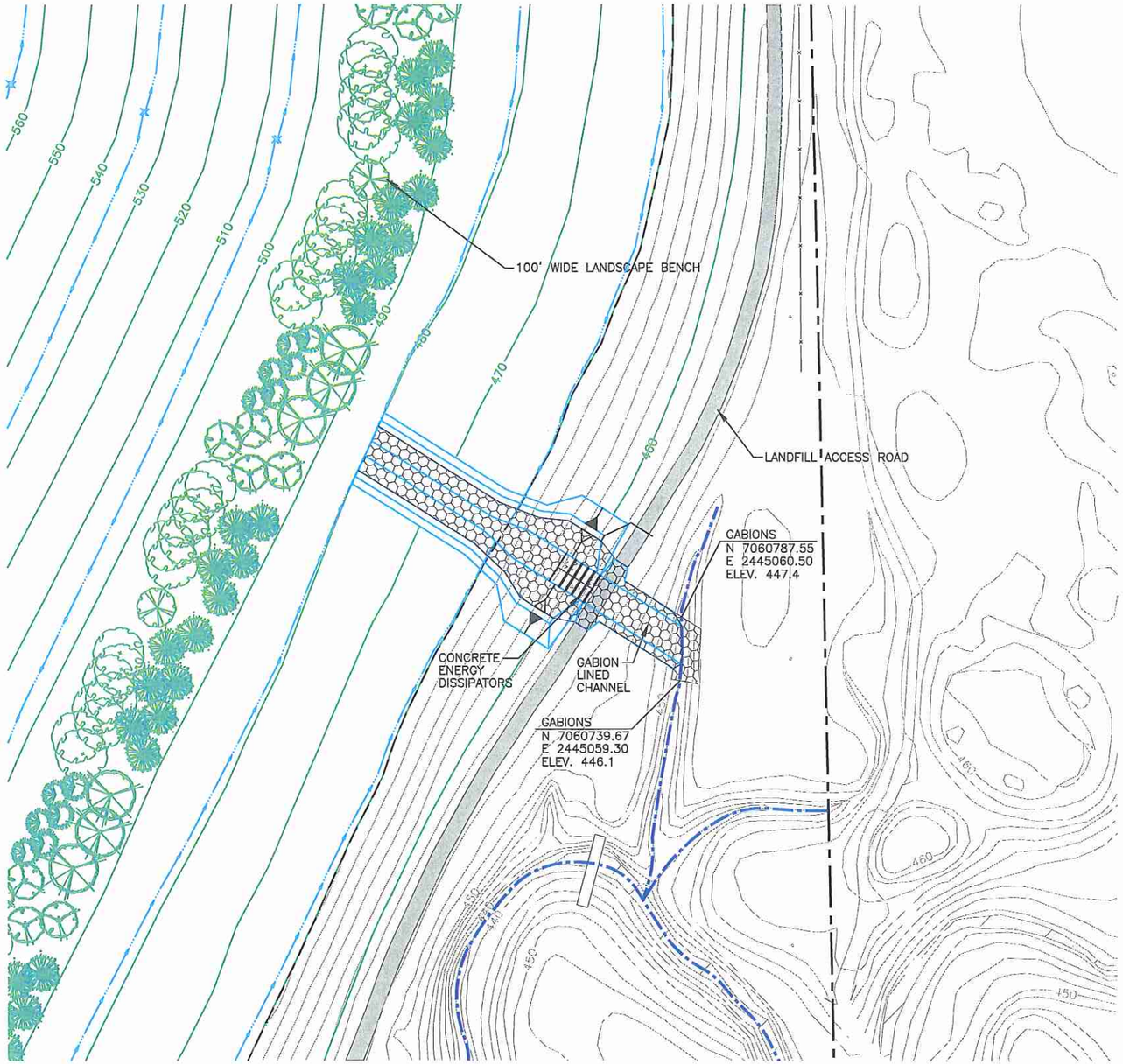
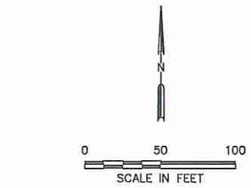
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 6





LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- 480 EXISTING CONTOUR
- 500 FINAL COVER CONTOUR
- DRAINAGE SWALE
- SECTION 404 JURISDICTIONAL WATERS OF THE U.S. (SEE NOTE 2)
- FENCELINE
- DRAINAGE LETDOWN
- CUT/FILL INDICATORS

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

STRUCTURE 2 PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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TBPE REGISTRATION NO. F-3727
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COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 7

ATTACHMENT 2

SECTION 404 JURISDICTIONAL DETERMINATION

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

17 September 2010

Jeffrey Young
Weaver Boos Consultants, LLC-Southwest
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

RE: Section 404 Jurisdictional Determination
City of Farmers Branch - Camelot Landfill
Lewisville, Denton County, Texas
GEC#09-003.WD

Dear Mr. Young:

Goshawk Environmental Consulting, Inc. (Goshawk) performed a general determination of "waters of the US" (including wetlands) for the entire Camelot Landfill (about 470 acres). Additionally, Goshawk delineated the waters of the US including wetlands identified during the field reconnaissance effort. The jurisdictional determination/delineation consisted of a pre-field literature review and a site assessment.

Site Description

As shown on Figure 1, the Camelot Landfill is located within the southeastern corner of Denton County, Texas and in the City of Lewisville. More specifically, it is located immediately south of Lake Lewisville and in a triangle formed by IH 35, State Highway 121 Business, and State Highway 121. According to the US Geological Survey (USGS) topographic map, the landfill has relatively flat topography along the east and north banks of the Elm Fork of the Trinity River (Figure 2). The latitude/longitude of the approximate center of the project is at 33° 1' 52.86" N and 96° 57' 5.56" W as determined using an electronic 1:24000 Lewisville East USGS topographic map. The majority of the land in this area is currently under industrial use including another landfill located south of the site.

Camelot Landfill is an existing Type I Municipal Solid Waste (MSW) Landfill operating under Texas Commission on Environmental Quality (TCEQ) Permit No. MSW-1312A. The facility was originally permitted in December 1979.

Literature Review

The pre-field evaluation included a review of the USGS 1:24000 Lewisville East (1981) quadrangle map; National Wetland Inventory (NWI) map (Lewisville East quadrangle); 1996 Digital Ortho Quarter Quadrangle (DOQQ); 2009 aerial photograph; Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map Number 48121C0565F dated August 23, 2001; the Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin (2006); and the Natural Resource Conservation Service (NRCS) Soil Survey of Denton County, Texas.

Elm Fork of the Trinity River forms the meandering southern boundary of the landfill, according to the USGS quadrangle map (Figure 2). Additionally, the topographic map indicates Midway Branch (a mapped blue line) meandering through eastern portions of the landfill site before emptying into Elm Fork of the Trinity River. Photo revisions of the topographic map (areas shown in purple) suggest several excavated areas exist throughout the landfill site. These areas were likely holding water (inundated) on the aerial photograph used to update the topographic map. Mapped elevations on the landfill range from 440 feet above mean sea level (MSL) along Elm Fork of the Trinity River to 455 feet MSL across the southern portion of the landfill. Very little topographic relief is indicated on the USGS topographic map.

The NWI map indicates several potential wetland areas within the landfill site boundary (Figure 3). Elm Fork of the Trinity River is mapped as R2OWH (riverine, lower perennial, open water, permanently flooded). Additionally, there are some PFO1A (palustrine, forested, broad-leaved deciduous, temporarily flooded) areas located along the Elm Fork of the Trinity River. A network of L1OWHx (lacustrine, limnetic, open water, permanently flooded, excavated) wetlands is located within the landfill site. These areas are likely deeper water areas that developed when excavation for the landfill was first conducted and the pits filled with water. The northernmost mapped potential wetlands are identified as POWHx (palustrine, open water, permanently flooded, excavated). These types of potential wetlands area typically associated with borrow pits or stock tanks and are relatively small in size.

The 1996 DOQQ indicates the majority of the landfill site has been disturbed by landfill activities (Figure 4). There is several open water areas (blue color) noted within the active landfill that correspond to active soil borrow areas that are used to support the landfill operation. There is a natural woodland corridor along Elm Fork of the Trinity River. The northern quarter of the site is undisturbed prairie with few trees and shrubs. There are several areas that exhibit a possible wetland signature (dark blue color) within the northern prairie portion of the site including a bi-lobed open water area with some indication that wetlands may extend to the north. Additionally, several other dark blue areas (possible wetlands) are noted within the northern prairie. Immediately southeast of the prairie is a rectangular area of undisturbed woodlands. The aerial photograph shows an obvious network of streams within this area.

The 2009 aerial photograph was used to identify general vegetation communities throughout the landfill site as shown on Figure 5. Generally, the landfill site can be divided into active cells, cells with vegetated intermediate cover, riparian woodlands, upland woodlands, open prairie, and wetlands. The landfill cells are centrally located with a natural woodland corridor along Elm Fork of the Trinity River to the south and undeveloped areas to the north and northeast. The undisturbed prairie noted in the northern quarter of the site on the 1996 DOQQ has experienced significant tree and shrub growth within much of its reaches. The rectangular undisturbed woodland is still evident. Evidence of the bi-lobed open water area is still present in this photograph; however, no other obvious wetland signatures are noted.

The FEMA FIRM (Figure 6) indicates that the active landfill portion of the site is mapped as Zone X (areas determined to be outside the 500-year floodplain. The area along the Elm Fork of the Trinity River is within Zone AE (special flood hazard areas inundated by the 100-year flood with base flood elevations determined) and cross-hatched (floodway). The north and northeast portions of the site are mapped Zone A (special flood hazard areas inundated by the 100-year flood, no base flood elevations determined).

The site lies within Land Resource Region (LRR) J – Southwestern Prairies Cotton and Forage Region (Figure 7). LRR J is generally described as nearly level to hilly terrain, dissected by streams and dominated by mostly tall grass prairie vegetation with woodlands along streams. The Camelot Landfill site and surrounding area exhibit the general description of this region.

As mapped by the NRCS (Figure 8), soil types mapped within landfill site include Altoga silty clay (4), Arents, gently undulating (6), Arents, hilly (7), Bastsil sandy loam (10), Crockett sandy loam (27), Frio silt clay (33), Ovan clay (63), and Trinity clay (78). Trinity soils are listed on the Hydric Soils of the United States list because of the frequency and duration of flooding during the growing season. The remaining mapped soil types are not listed as hydric.

Field Reconnaissance

The determination was conducted according to the method described in the US Army Corps of Engineers, "Internal Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, dated 2008 in conjunction with the 1987 Corps of Engineers "Wetlands Delineation Manual". Goshawk conducted a field reconnaissance effort on 2, 3, and 4 September 2009. The landfill site was traversed on foot and in a vehicle to generally confirm the vegetative communities as shown in Figure 5. Goshawk randomly established data sample points in representative locations within each of the mapped communities (Figure 9). In the situations where wetlands were identified within a particular community, an additional data sample point was recorded. Table 1 summarizes sample points and corresponding data forms, along with a general community description for each point assessed during the field reconnaissance efforts.

TABLE 1

Summary of Sample Points and Corresponding Data Forms

SAMPLE POINT (SP-)	COMMUNITY	DATA FORMS (DF-)
SP-1	Open prairie	DF-1
SP-2	Open prairie	DF-1
SP-3	Upland woodland	DF-2
SP-4	Upland woodland	DF-3
SP-5	Wetland A	DF-4
SP-6	Open prairie	DF-1
SP-7	Upland woodland	DF-2
SP-8	Open prairie	DF-5
SP-9	Open prairie	DF-5
SP-10	Wetland B	DF-6
SP-11	Upland woodland	DF-2
SP-12	Upland woodland	DF-7
SP-13	Upland woodland	DF-7
SP-14	Bi-lobed pond	DF-8
SP-15	Wetland C	DF-6

SAMPLE POINT (SP-)	COMMUNITY	DATA FORMS (DF-)
SP-16	Upland woodland	DF-9
SP-17	Upland woodland	DF-9
SP-18	Upland woodland	DF-10
SP-19	Upland woodland	DF-10
SP-20	Wetland D	DF-11
SP-21	Upland woodland	DF-7
SP-22	Wetland D	DF-11
SP-23	Upland woodland	DF-12
SP-24	Upland woodland	DF-12
SP-25	Wetland E	DF-13
SP-26	Active landfill	DF-14
SP-27	Intermediate cover cell	DF-15
SP-28	Riparian woodland	DF-16
SP-29	Intermediate cover cell	DF-17
SP-30	Riparian woodland	DF-18
SP-31	Intermediate cover cell	DF-19

A Trimble GeoExplorer XH (GeoXH) hand-held global positioning system (GPS) unit was used to delineate, the data sample points, wetlands, and stream channels. The collected data was post-processed using differential correcting. The ground-based reference station data used in the differential correction was obtained from the Continuously Operating Reference Station (CORS) in Denton, Texas (33° 12' 37.63384" N, 97° 9' 45.99831" W). This station is located approximately 16.8 miles from the landfill site. The estimated accuracies for the corrected positions are in Table 2. Over 90% of the data collected is accurate to less than 1 meter (m).

TABLE 2

Estimated Accuracies of Corrected GPS Data

RANGE	PERCENTAGE (%)
0 - 15 cm	--
15 - 30 cm	1.0%
30 - 50 cm	10.3%
50 cm - 1 m	80.0%
1 - 2 m	8.7%
2 – 5 m	--
>5 m	--

The surveyed stream channels and wetlands are depicted on Figures 10, 10a, 10b, 10c, and 10d. Figure 10a indicates a couple of isolated wetlands are in the northwest portion of the landfill site. Additionally, a network of wetlands and stream channels exist in the northeast portion (Figure 10b). Several tributaries of the Elm Fork of the Trinity River are in the far southeastern corner of the landfill site within the riparian woodlands (Figure 10c). Lastly,

several linear pits (excavated areas associated with the landfill operation) are centrally mapped within the active portion of the landfill (Figure 10d).

The open prairie community (DF-1 and DF-5) is found within the northwestern portion of the landfill site. This community can generally be described as having prim arily herbaceous species (Photos 1 and 2) with a few shrubs and trees creating a very low canopy coverage (<10% coverage). Dominant species include Johnson grass (*Sorghum halepense*), giant ragweed (*Ambrosia trifida*), and hedge-parsley (*Torilis arvensis*); however, Mexican hat (*Ratibida columnaris*), Canadian wildrye (*Elymus canadensis*), common sunflower (*Helianthus annuus*), sage (*Salvia* sp.), and horsemint (*Monarda citriodora*) were also noted. The trees and shrubs within the open prairie are primarily cedar elm (*Ulmus crassifolia*), hawthorn (*Craetagus crus-gralli*), and gum bumelia (*Bumelia lanuginosa*). No hydrologic characteristics were noted throughout open prairie community. Soils have a high clay content and are fairly uniform with a 2.5YR3/2 matrix color. No hydric indicators were noted within the upper 12 inches of the soil.

The upland woodland community (Photos 3 and 4) occupies the majority of the northeastern portion of the landfill site and the rectangular woodland located in the northeastern portion of the site. The upland woodlands are fairly uniform with minor differences in vegetative composition depending on the area sampled (DF-2, DF-3, DF-7, DF-9, DF-10, and DF-12). The most common tree species include cedar elm, bois d'arc (*Maclura pomifera*), sugar hackberry (*Celtis laevigata*), and gum bumelia with some areas having a small percentage of honey mesquite (*Prosopis glandulosa*), hawthorn, and green ash (*Fraxinus pennsylvanica*). Understory vegetation is typically very dense and consists mostly of Canadian wildrye, hedge-parsley, and giant ragweed. The clay dominated soils exhibit a 2.5YR3/2 matrix color down to 16 inches. No hydrologic indicators were noted within the upland woodlands.

Several wetland areas were identified within the undeveloped portions of the landfill site. Wetland A (Photo 5) and Wetland B (Photo 6) in the northwestern portion of the undeveloped area (Figure 10a) are very small (0.14 acres and 0.26 acres, respectively) depressional areas that seem to have been evident on the 1996 DOQQ (Figure 4). Wetland A (DF-4) is dominated by annual sumpweed (*Iva anuua*), annual aster (*Symphyotrichum subulatum*), fall panicum (*Panicum virgatum*), and an unidentified sedge (*Carex* sp.); however, common sunflower was also present. Wetland B (DF-6) is predominately covered with annual aster with a smaller percentage of annual sumpweed and sedge. Although these areas were dry during the field investigation, both were topographically lower than the surrounding area. The clay dominated soils have a depleted matrix color of 2.5Y3/1 in the upper 14 inches with 10YR5/8 redox concentrations at the deeper depths. Wetland C is a small depression (0.29 acres) that has an obvious connection to a stream channel (Figure 10b). Wetland C (DF-6) has similar vegetative composition to Wetland B with the exception a few green ash trees were noted. The soils have a depleted matrix and redox concentrations similar to Wetland B. Wetland D (1.47 acres) is located immediately adjacent to and north of the bi-lobed pond and terminates at the landfill sites northern boundary. Vegetation within Wetland D (DF-11) consists of swamp smartweed (*Polygonum hydropiperoides*), swamp rosemallow (*Hibiscus moscheutos*), annual sumpweed, and balloonvine (*Cardiospermum halicacabum*), with green ash trees along the edges (Photo 7). Soils have a very depleted matrix (2.5Y5/1) with a significant amount of 2.5YR4/8 redox concentrations throughout (Photo 8). Even though much of the area was very dry, this wetland had very wet to saturated soils. The bi-lobed pond (1.29 acres) was almost completely dry during the field investigation. The majority of the bottom of the pond (DF-8) was bare ground

with obvious soil cracking (Photo 9); however, the perimeter of the pond has hydrophytic vegetation including swamp rosemallow, balloonvine, and common buttonbush (*Cephalanthus occidentalis*). Soils exhibit a depleted matrix with redox concentrations. Wetland E is located within the rectangular undisturbed woodland area. This small depression (0.08 acres) does not have any obvious connection with a stream channel and appears to be isolated from any other water of the US. Wetland E (DF-13) is sparsely vegetated but does contain some sedge and a few green ash shrubs. The soils exhibit a 2.5Y3/1 matrix with some redox concentrations. This area was dry during the field investigation but is somewhat topographically lower than the surrounding uplands.

Several stream channels are located within the northeastern portion of the landfill site (Figure 10b). One stream flows toward the southeast from the eastern banks of the bi-lobed pond. The first 533 linear feet of stream is approximately 2 feet wide (Photo 10). Then the channel broadens to 7 feet wide (Photo 11) for the next 499 feet to where it crosses under one of the landfill access roads. At this point, the channel lies within a maintained ditch (30 feet width) for the remainder of its 1560 feet (Photo 12). There are also several other tributaries to this main tributary that are within the rectangular undisturbed woodland. These streams are 241 feet, 325 feet, and 1329 feet in length as mapped from west to east. The jurisdictional widths are 18 feet, 3 feet, and 8 feet, respectively. The eastern most tributary has some shared alignment with Midway Branch mapped on the USGS topographic map (Figure 2).

A network of tributaries is located in the far southeastern portion of the site (Figure 10c). These areas are very deeply incised (15 to 18 feet) and located within very dense riparian woodlands associated with the Elm Fork of the Trinity River. Since the canopy coverage was closed, the Trimble GPS unit could not connect with enough satellites to allow for the alignment of the streams to be accurately mapped. The main channel (Photo 13) is likely Midway Branch as mapped on the topographic map. It is approximately 12 feet wide and inundated at the time of the field investigation. The 2 tributaries were dry with a width of approximately 10 feet (Photo 14). The riparian woodlands (DF-16 and DF-18) along the Elm Fork of the Trinity River are dominated by American elm (*Ulmus americana*), cottonwood (*Populus deltoides*), cedar elm, and bur oak (*Quercus macrocarpa*) trees (Photos 15 and 16). The midstory and understory are dominated by Canadian wildrye, inland sea oats (*Chasmanthium latifolium*), frostweed (*Verbesina virginica*), green briar (*Smilax bona-nox*), and poison ivy (*Toxicodendron radicans*). A layer of leaf litter was noted on the surface of the soils. The clay soils had relatively low value color (2-3) with a chroma of 2; however, no redox concentrations were noted.

The active landfill cells and the cells with intermediate cover are located within the central portion of the landfill site. The active landfill includes areas of bare ground and sparse vegetation (Photo 17) along with 4 linear pits (open water areas) that represent areas excavated to support the ongoing landfill operation (Figure 10d). The active landfill (DF-14) is mostly sparsely vegetated with common sunflower, Johnson grass, and Spanish gold (*Grindelia papposa*); however, some portions of the active landfill have a good coverage of Bermuda grass (*Cynodon dactylon*). The 4 linear wetland pits range in size from 0.5 acres up to 2.36 acres. These areas are inundated (Photo 18) and a couple of the pits appear to provide water for dust control. The pits were excavated as part of normal landfill activities and exist solely because of the landfill. Some hydrophytic species are located along the pit edges. The cells with intermediate cover have had the opportunity to revegetate due to inactivity in these areas (Photo 19). Vegetation varies from site to site (DF-15, DF-17, DF-19) but is dominated by

upland grasses and forbs. The common species include common sunflower, Bermuda grass, and Johnson grass with a lower percentage of Spanish gold and croton (*Croton* sp.) present in some areas. These areas are typically topographically higher than the surrounding topography due to the fill and grading activities that have occurred in the past. For this same reason, soils were not analyzed.

Summary of Findings

All of the mapped stream channels (including Elm Fork of the Trinity River forming the south site boundary) would likely be considered jurisdictional waters of the US and be regulated under Section 404 of the Clean Water Act. Additionally, those wetlands (Wetland C, Wetland D, and bi-lobed pond) that are directly connected to the network of stream channels would also be considered jurisdictional waters of the US. The remaining mapped wetlands (Wetland A, B, and E) do not appear to have a direct connection to any other water of the US, so those areas may be considered isolated and therefore, not regulated. The 4 areas excavated within the landfill should not be considered regulated areas even though they meet the criteria to be considered wetlands. These areas developed after excavation for landfill purposes and are only temporary until these areas are further developed, consistent with the current TCEQ Solid Waste Permit. Impacts to the streams and or associated wetlands will necessitate permitting under Section 404 of the Clean Water Act. The US Army Corps of Engineers is the ultimate regulatory authority of Section 404 of the Clean Water Act and only their assessment can determine whether or not an area would be considered jurisdictional under current interpretations of Federal Law. Goshawk recommends submitting this determination/delineation along with any permit application to the US Army Corps of Engineers, Fort Worth District for any proposed impacts to the mapped areas.

If you have any questions or desire additional information, please feel free to call me at 512-203-0484.

Sincerely,

Zane N. Homesley
Principal

Attachments: Attachment A – Figures
Attachment B – Data Forms
Attachment C – On-site Photographs

Cc: Jason Edwards, Weaver Boos Consultants, LLC-Southwest

ATTACHMENT A

FIGURES

Map Source: ESRI, Maps & Data 9.3, 2008.

0 2.5 5 Miles

N

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

FIGURE 1

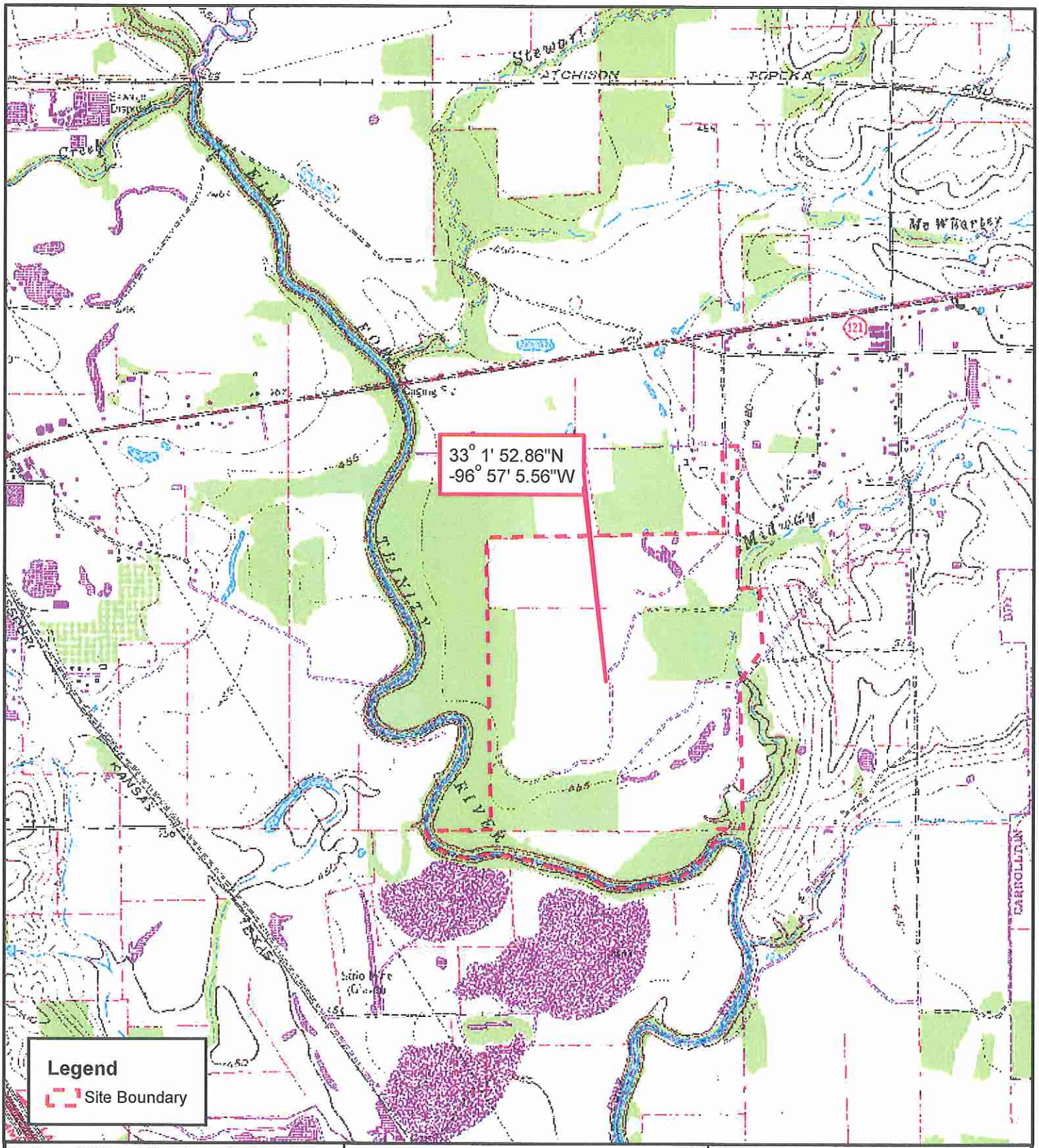
General Location Map

I/IIB-131

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure1_09-21-09.mxd	Project No. 09-003

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.



Map Source: TNRIS, Lewisville East, Texas Quadrangle, 1981.

Feet
0 1,000 2,000

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

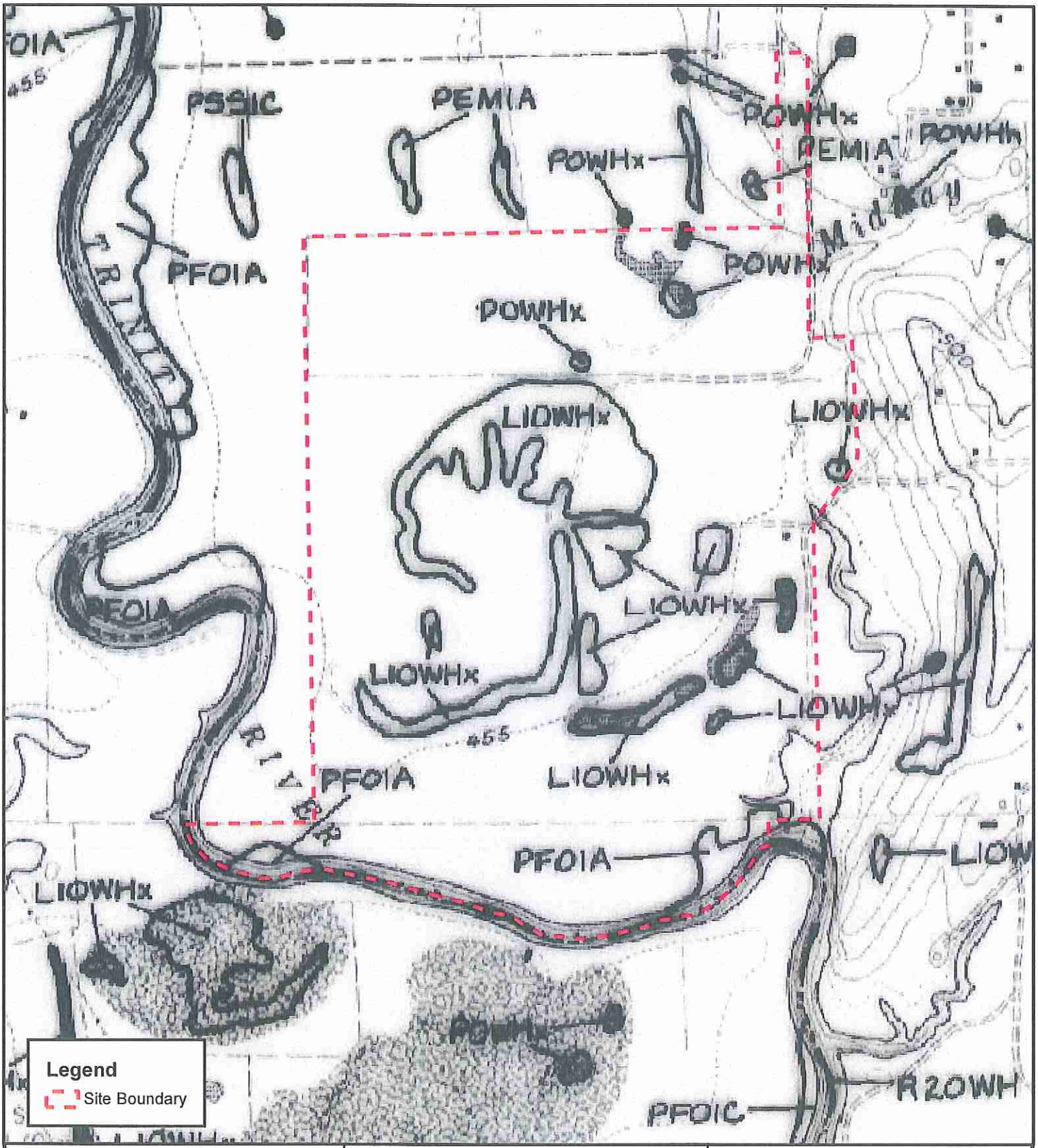
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 2

USGS Topographic Map

I/IIB-132

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure2_12-02-10.mxd	Project No. 09-003



Map Source: USFWS, National Wetland Inventory, Lewisville East, Texas, 1992,

Feet
0 500 1,000

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

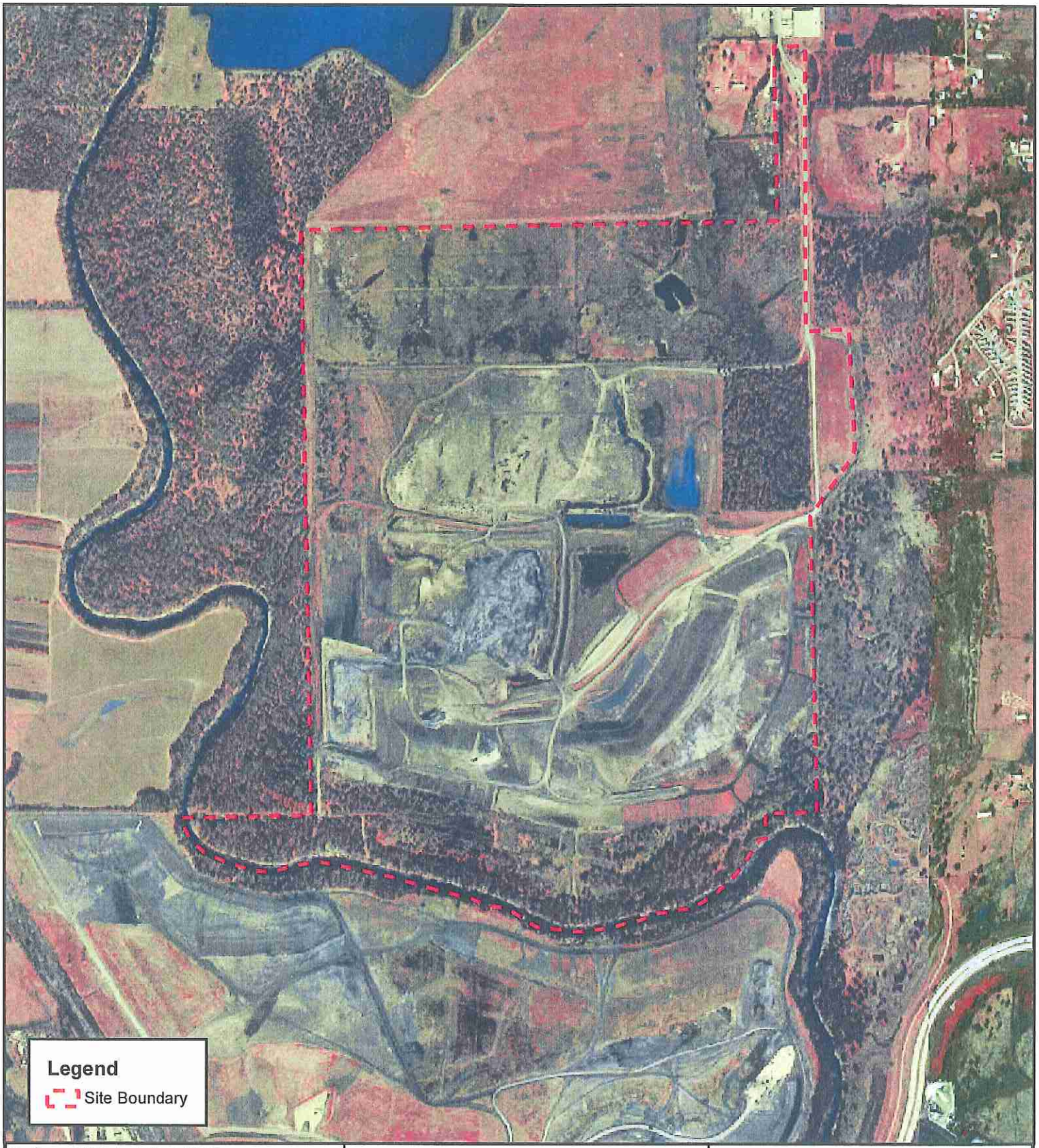
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 3

National Wetlands Inventory Map

I/IIB-133

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure3_12-02-10.mxd	Project No. 09-003



Map Source: TNRIS, Lewisville East SE, Texas
Lewisville East SW, Texas Digital Ortho Quadrangle, 1996.

N

Feet
0 500 1,000

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

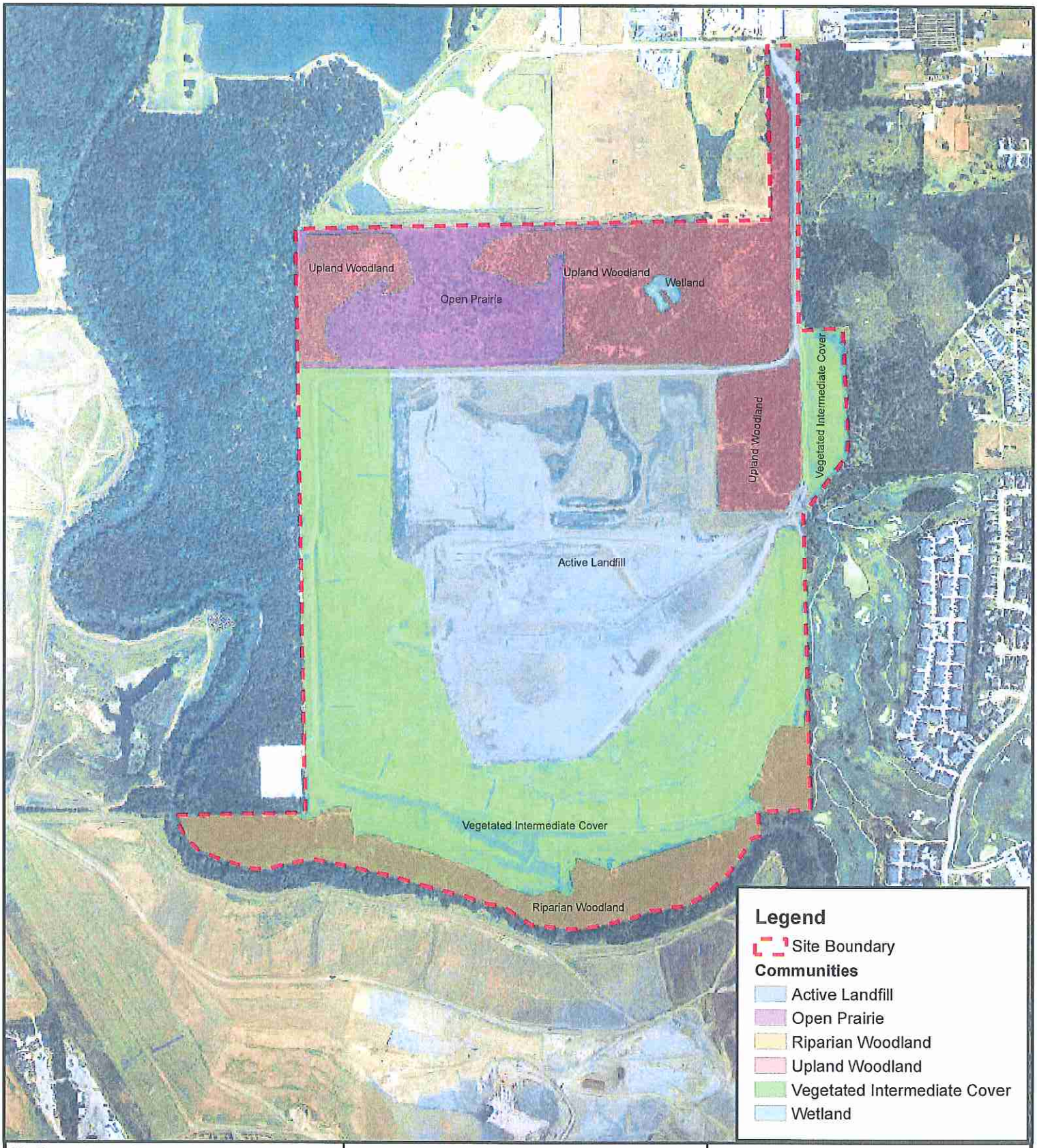
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 4

1996 Aerial Photograph Map

I/IIB-134

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure4_12-02-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

0 500 1,000 Feet

N

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

FIGURE 5

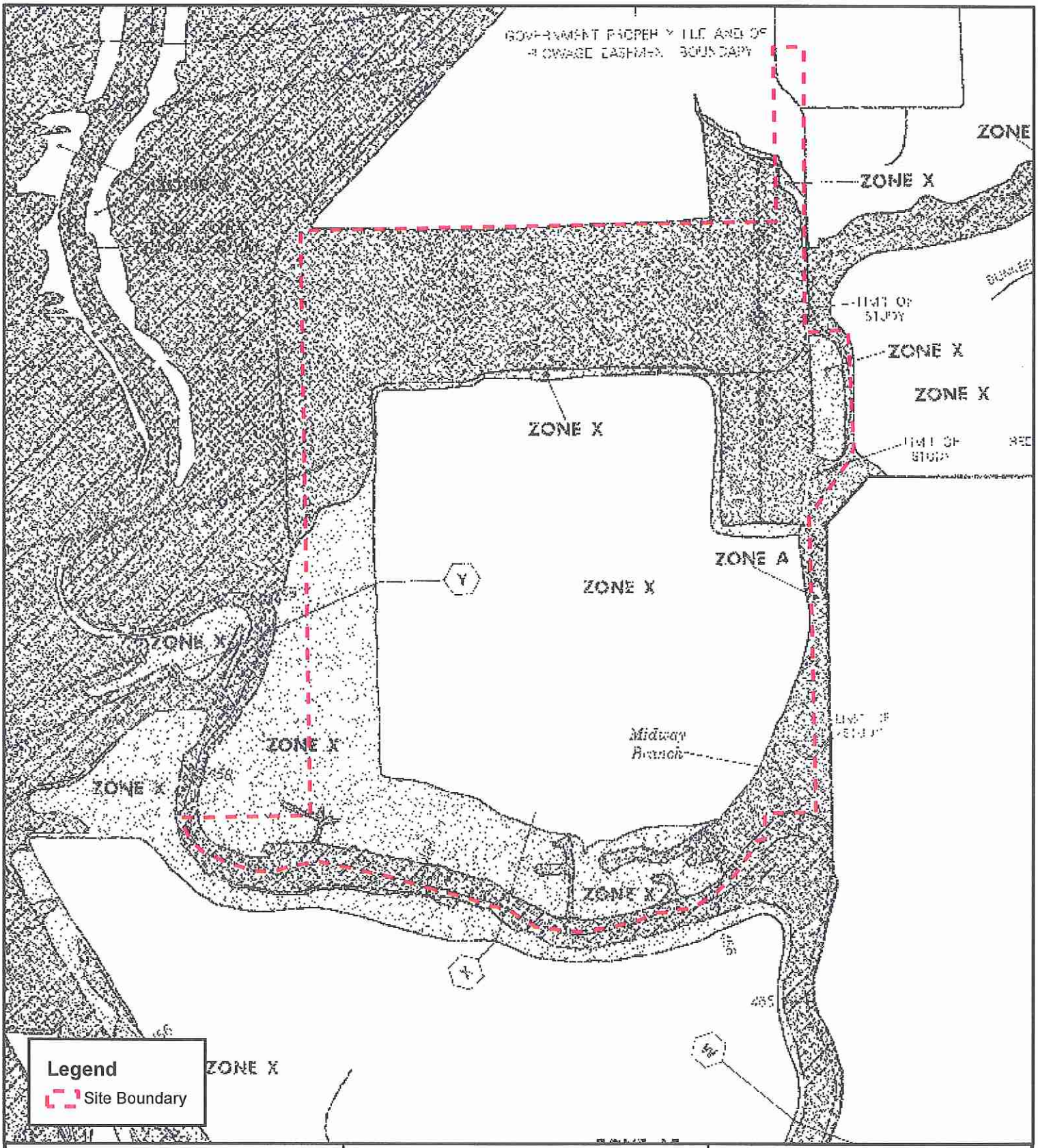
2009 Aerial Photograph Map

I/IIB-135

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure5_12-02-10.mxd	Project No. 09-003

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.



Map Source: FEMA, FIRM Denton County, Texas Panel Number 48121C0565F; Effective Date: August 23, 2001.

0 500 1,000 Feet

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

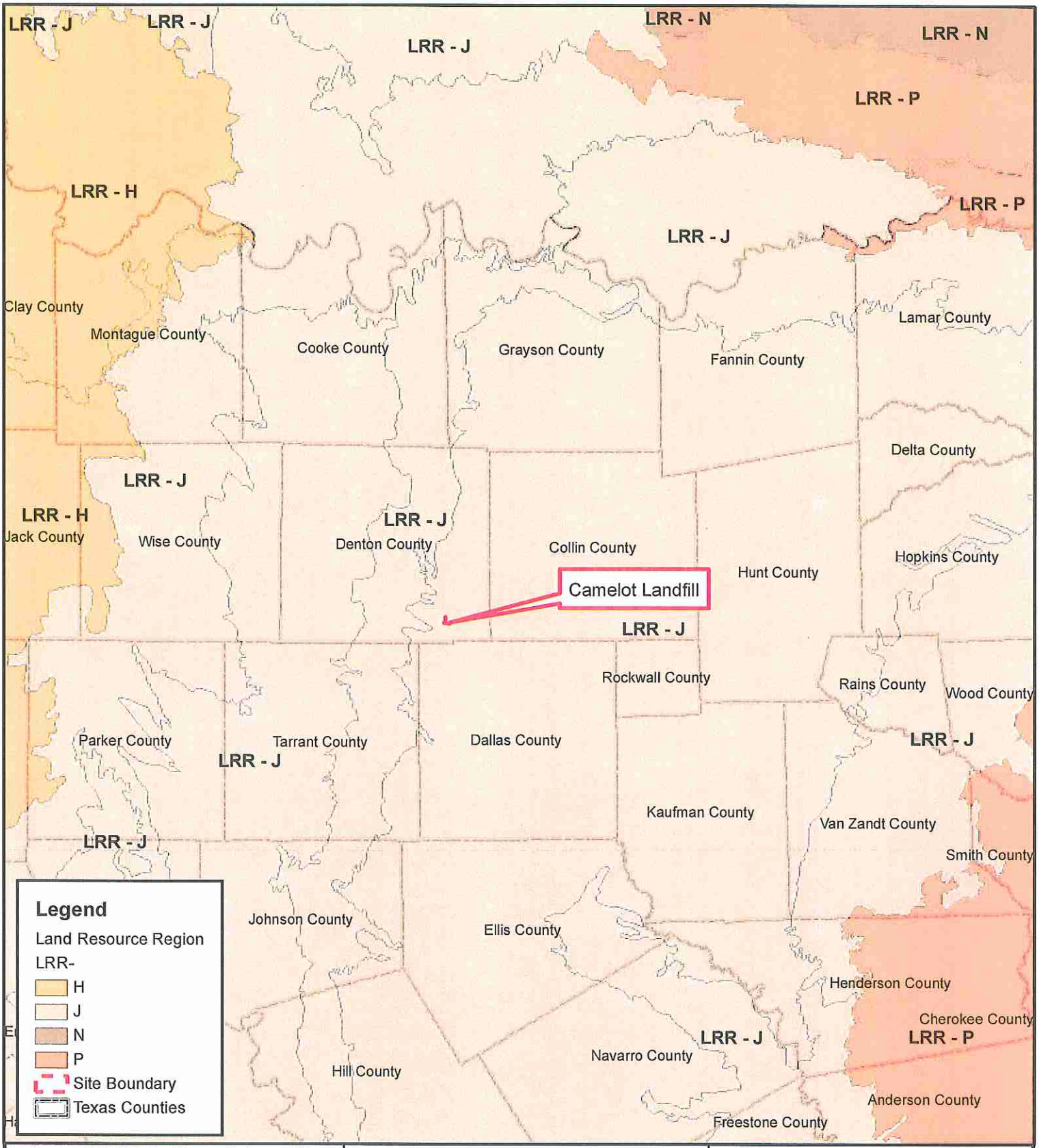
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 6

FEMA Floodplain Map

I/IIB-136

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure6_12-02-10.mxd	Project No. 09-003



Map Source: USDS, NRCS, Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin, 2006.

Miles
0 10 20

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

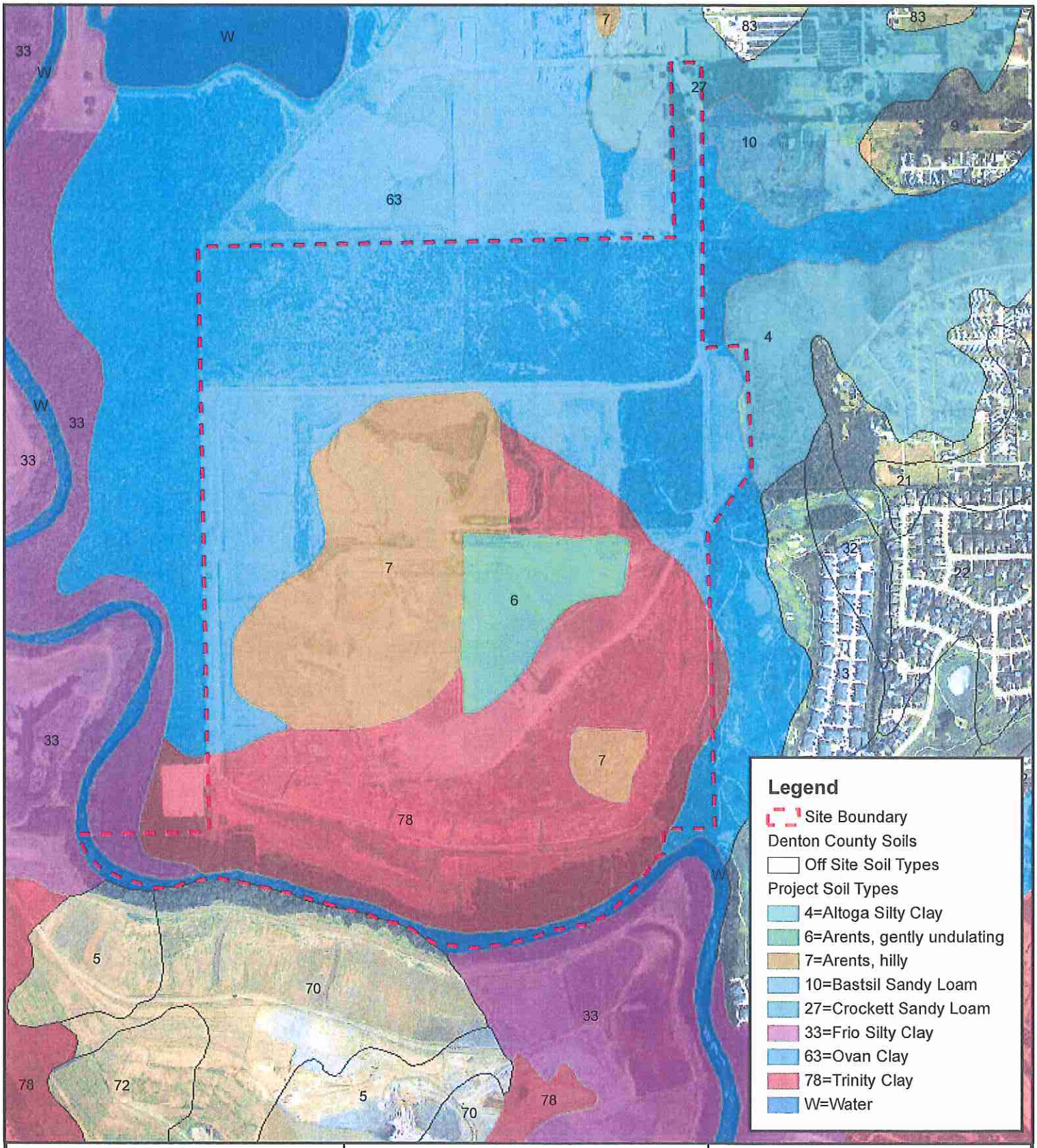
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 7

Land Resource Regions Map

I/IIB-137

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure7_12-02-10.mxd	Project No. 09-003



Map Source: USDS, NRCS, SSURGO, Denton County, Texas, 2009. client provided color aerial photograph, 2009.

Feet
0 500 1,000

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

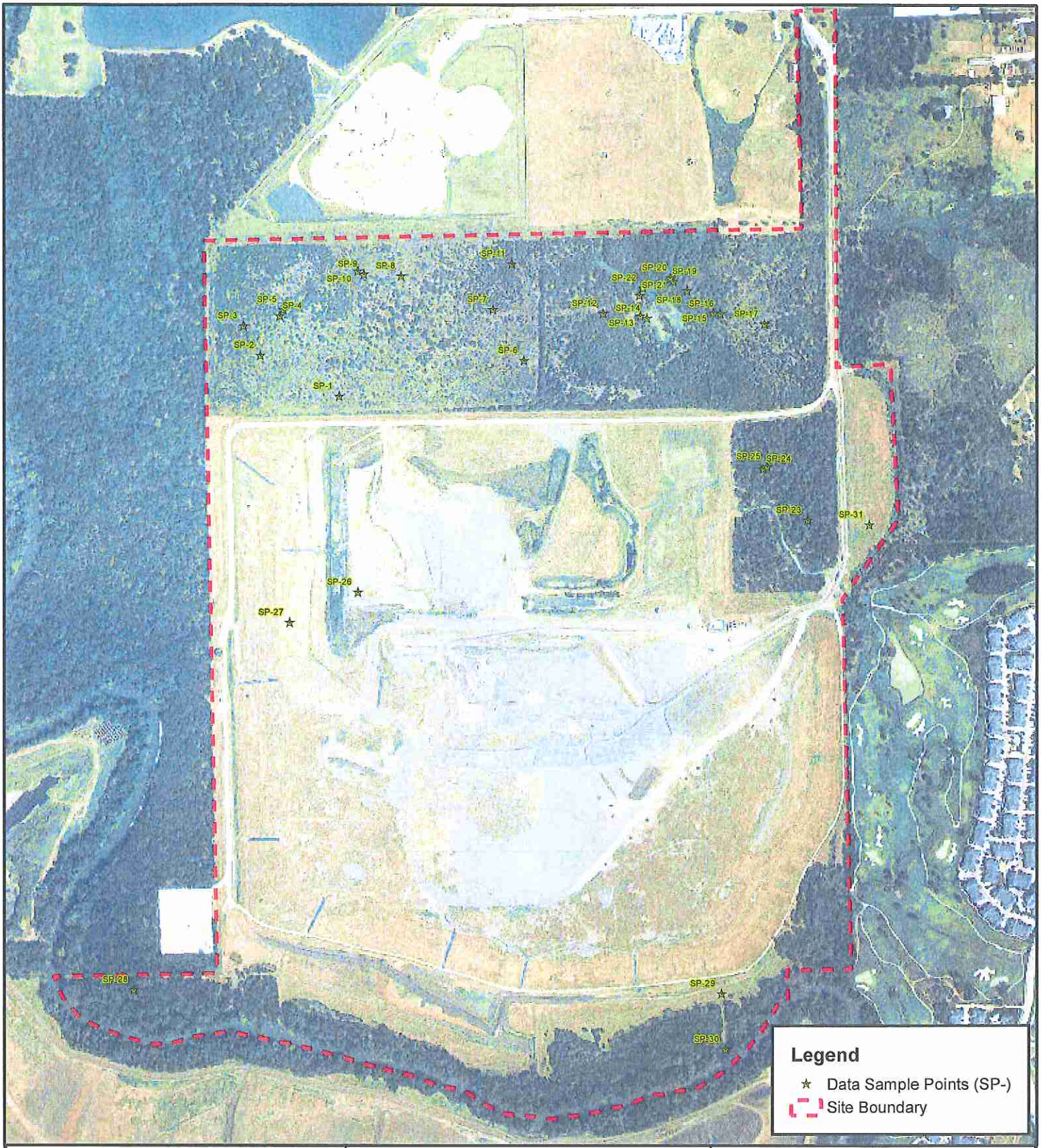
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 8

NRCS Soils Map

I/IIB-138

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure8_12-03-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

0 400 800 Feet

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
Weaver Boos Consultants-Southwest, LLC

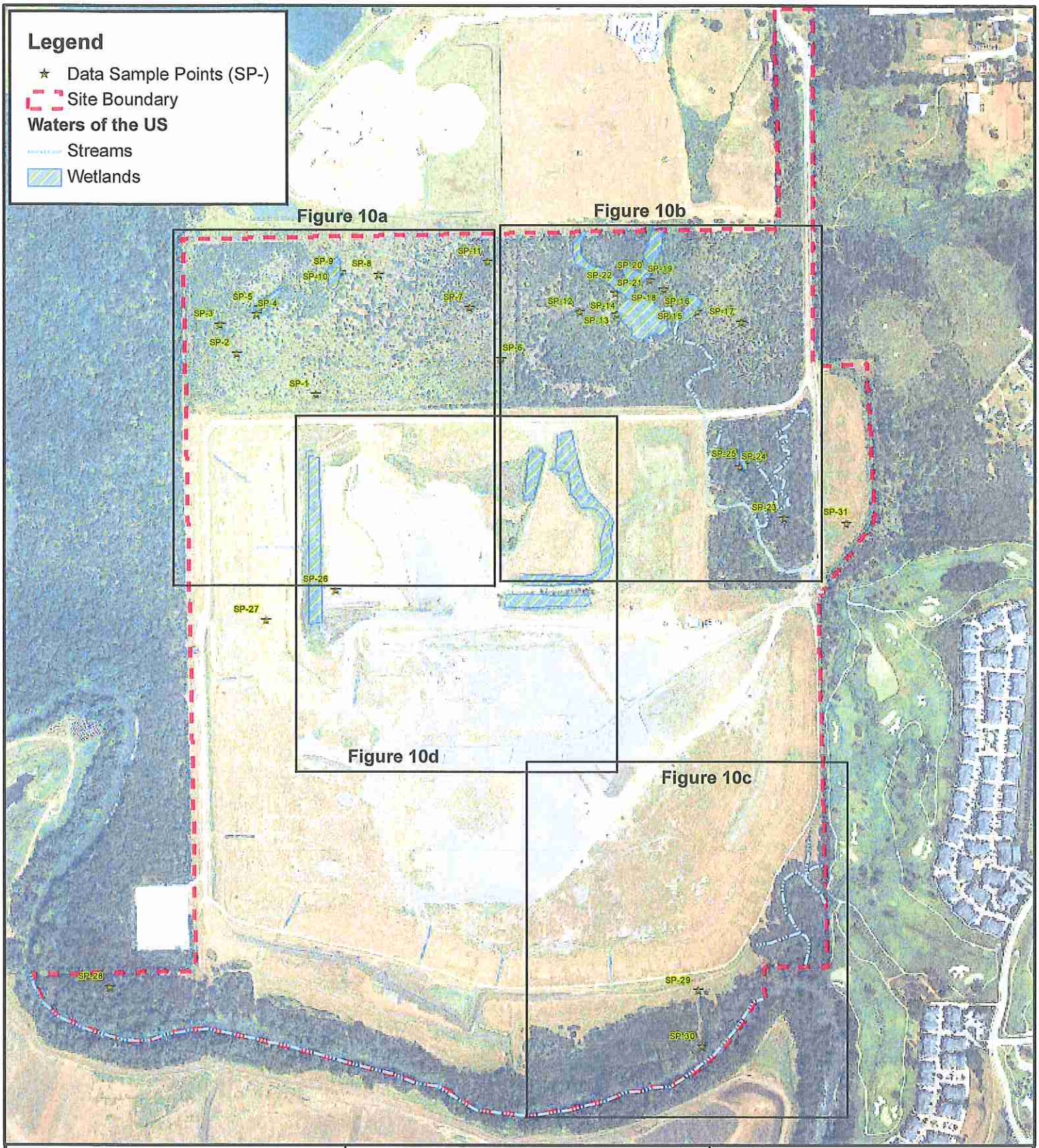
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 9

Data Sample Locations Map

I/IIB-139

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure9_12-03-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

Feet
0 400 800

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

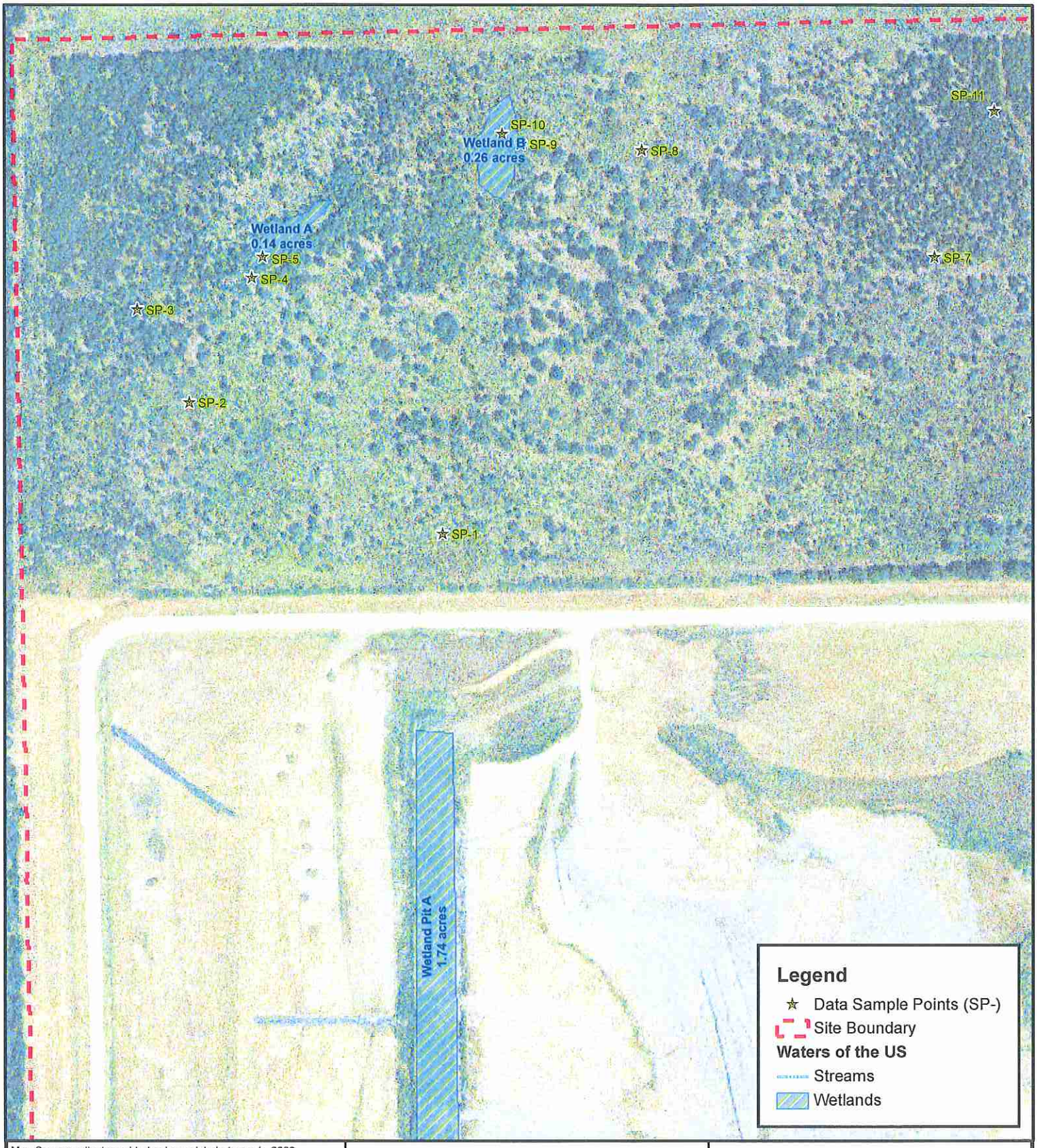
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 10

On-Site Findings Map

I/IIB-140

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure10_12-14-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

0 125 250 Feet

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

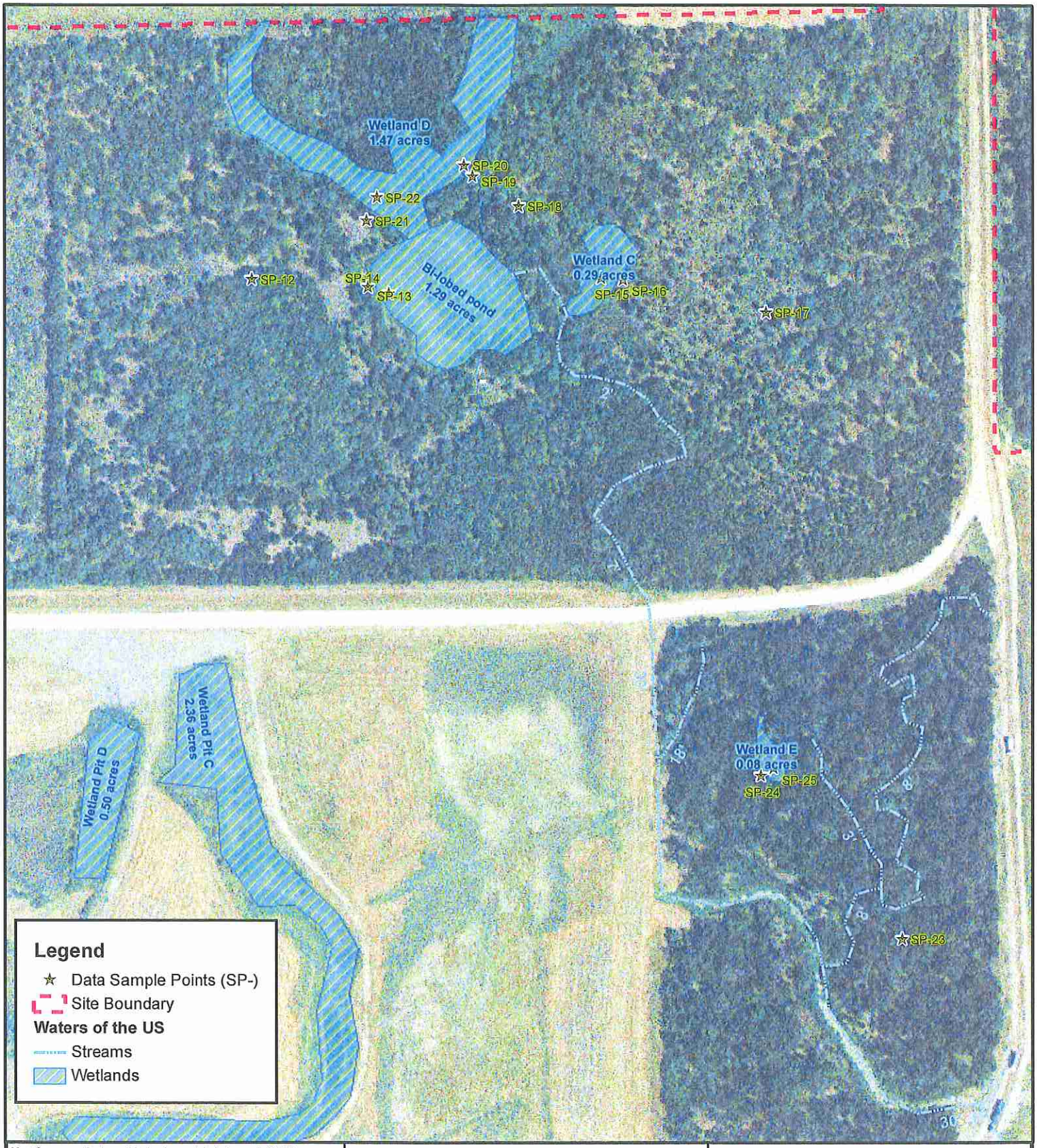
Camelot Landfill
Lewisville, Denton County, Texas
Weaver Boos Consultants-Southwest, LLC

FIGURE 10a

On-Site Findings Map

I/IIB-141

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure10a_12-3-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

Feet
0 125 250

N

Camelot Landfill
Lewisville, Denton County, Texas
Weaver Boos Consultants-Southwest, LLC

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

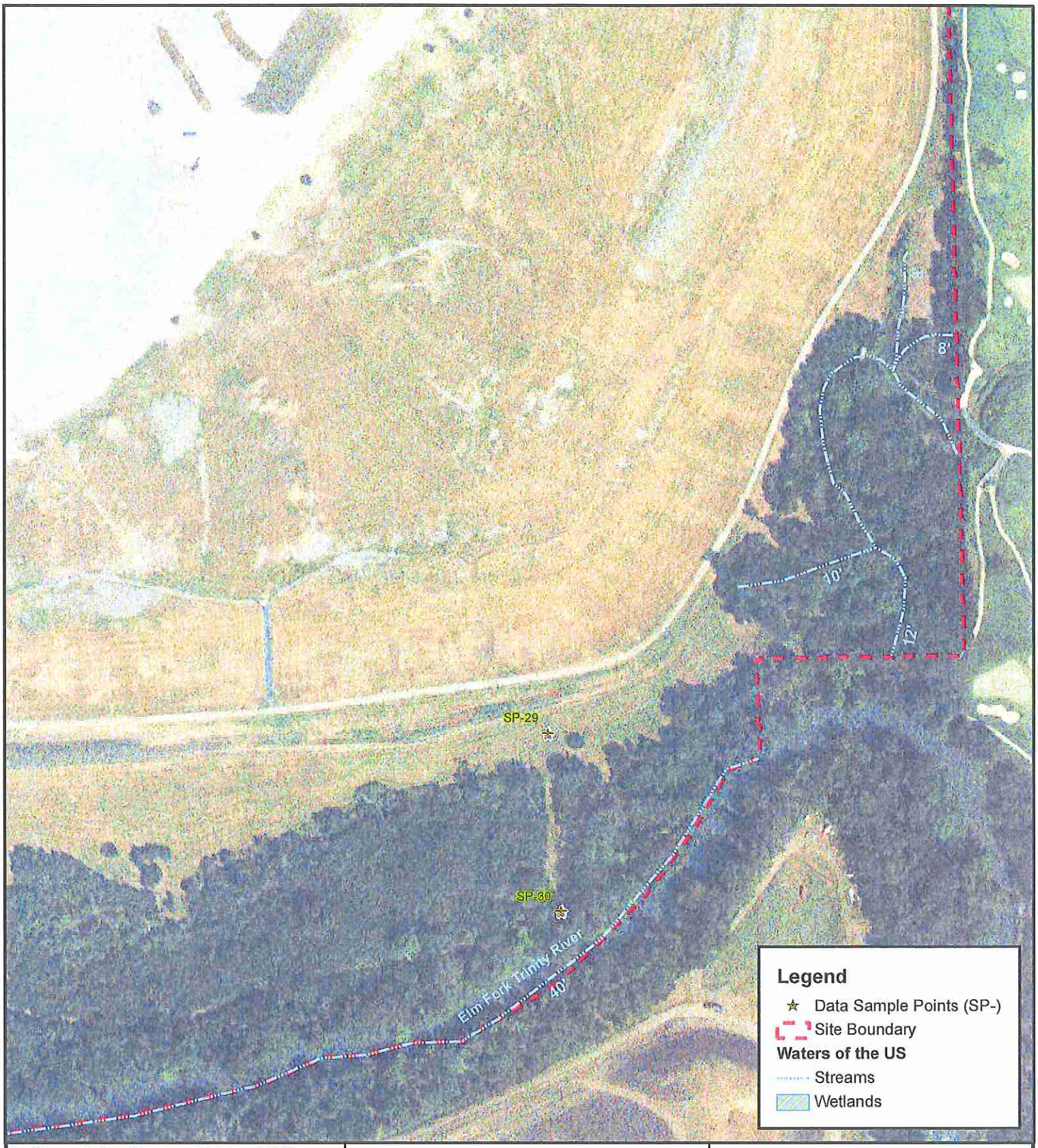
FIGURE 10b

On-Site Findings Map

I/IIB-142

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure10b_12-6-10.mxd	Project No. 09-003

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.



Map Source: client provided color aerial photograph, 2009,

0 125 250 Feet

N

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

Camelot Landfill
Lewisville, Denton County, Texas
City of Farmers Branch

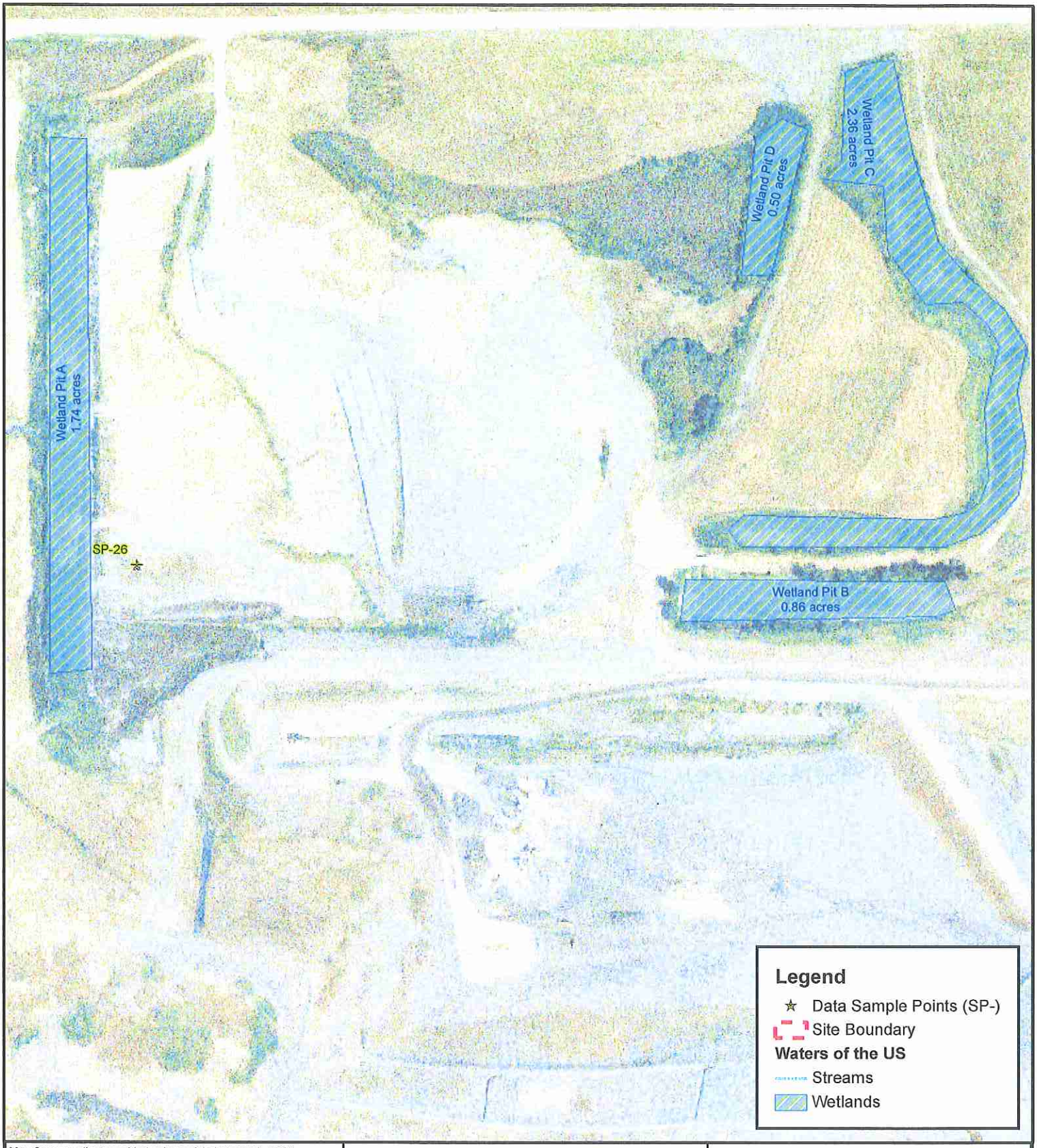
GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 10c

On-Site Findings Map

I/IIB-143

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure10c_12-4-10.mxd	Project No. 09-003



Map Source: client provided color aerial photograph, 2009,

0 125 250 Feet

N

Camelot Landfill
Lewisville, Denton County, Texas
Weaver Boos Consultants-Southwest, LLC

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

FIGURE 10d

On-Site Findings Map

I/IIB-144

Project Manager: ZNH	Approved By: ZNH
Map ID: Figure10d_12-6-10.mxd	Project No. 09-003

Mapping provided by Goshawk ECI. Map is intended for location only. It is not intended for construction purposes.

ATTACHMENT B

DATA FORMS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-1, 2, and 6

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.03655 Long: -96.954599 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a upland prairie.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	5%	no	FAC
2. *Craetagus crus-gralli*	5%	no	FAC-
3.			
4.			
	10%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Ambrosia trifida*	25%	yes	FAC
2. *Sorghum halepense*	20%	yes	FACU
3. *Torilis arvensis*	20%	yes	NL
4. *Ratibida columnaris*	10%	no	NL
5. *Elymus canadensis*	5%	no	FAC+
6. *Helianthus annuus*	10%	no	FAC
7. *Monrada citriodora*	5%	no	NL
8.			
9.			
10.			
	95%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland prairie is a mixture of grasses and wildflowers and a few trees dispersed throughout.

SOIL

Sampling Point: SP-1, 2, and 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-3 and 7

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.037754 Long: -96.956470 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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 [ ] No [X]
Hydric Soil Present?	Yes [ ]	No [X]	
Wetland Hydrology Present?	Yes [ ]	No [X]	

Remarks: This area can best be described as a upland woodland dominated by trees and shrubs.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	25%	yes	FAC
2. *Celtis laevigata*	20%	yes	FAC
3. *Craetagus crus-galli*	20%	yes	FAC-
4.			
	65%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Ulmus crassifolia*	10%	yes	FAC
2. *Celtis laevigata*	10%	yes	FAC
3.			
4.			
5.			
	20%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Ambrosia trifida*	15%	yes	FAC
2. *Elymus canadensis*	15%	yes	FAC+
3. *Torilis arvensis*	5%	no	NL
4. *Ratibida columnaris*	5%	no	NL
5.			
6.			
7.			
8.			
9.			
10.			
	40%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland woodland is dominated by trees and shrubs but has a moderately high density of herbaceous species. Although the dominance test is greater than 50%, the majority of the dominant species are facultative and there are no wetter species present.

SOIL

Sampling Point: SP-3 and 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2						clay	

[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)
- ☐ 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**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-4

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.037901 Long: -96.955754 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: This area can best be described as a upland woodland immediately adjacent to a wetland depression.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	40%	yes	FAC
2. *Bumelia lanuginosa*	15%	yes	FACU
3.			
4.			
	55%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Ulmus crassifolia*	15%	yes	FAC
2.			
3.			
4.			
5.			
	15%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Ambrosia trifida*	25%	yes	FAC
2. *Panicum virgatum*	25%	yes	FACW
3. *Torilis arvensis*	10%	no	NL
4. *Ratibida columnaris*	10%	no	NL
5.			
6.			
7.			
8.			
9.			
10.			
	70%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:

☒ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ 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 ☐

Remarks: This upland woodland is dominated by trees and shrubs but has a moderately high density of herbaceous species. Although the dominance test is greater than 50%, the majority of the dominant species are facultative. Fall panicum is a dominant and likely part of the transitional area between upland and wetland.

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Very uniform soils. No oxidation or reduction characteristics were noted in the soil sample.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. A wetter spot is noted adjacent to this location which corresponds to the wetland depression. This area is relatively well-drained and no hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-5

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038013 Long: -96.955683 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a herbaceous wetland depression. Topographically, the area is slightly lower than surrounding upland. Vegetation and soils exhibit wetland characteristics.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Iva anuua*	25%	yes	FAC
2. *Panicum virgatum*	20%	yes	FACW
3. *Symphyotrichum subulatum*	20%	yes	OBL
4. *Carex sp.*	20%	yes	FACW
5. *Helianthus annuus*	5%	no	FAC
6. *Cardiospermum halicacabum*	5%	no	FAC
7.			
8.			
9.			
10.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This wetland depression is dominated by hydric herbaceous species.

SOIL

Sampling Point: SP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5 YR 3/1						clay	
9-14	2.5 YR 3/1		10 YR 5/8	5%	C	M	clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: The mottling in the soil column is very obvious in the lower 6 inches. The redox concentrations are patches located throughout the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1)
- ☒ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

1996 and 2009 aerial photographs

Remarks: There is evidence of surface water/saturation in the 1996 aerial photograph. The area is topographically lower than surrounding uplands. There is evidence of standing water in the form of sediment and water marks.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-8 and 9

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038532 Long: -96.953310 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a upland prairie dominated by herbaceous species.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	5%	no	FAC
2. *Bumelia lanuginosa*	5%	no	FACU
3.			
4.			
	10%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Ambrosia trifida*	20%	yes	FAC
2. *Sorghum halepense*	15%	yes	FACU
3. *Torilis arvensis*	20%	yes	NL
4. *Salvia sp.*	15%	yes	NL
5. *Ratibida columnaris*	5%	no	NL
6. *Helianthus annuus*	5%	no	FAC
7. *Monrada citriodora*	5%	no	NL
8.			
9.			
10.			
	85%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland prairie is a mixture of grasses and wildflowers and a few trees scattered throughout. Most of the species present are Not Listed (NL) but are typically associated with upland areas.

SOIL

Sampling Point: SP-8 and 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-10

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038633 Long: -96.954173 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a herbaceous wetland depression. Topographically, the area is slightly lower than surrounding upland. Vegetation and soils exhibit wetland characteristics.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Symphyotrichum subulatum*	70%	yes	OBL
2. *Carex sp.*	8%	no	FACW
3. *Iva anuua*	8%	no	FAC
4. *Helianthus annuus*	5%	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	91% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This wetland depression has a very high coverage of annual aster with a few other species noted. All species listed are Facultative or wetter with annual aster being listed as obligate.

SOIL

Sampling Point: SP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/1		10 YR 5/8	5%	C	M	clay	

[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)
- ☐ 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**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: The mottling in the soil column is very obvious, probably a little larger concentration at lower depths. The redox concentrations are patches located throughout the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1)
- ☒ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

1996 and 2009 aerial photographs

Remarks: There is evidence of surface water/saturation in the 1996 aerial photograph. The area is topographically lower than surrounding uplands. Hydrology indicators also include sediment deposits and water marks.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-12, 13 & 21

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.037842 Long: -96.949309 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a upland woodland dominated by trees and shrubs.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1. *Maclura pomifera*	80%	yes	UPL
2. *Celtis laevigata*	5%	no	FAC
3.			
4.			
	85%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Maclura pomifera*	30%	yes	UPL
2. *Celtis laevigata*	10%	yes	FAC
3.			
4.			
5.			
	40%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Elymus canadensis*	40%	yes	FAC+
2. *Torilis arvensis*	10%	yes	NL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland woodland is dominated by trees and shrubs but has a moderately high density of herbaceous species. Bois d'arc is by far the most common species, however, Canadian wildrye is a very common herbaceous species.

SOIL

Sampling Point: SP-12, 13 & 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample. This area is very dry and has no evidence of wetland soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-14

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.037752 Long: -96.948455 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: POWHx

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a bi-lobed pond. Although it was dry during the field reconnaissance it is a well defined pond on a stream channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Cephalanthus occidentalis*	30%	yes	OBL
2. *Hibiscus moscheutos*	30%	yes	OBL
3.			
4.			
5.			
	60% = Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1. *Cardiospermum halicacabum*	25%	yes	FAC
2.			
	25% = Total Cover		

% Bare Ground in Herb Stratum 75%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: The bottom of the pond was almost entirely bare ground. The vegetative cover was along the perimeter of the pond.

SOIL

Sampling Point: SP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2		10 YR 5/8	10%	D,C	M	clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: The soil exhibits a depleted matrix with redox concentrations in the form of patches located throughout the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

1996 and 2009 aerial photographs

Remarks: There is evidence of surface water/saturation in the 1996 and 2009 aerial photograph. The area is topographically lower than surrounding uplands and within a defined stream channel. The edges of the pond are well defined and water marks are present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-16 & 17

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.037805 Long: -96.946989 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a upland woodland dominated by trees and shrubs.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	15%	yes	FAC
2. *Bumelia lanuginosa*	15%	yes	FACU
3. *Maclura pomifera*	5%	yes	UPL
4. *Prosopis glandulosa*	10%	yes	NL
	45%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Ulmus crassifolia*	20%	yes	FAC
2. *Craetagus crus-gralli*	15%	yes	FAC-
3.			
4.			
5.			
	35%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Torilis arvensis*	40%	yes	NL
2. *Ambrosia trifida*	10%	yes	FAC
3. *Elymus canadensis*	10%	yes	FAC+
4. *Euphorbia marginata*	5%	no	FACU-
5.			
6.			
7.			
8.			
9.			
10.			
	65%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland woodland has approximately 50-75% canopy coverage with some open areas in between so there is a higher concentration of herbaceous species.

SOIL

Sampling Point: SP-16 & 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample. This area is very dry and has no evidence of wetland soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (Includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-18 & 19

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038199 Long: -96.947635 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a upland woodland dominated by trees.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	50%	yes	FAC
2. *Maclura pomifera*	20%	yes	UPL
3.			
4.			
	70%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Torilis arvensis*	40%	yes	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland woodland has greater than 70% canopy coverage with very little mid-story. Ground cover consists almost entirely with beggar's ticks.

SOIL

Sampling Point: SP-18 & 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample. This area is very dry and has no evidence of wetland soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-20 & 22

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038418 Long: -96.947967 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a herbaceous wetland depression. Topographically, the area is slightly lower than surrounding upland. Vegetation and soils exhibit wetland characteristics.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	20%	yes	FACW-
2.			
3.			
4.			
	20%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. Polygonum hydropiperoides	30%	yes	OBL
2. Hibiscus moscheutos	15%	yes	OBL
3. *Iva anuua*	10%	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1. Cardiospermum halicacabum	10%	yes	FAC
2.			
	10%	= Total Cover	

% Bare Ground in Herb Stratum 15%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This wetland area has a mostly herbaceous cover, however, green ash trees are common along the edges.

SOIL

Sampling Point: SP-20 & 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 YR 5/1		2.5 YR 4/8	50%	C, D	M	clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: The redox concentrations are located throughout the matrix of the soil and are such a high percentage of the overall soil column. The redox concentrations are patches that are about as common as the matrix color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1)
- ☒ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

1996 and 2009 aerial photographs

Remarks: There is evidence of surface water/saturation in the 1996 and 2009 aerial photograph. The area is topographically lower than surrounding uplands. Hydrology indicators include sediment deposits and water marks.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-23 & 24

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.034330 Long: -96.945328 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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 [ ] No [X]
Hydric Soil Present?	Yes [ ] No [X]	
Wetland Hydrology Present?	Yes [ ] No [X]	

Remarks: This area can best be described as a upland woodland dominated by trees and shrubs.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus crassifolia*	70%	yes	FAC
2. *Fraxinus pennsylvanica*	10%	no	FACW-
3.			
4.			
	80%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Celtis laevigata*	15%	yes	FAC
2. *Fraxinus pennsylvanica*	10%	yes	FACW-
3.			
4.			
5.			
	25%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Elymus canadensis*	20%	yes	FAC+
2. *Torilis arvensis*	15%	yes	NL
3. *Ambrosia trifida*	15%	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This upland woodland has greater than 70% canopy coverage. Although the area has a Dominance Test of greater than 50%, most of the species are facultative with the exception of the green ash which comprises a small part of the tree and shrub stratums.

SOIL

Sampling Point: SP-23 & 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5 YR 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No oxidation or reduction characteristics were noted in the soil sample. This area is very dry and has no evidence of wetland soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears to be well-drained and was very dry during the field reconnaissance. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/2/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-25

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.038633 Long: -96.954173 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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: This area can best be described as a small wetland depression that is topographically lower than surrounding uplands. Vegetation and soils exhibit wetland characteristics.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. Fraxinus pennsylvanica	10%	yes	FACW-
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. Carex sp.	15%	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 75%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This wetland depression has very few plants within and the canopy coverage are from trees from the adjacent upland areas. The 2 most common species are green ash shrubs and sedge grass. The bottom is mostly bare ground.

SOIL

Sampling Point: SP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 YR 3/1		10 YR 5/8	5%	C	M	clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: The mottling in the soil column is not real common but the concentrations are more prevalent at lower depths.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☒ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☒ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (Includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

1996 and 2009 aerial photographs

Remarks: There is no obvious evidence of surface water/saturation in the 1996 or 2009 aerial photograph likely due to the tree cover. The area is slightly topographically lower than surrounding uplands and some sediment deposits were noted on the bare ground.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/3/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-26

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): disturbed plain Local relief (concave, convex, none): undulating Slope (%): 0-10%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.033263 Long: -96.954312 Datum: UTM 1983

Soil Map Unit Name: Arents, hilly NWI classification: None

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

Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [X]

Are Vegetation No, Soil No, or Hydrology No 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 [ ] No [X]
Hydric Soil Present?	Yes [ ] No [X]	
Wetland Hydrology Present?	Yes [ ] No [X]	

Remarks: This area is part of the active landfill where significant disturbance to vegetation and soil has occurred over the past 10 years. The natural topography has been modified as well. The area is topographically higher than the natural plain and the soils have been excavated and mixed over the years.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Sorghum halepense*	20%	yes	FACU
2. *Helianthus annuus*	15%	yes	FAC
3. *Grindelia papposa fka Prionopsis ciliata*	10%	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	45% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: The area has experienced significant disturbance and has a high percentage of bare ground with a few "weedy" species growing. Although the dominance test is greater than 50% no species is wetter than facultative and the species present are most often associated with upland areas.

SOIL

Sampling Point: SP-26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: A soil sample was not taken at this location due to the fact the soils have been significantly disturbed by excavation and fill in the past on this particular portion of the landfill. Soil mapping type "Arents" do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph and it appears as disturbed ground. It is topographically higher than the natural surrounding plain. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/3/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-27

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.032789 Long: -96.955684 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [X]

Are Vegetation No, Soil No, or Hydrology No 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: This sample location is on top of a landfill cell where trash has been placed and covered. The natural soil has been excavated in the past and trash deposited. A soil cover replaced. Topographically this area is significantly higher than the natural surrounding plain.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Sorghum halepense*	15%	yes	FACU
2. *Cynodon dactylon*	25%	yes	FACU
3. *Helianthus annuus*	10%	yes	FAC
4. *Grindelia papposa fka Prionopsis ciliata*	10%	yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	60% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: The area is dominated by various grasses and wildflowers. Many of the species are part of the seed mix used to stabilize disturbed areas and typically within uplands. The area has been recently mowed at the time of the field reconnaissance. The area marginally meets the dominance test but all species are facultative or drier.

SOIL

Sampling Point: SP-27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: A soil sample was not taken due to this being a required soil cover over an existing landfill cell. Additionally, soils have been significantly disturbed by excavation and fill in the past. The soil cover is likely a high clay content soil that was relocated from another area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears as disturbed and a hill on the aerial photograph. It is topographically higher than the natural surrounding plain. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/3/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-28

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.026710 Long: -96.958937 Datum: UTM 1983

Soil Map Unit Name: Frio silty clay NWI classification: None

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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 [ ] No [X]
Hydric Soil Present?	Yes [ ]	No [X]	
Wetland Hydrology Present?	Yes [ ]	No [X]	

Remarks: This area can best be described as a riparian woodland located along Elm Fork Trinity River. It is within mapped floodplain but does not appear to meet the criteria to be a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	35%	yes	FAC
2. *Ulmus crassifolia*	15%	yes	FAC
3. *Quercus macrocarpa*	15%	yes	FAC-
4. *Populus deltoides*	15%	yes	FAC
	80%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	25%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Elymus canadensis*	20%	yes	FAC+
2. *Verbesina virginica*	10%	yes	FACU
3. *Rivina humilis*	5%	no	NL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 60%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This riparian woodland has greater than 80% canopy coverage. Although the area has a Dominance Test of greater than 50%, most of the species are facultative.

SOIL

Sampling Point: SP-28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1								leaf litter
1-14	10 YR 2/2						silty clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: The top layer was organic matter consisting mostly of leaf litter from the woodlands. There were no oxidation or reduction characteristics noted in the soil sample. Although this area is adjacent to the Elm Fork of the Trinity River and within its floodplain, the soils seem relatively well drained and likely only flood periodically.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The photo suggests the area is a dense woodland but does not suggest an indication of water or saturation. The area was dry during the field reconnaissance and no hydrology characteristics were noted. A layer of leaf litter was noted in the soil sample but staining and/or sediment deposits were not present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/3/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-29

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): sloping to flat Slope (%): 0-10%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.026455 Long: -96.947227 Datum: UTM 1983

Soil Map Unit Name: Trinity clay NWI classification: None

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

Are Vegetation Yes, Soil Yes, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [X]

Are Vegetation No, Soil No, or Hydrology No 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: This sample location is along the edge or slope of a landfill cell where trash has been placed and covered. The natural soil has been excavated in the past and trash deposited. A soil cover replaced. Topographically this area is sloping to flat where the landfill cell meets the natural topography.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Sorghum halepense*	70%	yes	FACU
2. *Cynodon dactylon*	5%	no	FACU
3. *Helianthus annuus*	5%	no	FAC
4. *Croton sp.*	5%	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	85% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 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:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: The area is dominated by Johnsongrass however, various grasses and wildflowers are present as well.

SOIL

Sampling Point: SP-29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: A soil sample was not taken due to the soils being significantly disturbed by excavation and fill in the past

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears as an herbaceous vegetative type with evidence of disturbance in the past. No hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/3/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-30

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.025505 Long: -96.947174 Datum: UTM 1983

Soil Map Unit Name: Trinity clay NWI classification: PFO1A

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

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [X] No [ ]

Are Vegetation No, Soil No, or Hydrology No 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 [ ] No [X]
Hydric Soil Present?	Yes [ ]	No [X]	
Wetland Hydrology Present?	Yes [ ]	No [X]	

Remarks: This area can best be described as a riparian woodland located along Elm Fork Trinity River. It is within mapped floodplain but does not appear to meet the criteria to be a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1. *Ulmus americana*	35%	yes	FAC
2. *Quercus macrocarpa*	15%	yes	FAC-
3. *Populus deltoides*	15%	yes	FAC
4. *Ulmus crassifolia*	10%	no	FAC
	75%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1. *Ulmus americana*	40%	yes	FAC
2.			
3.			
4.			
5.			
	25%	= Total Cover	
Herb Stratum (Plot size: 5-ft radius)			
1. *Chasmanthium latifolium*	15%	yes	FAC
2. *Verbesina virginica*	10%	yes	FACU
3. *Elymus canadensis*	10%	yes	FAC+
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35%	= Total Cover	
Woody Vine Stratum (Plot size: 30-ft radius)			
1. *Smilax bona-nox*	10%	yes	FAC
2. *Toxicodendron radicans*	10%	yes	FAC
	20%	= Total Cover	

% Bare Ground in Herb Stratum 50%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] 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: This riparian woodland has greater than 80% canopy coverage. Although the area has a Dominance Test of greater than 50%, most of the species are facultative.

SOIL

Sampling Point: SP-30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	5 Y 3/2						clay	

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: There were no oxidation or reduction characteristics noted in the soil sample. Although this area is adjacent to the Elm Fork of the Trinity River and within its floodplain, the soils seem relatively well drained and likely only flood periodically.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The photo suggests the area is a dense woodland but does not suggest an indication of water or saturation. The area was dry during the field reconnaissance and no hydrology characteristics were noted.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Camelot Landfill City/County: Lewisville/Denton County Sampling Date: 9/4/2009

Applicant/Owner: Weaver Boos Consultants, LLC State: TX Sampling Point: SP-31

Investigator(s): Zane Homesley, Goshawk ECI Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): flat Slope (%): 0%

Subregion (LRR): J-Southwestern Prairies Cotton & Forage Lat: 33.034231 Long: -96.944080 Datum: UTM 1983

Soil Map Unit Name: Ovan clay NWI classification: None

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: This sample location is at the top of a landfill cell where trash has been placed and covered. The natural soil has been excavated in the past and trash deposited. A soil cover replaced. Topographically this area is higher than the surrounding natural plain.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5-ft radius)			
1. *Cynodon dactylon*	95%	yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 30-ft radius)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 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:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ 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 ☒

Remarks: The area is dominated by Bermudagrass.

SOIL

Sampling Point: SP-31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ☐ 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)~~
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: A soil sample was not taken due to this being a required soil cover over an existing landfill cell. Additionally, soils have been significantly disturbed by excavation and fill in the past. The soil cover is likely a high clay content soil that was relocated from another area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

1996 and 2009 aerial photographs

Remarks: There is no evidence of surface water in the 2009 aerial photograph. The area appears as an herbaceous vegetative type with evidence of disturbance in the past. No hydrology characteristics were noted.

ATTACHMENT C

ON-SITE PHOTOGRAPHS

PHOTO 1
Open prairie community

PHOTO 2
Open prairie community

PHOTO 3
Upland woodland community

PHOTO 4
Upland woodland community

PHOTO 5
Wetland A

PHOTO 6
Wetland B

PHOTO 7
Wetland D

PHOTO 8
Soils within Wetland D

PHOTO 9
Bi-lobed pond

PHOTO 10
Natural stream – 2-feet wide

PHOTO 11
Natural stream – 7 feet wide

PHOTO 12
Channelized stream – 30 feet wide

PHOTO 13
Midway Branch – SE portion of site (12 feet wide)

PHOTO 14
Dry tributary of Midway Branch – 10-feet wide

PHOTO 15
Riparian woodlands

PHOTO 16
Riparian woodlands

PHOTO 17
Sparsely vegetated active landfill

PHOTO 18
Linear wetland pit

PHOTO 19
Cell vegetated with intermediate cover

COORDINATION WITH U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

- January 4, 2011, FWS Response Letter.
- December 14, 2010, WBC Request for Review Letter.

JANUARY 4, 2011, FWS RESPONSE LETTER

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
WinSystems Center Building
711 Stadium Drive, Suite 252
Arlington, Texas 76011

In Reply Refer to:
21420-2010-I-0074

January 4, 2011

Mr. Jeffrey P. Young
Weaver Boos Consultants, LLC-Southwest
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109

Dear Mr. Young:

This responds to your December 14, 2010, letter requesting a determination of effect regarding the proposed expansion of the existing Camelot Landfill in Denton County, Texas. It is our understanding that the landfill boundary will be expanded by 118.85 acres and that waste disposal area will be expanded by 38.5 acres within this new boundary. The Federal Emergency Management Administration's (FEMA) Procedure Memorandum 64 indicates that projects requiring a Conditional Letter of Map Revision based-on Fill (CLOMR-F) or a Conditional Letter of Map Revision (CLOMR) will need documented compliance with the Endangered Species Act (Act).

The habitat assessment provided with your letter indicates that the site does not provide suitable habitat for the federally listed interior least tern, piping plover, bald eagle or whooping crane, and that the site would "not likely" be occupied. It also indicates that, although possible, it is "highly unlikely" that migratory birds would use the site during migration. Your letter requests that the Fish and Wildlife Service make a "no effect" or "not likely to adversely affect" determination for this project.
Under section 7 of the Act, it is the responsibility of the action agency (FEMA), often through a third party consultant contracted through the action agency, to make an effect determination. The assessment submitted with your letter has made a final determination that the project will have "no adverse effects" to threatened or endangered species listed under the Act. It is not completely clear whether this conclusion indicates a "no effect" or a "not likely to adversely affect" determination. However, given the previously described habitat assessment, it appears this determination is indicating that this project is "not likely to adversely affect" federally listed species. Given the lack of suitable habitat for federally listed species and continuing landfill operations at the project site we concur with your "not likely to adversely affect" determination.

We appreciate the opportunity to review the proposed project. If you have any further questions or concerns, please do not hesitate to contact John Morse, of my staff, at 817-277-1100.

Sincerely,

Thomas J. Cloud, Jr.
Field Supervisor

DECEMBER 14, 2010, WBC REQUEST FOR REVIEW LETTER

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

December 14, 2010
Project No. 1339-351-11-02-6A

Mr. Tom Cloud, Field Supervisor
U.S. Department of the Interior
Fish and Wildlife Service
711 Stadium Drive East, Suite 252
Arlington, Texas 76011

Re: Endangered or Threatened Species Assessment
Proposed Camelot Landfill Major Permit Amendment
Denton County, Texas

Dear Mr. Cloud:

The purpose of this letter is to (1) demonstrate coordination with the U.S. Department of the Interior, Fish and Wildlife Service (FWS), consistent with Title 30 Texas Administrative Code (TAC) §330.61(n)(2), and (2) demonstrate compliance with the Federal Emergency Management Administration's (FEMA) Procedures Manual 64 regarding Endangered Species Act (ESA) compliance for projects that require a Conditional Letter of Map Revision (CLOMR) for development within a floodplain. Section 330.61(n)(2) requires that a permit applicant for an expansion of a municipal solid waste facility contact FWS for locations and specific data relating to endangered and threatened species. FEMA's Procedures Manual 64 (dated August 18, 2010) requires that an applicant for a CLOMR demonstrate compliance with the ESA by obtaining a "not likely to adversely affect" or "no effect" determination from the FWS. The determination will be included in the CLOMR request that is submitted to FEMA for this project.

Weaver Boos Consultants, LLC–Southwest is in the process of preparing a major permit amendment application, on behalf of the City of Farmers Branch, to expand the Camelot Landfill. The existing permit boundary will be expanded approximately 118.85 acres. The existing permitted waste disposal area will be expanded laterally about 38.5 acres and the landfill will also be expanded vertically. To assist you in your determination regarding threatened or endangered species or their critical habitat within or near the referenced project, please find attached (1) a project summary and site location maps, (2) a site specific Threatened and Endangered Species Assessment completed by Goshawk Environmental Consulting, Inc. (September 2010), and (3) a summary of the FEMA CLOMR application.

The site has operated as a landfill for over 29 years, and most of the area within the existing landfill permit boundary has been disturbed by earth moving activities (e.g.,

landfill operations). A site specific Threatened and Endangered Species Site Assessment was completed in September 2010. As discussed in the attached Goshawk Environmental Consulting, Inc. report, the site does not provide habitat for and would not likely be occupied by any federally listed and stated listed threatened and endangered species. Goshawk notes that, while it is possible that some bird species may utilize the site during migration, use would be transitory in nature and of short duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

To verify compliance with §330.61(n)(2), we will need to include a review letter from the FWS within the TCEQ permit application. In addition, we will need to include in the FEMA CLOMR request a "no effect" or "not likely to adversely affect" determination from the FWS to document compliance with the ESA. Your assistance with these matters is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Attachment 1 – Project Summary and Site Location Maps
Attachment 2 – Goshawk Environmental Consulting, Inc. Threatened and Endangered Species Assessment
Attachment 3 – CLOMR Summary

cc: Shane Davis, City of Farmers Branch

ATTACHMENT 1

PROJECT SUMMARY
AND
SITE LOCATION MAPS

Project Summary

Camelot Landfill Expansion
Denton County, Texas

Introduction

The City of Farmers Branch is in the process of developing a major permit amendment application to expand the Camelot Landfill. This landfill expansion project will provide long-term disposal capacity for solid waste that is generated in the area. The permit application will be submitted to the Texas Commission on Environmental Quality (TCEQ). The application will undergo a detailed review by the TCEQ before the operating permit for this facility is issued.

The objective of this summary is to provide an overview of the proposed landfill expansion. The following subsections detail information regarding the owner and operator of the site, general site information, and a summary of the proposed site design.

Owner/Operator Information

The Camelot Landfill is owned by the City of Farmers Branch and operated by Camelot Landfill TX, LP. Camelot Landfill TX, LP, is a subsidiary of Republic Services, Inc. (Republic). Republic is one of the leading providers of solid waste services in the nation. Republic provides nonhazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the country.

Site Information

The following drawings are attached to this summary.

- Figure 1 – Site Location Map. This drawing shows the site location on a standard TxDOT county highway map.
- Figure 2 – General Topographic Map. This drawing shows the current landfill and waste disposal area on a USGS map.
- Figure 3 – Aerial Photograph. This figure details the existing and proposed landfill expansion area on an aerial photograph.
- Figure 4 – Existing Site Plan. This plan highlights the existing and proposed landfill expansion area on a detailed site topographic map.
- Figure 5 – Existing and Proposed Landfill Completion Plan. This plan provides a comparison between the existing permitted landfill and the proposed changes to the landfill completion plan.

Site History

The Camelot Landfill is an existing 351-acre Municipal Solid Waste (MSW) landfill (TCEQ Permit No. 1312A). The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended before the site opened to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A). The site was upgraded to Subtitle D standards in 1996.

The Camelot Landfill is located in southeastern Denton County and is easily accessed from area population centers via State Highway 121 Business. The service area includes Denton, Dallas, Collin, and Tarrant counties.

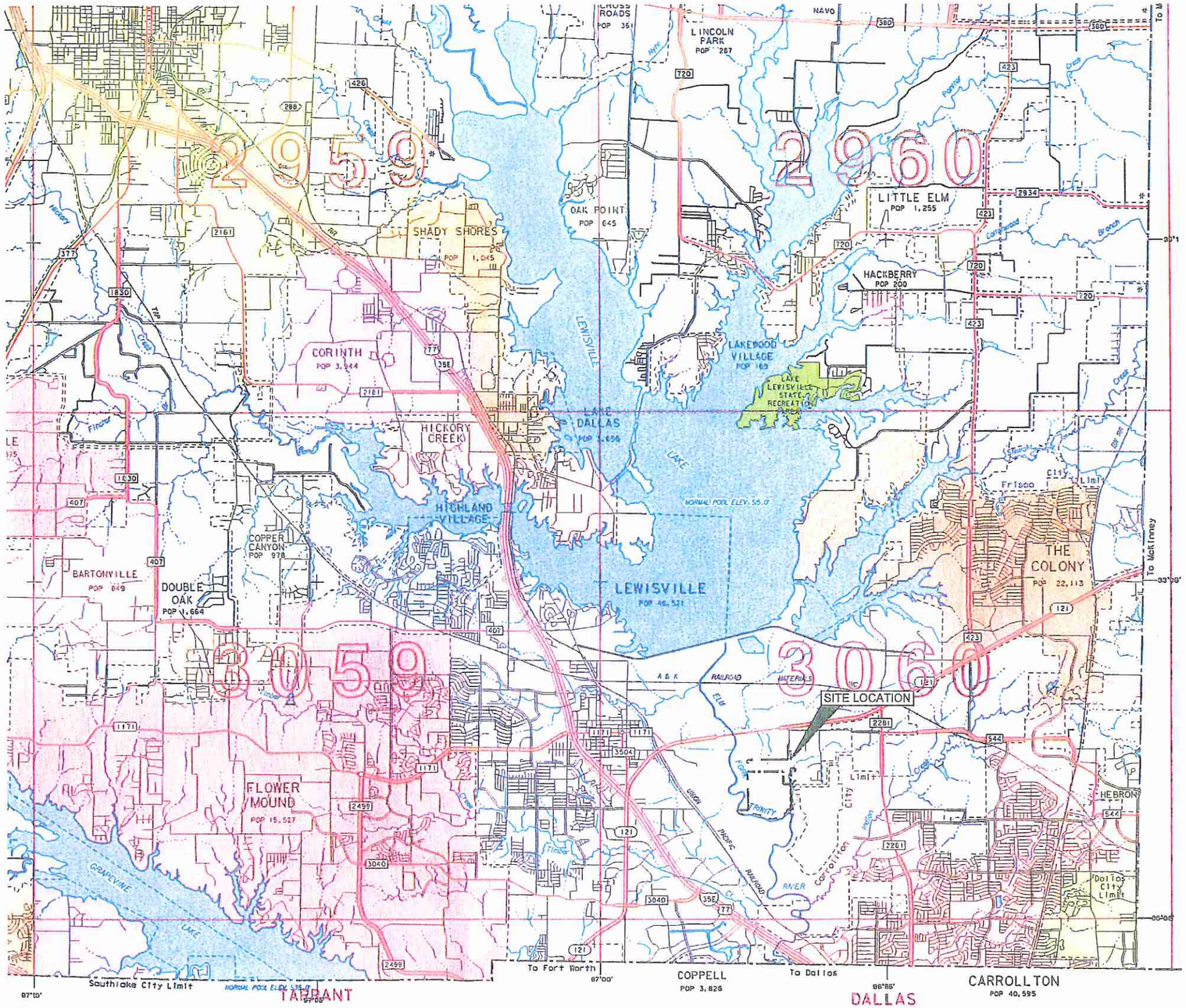
Design Summary

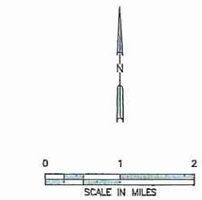
The following information presents a summary of the design and operations for the proposed Camelot Landfill expansion.

- The Camelot Landfill is an existing municipal solid waste landfill facility (TCEQ Permit No. MSW 1312A). The existing landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant counties.
- With this expansion, the existing 350.77-acre permit boundary will be increased by approximately 118.85 acres to 469.62 acres. The limits of waste will expand by 38.5 acres from approximately 198.3 acres to approximately 236.8 acres.
- Accepted wastes will remain consistent with the current municipal solid waste landfill permit. The facility will accept municipal solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities; municipal solid waste resulting from construction and demolition activities; Class 2 and Class 3 nonhazardous industrial solid waste; and certain special wastes as permitted by the TCEQ.
- Access to the site will be provided via the existing site access road at Huffines Boulevard. Based on travel patterns of existing landfill traffic, vehicles bound for the landfill will access the site using State Highway 121 Business and Huffines Boulevard.
- A liner and final cover system that meets all regulatory requirements will be used for constructing the solid waste containment system. The design objective of the containment system (final cover, liner, and leachate management system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. Leachate that is removed from the landfill is either recirculated or transported to an offsite, permitted treatment facility. The construction procedures of the liner and final cover systems follow strict TCEQ approved quality control and quality assurance procedures, which are

verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the TCEQ before solid waste is placed in the landfill.

- To control landfill gas emissions and minimize the potential for subsurface migration, a landfill gas (LFG) collection and control system (GCCS) has been installed at the site. The collection system currently consists of vertical extraction wells and collection piping throughout the waste mass. The collected LFG is conveyed to an LFG-to-energy (LFGTE) facility, which is owned by a third party energy developer. Any excess LFG not used by the LFGTE facility will be directed to the existing flare for combustion. The existing system will be expanded to incorporate the currently permitted but undeveloped waste fill footprint and the expansion area. Routine monitoring of the GCCS is performed to verify the efficiency of the GCCS to collect and control generated LFG.
- To verify that the highest level of environmental protection is maintained, the following landfill monitoring systems are provided:
  - Groundwater Monitoring System. The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened to monitor groundwater quality. The water samples are tested at an offsite laboratory.
  - Gas Monitoring System. The purpose of the landfill gas monitoring system is to verify that landfill gas does not migrate off site. Landfill gas probes are placed along the perimeter of the permit boundary.
  - These monitoring systems are sampled and tested periodically. The results are filed with the TCEQ and are public record.
- Site Operations. The site will be operated by properly trained personnel. A detailed site operating plan will be included in the permit amendment application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with TCEQ regulations. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis to ensure the site is in compliance with state regulations.

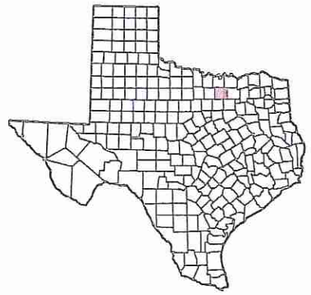




LEGEND

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY



KEY TO COUNTIES

GENERAL HIGHWAY MAP
DENTON COUNTY
TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

I/IIB-200

- [X] FOR INFORMATION PURPOSES ONLY
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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 1-SITE LOC MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

SITE LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants

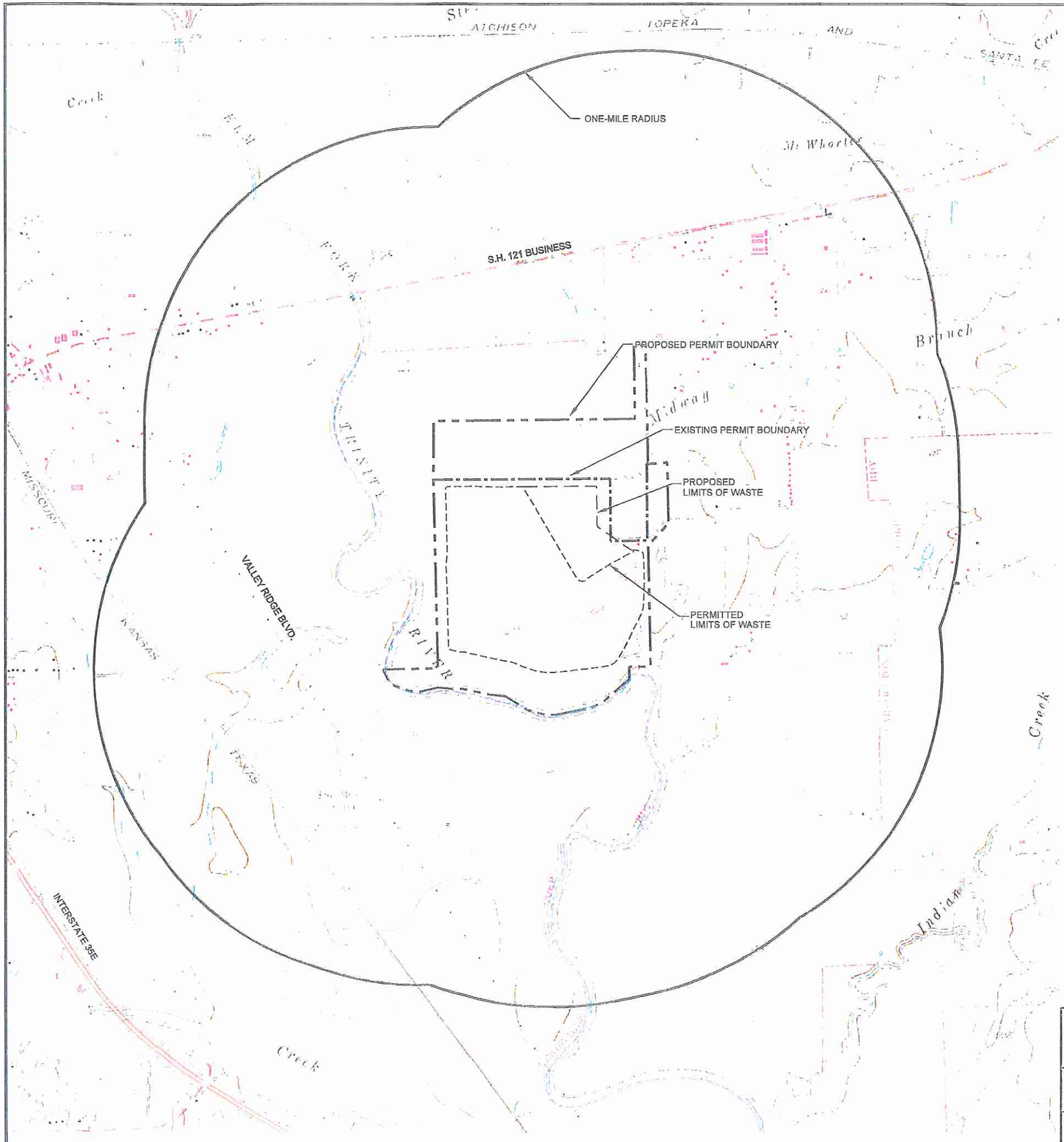
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1



N

0 1000 2000

SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMITS OF WASTE
- PROPOSED LIMITS OF WASTE

LEWISVILLE EAST, TEX.
1960
PHOTOREVISED 1974

CARROLLTON, TEX.
NW/4 CARROLLTON 15' QUADRANGLE
N3252.5-W9652.5/7.5
1959

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

NOTES:

1. SITE LOCATION BASE MAP ADAPTED FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS ABOVE.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SURVEYING CO. IN DECEMBER 2010.

I/IIB-201

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 2-GEN. TOPO. MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

GENERAL TOPOGRAPHIC MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2

N

0 500 1000
SCALE IN FEET

LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SURVEYING CO. IN DECEMBER 2010.

I/IIB-202

G:\1339\351\EXPANSION 2009\COORDINATION LETTER\3-AERIAL.dwg, 12/9/2010 11:22:25 AM, jwilson, 1:2

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[ ] ISSUED FOR CONSTRUCTION
[ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 3-AERIAL.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

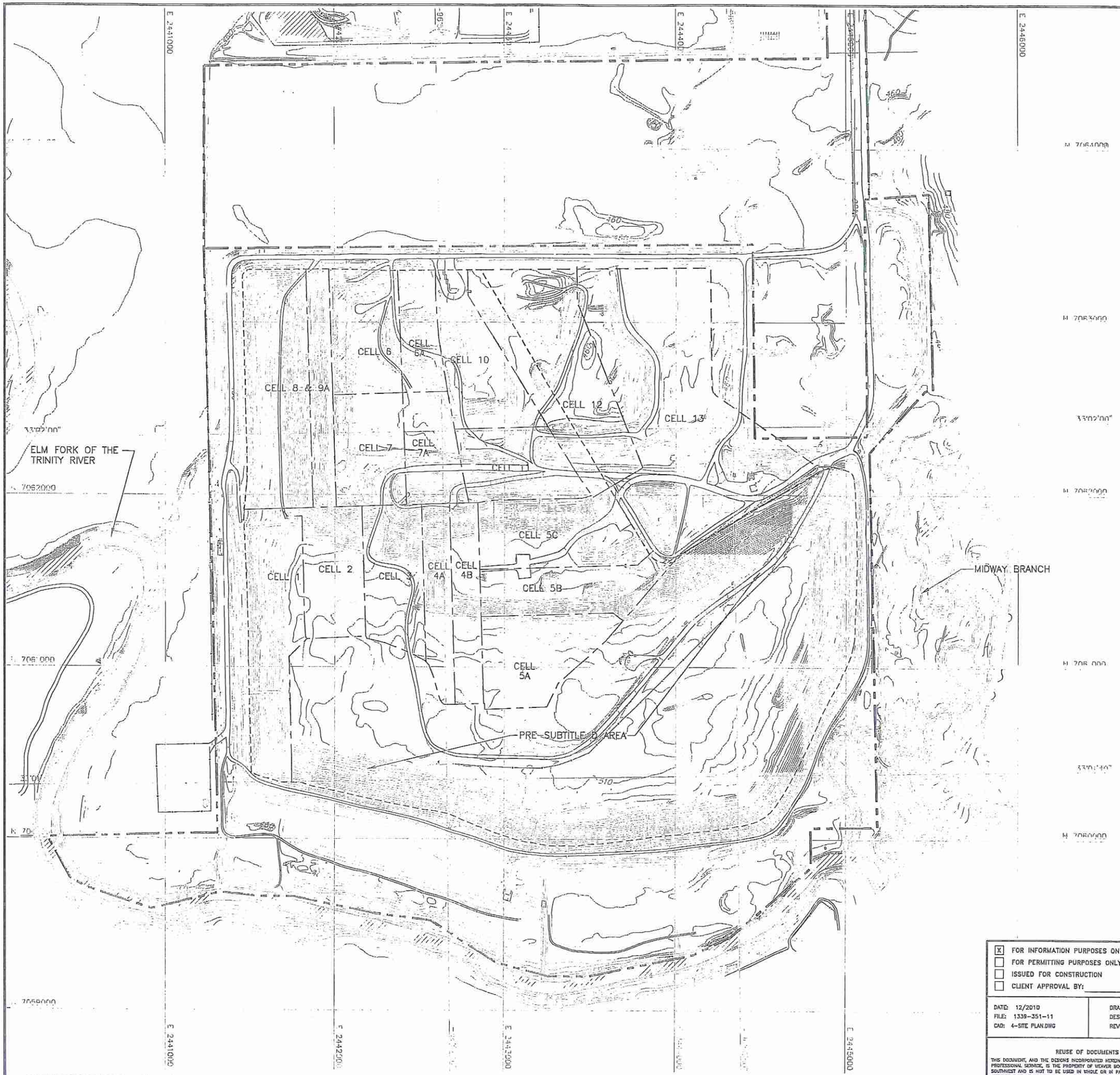
NO.	DATE	DESCRIPTION

AERIAL PHOTOGRAPHY

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- EXISTING LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-203

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DATE: 12/2010 | DRAWN BY: VRS
FILE: 1339-351-11 | DESIGN BY: RJS
CAD: 4-SITE PLAN.DWG | REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

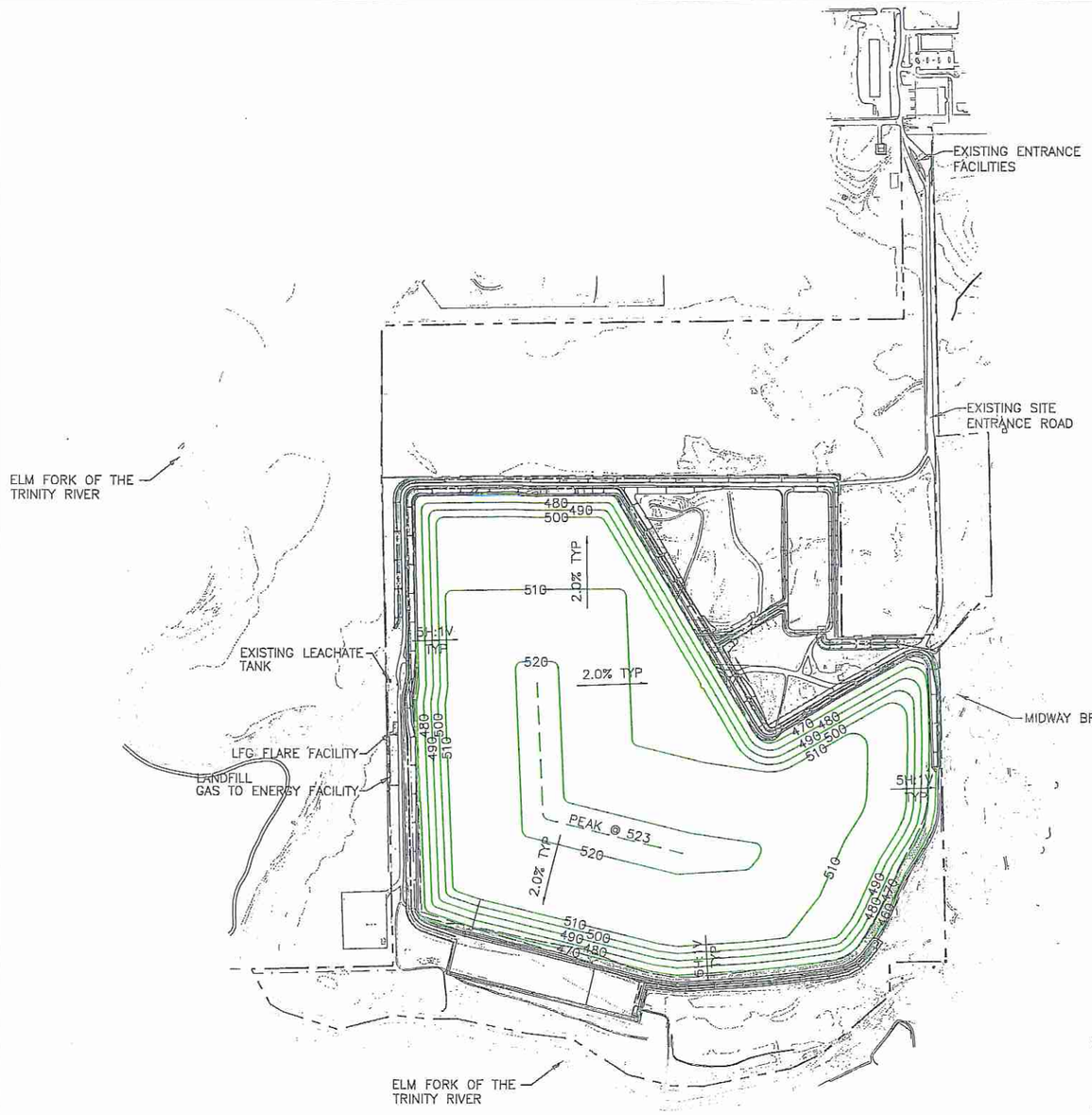
NO.	DATE	DESCRIPTION

SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4



PERMITTED LANDFILL COMPLETION PLAN

PROPOSED LANDFILL COMPLETION PLAN

N

0 500 1000

SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE
- EXISTING CONTOUR
- FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 5-COMPARISON.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5

ATTACHMENT 2

GOSHAWK ENVIRONMENTAL CONSULTING, INC.
THREATENED AND ENDANGERED
SPECIES ASSESSMENT

GOSHAWK
ENVIRONMENTAL CONSULTING, INC.

13 September 2010

Jeffrey Young
Weaver Boos Consultants, LLC-Southwest
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

RE: Threatened and Endangered Species Review
Camelot Landfill
Lewisville, Denton County, Texas
GEC#09-003.TE

Dear Mr. Young:

This letter report provides the results of a threatened or endangered species habitat assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Camelot Landfill in Denton County, Texas. The assessment included a literature review and field reconnaissance effort within the entire 469.6-acre proposed permit boundary.

LITERATURE REVIEW

Literature and agency file searches were conducted to identify the potential occurrence of any federally listed threatened or endangered species or potential habitat on the Camelot Landfill. The review included the US Fish and Wildlife Service (USFWS) threatened and endangered species list, along with the Texas Parks and Wildlife Department (TPWD) Rare, Threatened, and Endangered Species of Texas by County Database and TPWD's Texas Natural Diversity Database (TXNDD).

An Internet search of the USFWS, Southwest Region Ecological Services web site was conducted to identify the potential occurrence of any federally listed threatened or endangered species or potential habitat on the Camelot Landfill. The species listed for Denton County include: bald eagle (*Haliaeetus leucocephalus*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), and whooping crane (*Grus americana*) (attached). The bald eagle has been delisted and is currently being monitored.

The Rare, Threatened, and Endangered Species of Texas by County Database for Detnon County (attached) list was reviewed. Many species on the list are indicated as rare species and are not addressed within this report. Species listed as threatened or endangered by TPWD include: peregrine falcon (*Falco peregrinus*), bald eagle, white-faced ibis (*Plegadis chihi*), whooping crane, wood stork (*Mycteria americana*), red wolf (*Canus rufus*), Louisiana pigtoe (*Pleurobema reddellii*), sandbank pocketbook (*Lampsilis satura*), Texas heelsplitter (*Potamilus amphichaenus*), Texas horned lizard (*Phrynosoma cornutum*), and timber rattlesnake (*Crotalus horridus*). None of the listed species are indicated within the TXNDD as being documented within the limits of the Camelot Landfill or immediate surrounding areas.

FIELD RECONNAISSANCE

Goshawk conducted a field reconnaissance effort on 2, 3, and 4 September 2009 to assess the site for potential threatened or endangered species habitat. The majority of the land in the surrounding area is currently under industrial use including landfills, mining, and other activities. Most of the area within the Camelot Landfill is currently being used for active landfill operations. There is a narrow native riparian corridor in the southern portion of the site along Elm Fork of the Trinity River. Additionally, some upland woodlands and open prairie exist within the northern quarter of the site.

The active and covered landfill cells are located within the central portion of the Camelot landfill. The active landfill includes areas of bare ground and sparse vegetation along with several excavated borrow pits where soil has been removed and used as part of the landfill activities. The active landfill is mostly sparsely vegetated with common sunflower (*Helianthus annuus*), Johnson grass (*Sorghum halepense*), and Spanish gold (*Grindelia papposa*); however, some portions of the active landfill have a good coverage of Bermuda grass (*Cynodon dactylon*).

The riparian woodlands along the Elm Fork of the Trinity River are dominated by American elm (*Ulmus americana*), cottonwood (*Populus deltoides*), cedar elm (*Ulmus crassifolia*), and bur oak (*Quercus macrocarpa*) trees. The midstory and understory are dominated by Canadian wildrye (*Elymus canadensis*), inland sea oats (*Chasmanthium latifolium*), frostweed (*Verbesina virginica*), green briar (*Smilax bona-nox*), and poison ivy (*Toxicodendron radicans*).

The upland woodlands are fairly uniform with minor differences in vegetative composition. The most common tree species include cedar elm, bois d'arc (*Maclura pomifera*), sugar hackberry (*Celtis laevigata*), and gum bumelia (*Bumelia lanuginosa*) with some areas having a small percentage of honey mesquite (*Prosopis glandulosa*), hawthorn (*Craetagus crus-gralli*), and green ash (*Fraxinus pennsylvanica*). Understory vegetation is typically very dense and consists mostly of Canadian wildrye, hedge-parsley (*Torilis arvensis*), and giant ragweed (*Ambrosia trifida*).

The open prairie community can generally be described as having primarily herbaceous species with a few shrubs and trees creating a very low canopy coverage (<10% coverage). Dominant species include Johnson grass, giant ragweed, and hedge-parsley; however, Mexican hat (*Ratibida columnaris*), Canadian wildrye, common sunflower, sage (*Salvia* sp.), and horsemint (*Monarda citriodora*) were also noted. The trees and shrubs within the open prairie are primarily cedar elm, hawthorn, and gum bumelia.

None of the listed threatened or endangered species were observed on the site during the reconnaissance effort. Additionally, none of the on-site native vegetation exhibits the necessary characteristics to be occupied by any of the federal or state listed species.

DISCUSSION AND FINDINGS

Of all of the potential species listed by the USFWS and TPWD for Denton County, only the bird species and the timber rattlesnake could possibly occur at the site. Use by the bird species would be transitory in nature. An active landfill does not provide typical habitat for any of the listed species and the regular activity at the landfill would typically prevent any of the bird species from utilizing the area for long periods of time. The timer rattlesnake could possibly

utilize the riparian woodland corridor along the Elm Fork of the Trinity River. However, with all the industrial development in the overall area, use by the timber rattlesnake is not highly likely.

Based on this assessment, it is Goshawk's opinion that the site does not provide habitat for and would not likely be occupied by any of the federally listed and state listed threatened and endangered species. While it is possible that some bird species may utilize the site during migration, use would be transitory in nature and of very short duration. Lack of suitable habitat makes the occurrence of these species highly unlikely. No adverse effects to any of the listed species are expected with the continued development of this site.

If you have any questions or desire additional information, please feel free to call me at 512-203-0484.

Sincerely,

Zane N. Homesley
Principal

Attachments

Cc: Jason Edwards, Weaver Boos Consultants, LLC-Southwest

U.S. Fish & Wildlife Service

Endangered Species List

Back to Start

List of species by county for Texas:

Counties Selected: Denton

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Denton County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
bald eagle	*Haliaeetus leucocephalus*	Birds	DM				P
least tern	*Sterna antillarum*	Birds	E				I
piping Plover	*Charadrius melodus*	Birds	E, T				I
whooping crane	*Grus americana*	Birds	E, EXPN				P

Last Revision: 1/15/2010 5:40:00 PM

DENTON COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Bald Eagle	*Haliaeetus leucocephalus*	DL	T

found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Henslow's Sparrow *Ammodramus henslowii*

wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking

Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.

Western Burrowing Owl *Athene cunicularia hypugaea*

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

White-faced Ibis	*Plegadis chihi*		T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats

Whooping Crane	*Grus americana*	LE	E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties

Wood Stork	*Mycteria americana*		T

DENTON COUNTY

BIRDS

Federal Status State Status

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

MAMMALS

Federal Status State Status

Plains spotted skunk *Spilogale putorius interrupta*

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Red wolf *Canis rufus* LE E

extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies

MOLLUSKS

Federal Status State Status

Fawnsfoot *Truncilla donaciformis*

small and large rivers especially on sand, mud, rocky mud, and sand and gravel, also silt and cobble bottoms in still to swiftly flowing waters; Red (historic), Cypress (historic), Sabine (historic), Neches, Trinity, and San Jacinto River basins.

Little spectaclecase *Villosa lienosa*

creeks, rivers, and reservoirs, sandy substrates in slight to moderate current, usually along the banks in slower currents; east Texas, Cypress through San Jacinto River basins

Louisiana pigtoe *Pleurobema riddellii* T

streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins

Pistolgrip *Tritogonia verrucosa*

stable substrate, rock, hard mud, silt, and soft bottoms, often buried deeply; east and central Texas, Red through San Antonio River basins

Rock pocketbook *Arcidens confragosus*

mud, sand, and gravel substrates of medium to large rivers in standing or slow flowing water, may tolerate moderate currents and some reservoirs, east Texas, Red through Guadalupe River basins

Sandbank pocketbook *Lampsilis satura* T

small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms; east Texas, Sulfur south through San Jacinto River basins; Neches River

Texas heelsplitter *Potamilus amphichaenus* T

quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins

Wabash pigtoe *Fusconaia flava*

DENTON COUNTY

MOLLUSKS		Federal Status	State Status

creeks to large rivers on mud, sand, and gravel from all habitats except deep shifting sands; found in moderate to swift current velocities; east Texas River basins, Red through San Jacinto River basins; elsewhere occurs in reservoirs and lakes with no flow

REPTILES		Federal Status	State Status

Texas garter snake *Thamnophis sirtalis annectens*

wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August

Texas horned lizard *Phrynosoma cornutum* T

open, arid and semi-arid regions with sparse vegetation, including grass, 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; breeds March-September

Timber/Canebrake rattlesnake *Crotalus horridus* T

swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto

PLANTS		Federal Status	State Status

Glen Rose yucca *Yucca necopina*

Texas endemic; grasslands on sandy soils and limestone outcrops; flowering April-June

ATTACHMENT 3

CLOMR SUMMARY

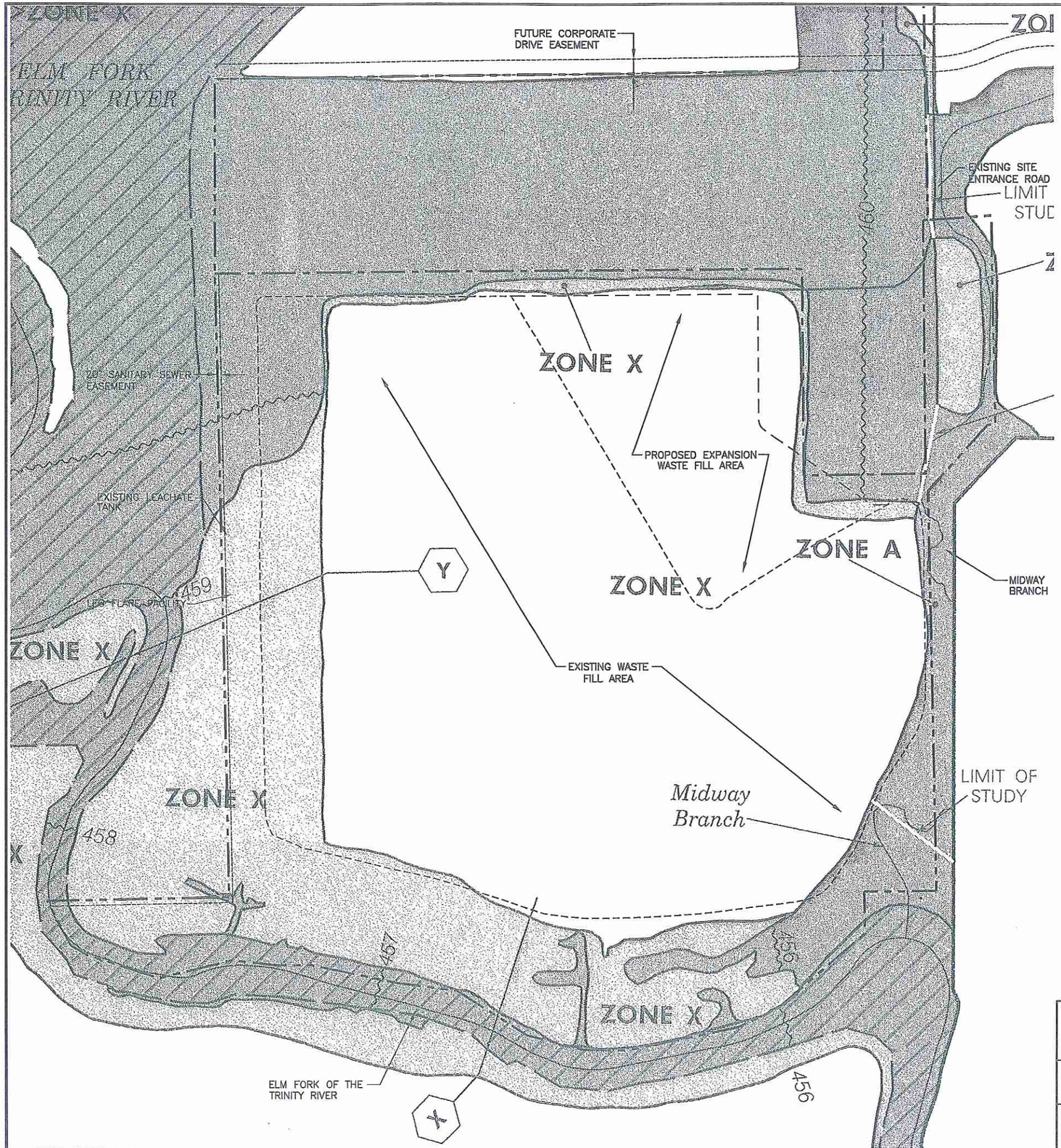
CLOMR SUMMARY

The purpose of the Conditional Letter of Map Revision (CLOMR) is to obtain approval from the City of Lewisville and the Federal Emergency Management Agency (FEMA) to revise portions of the limits of the 100-year floodplain within the 469.6-acre Camelot Landfill permit boundary in Denton County, Texas. The effective FIRM for the area is shown on Figure 1. The scope of the CLOMR request is limited to portions of the Elm Fork of the Trinity River near the Camelot Landfill. The CLOMR updates the previously approved CLOMR, Case No. 02-06-1950R (submitted April 2001 and approved November 2002), for this site, which allowed for the continued development of the existing landfill operation. A summary of the previously approved CLOMR is included on Figure 2.

The revisions included in the proposed CLOMR request are provided on Figure 3 and listed below.

- Detention pond development along southern portion of the site. An additional detention pond is proposed along the southern portion of the site. This detention pond will collect runoff from the southern portion of the landfill and will function similar to the existing permitted detention pond located in the southwest portion of the site.
- Northern area development. To allow for the development of facilities to support the operation of the landfill, this project includes the removal of two areas from the floodplain. As shown on Figure 3, these two areas will be used for (1) offices and maintenance facilities, including access roads, and (2) a 16-acre area that will be used to support operations, such as equipment storage, a Citizen Convenience Center, Entrance Facilities, Access Roads, and/or a wood waste processing area.
- Modification of the floodplain in the northeast portion of the site. This area is proposed to be removed from the ineffective flow area of the 100-year floodplain, to provide for the continued development of the solid waste disposal area.

The proposed floodplain revisions will update the effective FIRM as shown on Figure 4. It should be noted that the floodway will not be altered as a part of the CLOMR request.



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 X — Elevation Reference Mark
- M2 — River Mile
- 97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

N

0 300 600

SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- PERMITTED PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE

NOTE:

1. REPRODUCED FROM FEMA FIRM NUMBER 48121C0565 F, EFFECTIVE DATE AUGUST 23, 2001.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-215

- [X] FOR INFORMATION PURPOSES ONLY
- [ ] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 1339-351-11
CAD: 1-EFFECTIVE FIRM.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

EFFECTIVE FLOOD INSURANCE RATE MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

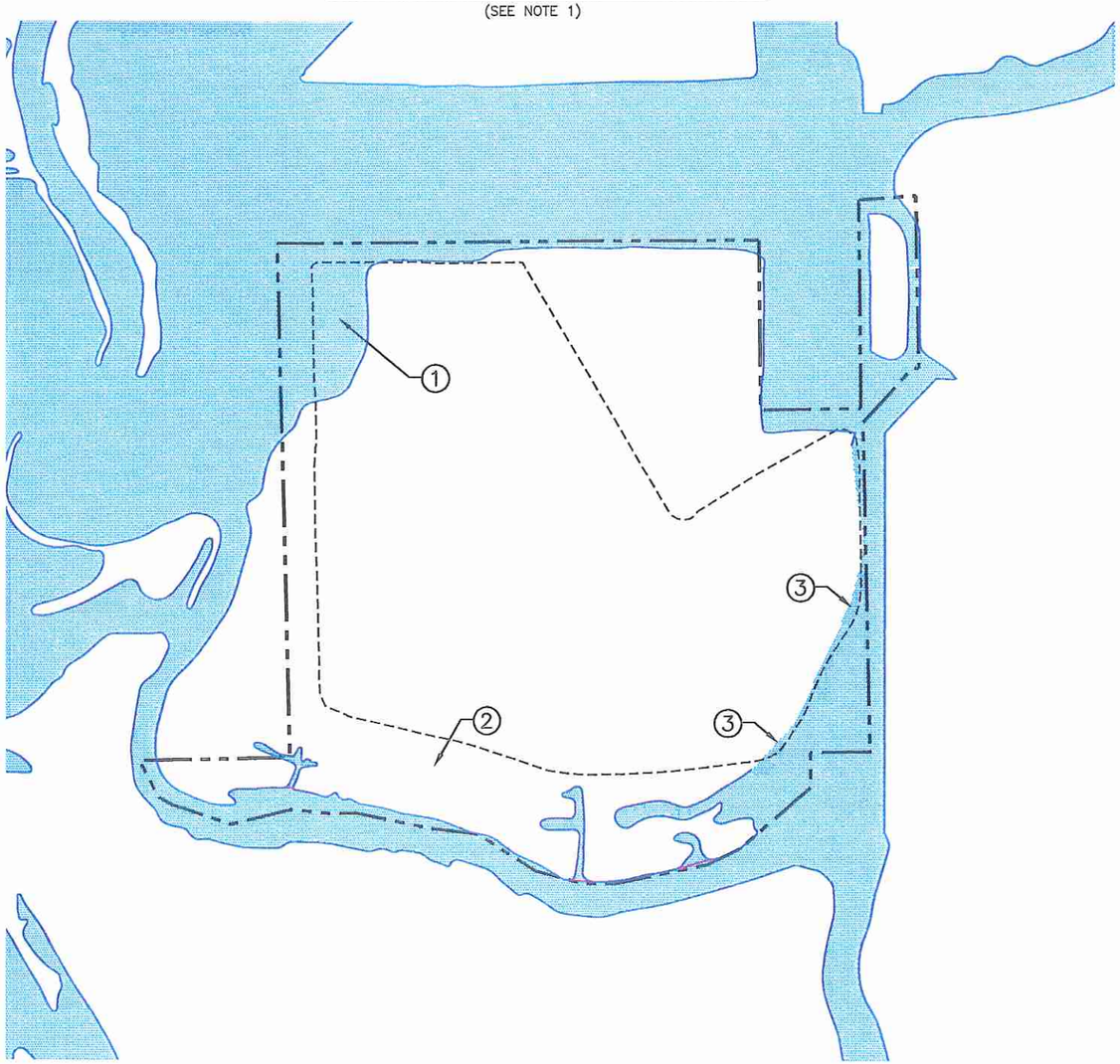
FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

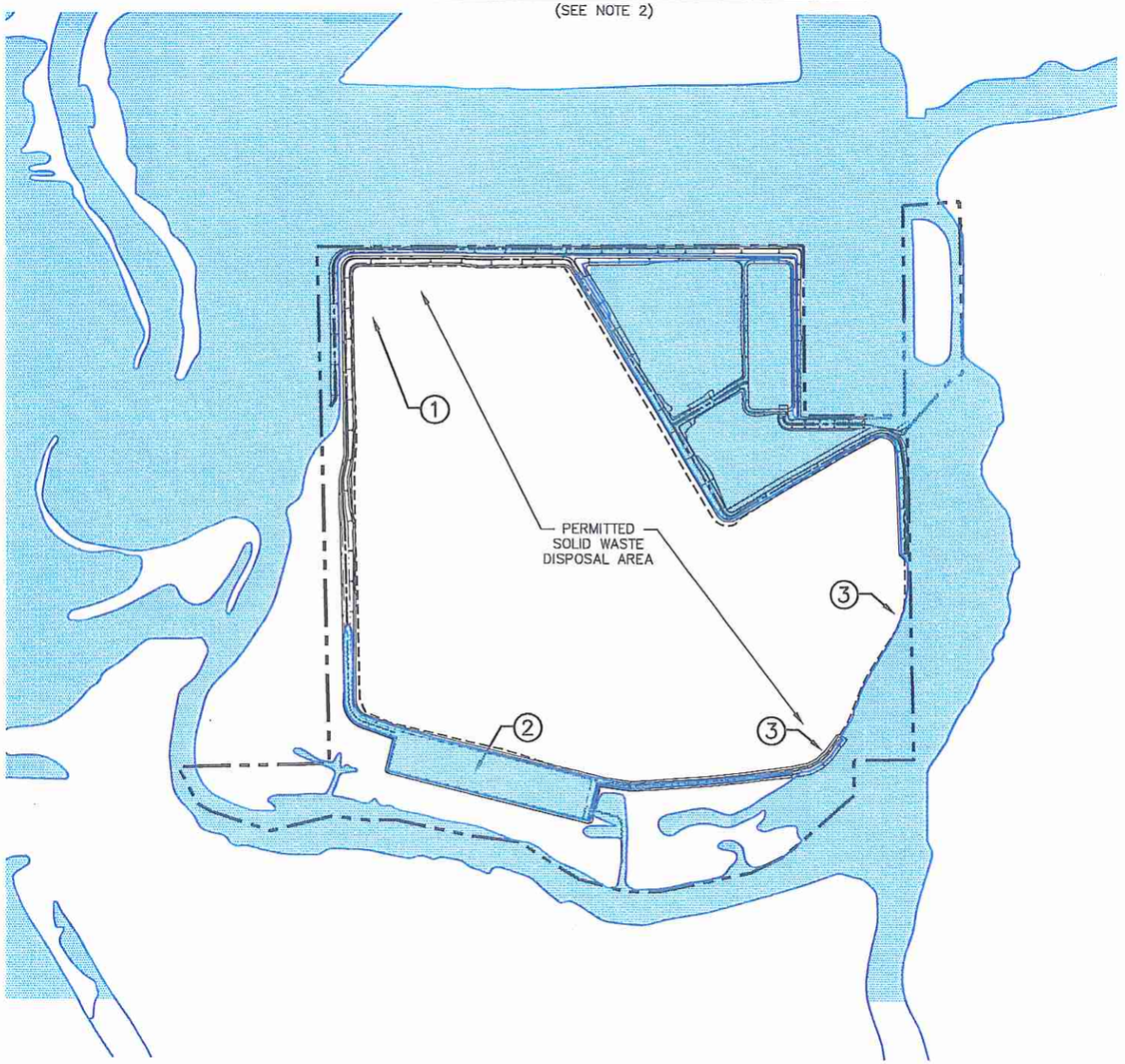
FIGURE 1

O:\1339\351\EXPANSION 2009\COORDINATION LETTER\CLOMR\1-EFFECTIVE FIRM.dwg, 12/14/2010 5:14:01 PM, cmarsh, 1:2

2001 EFFECTIVE FIRM NO. 48113C0015 J
(SEE NOTE 1)



APRIL 2001 CLOMR CASE NO. 02-06-1950R
(SEE NOTE 2)



CHANGES INCLUDED IN THE APRIL 2001 CLOMR

1. THE NORTHWEST CORNER IS REMOVED FROM THE 100-YEAR FLOODPLAIN. NO CHANGE TO THE MODEL IS NEEDED. THIS CHANGE REPRESENTS A MAP CORRECTION.
2. ADDITION OF DETENTION POND.
3. ADJUSTMENT OF THE FLOODPLAIN LIMITS ON THE EAST AND SOUTHEAST SIDES OF THE LANDFILL TO REFLECT AS-BUILT CONDITIONS.

N

0 500 1000
SCALE IN FEET

LEGEND
- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- 100-YEAR FLOODPLAIN

NOTES:

1. FLOODPLAIN IS REPRODUCED FROM FIRM NO. 48113C0015J FOR DALLAS COUNTY, TEXAS AND INCORPORATED AREAS REVISED SEPTEMBER 7, 2000.
2. FLOODPLAIN IS REPRODUCED FROM THE POST-PROJECT CONDITION INCLUDED IN CLOMR CASE NO. 02-06-1950R DEVELOPED BY O'BRIAN ENGINEERING, INC., APRIL 24, 2001.

I/IIB-216

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DATE: 12/2010
FILE: 1339-351-11
CAD: 2-2001 FLOODPLAIN.DWG
DRAWN BY: VRS
DESIGN BY: CRM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

2001 FIRM AND CLOMR FLOODPLAIN CONDITION COMPARISON

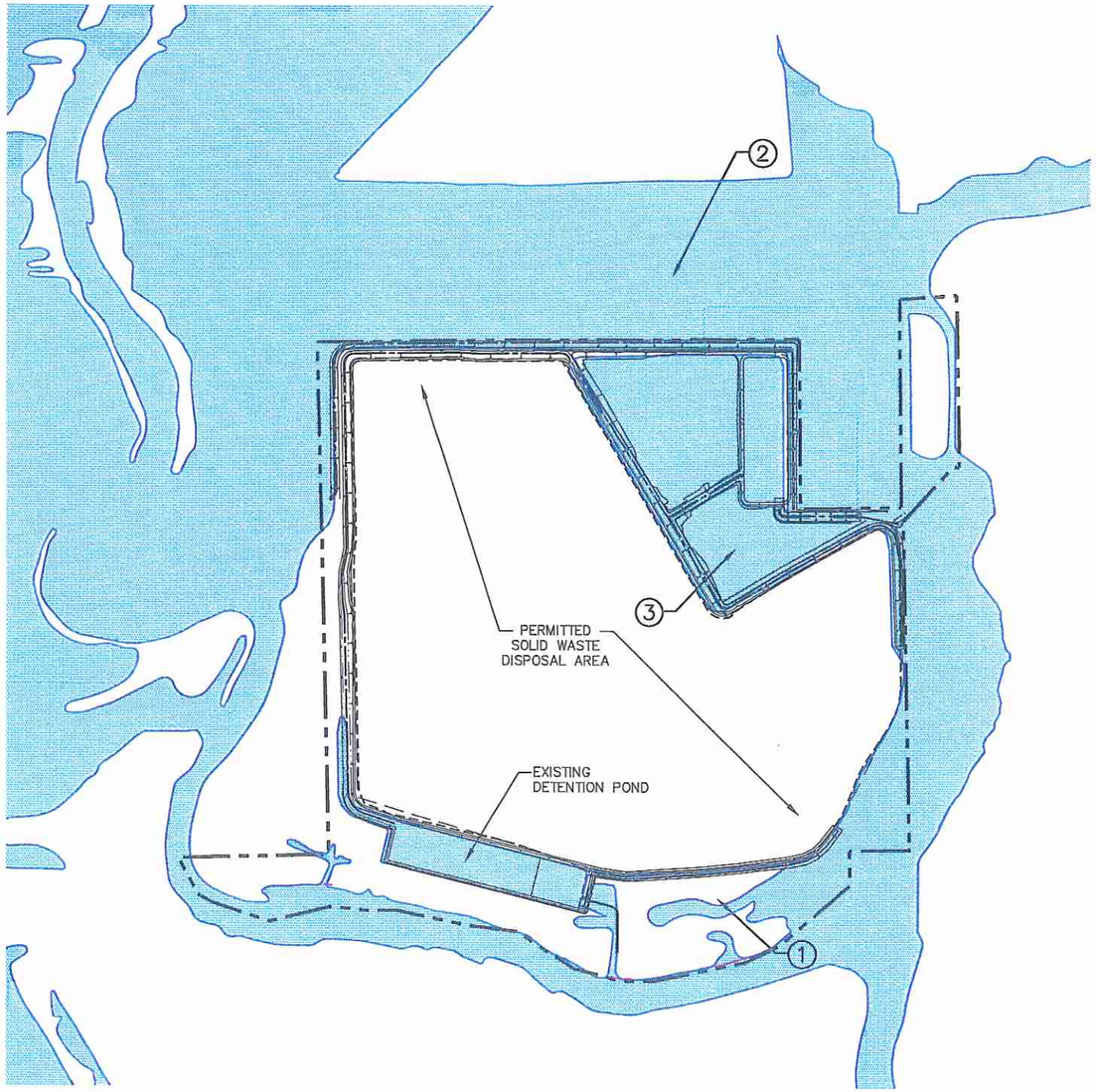
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

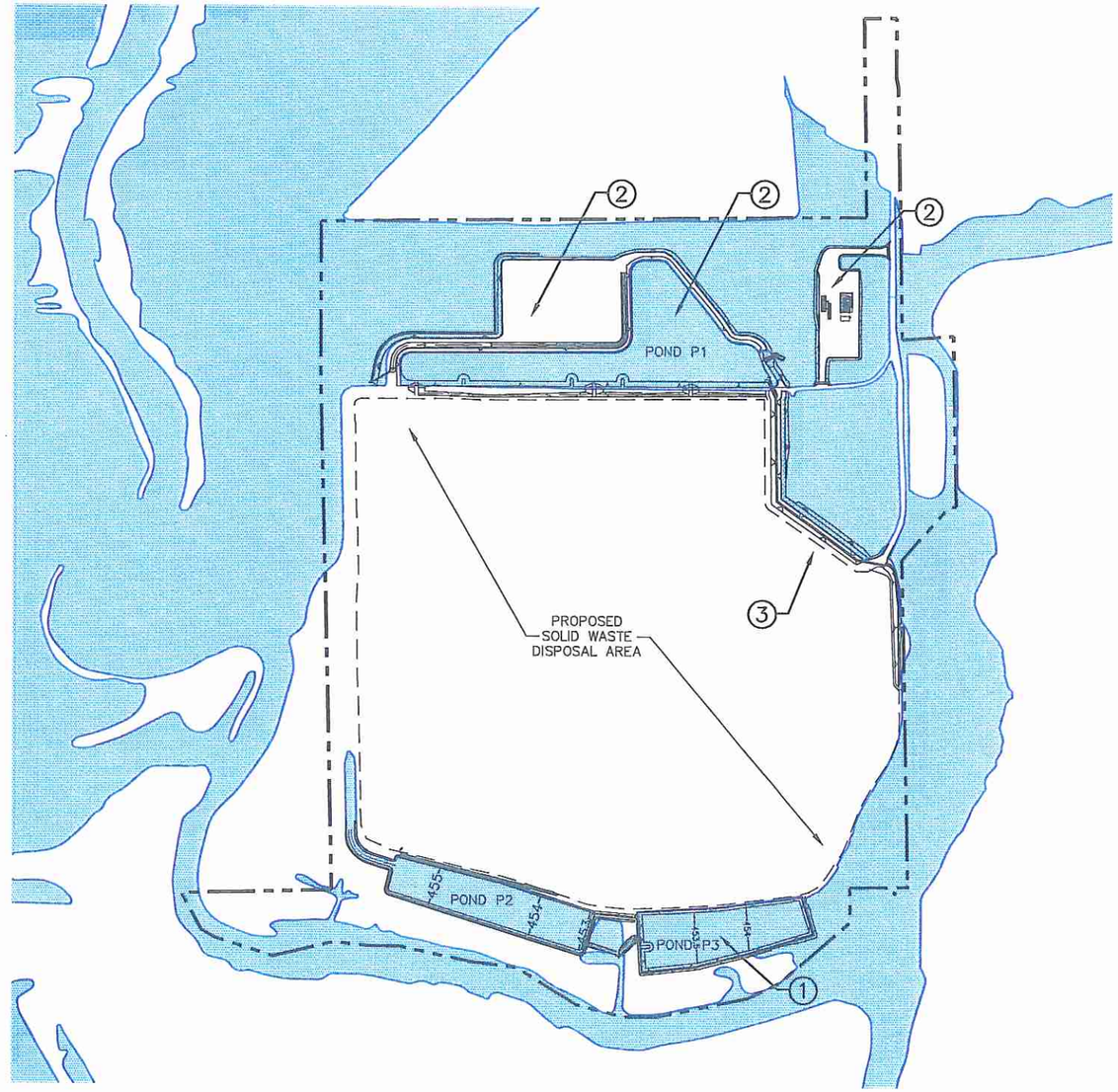
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2

EXISTING PERMITTED OR PRE-PROJECT CONDITION



POST-DEVELOPMENT CONDITION



NOTE:

1. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

N

0 500 1000

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- POST-DEVELOPMENT LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE
- 100-YEAR FLOODPLAIN

CHANGES FROM PERMITTED TO POST-DEVELOPMENT

(1) ADDITION OF DETENTION POND. THIS ADDITIONAL DETENTION POND WILL FUNCTION SIMILAR TO THE EXISTING PERMITTED DETENTION POND.

(2) NORTHERN AREA DEVELOPMENT. TO ALLOW FOR THE DEVELOPMENT OF FACILITIES TO SUPPORT THE OPERATION OF THE LANDFILL, THIS PROJECT INCLUDES THE REMOVAL OF TWO AREAS FROM THE FLOODPLAIN IN THE NORTHERN PORTION OF THE SITE. THESE TWO AREAS WILL BE USED FOR (1) OFFICES AND MAINTENANCE FACILITIES, INCLUDING ACCESS ROADS AND (2) A 16-ACRE AREA THAT WILL BE USED TO SUPPORT OPERATIONS, SUCH AS EQUIPMENT STORAGE, A CITIZEN CONVENIENCE CENTER, ENTRANCE FACILITIES, ACCESS ROADS, AND/OR A WOOD WASTE PROCESSING AREA.

(3) REMOVAL OF NORTHEAST AREA FROM FLOODPLAIN TO ALLOW FOR THE CONTINUED DEVELOPMENT OF THE LANDFILL. THIS AREA IS PROPOSED TO BE REMOVED FROM THE INEFFECTIVE FLOW AREA OF THE 100-YEAR FLOODPLAIN.

I/IIB-217

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DATE: 12/2010 | DRAWN BY: VRS
FILE: 1339-351-11 | DESIGN BY: CRM
CAD: 3-FLOODPLAIN COMP.DWG | REVIEWED BY: JPY

PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

FLOODPLAIN CONDITION COMPARISON

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
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SOUTH BEND, IN
SPRINGFIELD, IL
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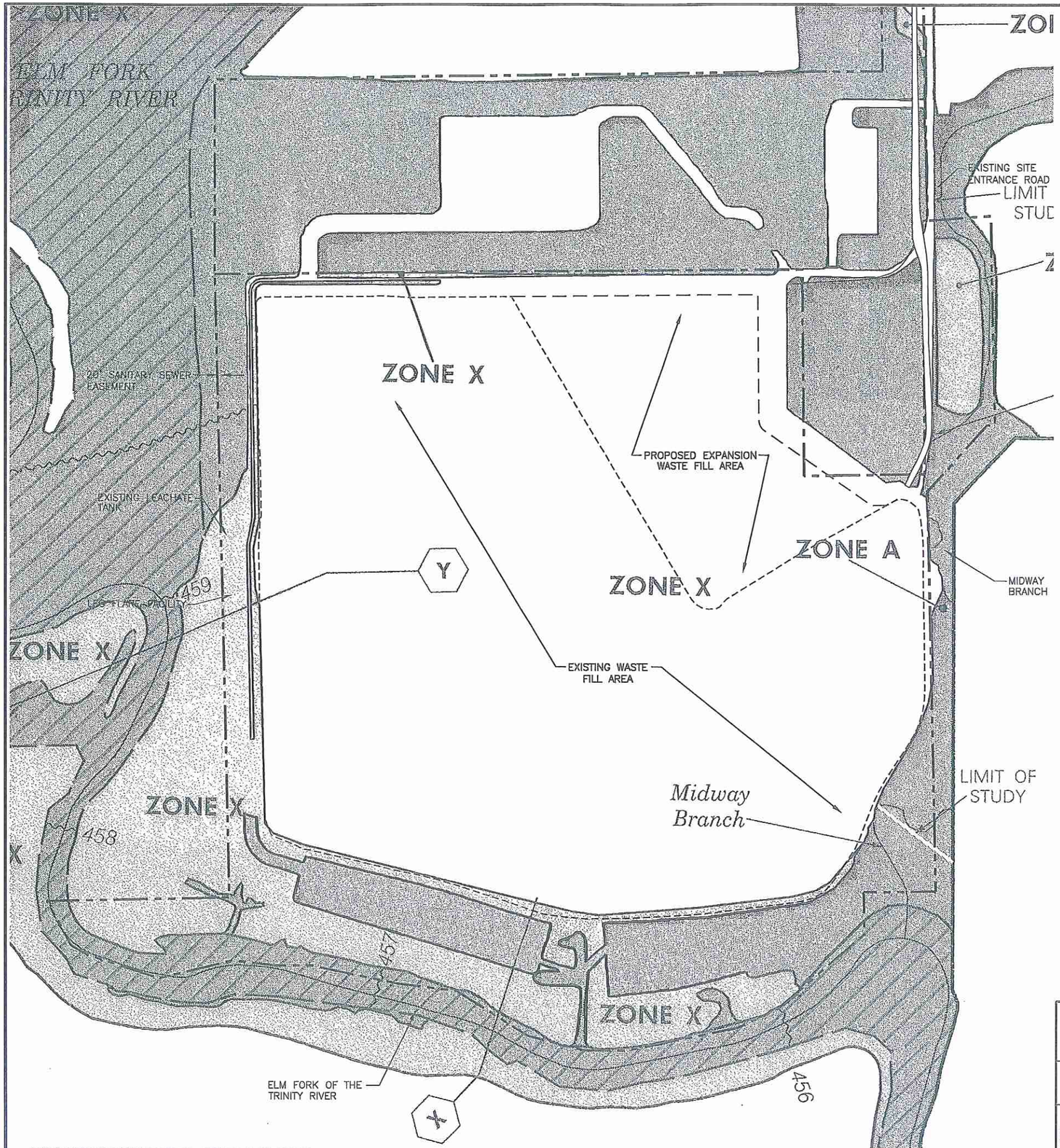
FIGURE 3



LEGEND

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FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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OTHER AREAS

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UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

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- RM7 X — Elevation Reference Mark
- M2 — River Mile
- 97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

N

0 300 600

SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- PERMITTED PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- PERMITTED LIMIT OF WASTE

NOTE:

1. PORTIONS OF FLOODPLAIN AND FLOODWAY BOUNDARIES WERE REPRODUCED FROM FEMA FIRM NUMBER 48121C0565 F, EFFECTIVE DATE AUGUST 23, 2001.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IIB-218

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CAD: 4-REVISED FIRM.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

CLOMR REQUEST REVISED FLOOD INSURANCE RATE MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL · NAPERVILLE, IL · COLUMBUS, OH · DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN · SOUTH BEND, IN · SPRINGFIELD, IL · ST. LOUIS, MO

FIGURE 4

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CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

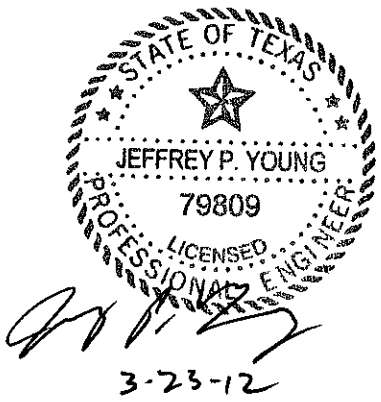
APPENDIX I/IIC

LOCATION RESTRICTION DEMONSTRATIONS

Prepared for

City of Farmers Branch

March 2012



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-6A

This document is intended for permitting purposes only.

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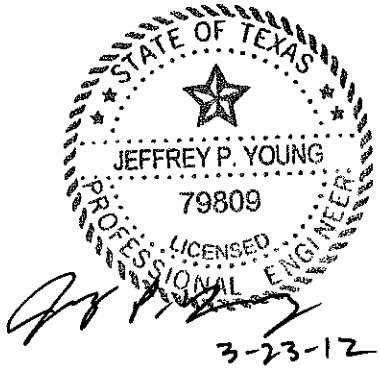

FIGURES

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1 INTRODUCTION

The purpose of this report is to provide demonstrations of the location restrictions for the Camelot Landfill. Title 30 Texas Administrative Code (TAC) §330, Subchapter M identifies eleven location restrictions for the protection of human health and the environment. The eleven location restrictions include easements and buffer zones, airports, floodplains, groundwater, endangered or threatened species, wetlands, fault areas, seismic impact zones, unstable areas, coastal areas, and Type I and Type IV landfill permit issuance prohibited.

The Subtitle D regulations also require that the owner of a site must demonstrate either that the location restrictions do not apply or that the landfill, while located in a restricted area, is designed and operated in such a way that it protects human health and the environment.

2 EASEMENTS AND BUFFER ZONES

The easements and buffer zones location restrictions within Title 30 TAC §330.543 require 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, unless otherwise authorized by the Executive Director. Also, all pipeline and utility easements shall be clearly marked with posts that extend at least six feet above ground level, spaced at intervals no greater than 300 feet. In addition, for vertical or lateral expansions, the owner or operator shall establish and maintain a 125-foot buffer zone for any newly permitted airspace.

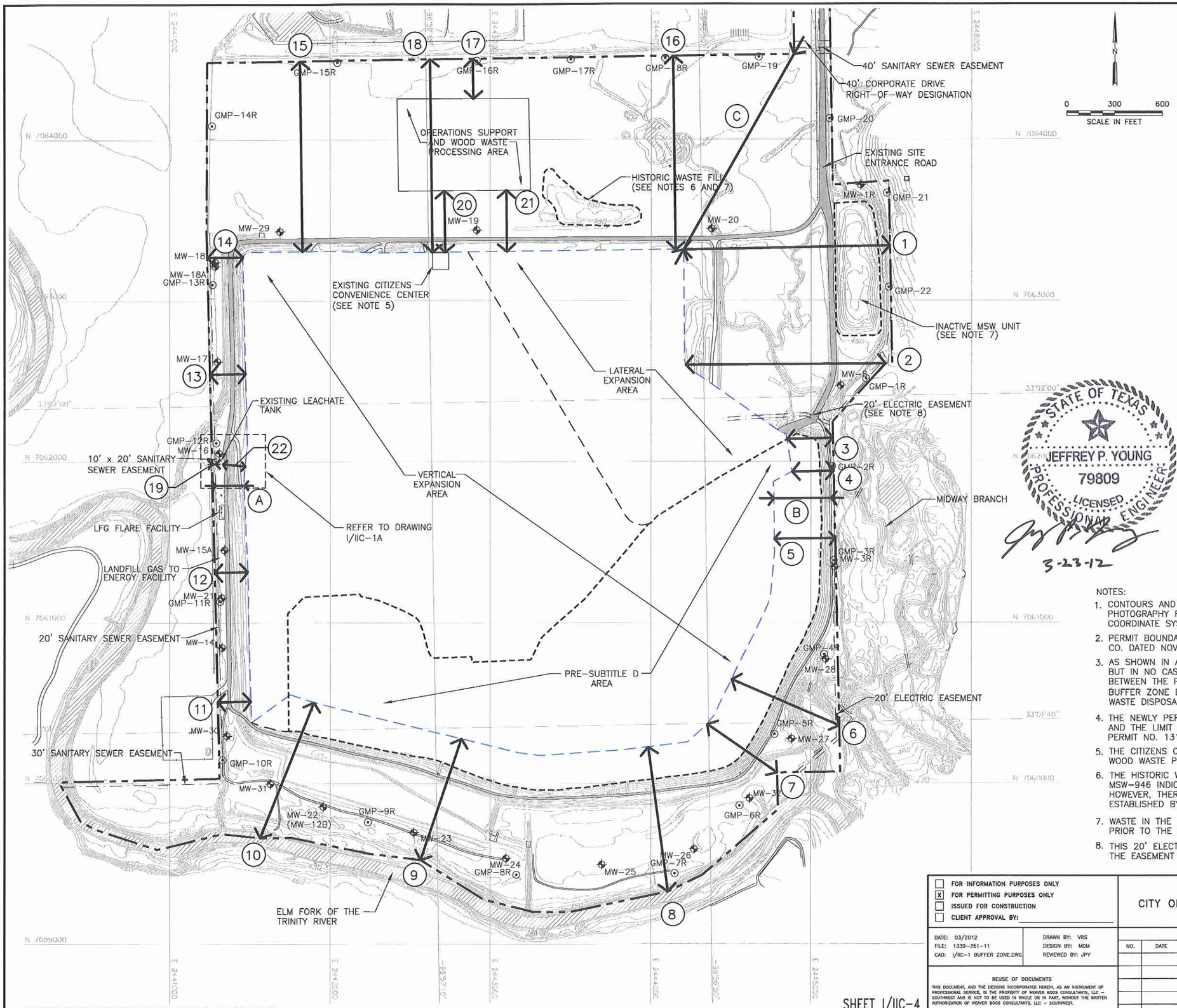
The proposed buffer zones for the site are shown on Drawing I/IIC-1 and are discussed below.

- **Existing Permitted Limits of Waste.** As shown on Drawing I/IIC-1, a buffer zone of at least 50 feet is maintained between the permit boundary and the permitted limits of waste defined in TCEQ Permit No. 1312A.
- **Vertical Expansion Area.** As shown on Drawing I/IIC-1, a buffer zone is maintained between the permit boundary and the proposed new waste disposal airspace (labeled as "newly permitted airspace limit of waste"), consistent with Title 30 TAC §330.543(b)(2)(B).
- **Lateral Expansion Area.** As shown on Drawing I/IIC-1, a buffer zone of at least 125 feet is maintained between the permit boundary and the 32.5-acre lateral expansion area.
- **Citizens Convenience Center.** As shown on Drawing I/IIC-1, a buffer zone of over 50 feet is maintained between the permit boundary and the Citizens Convenience Center.
- **Existing Leachate Storage Tank.** As shown on Drawings I/IIC-1 and I/IIC-1A, the existing leachate storage tank is located next to the City of Lewisville sanitary sewer line. The sewer line is located about 12 feet from the permit boundary. The leachate tank is located about 25 feet from the permit boundary, and an existing dual-contained pipeline connects the 100,000-gallon line to the sewer line. The existing leachate storage tank has been in place for about 10 years. As shown on Drawing I/IIC-1A, the existing buffer zone is 25 feet, which is less than the 50-foot buffer zone listed in §330.543(b)(1). However, §330.543(b)(1) also allows the executive director to consider alternatives to the specified buffer zone requirement for permitted storage facilities.

The existing leachate tank is located next to the City of Lewisville sewer line to facilitate the transfer of leachate from the storage tank to the sanitary sewer. This leachate storage configuration maximizes the distance between the east side of the tank and the limits of waste. As shown on Figure I/IIC-1A, a buffer zone of 139 feet is provided between the limits of waste and the storage tank to facilitate site access and access for emergency vehicles. An all-weather perimeter road is located within this area. It is proposed that this area be authorized as an acceptable alternative buffer zone configuration, consistent with §330.543(b)(1).

Five easements are located within the permit boundary at the site. A 20 to 30-foot-wide sanitary sewer easement is located along the western side of the permit boundary, a 10-foot by 20-foot sanitary sewer easement is located along the western side of the permit boundary adjacent to the 20 to 30-foot-wide sanitary sewer easement, a 20-foot-wide electrical easement is located along the eastern side of the permit boundary, and a 40-foot-wide right-of-way dedication and a 40-foot wide sanitary sewer easement cross the permit boundary on the north side of the site. The 20-foot-wide electrical easement encroaches on the limit of waste; however, this electrical line serves the existing maintenance area and will be abandoned prior to the development of this area. At their closest point for the remaining four easements, the easement boundaries are a minimum of 180 feet away from the limit of waste, providing the required separation between the easement and the waste footprint. In addition, all utility line and pipeline easements will be clearly marked in accordance with the Site Operating Plan.

Given the above, the site is in compliance with the easements and buffer zone location restrictions.



LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- EXISTING PERMITTED PRE-SUBTITLE D LIMIT OF WASTE (TCEQ PERMIT NO. 1312A)
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE (TCEQ PERMIT NO. 1312A)
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE (SEE NOTE 4)
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- EASEMENT
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- GMP-13 — EXISTING LANDFILL GAS MONITORING PROBE

LANDFILL BUFFER ZONE INFORMATION		
LOCATION	BUFFER ZONE BETWEEN PERMIT BOUNDARY AND EXISTING PERMITTED PRE-SUBTITLE D/ SUBTITLE D LIMIT OF WASTE	BUFFER ZONE BETWEEN PERMIT BOUNDARY AND NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
1	NA[1]	1289 FEET
2	NA[1]	1247 FEET
3	126 FEET	288 FEET
4	86 FEET	259 FEET
5	88 FEET	379 FEET
6	441 FEET	731 FEET
7	243 FEET	531 FEET
8	706 FEET	908 FEET
9	815 FEET	796 FEET
10	708 FEET	907 FEET
11	207 FEET	207 FEET
12	207 FEET	207 FEET
13	223 FEET	223 FEET
14	220 FEET	220 FEET
15	1181 FEET	1181 FEET
16	NA[1]	1203 FEET
PROCESSING/DISPOSAL UNIT BUFFER ZONE INFORMATION		
17	FUTURE WOOD WASTE PROCESSING AREA	247 FEET
18	CITIZENS CONVENIENCE CENTER	1198 FEET
19	EXISTING LEACHATE STORAGE TANK	25 FEET
20	FUTURE WOOD WASTE PROCESSING AREA/ EXISTING CITIZENS CONVENIENCE CENTER	381 FEET
21	FUTURE WOOD WASTE PROCESSING AREA/ NEWLY PERMITTED AIRSPACE LIMIT OF WASTE	381 FEET
22	EXISTING LEACHATE TANK/ NEWLY PERMITTED AIRSPACE LIMIT OF WASTE	139 FEET
LOCATION	BUFFER ZONE BETWEEN EASEMENT BOUNDARY AND EXISTING PERMITTED PRE-SUBTITLE D/ SUBTITLE D LIMIT OF WASTE	BUFFER ZONE BETWEEN EASEMENT BOUNDARY AND NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
A	175 FEET	175 FEET
B	63 FEET	357 FEET
C	1395 FEET	1395 FEET

[1] LATERAL EXPANSION AREA ONLY.

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.
3. AS SHOWN IN APPENDIX I/IIC, THE BUFFER ZONES VARY AROUND THE PERIMETER OF THE SITE, BUT IN NO CASE ARE THEY LESS THAN 50-FEET FOR EXISTING WASTE. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND THE LATERAL EXPANSION IS AT LEAST 125-FEET. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND NEWLY PERMITTED (PERMIT NO. 1312B) WASTE DISPOSAL AIRSPACE IS AT LEAST 125-FEET.
4. THE NEWLY PERMITTED AIRSPACE LIMIT OF WASTE REFLECTS THE LATERAL EXPANSION AREA AND THE LIMIT OF WASTE THAT IS ASSOCIATED WITH THE VERTICAL EXPANSION AREA FOR MSW PERMIT NO. 1312B.
5. THE CITIZENS CONVENIENCE CENTER WILL BE RELOCATED TO THE OPERATIONS SUPPORT AND WOOD WASTE PROCESSING AREA PRIOR TO THE DEVELOPMENT OF CELL 10.
6. THE HISTORIC WASTE FILL AREA LIMITS ARE APPROXIMATE. THE RECORD FOR TCEQ PERMIT NO. MSW-946 INDICATES WASTE WAS PLACED PRIOR TO THE ISSUANCE OF THE PERMIT IN 1979. HOWEVER, THERE IS NO DRAWING THAT SHOWS THE ACTUAL LIMITS OF WASTE. THE LIMITS WERE ESTABLISHED BY VISUAL OBSERVATIONS OF THE AREA.
7. WASTE IN THE INACTIVE MSW UNIT AND THE HISTORICAL WASTE FILL AREA WILL BE RELOCATED PRIOR TO THE DEVELOPMENT OF THE NORTH DETENTION POND.
8. THIS 20' ELECTRICAL EASEMENT PROVIDES ELECTRICITY TO THE TEMPORARY MAINTENANCE AREA. THE EASEMENT WILL BE ABANDONED PRIOR TO DEVELOPMENT IN THIS AREA.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: I/IIC-1 BUFFER ZONE.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT BUFFER ZONE PLAN

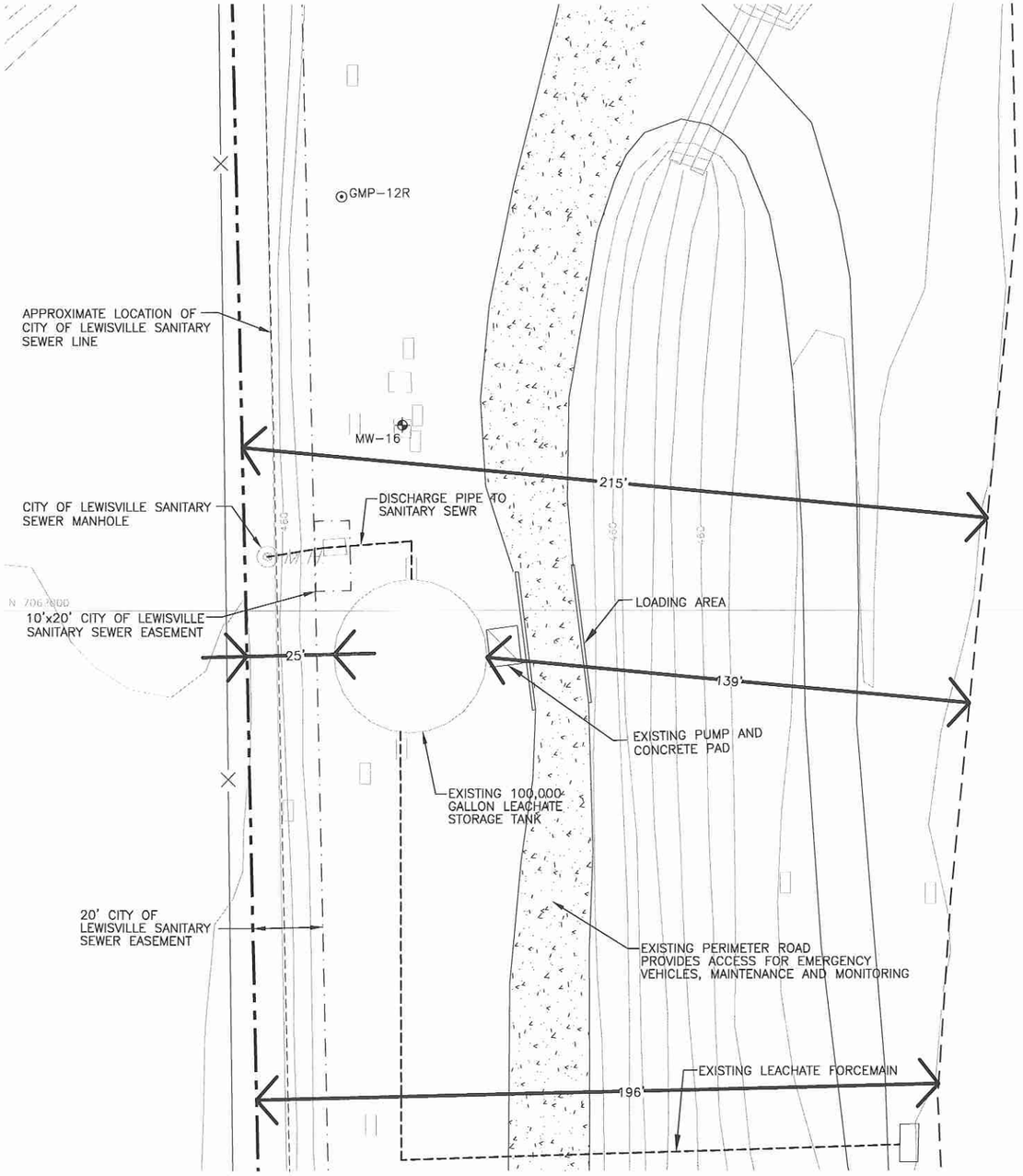
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

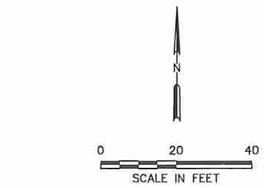
Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIC-1

SHEET I/IIC-4

O:\1339\351\EXPANSION 2009\PARTS I-II\I-IIC\I-IIC-1 BUFFER ZONE PLAN.dwg, jwilson, 1:2





LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE
- N 7004000 STATE PLANE COORDINATE SYSTEM
- 500 EXISTING CONTOUR
- EASEMENT
- GMP–12R PERMITTED GAS MONITORING PROBE
- MW–16 PERMITTED GAS MONITORING PROBE
- PERIMETER ACCESS ROAD
- PERIMETER FENCE
- EXISTING FORCEMAIN

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.

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- [ ] ISSUED FOR CONSTRUCTION
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DATE: 03/2012
FILE: 1339–351–11
CAD: I/IIC–1A BUFFER ZONE.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT BUFFER ZONE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

SHEET I/IIC–5

DRAWING I/IIC–1A

3 AIRPORT SAFETY

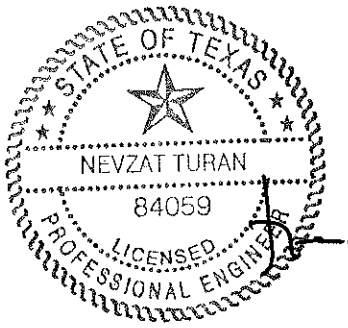
The Airport Safety Location Restrictions within Title 30 TAC §330.545 require that airports within the vicinity of the landfill site be identified. The regulation states that land disposal sites located within 10,000 feet of an airport runway end used by turbojet aircraft or within 5,000 feet of an airport runway end used by piston-type aircraft shall demonstrate that the unit is designed and operated so that the landfill does not pose a bird hazard to aircrafts.

The Federal Aviation Administration (FAA) was contacted to identify publicly used airports in the vicinity of the landfill. The FAA response letter dated January 4, 2011, is included in Appendix I/IIB. As indicated in the letter, there are no public use airports within 5 miles of the site. The FAA had no objection to the proposed major permit amendment from the standpoint of potential bird hazards to aircraft.

In addition, the FAA also reviewed the proposed major permit amendment to determine the potential for the site to be a hazard to air navigation. As documented in a letter dated February 2, 2011 the proposed major permit amendment does not pose as a hazard to air navigation (refer to Appendix I/IIB for more information). Appendix I/IIB also includes a letter from FAA that confirms that the FAA has completed the critical evaluation necessary to determine that an incompatibility does not exist with area airports and the landfill.

In addition, Title 30 TAC §330.545(b) requires that small general service airports located within a six-mile radius of a lateral expansion be notified of the proposed expansion. Title 30 TAC §330.545(b) also requires that large general public commercial airports located within a five-mile radius of a lateral expansion be notified of the proposed expansion. No small general service airports or large general public commercial airports are located within a six-mile or five-mile radius, respectively, of the site (as shown on Figure I/II-8.1 in Parts I/II).

Given the above, the site is in compliance with the Airport Location Restriction.



3-23-12

4 FLOODPLAINS

Title 30 TAC §330.547 prohibits waste disposal operations located in the 100-year floodway, requires that new expansion areas not restrict the flow of the 100-year flood, reduce the temporary water stage capacity of the floodplain, or result in washout of solid waste; and requires storage and processing facilities to be located outside of the 100-year floodplain.

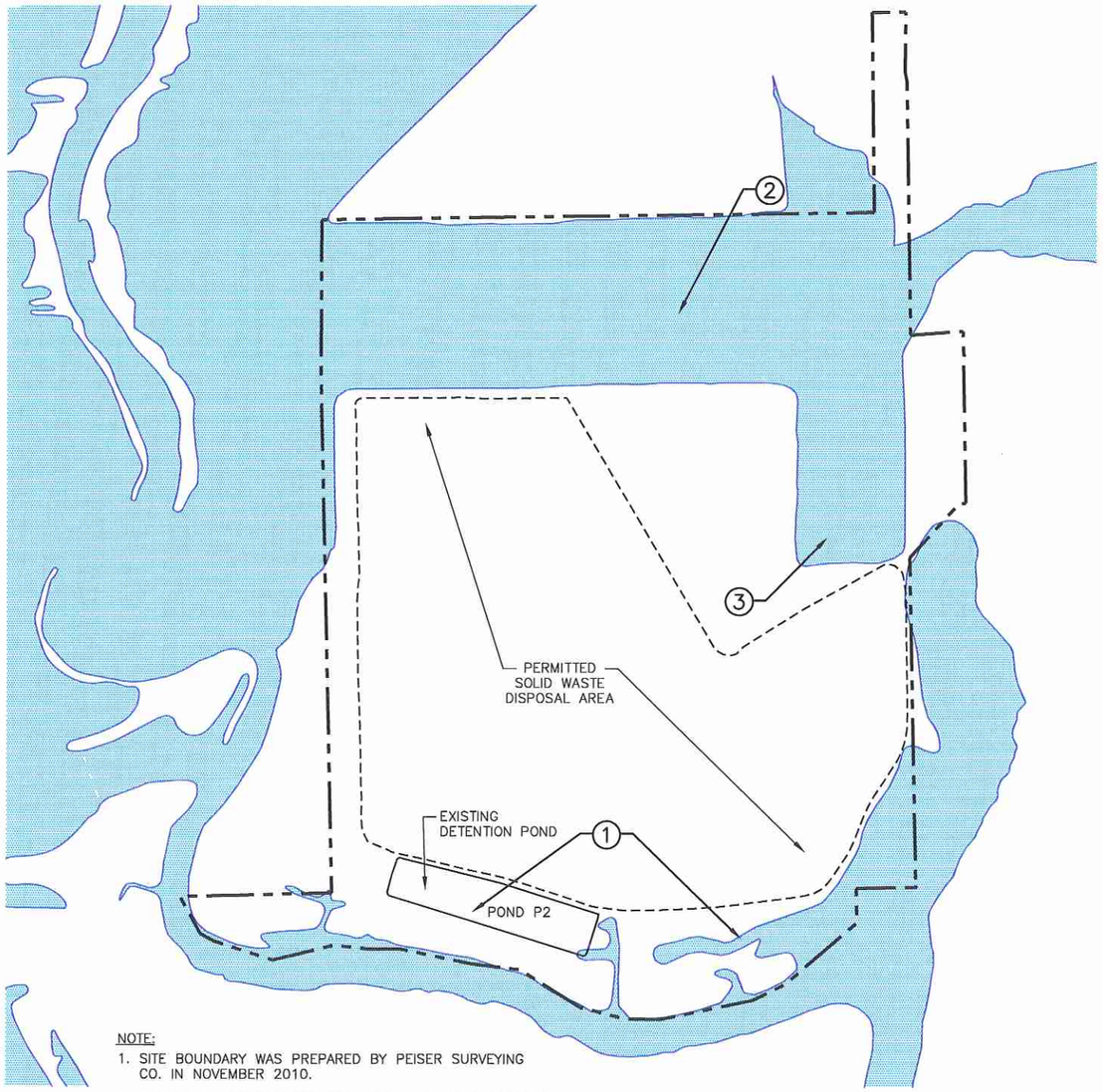
Drawing I/II-C-2 compares the existing permitted site condition (TCEQ Permit No. 1312A) and the effect the proposed revision to the site development plan will have on the 100-year floodplain under TCEQ Permit No. 1312B. As discussed in Part III, Appendix IIIO – Floodplain Information, flood storage will be created to offset the flood storage consumed by the proposed landfill expansion. The site is located within the Trinity River corridor and a Trinity River Corridor Development Certificate (CDC) has been obtained from the City of Lewisville for the continued development of the landfill. In addition, a CLOMR has also been obtained from FEMA to allow for the proposed development within the 100-year floodplain. The CDC and CLOMR permit applications and permits are included in Part III, Appendix IIIO, and represent the approvals required to develop the site so that the waste disposal area will be protected from the 100-year floodplain. Drawing I/IIC-3 shows the revised limits of the 100-year floodplain shown on the revised Flood Insurance Rate Map (FIRM) included in the approved FEMA CLOMR request.

Compliance with each floodplain location restriction is listed in Table 4-1.

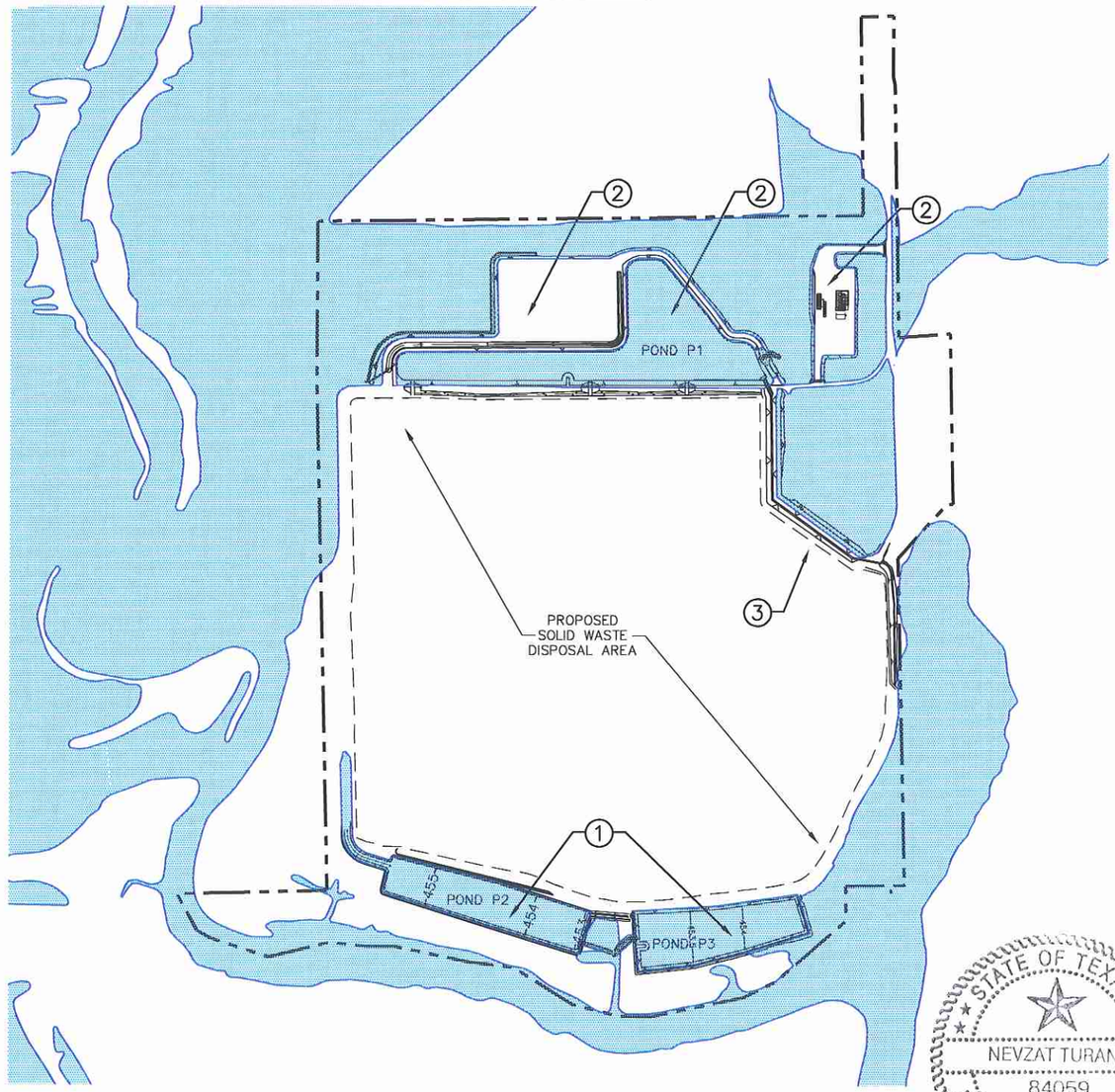
Table 4-1
Floodplain Location Restriction Requirements

Regulatory Citation	Regulation Summary	How Regulation is Addressed
330.547(a)	No disposal operations located in a 100-year floodway.	As shown on Drawing I/IIC-3, no disposal operations are located in a 100-year floodway.
330.547(b)	Proposed developments shall not restrict the flow of the 100-year flood, reduce floodplain storage capacity, or result in solid waste washout.	As noted in Appendix IIIO, the existing and proposed waste fill areas and related site development will not restrict the flow or the 100-year flood. As noted in Appendix IIIO-C, the proposed condition creates an additional 98 ac-ft of floodplain storage for the 100-year flood. Additionally, there is over three feet of freeboard available between the landfill perimeter berm and the 100-year water surface elevation (refer to Appendix IIIO, Drawings 7-1 and 7-2 in the CDC application).
330.547(c)	Storage and processing facilities located outside of 100-year floodplain unless facilities prevent washing during 100-year event.	There are no facilities within the post-development limits of the 100-year floodplain. Also, three feet of freeboard is provided between the landfill perimeter berm and the calculated 100-year water surface elevation delineated in Appendix IIIO.

EXISTING PERMIITED CONDITION



PROPOSED CONDITION



NOTE:

1. SITE BOUNDARY WAS PREPARED BY PEISER SURVEYING CO. IN NOVEMBER 2010.
2. FLOODPLAIN REPRODUCED FROM FIRM NO. 48121C0565 G, EFFECTIVE DATE APRIL 18, 2011.

CHANGES FROM EXISTING PERMITTED TO THE PROPOSED CONDITION

(1) ADDITION OF DETENTION POND, POND P3. THE SOUTHWEST POND (POND P2) WAS CONSTRUCTED AS AUTHORIZED BY THE CLOMR APPLICATION (CASE NO. 02-06-1950R APPROVED BY FEMA ON NOVEMBER 18, 2002 FOR THE EXISTING PERMITTED SITE). THE SOUTHEAST POND (POND P3) WILL FUNCTION SIMILAR TO THE PREVIOUSLY-PERMITTED SOUTHWEST POND.

(2) NORTHERN AREA DEVELOPMENT. TO ALLOW FOR THE DEVELOPMENT OF FACILITIES TO SUPPORT THE OPERATION OF THE LANDFILL, THIS PROJECT INCLUDES THE REMOVAL OF TWO AREAS FROM THE FLOODPLAIN IN THE NORTHERN PORTION OF THE SITE. THESE TWO AREAS WILL BE USED FOR (1) OFFICES AND MAINTENANCE FACILITIES, INCLUDING ACCESS ROADS AND (2) A 16-ACRE AREA THAT WILL BE USED TO SUPPORT OPERATIONS, SUCH AS EQUIPMENT STORAGE, A CITIZEN CONVENIENCE CENTER, ENTRANCE FACILITIES, ACCESS ROADS, AND/OR A WOOD WASTE PROCESSING AREA.

(3) REMOVAL OF NORTHEAST AREA FROM FLOODPLAIN TO ALLOW FOR THE CONTINUED DEVELOPMENT OF THE LANDFILL. THIS AREA IS PROPOSED TO BE REMOVED FROM THE INEFFECTIVE FLOW AREA OF THE 100-YEAR FLOODPLAIN.

N

0 500 1000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- 100-YEAR FLOODPLAIN

STATE OF TEXAS
NEVZAT TURAN
84059
LICENSED
PROFESSIONAL ENGINEER
3-23-12

SHEET I/IIC-8

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- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: C-2-FLOODPLAIN COMP.DWG
DRAWN BY: VRS
DESIGN BY: CRM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

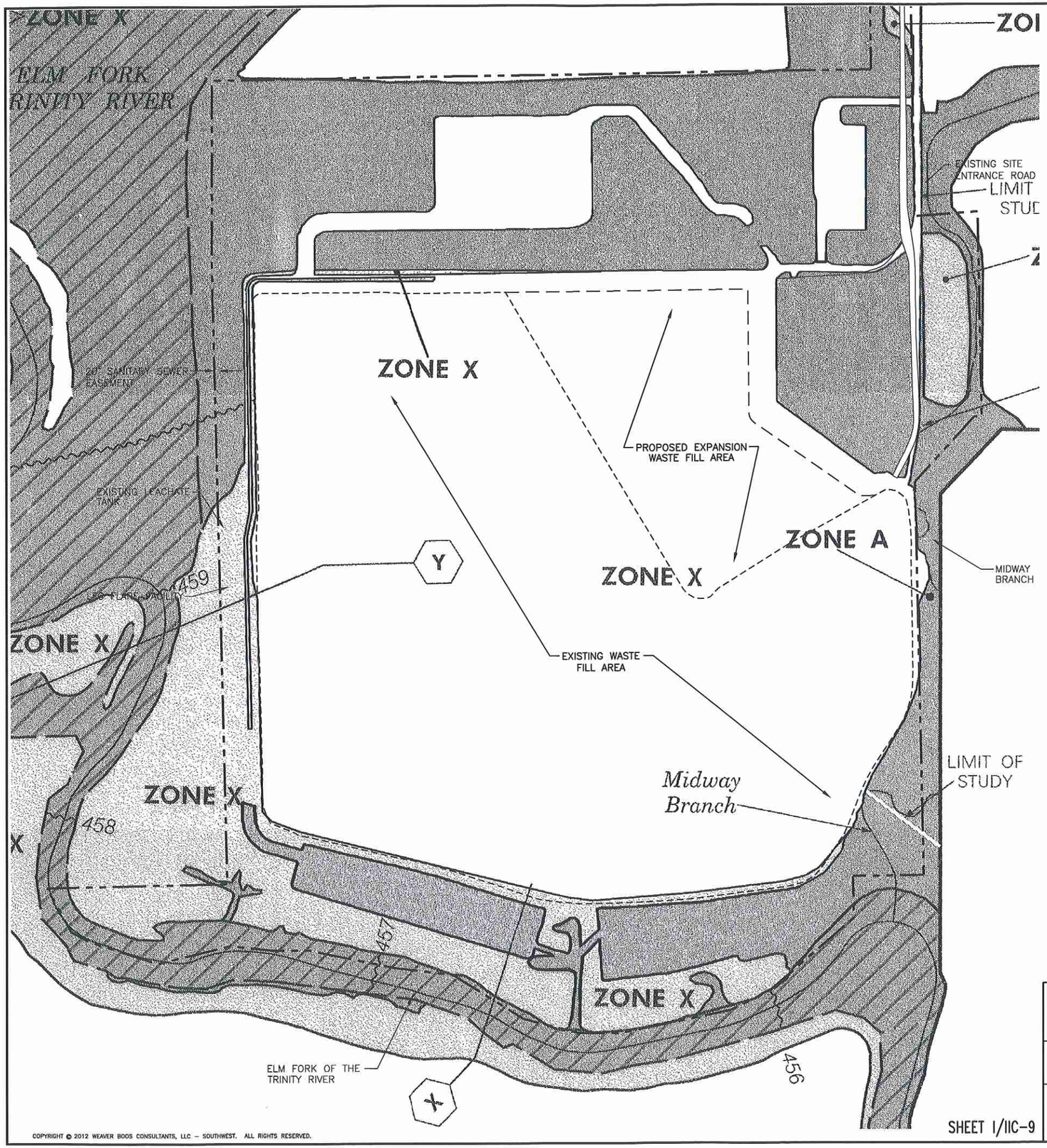
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
FLOODPLAIN CONDITION COMPARISON

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIC-2



SHEET I/IIC-9

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 — Fiver Mile
- 97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

N

0 300 600

SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE

NOTE:

1. PORTIONS OF FLOODPLAIN AND FLOODWAY BOUNDARIES WERE REPRODUCED FROM FEMA FIRM NUMBER 48121C0565 F, EFFECTIVE DATE AUGUST 23, 2001.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN NOVEMBER 2010.

STATE OF TEXAS
NEVZAT TURAN
84059
LICENSED
PROFESSIONAL ENGINEER
3-23-12

- [ ] FOR INFORMATION PURPOSES ONLY
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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: I-IIC-3-REVISED FIRM.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
REVISED FLOOD INSURANCE RATE MAP

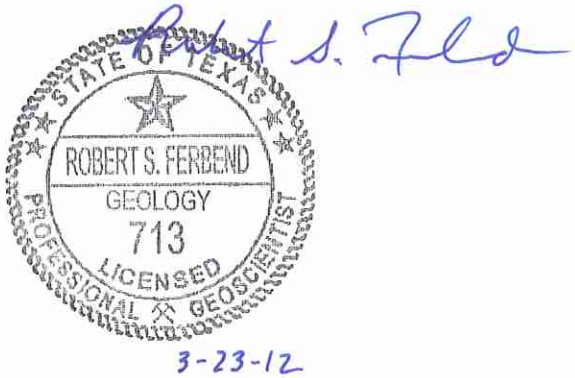
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING I/IIC-3

5 GROUNDWATER

The groundwater location restriction within Title 30 TAC §330.549 prohibits a Type I or Type IAE landfill on the recharge zone of the Edwards Aquifer. Given that the Camelot Landfill is not located on the recharge zone of the Edwards Aquifer, the site is in compliance with the groundwater location restriction.



6 ENDANGERED OR THREATENED SPECIES

The endangered or threatened species location restrictions within Title 30 TAC §330.551 require that the facility and the operation of the facility not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or contribute to the taking of any endangered or threatened species.

The U.S. Fish and Wildlife Services (FWS) and Texas Parks and Wildlife Department (TPWD) were contacted to request information regarding endangered or threatened species or their critical habitat with respect to the site. The FWS and TPWD response letters are included in Appendix I/IIB. In addition, a site-specific threatened and endangered species habitat assessment was completed by Goshawk Environmental Consulting, Inc. in September 2010 (refer to the TPWD tab in Appendix I/IIB). This study concluded that the area within the permit boundary does not provide habitat for and would not likely be occupied by any federally listed and state listed threatened and endangered species.

Therefore, it is concluded that the expansion of the Camelot Landfill will not result in the destruction or adverse modification of the critical habitat of any threatened or endangered species, or cause or contribute to the taking of any threatened or endangered species.

Given the above, the site is in compliance with the endangered or threatened species location restriction.

7 WETLANDS

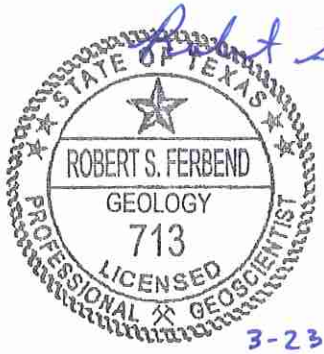
The area within the proposed expanded permit boundary of the Camelot Landfill was evaluated for compliance with wetlands provisions, including the determination and identification requirements in 30 TAC §330.61(m)(2) and (3) and the wetlands location restriction in 30 TAC §330.553(b). The expanded landfill unit at the Camelot Landfill will not be located in wetlands and development of the site will comply with the wetlands location restriction.

A waters of the U.S. and wetlands determination/delineation was performed by Goshawk Environmental Consulting, Inc. Their September 17, 2010 report is included in Appendix I/IIB, beginning at page I/IIB-135 (other wetlands materials, including correspondence with the USACE, are also included in Appendix I/IIB). The report identified waters of the U.S. and wetlands, both jurisdictional and non-jurisdictional, located within the proposed expanded permit boundary. These features are shown on Parts I/II, Figures I/II-11.3 and I/II-11.4.

The only jurisdictional wetlands on the site are located in the northeastern portion of the expanded permit boundary, north and east of proposed detention pond P1, in an area of the site not proposed for development. As noted on Figure I/II-11.4, two stormwater management facilities are proposed to be constructed near or within stream channels identified as Section 404 jurisdictional areas. The two structures are (1) a 25-foot-wide concrete and gabion-lined spillway and (2) gabion mattresses that will control erosion from stormwater flow from a drainage letdown. The construction of these stormwater management facilities is authorized by Nationwide Permit No. 43. No other aspect of the proposed site development will require Department of the Army authorization under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899.

As shown on Figure I/II-11.4, approximately 5.9 acres of non jurisdictional wetlands were identified within the proposed expanded permit boundary, including approximately 5.5 acres located within the existing permit boundary. No USACE permit is required for development of these 5.5 acres of non-jurisdictional wetlands, located in areas of the site previously excavated for soil borrow and temporary water storage. Development of the site will continue to include the use, reconfiguration, removal and/or relocation of, and the removal of water from and placement of soil in these and similar excavated areas in advance of expansion of the landfill unit.

Consistent with the goal set out in 30 TAC §330.553(b)(4), the site has been designed to include the creation of more than 30 acres of stormwater detention ponds that will function similar to wetland areas. As shown on Figure I/II-11.4, vegetation will be established in the detention ponds, which will retain water because of their relatively flat bottom grades.



8 FAULT AREAS

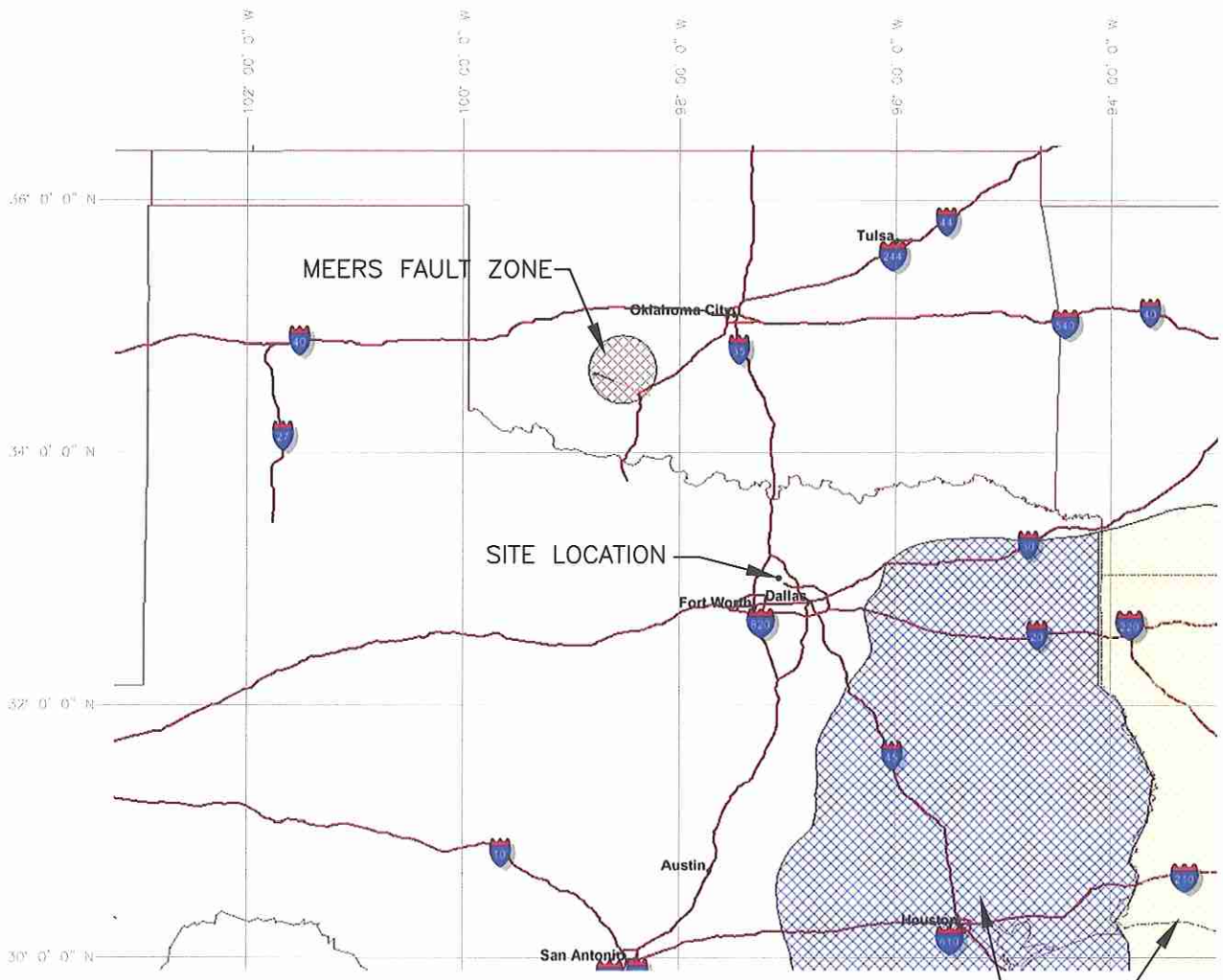
The Camelot Landfill and the surrounding area were examined by Robert S. Ferbend, P.G., a WBC licensed professional geoscientist, for indications of the presence of Holocene time geologic faulting in accordance with §330.555 criteria. The study was conducted by reviewing available literature, published topographic and geologic maps, aerial photographs of the area, and an area reconnaissance. The following is a summary of the findings from the references as part of the determination for these fault areas:

- Geologic Atlas of Texas, Sherman (1991) and Dallas (1987) sheets, Bureau of Economic Geology (BEG), Barnes, V. E.. A portion of these geologic maps showing the landfill vicinity is presented as Figure IIIG-A-1 – Regional Geologic Map in Appendix IIIG of Part III. No geologic faults were identified by the Bureau of Economic Geology within 10 miles of the permit boundary.
- Quaternary Fault and Fold Database for the United States, 2006, US Geological Survey and Texas Bureau of Economic Geology. Drawing I/IIC-4 – USGS Quaternary Fault Zones presents a USGS Quaternary fault database map that indicates no Quaternary faults are located within 0.5 miles of the site.
- Northern Trinity/Woodbine Aquifer Groundwater Availability Model, Texas Water Development Board, Harden and Associates, Inc., 2004. Although no Holocene faults were noted by Harden et al in the landfill area, faults are indicated by Harden (reference Figure IIIG-A-2 in Appendix IIIG-A) about 6 miles northwest of the landfill. According to the Denton County portion of the Tectonic Map of Texas (reproduced on Drawing I/IIC-5), this fault was formed during the Ouachita Orogeny, which occurred about 285 million years ago. As such, this mapped fault is inactive and no Halocene (last 11,000 years) faults are indicated within 0.5 miles of the facility in these structural geologic drawings.
- USGS 7.5 minute topographic maps including the Lewisville East, Texas (1981), and Carrollton, Texas (1981). Figure IIIG-A-6 – Water Well Location Map is based on portions of these USGS maps. There is no surface expression of a fault within 0.5 miles of the site on Figure IIIG-A-6.
- Aerial Photograph of Landfill Area, August 2010, Figure I/II-6.1. This recent aerial photograph of the landfill area was reviewed by Robert S. Ferbend, P.G., for natural lineaments. Lineaments are potential surface expressions of Holocene fault displacements. All linear features in the aerial photograph appear to be manmade (i.e., roadways, buildings, earthen structures). Therefore, no expressions of Holocene faulting are apparent in the aerial photograph within a one-mile radius of the landfill.

- Tectonic Map of Texas, 1990, Drawing I/IIC-5. This drawing indicates the nearest mapped fault is a Ouachita-age inactive fault located about six miles northeast of the landfill at its closest extent.

The above published sources of potential fault information indicated no known active geologic faults are present within 0.5 miles of the facility. Therefore, the site complies with §330.553(b) which requires the site must be investigated for unknown faults when an active fault is known to exist within 0.5 miles of the site. In addition, Robert S. Ferbend, P.G. (a WBC licensed professional geoscientist) did not observe any indications of active geologic faults within 0.5 miles of the site during the area reconnaissance.

Robert S. Ferbend, P.G. (a WBC licensed professional geoscientist) completed an on-site and area reconnaissance and a review of 107 site borehole logs (drilled to a maximum depth of 111 feet below ground surface). The subsurface data were analyzed for stratigraphic offsets and fracture zones to evaluate the facility for the presence of Holocene faulting. No offsets or fracture zones are indicated in the borehole data presented in Appendix IIIG-B. No unusual scarps or topographic breaks were interpreted to be within 200 feet of the site. No evidence of faulting was found associated with on-site or adjacent roadways. No structural influence of stream courses was observed. In addition, no unusual relief or topographic features, such as sag ponds, truncated alluvial spurs, or offset tributary alignments, were observed. No evidence of Holocene faulting within 200 feet of the permit boundary was noted in the listed literature. A review of the USGS Quaternary Fault and Fold Database (see Drawing I/IIC-4) of the US indicated no Holocene or Quaternary faults are located within 200 feet of the permit boundary. Because the Holocene Epoch (approximately last 11,000 years) is part of the Quaternary Period (approximately last 2 million years), faults identified in the Quaternary fault and fold database would include Holocene faults. As no evidence of Holocene faulting within 200 feet of the site was identified, the site complies with the fault area location restriction listed in §330.555(a).



STATE OF TEXAS
ROBERT S. FERBEND
GEOLOGY
713
LICENSED
PROFESSIONAL GEOSCIENTIST

3-23-12

NOTE:

1. QUATERNARY FAULT MAPS REPRODUCED FROM USGS AND TEXAS BUREAU OF ECONOMIC GEOLOGY DATA, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES USING THE INTERACTIVE USGS MAPPING TOOL.

MAJOR PERMIT AMENDMENT
USGS QUATERNARY FAULT ZONES

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

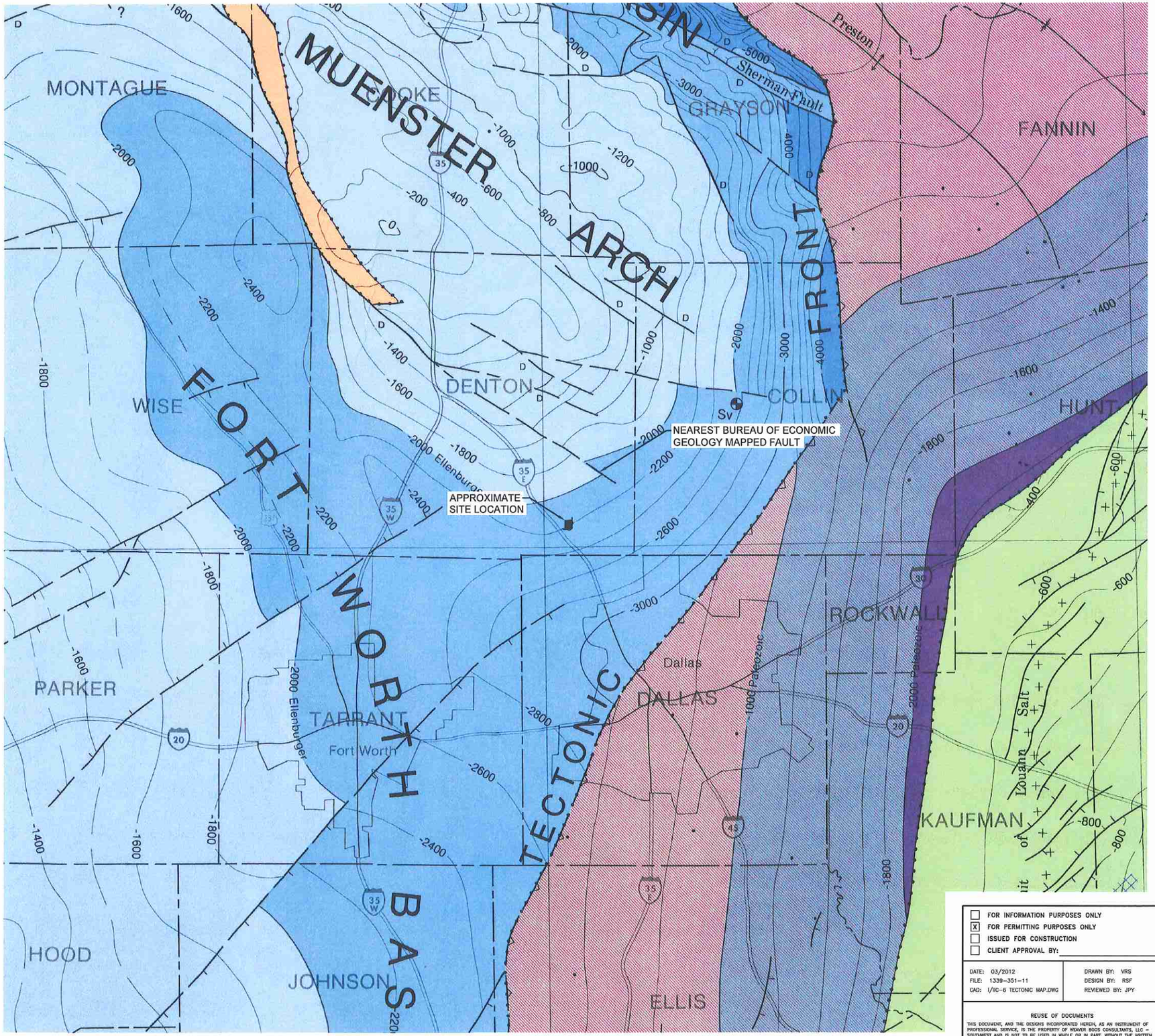
Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH

FORT WORTH, TX
DENVER, CO
ST. LOUIS, MO

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL

DRAWN BY: VRS	DATE: 03/2012	FILE: 1339-351-11
REVIEWED BY: JPY	CAD: FIG I/IIC-4.DWG	DRAWING I/IIC-4



SYMBOLS

FAULT TRACES (dashed where inferred or approximately located)

- Nature undetermined, downthrown side indicated
- El Cedral Fault — Normal fault, downthrown side indicated
- Dugout Creek — Thrust fault, teeth on upper plate
- Reverse fault, teeth on upthrown block
- Strike-slip fault
- Trend of major normal faults (offshore)
- Front of orogenic activity

FOLD AXIAL TRACES:

- Anticline, with plunge
- Syncline, with plunge
- Monocline
- Overturned anticline
- Overturned syncline
- Axial trend in highly folded rocks
- Strike trend in highly folded rocks (Van Horn)

Note: All faults and fold traces shown at the contoured horizon. Faults dashed where inferred, dotted where buried

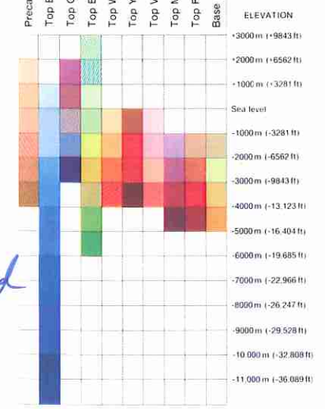
CONTACTS and CONTOURS:

- Contact of exposed units
- -200 — Contour, 200-m interval, tick on downdip side
- -100 — Supplemental contour, 100-m interval
- Change of contour horizon
- Limit of volcanic cover, in Marfa Basin area

DIAPIRS and related structures:

- Gyp Hill — Salt diapir piercing the contour horizon

CONTOUR SHADING



Robert S. Ferbend

STATE OF TEXAS
ROBERT S. FERBEND
GEOLOGY
713
LICENSED
PROFESSIONAL GEOSCIENTIST

3-23-12

NOTES:

1. THE SITE IS APPROXIMATELY 5.7 MILES SOUTHWEST OF THE NEAREST MAPPED FAULT. THIS FAULT'S ORIENTATION IN THIS STRUCTURAL PROVINCE INDICATES OACHITA OROGENY DISPLACEMENT.
2. MAP ADAPTED FROM TECTONIC MAP OF TEXAS, T.E. EWING et al, 1990, BUREAU OF ECONOMIC GEOLOGY, THE UNIVERSITY OF TEXAS AT AUSTIN.

SHEET I/IIC-16

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012 | DRAWN BY: VRS
FILE: 1339-351-11 | DESIGN BY: RSF
CAD: I/IIC-6 TECTONIC MAP.DWG | REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TECTONIC MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL; NAPERVILLE, IL; COLUMBUS, OH; DENVER, CO | FORT WORTH, TX (817) 735-9770 | GRIFFITH, IN; SOUTH BEND, IN; SPRINGFIELD, IL; ST. LOUIS, MO

DRAWING I/IIC-5

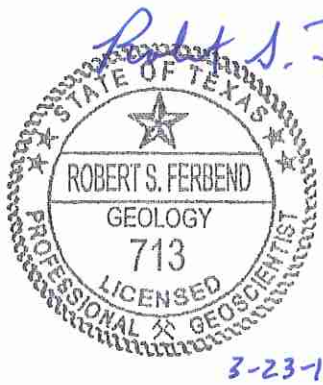
REUSE OF DOCUMENTS
THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST.

9 SEISMIC IMPACT ZONES

The seismic impact zone location restriction defined by Title 30 TAC §330.557 is an area with a 10 percent or greater probability that the maximum horizontal acceleration in rock, expressed as a percentage of the earth's gravitational pull, will exceed 0.10 g in 250 years. Drawing I/IIC-6 is a seismic impact zone map of Texas adapted from USGS seismic hazard maps for peak ground acceleration with a 2 percent in 50 years return period (USGS, 2002). According to the USGS, a 10 percent probability in 250 years is equivalent to a 2 percent probability in 50 years. As shown in this figure, the site is not within a 10 percent in 250 year probability seismic impact zone and the seismic impact zone location restriction does not apply.

According to the USGS Ground Motion Parameter Calculator Version 5.1.0, the site-specific (for the geographic center of the landfill location at 33°01′52.86" N latitude, 96°57′5.56" W longitude) maximum seismic horizontal acceleration with a 2 percent exceedance probability in a 50-year time period is 0.0346 (3.46 percent of g). As such, the USGS-derived site-specific horizontal acceleration of the force of gravity is significantly below the 0.10g (10 percent of the force of gravity) definition of a seismic impact zone, and the site complies with the seismic impact zone location restriction.

3-23-12



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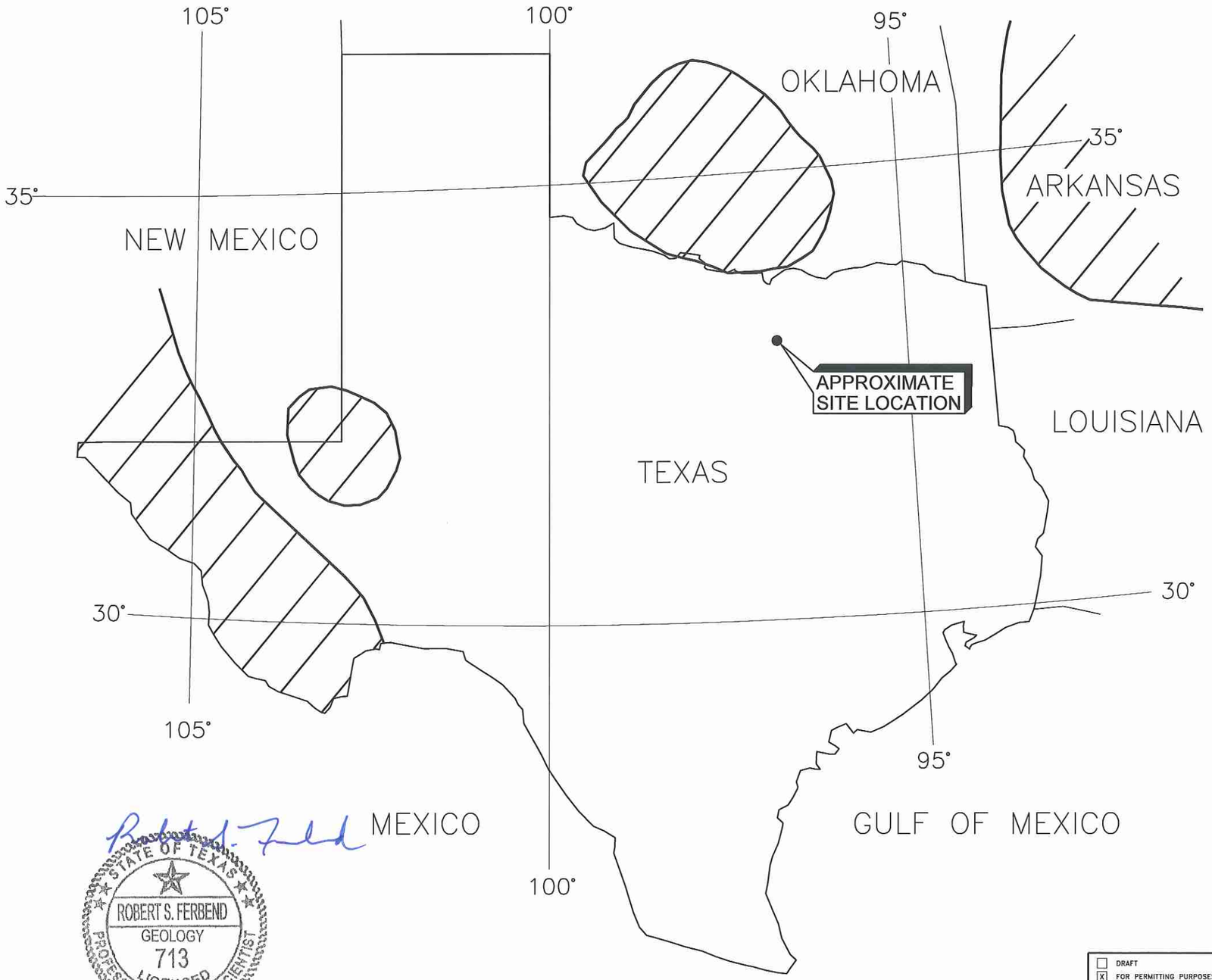


0 25 50 100
APPROXIMATE SCALE IN MILES

INDICATES SEISMIC IMPACT ZONE AS DEFINED BY 30 TAC § 330.557 (AREA WITH TEN PERCENT PROBABILITY THAT THE MAXIMUM HORIZONTAL ACCELERATION IN ROCK, EXPRESSED AS A PERCENTAGE OF EARTH'S GRAVITATIONAL PULL (g), WILL EQUAL OR EXCEED 0.1g IN 250 YEARS)

NOTES:

1. SEISMIC IMPACT ZONE MAP MODIFIED FROM NATIONAL SEISMIC HAZARD 2002 MAPS FOR 2% EXCEEDANCE PROBABILITY IN 50 YEAR TIME FRAME.
2. ACCORDING TO THE USGS GROUND MOTION PARAMETER CALCULATOR APPLET (VERSION 5.1.0). THE MAXIMUM SEISMIC HORIZONTAL ACCELERATION WITH A 10 PERCENT PROBABILITY OF EXCEEDANCE IN A 250-YEAR TIME FRAME AT THE CAMELOT LANDFILL COORDINATES OF N33°01'52.86" LATITUDE AND W96°57'5.56" LONGITUDE IS 0.0346g (3.46% OF THE FORCE OF GRAVITY). THESE LATITUDE AND LONGITUDE COORDINATES REPRESENT THE LOCATION OF THE APPROXIMATE GEOGRAPHIC CENTER OF THE LANDFILL.

STATE OF TEXAS
NEVZAT TURAN
84059
LICENSED
PROFESSIONAL ENGINEER
3-23-12

STATE OF TEXAS
ROBERT S. FERBEND
GEOLOGY
713
LICENSED
PROFESSIONAL GEOSCIENTIST
3-23-12

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: I/II C-5-SEISMIC.DWG

DRAWN BY: VRS
DESIGN BY: RSF
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SEISMIC IMPACT ZONE MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

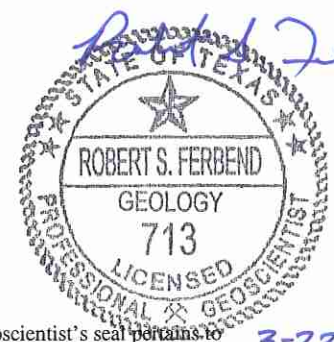
Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING I/IIC-6

SHEET I/IIC-18

3-23-12

(Engineer's seal pertains to non-italicized text in Section 10 of Appendix I/IIC.)



3-23-12

(Geoscientist's seal pertains to italicized text in Section 10 of Appendix I/IIC.)

10 UNSTABLE AREAS

10.1 Introduction

The location restriction criteria in Title 30 TAC §330.559 require engineering measures to be incorporated into the design of a disposal unit located in an unstable area to ensure that the integrity of the structural components of the disposal unit will not be disrupted. Unstable areas, by definition, are areas susceptible to natural or human-induced events or forces that are capable of impairing the integrity of some or all structural components (i.e., liner systems, leachate collection systems, and final cover systems) of a disposal unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movement, or karst terrain.

These three potential unstable area conditions are discussed in the following three subsections.

10.2 Foundation Conditions

10.2.1 Bottom Liner Foundation Condition

As discussed in Section 7 of Appendix IIIJ, a minimum of 40 feet of low permeability shale separates the proposed expansion area sump EDE of 387 ft-msl elevation from the underlying top of the Woodbine Strata. A foundation settlement analysis is included in Appendix IIIJ (Appendix IIIJ-B) to verify that the amount of consolidation of the natural soils below the site will not adversely affect the integrity of the existing and future liner systems. As noted in Appendix IIIJ, the strain on both liner systems caused by differential settlement is within acceptable limits for the liner system materials. In addition, the bottom liner leachate collection system design, included in Appendix IIIC, has been developed to account for settlement. As demonstrated in Appendix IIIC, the leachate collection system will function as designed after the final settlement of the foundation soils has occurred.

Onsite and local geologic and geomorphologic features were evaluated as part of Appendix IIIG for naturally induced events or forces that would have the potential to affect the integrity of the landfill or the landfill's components. No potential for subsidence due to local groundwater withdrawal was identified in this evaluation. The area obtains its water resources largely from surface water reservoirs. Only 21 registered water wells are present within a one-mile radius of the permit boundary. For

these reasons, there is no significant potential for landfill subsidence due to groundwater withdrawal.

In addition, no potential for subsidence due to natural gas and crude oil production was identified. In January 2011, there were two Barnett Shale natural gas well sites and no oil wells within one mile of the landfill's permit boundary reported in the Railroad Commission of Texas's online database at http://gis2.rrc.state.tx.us/public. In the landfill vicinity, the nearest natural gas well (API No. 121-33672) penetrated strata to a depth of about 9,000 feet and was deviated to a horizontal trend through the Barnett Shale. Although deep brine groundwater is commonly produced during Barnett Shale gas exploration, the gas well development process includes high pressure fracturing of the formation using water and sand which would replace removed brine water. The Mississippian-age Barnett Shale rocks are hard, competent, and incompressible. Therefore, the potential for subsidence due to natural gas and brine water withdrawal is insignificant.

Given the above, it is concluded that no naturally induced event or forces will adversely affect the landfill or the landfill components.

10.2.2 Pre-Subtitle D Overliner Foundation Condition

The geotechnical design in Appendix IIIJ includes a demonstration that the pre-Subtitle D waste underlying the proposed separatory overliner will not cause unstable conditions for the proposed vertical expansion area. The purpose of the overliner system settlement analysis, included in Appendix IIIJ (refer to Section 7.4), is to (1) show that positive drainage is maintained for the overliner leachate collection system consistent with the demonstration included in Appendix IIIC and (2) to verify that the strain induced on the overliner system components due to differential settlement of the waste below the overliner is within acceptable limits. The post-settlement slopes of the overliner system were used to demonstrate that the overliner leachate collection system will maintain less than 1 foot of leachate over the floor of the overliner system. The strain demonstration included in Appendix IIIJ shows that the overliner areas and overliner leachate collection pipes will be stable and maintain positive drainage after settlement. The overliner will be stable given that the estimated strain on components of the overliner system is within the acceptable range for these materials.

10.2.3 Final Cover Foundation Condition

The geotechnical design in Appendix IIIJ includes demonstrations that the proposed final cover system will function as designed after the final settlement of waste placed below the final cover area is complete. The demonstrations also include a strain analysis showing that the differential settlement of waste will not be detrimental to the final cover system and the maximum estimated strain will be below allowable strain values for each final cover system component.

10.3 Mass Movement

The geotechnical design in Appendix IIIJ includes an analysis that the mass movement of natural soils and the landfill will not occur at the site. A detailed summary of the slope stability analyses is provided in Section 6 of Appendix IIIJ. The analyses show that the excavated and constructed slopes will be stable. The analyses incorporate various interim fill conditions and the final configuration condition of the landfill. The results of the stability analyses indicate that the proposed excavation, constructed liner, interim waste fill slopes, overliner, and final configuration slopes are stable under the conditions analyzed. The results of the stability analyses demonstrate that the calculated factor of safety values are higher than the recommended minimum factors of safety. The recommended minimum factors of safety for the conditions analyzed were determined using recommendations from the USACE "Design and Construction of Levees" manual (EM 1110-2-1913) and the EPA's "Technical Guidance Manual for Design of Solid Waste Disposal Facilities." An infinite slope stability analysis was also developed for the liner, overliner, and final cover systems and are discussed in more detail in Section 6 of Appendix IIIJ. The results of both the generalized slope stability and interface slope stability analyses indicate that the landfill and its components will be geotechnically stable as designed.

Furthermore, to ensure interface stability of the landfill components, the minimum interface strength requirements have been incorporated into the Appendix IIID – Liner Quality Control Plan for future bottom and overliner construction and Appendix IIIE – Final Cover System Quality Control Plan for the future final cover system.

10.4 Karst Terrain

As discussed in Section 1.1 in Appendix IIIG of Part III, the site is located in the Black Prairie regional physiographic province. This province is underlain by Cretaceous-age sediments including Eagle Ford Group shale, Woodbine Formation sandstone and shale, and Washita and Fredericksburg group limestone, clay, marl and shale. No surface indications of karst development were observed during the WBC on-site investigation, from area roadways, in a site aerial photograph, or in area USGS topographic maps. No dissolution voids or jointing have been noted in the subsurface investigation borehole logs or in the site's borrow area that indicate any potential for karst development. In addition, the USGS karst open file report 76-623 indicates the landfill permit boundary contains no underlying, near surface rocks that are favorable for karst development (i.e., massively bedded limestone, gypsum, or halite in the near surface). According to the Texas Speleological Survey Cave and Karst Database (2008), there are no reported caves or karst sinkholes in the landfill vicinity.

No surface indications of karst development were observed by Robert S. Ferbend P.G. (a WBC licensed professional geoscientist) during on-site investigations, from area roadways, or in a site aerial photograph. The review of area topographic maps indicates no karst topography or sinkholes exist in the site vicinity. The USGS 7.5-minute

topographic maps reviewed included the Lewisville East, Texas (1981), and Carrollton, Texas (1981) quadrangle maps. These references are listed on Figure IIIG-A-6 in Appendix IIIG-A of Part III.

Karst terrain formation requires thickly-bedded, fractured water-soluble rocks to be present in the near surface. Potentially karstic-producing weatherable rocks include limestone, gypsum, and halite. Where the dissolution cavities become large enough, the roof of the cavity may collapse, forming a sinkhole. In a karst terrain, sinkholes may be indicated on topographic maps as circular to sub-rounded (often concentric) closed topographic contour lines that spatially may have a sponge-like texture on the topographic map. A vanishing stream or lack of developed surface drainage on a topographic map may also indicate the presence of karst conditions. Robert S. Ferbend, P.G. (a WBC licensed professional geoscientist) reviewed the referenced USGS topographic maps and determined that no characteristic karstic map features were present. No surface indications of karstic sinkholes were observed by Mr. Ferbend during an area reconnaissance from area roadways or in a site aerial photograph. Based on borehole evidence and regional stratigraphy, the conditions necessary for karst development (e.g., shallow unit of fractured or elevated porosity limestone) is not present beneath the landfill permit boundary.

10.5 Summary

In summary, the bottom liner system is founded in the low-permeability unweathered Eagle Ford Shale. In addition, the final cover and pre-Subtitle D area overliner systems are designed to ensure that the integrity of these systems will be maintained. The stability analysis shows that each landfill component will be stable and no mass movements will occur. *Finally, there is no potential for karst development to occur.*

Given the above, it is concluded that no naturally induced event or forces will adversely affect the landfill or the landfill components. This conclusion is based on a review of the site in its current state, *the expected groundwater usage* and development around the site, and the facility operations itself; *there are no onsite local soil conditions, geologic conditions, geomorphologic features, or potential for karst development to occur* as well as no human induced features or events (both surface and subsurface) that would result in significant differential settlement or other unstable conditions. Therefore, the site meets the requirements of Title 30 TAC §330.559. The site is and will continue to be in compliance with this location restriction.

11 COASTAL AREAS

The coastal areas location restriction within Title 30 TAC §330.561 requires that a new landfill cell or expansion of an existing cell of a landfill managing Class 1 Industrial Solid Waste not be located on a barrier island or peninsula, or within 1,000 feet of an active coastal shoreline erosion.

Given that the Camelot Landfill does not accept Class 1 Industrial Solid Waste and is located more than 1,000 feet from the nearest coastal shoreline, the site is in compliance with the coastal areas location restriction.

12 TYPE I AND TYPE IV LANDFILL PERMIT ISSUANCE PROHIBITED

The Type I and Type IV Landfill Permit Issuance Prohibited location restriction within Title 30 TAC §330.563 prohibits the issuance of a permit for a Type IV landfill that is located within 100 feet of a canal that is used as a public drinking water source or for irrigation of crops used for human or animal consumption or that is located in a county with a population of more than 225,000 that is located adjacent to the Gulf of Mexico. The location restriction also prohibits the issuance of a permit for a new Type I or Type IV landfill or a permit amendment authorizing the conversion of a Type IV landfill to a Type I landfill only if the landfill is 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, on public or private land.

Given that the Camelot Landfill is a Type I landfill and is not located inside the boundaries of a national forest, the site is in compliance with the Type I and Type IV landfill permit issuance prohibited location restriction.

APPENDIX I/IID

TRAFFIC STUDY

WEAVER
BOOS
CONSULTANTS
LLC
SOUTHWEST

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76109
PHONE: 817.735.9770
FAX: 817.735.9775
www.weaverboos.com

Chicago, IL
Naperville, IL
Springfield, IL
South Bend, IN
St. Louis, MO
Columbus, OH
Denver, CO
Fort Worth, TX
Clermont, FL
Grand Rapids, MI
Portland, OR

February 3, 2011
Project No. 1339-351-11-02-1I

Mr. Bill Hale, P.E.
District Engineer, Dallas District
Texas Department of Transportation
4777 E Highway 80
Mesquite, Texas 75150-6643

Re: Traffic Location Restriction Information
Proposed Camelot Landfill Major Permit Amendment
Denton County, Texas

Dear Mr. Hale:

The purpose of this letter is to demonstrate coordination with the Texas Department of Transportation (TxDOT), consistent with Title 30 Texas Administrative Code (TAC) §330.61(i)(4). This regulation requires that a permit applicant for an expansion of a municipal solid waste facility coordinate with TxDOT regarding any potential traffic or location restrictions.

Weaver Boos Consultants, LLC-Southwest is preparing a permit amendment application, under contract with the City of Farmers Branch, to authorize future expansion of the Camelot Landfill located in Denton County. The permit amendment application will be submitted to the Texas Commission on Environmental Quality for review and approval before the site develops the expansion area.

The site entrance is located at 580 Huffines Boulevard, approximately 1,800 feet south of the intersection of State Highway 121 Business and Huffines Boulevard. The proposed landfill expansion does not include a change to the location of the site entrance.

The attached traffic study has been prepared to provide an overview of the existing landfill operation and to show that the site access roads will continue to provide adequate access to the site throughout the life of the facility. The key conclusions listed in the attached report include the following.

- The landfill has been in operation for 30 years and the traffic patterns associated with the waste collection vehicles that travel to the site are well established.
- The site is located near several major transportation corridors including IH-35E, SH 121 B, and State Highway 121 (Sam Rayburn Tollway).

- Direct access to the site is through an industrial area that supports several commercial and industrial uses.
- The existing access roads will provide adequate access to the site through the projected life of the landfill.

To verify compliance with §330.61(i)(4), we will need to include a letter from TxDOT in the permit amendment application regarding the adequacy of the site access roads and any traffic or location restrictions at or near the site.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Charles R. Marsh, P.E.
Project Engineer

Attachments: Traffic Study

cc: Shane Davis, City of Farmers Branch
Jeffrey P. Young, P.E., Weaver Boos Consultants, LLC–Southwest

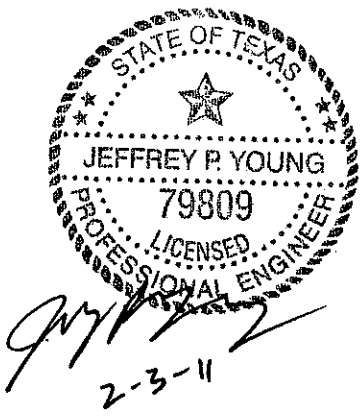
CAMELOT LANDFILL
DENTON COUNTY, TEXAS
TCEQ PERMIT NO. MSW-1312B

TRAFFIC STUDY

Prepared for

City of Farmers Branch

February 2011



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-1I

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1 INTRODUCTION

1.1 Purpose

Weaver Boos Consultants, LLC–Southwest is in the process of developing a Major Permit Amendment Application, on behalf of the City of Farmers Branch, to authorize future expansion of the Camelot Landfill. The purpose of this study is to address roadway and traffic issues related to the Camelot Landfill. The study is completed consistent with the requirements listed in 30 TAC §330.61(i), which requires the following information.

- 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; and
- Submit documentation of coordination of all designs of proposed public roadway improvements such as turning lanes, storage lanes, etc., associated with site entrances with the agency exercising maintenance responsibility of the public roadway involved. In addition, the documentation of coordination with the Texas Department of Transportation for traffic and location restrictions will need to be included in the application.

1.2 Summary of Proposed Expansion

The Camelot Landfill is an existing 351-acre Municipal Solid Waste (MSW) landfill (TCEQ Permit No. 1312A). The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A).

The purpose of the permit amendment is to secure authorization for future vertical and horizontal expansion of the Camelot Landfill. The permitted 207.4-acre waste disposal area will be expanded by 38.6 acres, and the permit boundary will be expanded to approximately 469.62 acres. The maximum permitted final cover elevation will be increased from 523.0 ft-msl to 725.0 ft-msl. The resulting capacity increase is 37,700,000

cubic yards. The permit amendment will provide for the long-term disposal needs of Denton County and surrounding communities.

The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business in southeastern Denton County and are easily accessed from area population centers via State Highway 121 Business and Huffines Boulevard. Prior to the completion of the eastern expansion of Corporate Drive the landfill entrance facilities will be moved approximately 1,500 feet south of their existing location. A detailed summary and site location maps are included in Appendix A.

2 TRAFFIC INFORMATION

2.1 Area Transportation Infrastructure and Land Use

As shown on Figure 2-1, the primary access roads within one mile of the site are Huffines Boulevard, State Highway 121 Business (SH 121 B), Midway Road, Holfords Prairie Road, and State Highway 121 (Sam Rayburn Tollway). Other access roads within one mile of the site include Railroad Street and Hebron Parkway. Numerous other roads are located within 1-mile of the site that may be periodically used by waste collection vehicles to serve residences and businesses located along or near these roadways. However, these other roads are not considered access roads per 30 TAC §330.61(i). As shown on Figure 2-2, direct access to the site is provided by Huffines Boulevard, which terminates at the landfill. Northbound vehicles on Huffines Boulevard are restricted from turning left onto SH 121B. Vehicles exiting westbound onto SH 121 B utilize Midway Road and Holfords Prairie Road. Vehicles exiting eastbound onto SH 121 B use Huffines to turn eastbound onto SH 121 B.

As shown on Figure 2-2, the area between SH 121 B and the landfill is an industrial area that includes several industrial and commercial uses. Nearby businesses include a vehicle scrap yard tree nursery, construction contractor, and concrete crushing facility. These industries involve a high percentage of truck traffic. This industrial area is supported by several roads, including Huffines Boulevard, Midway Road, and Holfords Prairie Road. The landfill has been in operation for 30 years and the traffic patterns associated with the waste collection vehicles that travel to the site are well established.

In addition to the current access road situation, a major new access road, Corporate Drive is planned to be constructed in 2019 that will further improve access to the site. Corporate Drive is planned to be extended from southwest of the facility along the northern side of the Camelot Landfill permit boundary and tie-in to the existing Carrollton Parkway east of the landfill. The future Corporate Drive alignment is also shown on Figure 2-1 and 2-2. Based on information provided by the North Central Texas Council of Governments, the Corporate Drive extension is planned to be completed by 2019. This new roadway will allow landfill vehicles to access the landfill entrance road via Corporate Drive or SH 121 B.

Prior to the completion of the eastern expansion of Corporate Drive, the landfill entrance facilities will be moved approximately 1,500 feet south of their existing location. The existing and proposed entrance facilities are shown on Figures 2-2 and 2-3.

2.2 Access Road Overview

As discussed in Section 2.1, the primary access roads within one mile of the site are Huffines Boulevard, SH 121 B, Midway Road, Holfords Prairie Road, and State Highway 121. Additionally, Railroad Street and Hebron Parkway are within one mile of the site and are also considered access roads. Descriptions of the access roads are listed below. In addition, Appendix B includes several photographs of Huffines Boulevard, SH 121 B, Midway Road, and Holfords Prairie Road.

Huffines Boulevard is a two-lane concrete-paved road that connects to the landfill access road into Camelot Landfill. All landfill vehicles utilize Huffines Boulevard to enter the landfill. Near the intersection of Huffines and Midway Road, Huffines expands to four lanes to accommodate traffic turning to or from SH 121 B. Northbound traffic on Huffines is restricted from making left turns onto SH 121 B (refer to the photograph in Appendix B which shows the road sign that restricts a left turn onto SH 121 B). Acceleration and deceleration lanes are provided at the one-way stop-controlled Huffines-SH 121 B intersection (refer to Section 3 for additional information regarding this intersection).

State Highway 121 Business provides the majority of landfill vehicles with access to Huffines Boulevard. SH 121 B is a four-lane, median-divided, 50 mph, concrete-paved highway that runs east and west, north of the landfill. SH 121 B merges with State Highway 121 approximately 2 miles northeast of the site. SH 121 B also intersects Interstate 35E (IH-35E) approximately 2 miles west of the site.

Midway Road forms a T intersection with Huffines Boulevard approximately 300 feet south of the Huffines-SH 121 B intersection. Traffic turning onto Huffines from Midway is stop-controlled. Midway Road is approximately 1.1 miles long, traversing east from Huffines Boulevard. Midway terminates at the intersection with FM 544, which crosses over State Highway 121 via a grade-separated crossing. Midway Road is a two-lane concrete and asphalt paved 35 mph road that provides access to Huffines Boulevard for all landfill vehicles that do not utilize SH 121 B. Landfill vehicles will use Midway Road when exiting the site if they plan to head westbound on SH 121 B. Since left turns are restricted from Huffines to SH 121 B, landfill vehicles will head eastbound on Midway Road then northbound on Holfords Prairie Road to a signalized intersection with SH 121 B. The intersection with Holfords Prairie is a four-way stop-controlled intersection.

Holfords Prairie Road is a two-lane 30 mph road. The intersection of Holfords Prairie North and SH 121 B is signal-controlled with deceleration lanes for vehicles turning south from SH 121 B or north onto Fish Hatchery Road. The intersection also provides protected left turn lanes on SH 121 B. Acceleration lanes are provided onto SH 121 B for traffic from Holfords Prairie Road or Fish Hatchery Road.

State Highway 121 is a four-lane, median-divided, concrete-paved tollway approximately 3,200 feet southeast of the landfill. Landfill vehicles access the site from State Highway 121 via FM 544 and SH 121 B.

Railroad Street is a two-lane, undivided, asphalt-paved street located approximately 3,000 feet southwest of the landfill. Railroad Street runs parallel to IH-35E and can provide access between SH 121 B and Hebron Parkway. Very little development is located along Railroad Street, with the exception of a large athletic complex located due west of the landfill. The number of landfill vehicles traveling to the Camelot Landfill using Railroad Street is anticipated to be minor.

Hebron Parkway is a six-lane, median-divided, concrete-paved 45 mph thoroughfare located south of the landfill that acts as a conduit between IH-35E and State Highway 121. Due to the lack of a direct connection to the landfill entrance, it is anticipated that the number of landfill vehicles traveling to the Camelot Landfill using Hebron Parkway will be minor.

2.3 Existing and Projected Traffic Data

The 2010 volume of vehicle traffic on access roads within one mile of the site is summarized on Table 2.1. As noted on Table 2.1, traffic count information for Railroad Street, Hebron Parkway, and Midway Road was obtained from the 2004 TxDOT Denton County traffic map. Traffic count information for SH 121 B and State Highway 121 was obtained from the 2008 TxDOT Dallas District traffic map. Volumes from 2004 and 2008 were adjusted to account for additional traffic created by area growth through 2010. Refer to Appendix D for traffic count information.

Traffic counts for Huffines Boulevard and Holfords Prairie Road were obtained manually over a two-day period between the hours of 7 AM and 6 PM. This traffic data was converted to a 24-hour traffic volume. A summary of the manual traffic data counts and the adjusted 24-hour volumes is included on Tables 2.3 and 2.4, respectively. Additionally, directional traffic data was obtained manually along Huffines at the SH 121 B and Midway Road intersections and along Holfords Prairie Road at the SH 121 B and Midway intersections. This information was used to analyze the adequacy of each intersection. An intersection analysis summary is provided in Section 3.

Projected traffic volumes for 2020 and 2039 (the expected end of useful life of Camelot Landfill) were developed using North Central Texas Council of Government (NCTCOG) population estimates. These volumes are shown on Table 2-1.

Traffic associated with the landfill is also shown on Table 2.1. The current daily waste inflow rate is 1,500 tons per day. Growth of the area over the life of the landfill and the expected closure of the nearby DFW Landfill will increase the projected waste inflow rate to 4,266 tons per day in the year 2020. The waste inflow rate is conservatively projected to increase to 5,301 tons per day during the expected last year of operations in 2039. Therefore, traffic projections were developed for traffic patterns that will occur at the landfill for waste inflow rates of 1,500 tons per day (in 2010) and 5,301 tons per day (in 2039). These traffic volumes are shown on Figures 2-4 and 2-5.

As noted previously, Corporate Drive is expected to be completed by 2019 and will intersect Huffines Boulevard approximately 3,000 feet south of SH 121 B. The addition of this major new access road will further improve access to the site. It is expected that Corporate Drive will divert a significant portion of landfill traffic from Midway Road, Holfords Prairie Road North, and SH 121 B. To account for the addition of Corporate Drive, Figure 2-6 shows projected traffic volumes after Corporate Drive is in use. Projected traffic volumes for Corporate Drive were provided by the NCTCOG for years 2019 and 2030. These volumes were adjusted to account for additional traffic created by area growth over the life of the site.

For this study, it is estimated that 35 percent of landfill vehicles on SH 121 B and 75 percent of landfill vehicles using Midway Road would be routed onto Corporate Drive. In all, 51 percent of total landfill vehicles are expected to use Corporate Drive once it is completed. To account for the anticipated increase in landfill traffic due to the closure of the DFW Landfill (expected in 2020) and the redistribution of traffic due to the completion of Corporate Drive (expected in 2019), an analysis of the year 2020 is included in the calculations in Section 2.4 and 3.

2.4 Traffic Impact Assessment

To determine the impact of the landfill expansion, roadway and intersection capacity analyses were performed on roadways and intersections near the Camelot Landfill. The landfill access roads were analyzed to determine the level of service (LOS). The landfill access roads can be classified as urban streets (Huffines Boulevard, Midway Road, Holfords Prairie Road, and Railroad Street), urban multi-lane highways (SH 121B, Hebron Parkway, and Corporate Drive), and a freeway (Sam Rayburn Tollway). The LOS of each of these types of roads is summarized in Table 2.5.

LOS calculations for the landfill access roads were performed for peak hour volumes on each roadway in accordance with the Highway Capacity Manual (Ref. 1). Results of these analyses are included in Table 2.2. The peak hour volume is assumed to be 10 percent of the total daily traffic for each analyzed road. The peak hour percentage was developed using TxDOT automated 15-minute traffic counts for SH 121 B. Using these counts, the peak hour volume on SH 121 B was identified and found to be 10 percent of the 24-hour traffic. This analysis was completed for scenarios that both include Corporate Drive and exclude this potential new access road from the analysis. In summary, the LOS for each access road is "B" or higher and the percentage of the roadway capacity used by landfill vehicles is less than 6 percent on Huffines Boulevard and less than 2 percent on all other access roads.

In addition to the above analysis, the intersections at Huffines Boulevard and SH 121 B, Huffines Boulevard and Midway Road, Holfords Prairie Road and SH 121 B, and Holfords Prairie Road and Midway Road were analyzed to determine the intersection LOS using "Synchro 7" developed by Trafficware (Ref. 2). Synchro 7 is a standard program routinely used by traffic engineers for determining the capacity of an intersection. Results of the intersection analysis are included in Section 3.

Table 2.1
2-Way Traffic Volumes

Location	2010 Traffic Conditions [1, 3]						Projected 2020 Traffic Conditions Without Corporate Drive [3]						Projected 2039 Traffic Conditions Without Corporate Drive [3]					
	Daily			Peak Hour [4]			Daily			Peak Hour [5]			Daily			Peak Hour [5]		
	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total
Huffines Boulevard	556	1,753	2,309	56	175	231	1,554	2,017	3,571	155	202	357	1,950	2,532	4,482	195	253	448
State Highway 121 Business	457	31,054	31,511	46	3,105	3,151	1,278	35,733	37,011	128	3,573	3,701	1,690	44,853	46,543	169	4,485	4,654
Midway Road	195	1,843	2,038	19	184	204	544	2,121	2,665	54	212	266	719	2,662	3,382	72	266	338
Holfords Prairie Road North	143	2,728	2,871	14	273	287	399	3,139	3,538	40	314	354	501	3,940	4,441	50	394	444
State Highway 121 (Sam Rayburn Tollway)	100	59,611	59,711	10	5,961	5,971	280	68,591	68,871	28	6,859	6,887	370	86,098	86,467	37	8,610	8,647
Railroad Street	10	2,749	2,759	1	275	276	28	3,163	3,191	3	316	319	37	3,971	4,008	4	397	401
Hebron Parkway	20	27,743	27,763	2	2,774	2,776	56	31,923	31,979	6	3,192	3,198	74	40,071	40,144	7	4,007	4,014

Location	2010 Traffic Conditions [1, 3]						Projected 2020 Traffic Conditions With Corporate Drive [3]						Projected 2039 Traffic Conditions With Corporate Drive [3]					
	Daily			Peak Hour [4]			Daily			Peak Hour [4]			Daily			Peak Hour [4]		
	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total	Landfill Trips [5]	Non-Landfill Trips	Total	Landfill Trips	Non-Landfill Trips	Total
Huffines Boulevard	556	1,753	2,309	56	175	231	1,554	2,017	3,571	155	202	357	1,950	2,532	4,482	195	253	448
State Highway 121 Business	457	31,054	31,511	46	3,105	3,151	706	35,733	36,439	71	3,573	3,644	934	44,853	45,786	93	4,485	4,579
Midway Road	195	1,843	2,038	19	184	204	102	2,121	2,223	10	212	222	135	2,662	2,797	13	266	280
Holfords Prairie Road North	143	2,728	2,871	14	273	287	72	3,139	3,211	7	314	321	90	3,940	4,030	9	394	403
State Highway 121 (Sam Rayburn Tollway)	100	59,611	59,711	10	5,961	5,971	280	68,591	68,871	28	6,859	6,887	370	86,098	86,467	37	8,610	8,647
Railroad Street	10	2,749	2,759	1	275	276	28	3,163	3,191	3	316	319	37	3,971	4,008	4	397	401
Hebron Parkway	20	27,743	27,763	2	2,774	2,776	56	31,923	31,979	6	3,192	3,198	74	40,071	40,144	7	4,007	4,014
Corporate Drive [2]	--	--	--	--	--	--	796	10,739	11,535	80	1,074	1,154	997	12,923	13,920	100	1,292	1,392

Notes:

[1] 2010 Traffic conditions are based on volumes provided on the 2008 TxDOT Dallas District Traffic Map for State Highway 121 Business and Sam Rayburn Tollway, volumes from the 2004 TxDOT Denton County Traffic Map for Railroad Street, Hebron Parkway, and Midway Road. These volumes are projected using population growth rates in the NCTCOG North Central Texas 2030 Demographic Forcast.

[2] Traffic volume data for Corporate Drive provided by NCTCOG for years 2019 and 2030.

[3] The annual population growth rate is 2.57% for years 2000 to 2005, 1.55% for 2006-2010, 1.56% for 2011-2015, 1.27% for 2016-2020, 1.48% for 2021-2025, and 1.10 % for 2026-2030. The growth rate for 2031-2039 is assumed to be 1.10%, consistent with years 2026-2030.

[4] Peak hour volumes are assumed to be ten percent of the total daily traffic volume.

[5] 2010 Landfill trips were estimated from current landfill operating information. Projected landfill trips were calculated based on the projected waste inflow rate. The number of inbound trips per day was calculated based on truck capcity, density, tonnage, and the current breakdown of landfill vehicle types. The inbound volume was doubled to obtain the number of total daily two-way landfill trips.

[6] Corporate Drive is scheduled to be complete in 2019. When complete, it is estimated that approximately 75% of the landfill vehicles utilizing Midway Road and 35% of landfill vehicles ustilizing State Highway 121 Business will move to Corporate Drive.

24-Hour One-Way Landfill Vehicle Estimates [1]

Vehicle Description	2010 Conditions					2020 Conditions					2039 Conditions				
	Truck Capacity (yd^3)	Waste Density (lb/yd^3)	Truck Capacity (tons)	Distribution of Waste Stream (tons)	Estimated Vehicle Counts (vehicles/day)	Truck Capacity (yd^3)	Waste Density (lb/yd^3)	Truck Capacity (tons)	Distribution of Waste Stream (tons)	Estimated Vehicle Counts (vehicles/day)	Truck Capacity (yd^3)	Waste Density (lb/yd^3)	Truck Capacity (tons)	Distribution of Waste Stream (tons)	Estimated Vehicle Counts (vehicles/day)
Read Loader	20	500	5.00	365	73	20	500	5.00	1,025	205	20	500	5.00	1,295	259
Front Loader	40	500	10.00	340	34	40	500	10.00	950	95	40	500	10.00	1,230	123
Rolloffs	30	267	4.00	284	71	30	267	4.00	796	199	30	267	4.00	988	247
Transfer Trailers	125	400	25.00	500	20	125	400	25.00	1,425	57	125	400	25.00	1,750	70
Private Individuals	--	--	0.25	11	44	-	-	0.25	30	120	--	--	0.25	38	152
Subtotal:	--	--	--	1,500	242				4,226	676	--	--	--	5,301	851
Facility Personnel/Misc. [2]	--	--	--	--	36	-	-	-	-	101	--	--	--	--	128
Total:	--	--	--	**1,500**	**278**				**4,226**	777	--	--	--	**5,301**	**979**

Notes:

[1] Corporate Drive is scheduled to be complete in 2019. When complete, it is estimated that approximately 75% of the landfill vehicles utilizing Midway Road and 35% of landfill vehicles ustilizing State Highway 121 Business will move to Corporate Drive.

[2] Facility personnel and miscellaneous vehicle count estimates were assume to be approximately 15% of the total vehicles.

Table 2.2
Traffic Impact Assessment

Location	Roadway Capacity (veh/hr)	2010 Traffic Conditions						Projected 2020 Traffic Conditions Without Corporate Drive						Projected 2039 Traffic Conditions Without Corporate Drive					
		Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	LOS [1]	% of Roadway Capacity Used by Landfill Vehicles	Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	LOS [1]	% of Roadway Capacity Used by Landfill Vehicles	Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	LOS [1]	% of Roadway Capacity Used by Landfill Vehicles
Huffines Boulevard	3,800	2,309	556	231	6.1%	A	1.5%	3,571	1,554	357	9.4%	A	4.1%	4,482	1,950	448	11.8%	A	5.1%
State Highway 121 Business	5,600	31,511	358	3,151	56.3%	A	0.6%	37,011	1,278	3,701	66.1%	A	2.3%	46,543	1,690	4,654	83.1%	B	3.0%
Midway Road	3,800	2,038	198	204	5.4%	A	0.5%	2,655	544	266	7.0%	A	1.4%	3,382	719	338	8.9%	A	1.9%
Holfords Prairie Rd.	3,800	2,871	139	287	7.6%	A	0.4%	3,538	399	354	9.3%	A	1.1%	4,441	501	444	11.7%	A	1.3%
State Highway 121 (Sam Rayburn Tollway)	14,400	59,711	100	5,971	41.5%	A	0.1%	68,871	280	6,887	47.8%	B	0.2%	86,467	370	8,647	60.0%	B	0.3%
Railroad Street	3,800	2,759	10	276	7.3%	A	0.0%	3,191	28	319	8.4%	A	0.1%	4,008	37	401	10.5%	A	0.1%
Hebron Parkway	8,400	27,763	20	2,776	33.1%	A	0.0%	31,979	56	3,198	38.1%	A	0.1%	40,144	74	4,014	47.8%	A	0.1%

Location	Roadway Capacity (veh/hr)	2010 Traffic Conditions						Projected 2020 Traffic Conditions With Corporate Drive						Projected 2039 Traffic Conditions With Corporate Drive					
		Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	LOS [1]	% of Roadway Capacity Used by Landfill Vehicles	Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	D	% of Roadway Capacity Used by Landfill Vehicles	Total Volume (vpd)	Landfill Vehicles (vpd)	Peak Hour Volume (veh)	% of Roadway Capacity used	LOS [1]	% of Roadway Capacity Used by Landfill Vehicles
Huffines Boulevard	3,800	2,309	556	231	6.1%	A	1.5%	3,571	1554	357	9.4%	A	4.1%	4,482	1950	448	11.8%	A	5.1%
State Highway 121 Business	5,600	31,511	358	3,151	56.3%	A	0.6%	36,439	706	3,644	65.1%	A	1.3%	45,786	934	4,579	81.8%	B	1.7%
Midway Road	3,800	2,038	198	204	5.4%	A	0.5%	2,223	102	222	5.9%	A	0.3%	2,787	135	279	7.3%	A	0.4%
Holfords Prairie Rd.	3,800	2,871	139	287	7.6%	A	0.4%	3,211	72	321	8.5%	A	0.2%	4,030	90	403	10.6%	A	0.2%
State Highway 121 (Sam Rayburn Tollway)	14,400	59,711	100	5,971	41.5%	A	0.1%	68,871	280	6,887	47.8%	B	0.2%	86,467	370	8,647	60.0%	B	0.3%
Railroad Street	3,800	2,759	10	276	7.3%	A	0.0%	3,191	28	319	8.4%	A	0.1%	4,008	37	401	10.5%	A	0.1%
Hebron Parkway	8,400	27,763	20	2,776	33.1%	A	0.0%	31,979	56	3,198	38.1%	A	0.1%	40,144	74	4,014	47.8%	A	0.1%
Corporate Drive	8,400	--	--	--	--	--	--	11,535	796	1,154	13.7%	A	0.9%	13,920	997	1,392	16.6%	A	1.2%

Notes:

[1] Level of Service for State Highway 121 Business, Hebron Parkway, and Corporate Drive is determined using Speed-Flow-Density curves from from Reference 1, Chapter 21. Level of Service for Sam Rayburn Tollway is determined using Speed-Flow-Density curves from Reference 1, Chapter 22. Level of Service for Huffines Boulevard, Railroad Street, Midway Road, and Holfords Prairie Road is determined based on average travel speed from Reference 1, Chapter 15.

Table 2.3
Vehicular Turning Movements

Location	Time	Movements[1]											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Huffines Boulevard and State Highway 121 Business[2]	7AM - 11AM	--	--	264	193	--	--	--	--	244	--	--	--
	11AM - 2PM	--	--	199	110	--	--	--	--	221	--	--	--
	2PM - 6PM	--	--	170	158	--	--	--	--	228	--	--	--
	Total	--	11,524[4]	633	461	11,071[4]	--	--	--	693	--	--	--
Holfords Prairie Road North and State Highway 121 Business[3]	7AM - 11AM	--	--	232	56	--	--	364	--	28	--	--	--
	11AM - 2PM	--	--	170	47	--	--	226	--	22	--	--	--
	2PM - 6PM	--	--	308	79	--	--	383	--	24	--	--	--
	Total	--	13438[4]	710	182	8959[4]	--	973	--	74	--	--	--
Huffines Boulevard and Midway Road[2]	7AM - 11AM	--	--	--	126	--	3	--	258	191	55	352	--
	11AM - 2PM	--	--	--	105	--	5	--	248	190	30	286	--
	2PM - 6PM	--	--	--	79	--	6	--	173	218	41	330	--
	Total	--	--	--	310	--	14	--	679	599	126	968	--
Holfords Prairie Road North and Midway Road[3]	7AM - 11AM	162	98	--	--	175	306	--	--	--	102	--	37
	11AM - 2PM	156	57	--	--	132	130	--	--	--	97	--	34
	2PM - 6PM	194	73	--	--	262	237	--	--	--	243	--	44
	Total	512	228	--	--	569	673	--	--	--	442	--	115

Table 2.4
Vehicular Turning Movements - Adjusted Data[5]

Location	Time	Movements[1]												AADT[6]	
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Huffines Blvd.	Holfords Prairie Rd.
Huffines Boulevard and State Highway 121 Business[2]	24 Hours	--	14893[4]	818	596	14308[4]	--	--	--	896	--	--	--	2,309	--
Holfords Prairie Road North and State Highway 121 Business[3]	24 Hours	--	14,529[4]	918	235	13,960[4]	--	1,257	--	96	--	--	--	--	2,506
Huffines Boulevard and Midway Road[2]	24 Hours	--	--	--	401	--	18	--	878	774	163	1,251	--	--	--
Holfords Prairie Road North and Midway Road[3]	24 Hours	662	295	--	--	735	870	--	--	--	571	--	149	--	--

Notes:

[1] EB, NB, WB, and SB refer to eastbound, northbound, westbound, and southbound traffic, respectively. L, T, and R refer to left turning, through, and right turning movements, respectively.

[2] Traffic counts were collected manually by Weaver Boos Consultants on October 12, 2010.

[3] Traffic counts were collected manually by Weaver Boos Consultants on October 13, 2010.

[4] Through movements for SH 121B were estimated based on the TxDOT AADT volume provided for SH 121B.

[5] Actual vehicle counts were adjusted for the time of day in which the volumes were collected. TxDOT 24 hour volumes for SH 121B are divided into 15-minute volumes, and these 15-minute volumes were used to develop expansion factors to convert the 7AM to 6PM raw traffic volumes into 24-hour volumes.

[6] AADT estimates for Huffines Boulevard and Holfords Prairie Road were determined using the adjusted total turning movement volumes onto and off each road at its intersection with S.H. 121 Business. For Huffines Blvd., the AADT is the sum of the daily EBR, WBL, and NBR movement volumes. The AADT for Holfords Prairie Road is the sum of the EBR, WBL, NBL, and NBR movement volumes.

Table 2.5
Roadway Level of Service[1]

Road Type	LOS Determinant Factors	Level of Service Description
Urban Street	Average Travel Speed and Control Delay	A – Free-flow operation with travel speed about 90% of free-flow speed (FFS). Minimal control delay.
		B – Average speed about 70% of FFS and insignificant control delay.
		C – Average speed about 50% of FFS with queues or adversely coordinated signals.
		D – Average speed about 40% of FFS. Adverse signal progression or timing with high traffic volumes.
		E – Average speed about 33% of FFS. Significant control delay.
		F – Average speed about 25% to 33% of FFS. High control delay and congestion.
Urban Multi-Lane Highway	Density, Speed, and Volume to Capacity Ratio	A – Free-flow conditions.
		B – Same travel speed as LOS A with slightly increased restriction on maneuverability.
		C – Minor decrease in travel speed, increased restriction on maneuverability.
		D – Severe reduction in travel speed and maneuverability due to increased volume.
		E – Travel speeds at 70% to 90% of FFS. Roadway is at or near capacity.
		F – Vehicles arrive faster than are discharged from a segment. Travel speeds generally less than 30 mph. Queues and stoppages are frequent.
Freeway	Density	A – Free-flow conditions. Density range is 0-11 passenger cars per mile per lane (pc/mi/ln).
		B – Travel speed at FFS. Density range is ›11-18 pc/mi/ln.
		C – Travel speed near FFS. Noticeable reduction in maneuverability. Density range is ›18-26 pc/mi/ln.
		D – Decreased speed and maneuverability. Density range is ›26-35 pc/mi/ln.
		E – Operation at freeway capacity. Travel speed ›49mph. Density range is ›35-45 pc/mi/ln.
		F – Breakdown or bottleneck conditions. Density range is ›45 pc/mi/ln.

[1] Level of service descriptions are based on the methods and concepts in Reference 1, Chapters 9 and 15.

N

0 1000 2000
SCALE IN FEET

LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- CORPORATE DRIVE (FUTURE)

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

STATE OF TEXAS
CHARLES R. MARSH
105073
LICENSED
PROFESSIONAL ENGINEER
02-03-2011

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DATE: 02/2011
FILE: 1339-351-11
CAD: 2-1 1 MILE.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

PUBLIC ROADS WITHIN 1-MILE RADIUS
CAMELOT SANITARY LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2-1

N

0 250 500

SCALE IN FEET

LEGEND:

PROPOSED PERMIT BOUNDARY

CORPORATE DRIVE (FUTURE)

NOTE:

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105073
LICENSED PROFESSIONAL ENGINEER
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CAD: 2-2 2010 ACCESS RDS.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JPY

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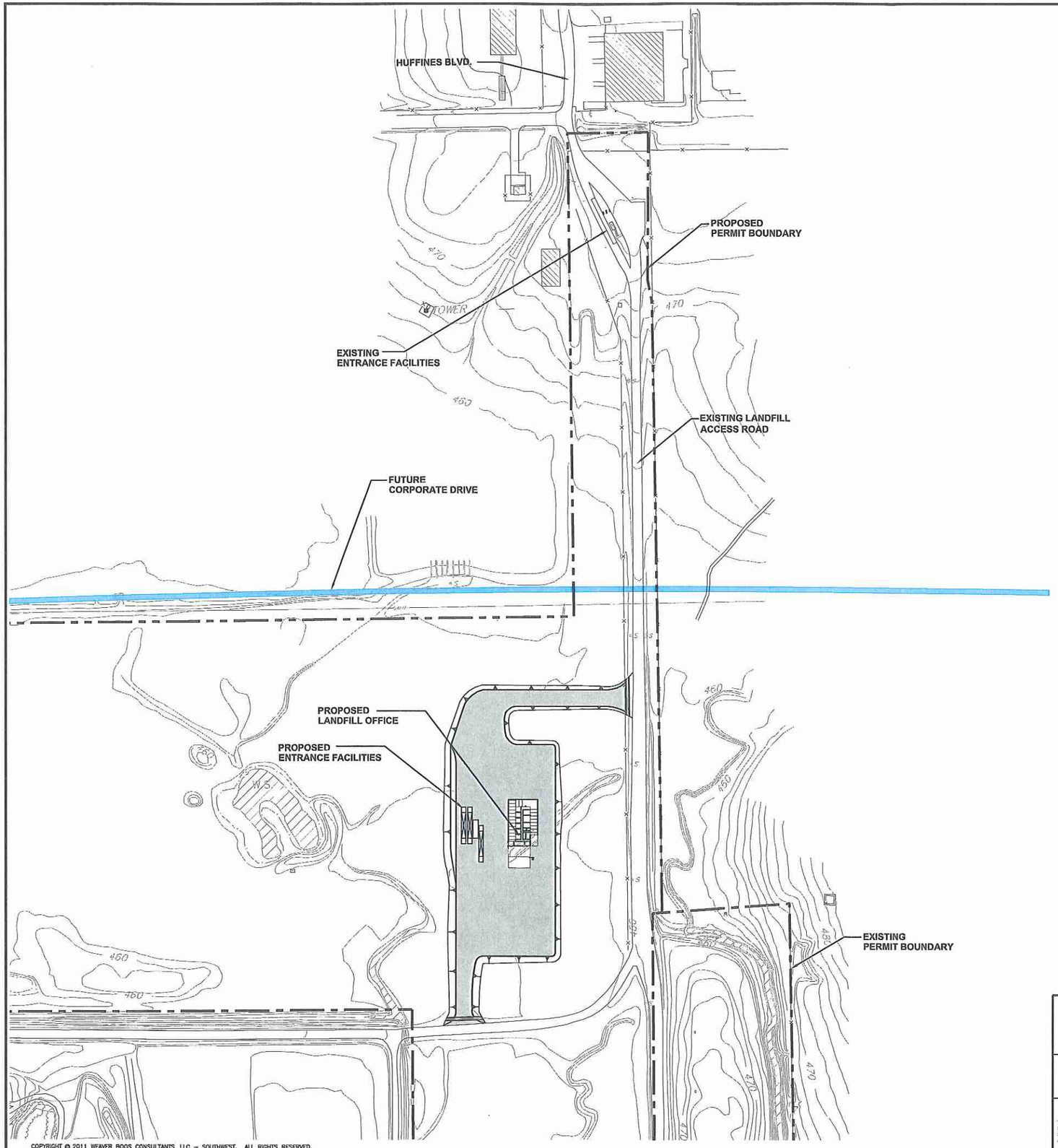
NO.	DATE	DESCRIPTION

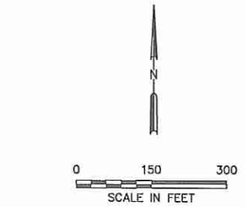
LANDFILL ACCESS ROADS IN 2010

CAMELOT SANITARY LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL · NAPERVILLE, IL · COLUMBUS, OH · DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN · SOUTH BEND, IN · SPRINGFIELD, IL · ST. LOUIS, MO

FIGURE 2-2





LEGEND:

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-10. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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EXISTING AND PROPOSED ENTRANCE FACILITIES

CAMELOT SANITARY LANDFILL
DENTON COUNTY, TEXAS

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GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2-3

N

0 1000 2000
SCALE IN FEET

LEGEND:

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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CHARLES R. MARSH
105073
LICENSED
PROFESSIONAL ENGINEER
2-3-2011

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DESIGN BY: RJS
REVIEWED BY: JPY

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DISTRIBUTION OF WASTE HAUL TRIPS-2010

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DENTON COUNTY, TEXAS

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ST. LOUIS, MO

FIGURE 2-4

N

0 1000 2000
SCALE IN FEET

LEGEND:

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
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CHARLES R. MARSH
105073
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PROFESSIONAL ENGINEER
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CAD: 2-5 2039 HAUL.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JPY

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CITY OF FARMERS BRANCH

REVISIONS

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DISTRIBUTION OF WASTE HAUL TRIPS–2039 WITHOUT CORPORATE DRIVE

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FORT WORTH, TX
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GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2-5

N

0 1000 2000
SCALE IN FEET

LEGEND:

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
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CHARLES R. MARSH
105073
LICENSED PROFESSIONAL ENGINEER
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DATE: 02/2011
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CAD: 2-6 2039 CORP.DWG

DRAWN BY: JDW
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

DISTRIBUTION OF WASTE HAUL TRIPS–2039 WITH CORPORATE DRIVE

CAMELOT SANITARY LANDFILL
DENTON COUNTY, TEXAS

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SOUTH BEND, IN
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ST. LOUIS, MO

FIGURE 2-6

3 INTERSECTION ANALYSIS

The LOS of a road or intersection is determined by the physical characteristics of the roadway (e.g., lane width and the presence of a median), traffic controls, traffic characteristics, and traffic volume (Ref. 1). Along an urban roadway or highway, signalized intersections have a large impact on the roadway and its LOS. Intersection operational capacities for design are typically determined for a peak 15-minute flow rate and then classified to an LOS ranging from "A" to "H," with "A" representing the free-flow conditions and "H" representing forced flow, as reflected in Table 3.1 (reproduced from Ref. 2).

Table 3.1
Intersection Level of Service

Level of Service	Intersection Capacity Utilization	Congestion Level	Vehicles Cleared 1st Signal cycle
A	< 55%	None	Always
B	55% - 64%	Very little	Almost always
C	64% - 73%	No major	Most always
D	73% - 82%	Normally none	Majority
E	82% - 92%	On verge of capacity	Many not
F	91% - 100%	Over Capacity	Residual queues
G	100% - 109%	20% over capacity	Residual queues
H	> 109%	Over 20% over capacity	Residual queues

To evaluate the impact of the proposed landfill expansion on existing intersections of access roads, an intersection capacity analysis was performed using the Synchro 7 computer program (Ref. 2). Synchro is a standard program used by traffic engineers to evaluate the capacity of an intersection. Synchro implements the methods of the *2000 Highway Capacity Manual*, Chapters 15, 16, and 17 (Ref. 2). The analysis addresses each of the intersections that connect the site entrance with SH 121 B: SH 121 B and Huffines Boulevard, Huffines Boulevard and Midway Road, Midway Road and Holfords Prairie Road, and SH 121 B and Holfords Prairie Road.

Geometric properties (discussed in Section 2.2) and movement volumes (discussed in Section 2.3) are input for each intersection for the existing (2010) traffic conditions, and the 2020 and 2039 traffic conditions. The peak 15-minute flow rate was calculated by dividing the peak hour volume by the default value of 0.92 listed in the *2000 Highway Capacity Manual* (Ref. 1). The results of the intersection capacity analysis are summarized in Table 3.2. Synchro 7 output files are included in Appendix C.

Table 3.2
Intersection Capacity Analysis

Location		2010 Traffic Conditions	2020 Traffic Conditions Without Corporate Drive	2020 Traffic Conditions With Corporate Drive	2039 Traffic Conditions Without Corporate Drive	2039 Traffic Conditions With Corporate Drive
Huffines Boulevard and State Highway 121 Business	AADT	31,511	37,011	36,439	46,543	45,786
	ICU	68.1%	78.8%	77.7%	97.4%	95.9%
	LOS	C	D	D	F	F
	Landfill Vehicles	457	1,278	706	1,690	934
	% Landfill Vehicles	1.5%	3.5%	1.9%	3.6%	2.0%
Holfords Prairie Road North and State Highway 121 Business	AADT	31,511	37,011	36,439	46,543	45,786
	ICU	78.5%	89.3%	88.1%	108.0%	106.5%
	LOS	D	E	E	G	G
	Landfill Vehicles	143	399	72	501	90
	% Landfill Vehicles	0.5%	1.1%	0.2%	1.1%	0.2%
Huffines Boulevard and Midway Road	AADT	2,309	3571	3571	4482	4482
	ICU	22.2%	27.1%	25.1%	31.5%	28.1%
	LOS	A	A	A	A	A
	Landfill Vehicles	556	1,554	758	1,950	953
	% Landfill Vehicles	24.1%	43.5%	21.2%	43.5%	21.3%
Holfords Prairie Road North and Midway Road	AADT	2,871	3538	3211	4441	4030
	ICU	38.1%	43.3%	31.3%	52.2%	33.8%
	LOS	A	A	A	A	A
	Landfill Vehicles	195	399	102	501	135
	% Landfill Vehicles	6.8%	11.3%	3.2%	11.3%	3.3%

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As shown in Table 3.2, two stop-controlled intersections (Huffines Boulevard and Midway Road; Holfords Prairie Road and Midway Road) provide excellent service in 2010, 2020, and 2039, having an LOS of A in all conditions. The SH 121 B and Huffines Boulevard intersection has an LOS of C for the existing conditions. However, the increase in traffic demand in 2020 and 2039, both with and without Corporate Drive, is near the design capacity of the intersection. For both 2039 conditions, the Intersection Capacity Utilization (ICU) for this intersection is over 95 percent, which corresponds to an LOS of F. It is important to note that the decrease in LOS and the increase in ICU between the years 2010 and 2039 can be attributed to the increase in non-landfill traffic. In this time period, the total traffic increases over 40 percent while the percentage of landfill vehicles using this intersection increases by a maximum of 2.1 percent.

Similarly, the SH 121 B and Holfords Prairie Road intersection currently operates at an LOS of D, indicating that the intersection is currently near its capacity. In 2020 and 2039, the ICU increases to over 88 and 108 percent and the LOS decreases to E in 2020 and G in 2039. Again, the drop in service level of this intersection is due to the overall growth in traffic demand, as the total traffic increases approximately 48 percent while the percentage of landfill vehicles increases only 0.6 percent. In fact, for both intersections (1 – Huffines Boulevard and SH 121 B, and 2 – Holfords Prairie Road North and SH 121 B), the landfill vehicles utilize only a small percentage of the total traffic at these intersections in all cases.

As shown in Table 3.2, it is expected that Corporate Drive, if constructed, will decrease the demand on these four intersections and increase the respective levels of service. In the 2020 and 2039 conditions with Corporate Drive, the ICU drops slightly for all intersections, but this increase is not enough to change the LOS.

At this time, there is no design available for the proposed intersection of Corporate Drive and Huffines Boulevard. However, since the landfill vehicles are already included in existing traffic counts, it is estimated that this future intersection, if Corporate Drive is constructed, will have adequate capacity throughout the life of the landfill.

4 COMPLIANCE WITH HIGHWAY BEAUTIFICATION ACT

The Texas Transportation Code (TTC) Chapter 391 outlines compliance conditions and regulations to ensure that areas adjacent to interstate and primary transportation systems in Texas comply with the Highway Beautification Act (HBA), 23 U.S.C. §131.136, and 319. In the context of the HBA, landfills are classified as junk yards, and no junkyard may be established within 1,000 feet of the right of way of a highway in the interstate or primary systems. The rights of way of State Highway 121 Business and State Highway 121 are not within 1,000 feet of the permit boundary of the Camelot Landfill; therefore, the requirements set forth in the HBA would not apply to the Camelot Landfill.

However, the design and operating requirements listed in the proposed Texas Commission on Environmental Quality (TCEQ) permit application were developed to meet the intent of the screening standards for landfills set forth in the TxDOT Right of Way Manual (Volume 7 – Beautification, Chapter 10 – Control of Junkyards). According to the TxDOT Right of Way Manual, landfills will be considered appropriately screened by:

- Fencing the landfill area;
- Confining the refuse to the smallest practical area;
- Reducing the refuse to the smallest practical volume; and
- Covering the refuse with a layer of earth at the conclusion of each day's operation or at more frequent intervals if necessary.

A summary of each of these requirements is listed in Table 4.1.

Table 4.1
Camelot Landfill Expansion
Landfill Screening Requirements

TxDOT Screening Requirements	Existing and Proposed Site Design or Permit Operating Condition
Fencing the Landfill Area	The Camelot Landfill is currently fenced along the eastern and western boundaries. The Elm Fork and heavy vegetation prevent access along the southern and northern boundaries, respectively. Access into the site is restricted to the entrance road in the northeast corner.
Confining the Refuse to the Smallest Practical Area and Volume	Solid waste at the Camelot Landfill is disposed of at the working face of the landfill. The working face is the only portion of the disposal area containing exposed solid waste. The size of the working face is required to be confined to as small of an area as practical. Specific working face size limitations are included in the existing and proposed Site Operating Plan.
Covering the Refuse with a Layer of Earth at the Conclusion of Each Day's Operation or at More Frequent Intervals if Necessary	The Site Operating Plan mandates that at the end of each operating day, exposed solid waste will be covered by at least six inches of earthen cover material or by TCEQ-approved alternate daily cover material. Additionally, areas that have received daily cover and become inactive for at least 180 days will receive an additional 6 inches of well-compacted cover material. This intermediate cover will be graded and seeded such that sustainable vegetation is established on these inactive areas. The erosion control plan for the Camelot Landfill outlines inspection and maintenance requirements designed to maintain the vegetation and integrity of the intermediate cover.

5 SUMMARY

In summary, the existing roadways, including the intersections, provide adequate access to the landfill. The major conclusions of this report are summarized below.

- The landfill has been in operation for 30 years and the traffic patterns associated with the waste collection vehicles that travel to the site are well established.
- The site is located near several major transportation corridors including IH-35, SH 121 B, and Sam Rayburn Tollway.
- Direct access to the site is through an industrial area that supports several commercial and industrial uses.
- The LOS for each access road is "B" or higher and the percentage of the roadway capacity used by landfill vehicles is less than 6 percent on Huffines Boulevard and less than 2 percent on all other access roads.
- Throughout the life of the expanded landfill, the intersections at Midway Road and (1) Huffines Boulevard and (2) Holfords Prairie Road North maintain an LOS of A, even if Corporate Drive is not constructed.
- Due to the growth in the area, including the industrial and commercial uses of the area north of the landfill, the SH 121 B intersections LOS does decrease during the life of the landfill. However, the landfill traffic only comprises a small percentage of the traffic at these intersections (less than 4 percent in all cases).
- The construction of Corporate Drive will improve access to the site; however, the existing access roads will continue to provide adequate access to the site even if Corporate Drive is not constructed.

6 REFERENCES

1. Transportation Research Board, National Research Council. Highway Capacity Manual. Washington, D.C.: National Academy of Sciences, 2000.

2. Husch, David and Albeck, John. Synchro Studio 7 User Guide. Sugarland, TX: Trafficware, Ltd., 2006.

APPENDIX A

PROJECT SUMMARY AND SITE LOCATION MAPS

Project Summary

Camelot Landfill Expansion
Denton County, Texas

Introduction

The City of Farmers Branch is in the process of developing a major permit amendment application to authorize future expansion of the Camelot Landfill. This landfill expansion project will provide long-term disposal capacity for solid waste that is generated in the area. The permit application will be submitted to the Texas Commission on Environmental Quality (TCEQ). The application will undergo a detailed review by the TCEQ before the operating permit for this facility is issued.

The objective of this summary is to provide an overview of the proposed landfill expansion. The following subsections detail information regarding general site information and a summary of the proposed site design.

Site Information

The following drawings are attached to this summary.

- Figure 1 – Site Location Map. This drawing shows the site location on a standard TxDOT county highway map.
- Figure 2 – General Topographic Map. This drawing shows the currently permitted and proposed expanded landfill permit boundary on a USGS map.
- Figure 3 – Aerial Photograph. This figure details the currently permitted and proposed expanded landfill permit area on an aerial photograph.
- Figure 4 – Existing Site Plan. This plan highlights the currently permitted and proposed expanded landfill permit area on a detailed site topographic map.
- Figure 5 – Existing and Proposed Landfill Completion Plan. This plan provides a comparison between the currently permitted landfill and the proposed changes to the landfill completion plan.

Site History

The site was originally permitted by the Texas Department of Health (TDH) in 1979. The original permit number was Permit No. 1312. The permit was amended to expand the permit boundary to approximately 351 acres (TCEQ Permit No. MSW 1312A). The site was upgraded to Subtitle D standards in 1996.

The Camelot Landfill is located in southeastern Denton County and is easily accessed from area population centers via State Highway 121 Business. The service area includes Denton, Dallas, Collin, and Tarrant counties. The site entrance facilities are located at 580 Huffines Boulevard, approximately 1,800 feet south of State Highway 121 Business.

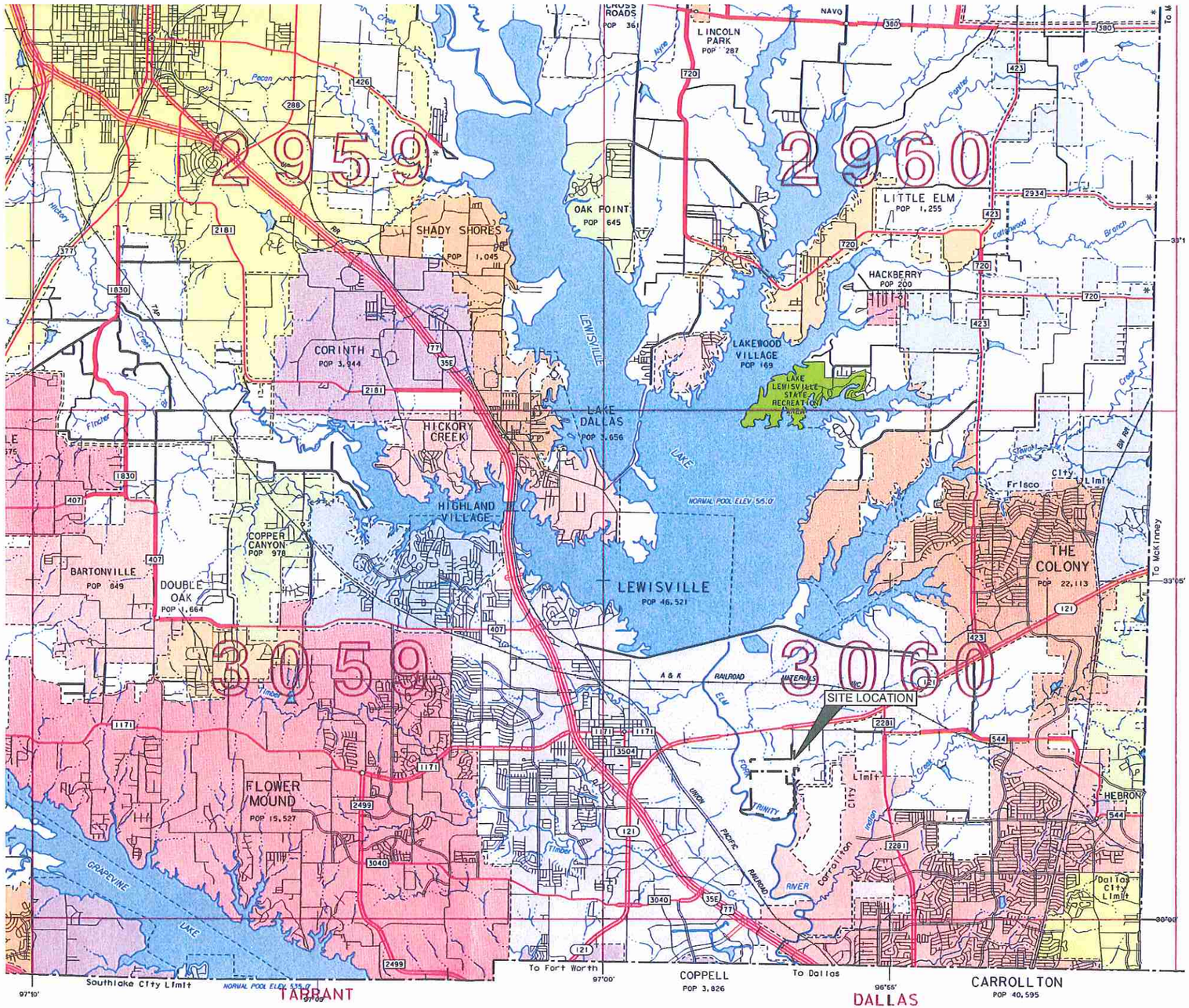
Design Summary

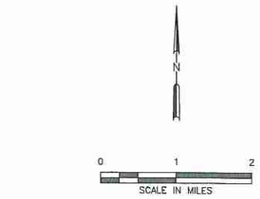
The following information presents a summary of the design and operations for the proposed Camelot Landfill expansion.

- The Camelot Landfill is an existing municipal solid waste landfill facility (TCEQ Permit No. MSW 1312A). The existing landfill currently serves residences and businesses in Denton, Dallas, Collin, and Tarrant counties.
- With this expansion, the existing 350.77-acre permit boundary will be increased by approximately 118.85 acres to 469.62 acres. The authorized limits of waste will expand by 38.5 acres from approximately 198.3 acres to approximately 236.8 acres.
- Accepted wastes will remain consistent with the current municipal solid waste landfill permit. The facility will accept municipal solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities; municipal solid waste resulting from construction and demolition activities; Class 2 and Class 3 nonhazardous industrial solid waste; and certain special wastes as permitted by the TCEQ.
- Access to the site will be provided via the existing site access road at Huffines Boulevard. Based on travel patterns of existing landfill traffic, vehicles bound for the landfill will access the site using State Highway 121 Business and Huffines Boulevard.
- A liner and final cover system that meets all regulatory requirements will be used for constructing the solid waste containment system. The design objective of the containment system (final cover, liner, and leachate management system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. Leachate that is removed from the landfill is either recirculated or transported to an offsite, permitted treatment facility. The construction procedures of the liner and final cover systems follow strict TCEQ approved quality control and quality assurance procedures, which are verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the TCEQ before solid waste is placed in the landfill.
- To control landfill gas emissions and minimize the potential for subsurface migration, a landfill gas (LFG) collection and control system (GCCS) has been installed at the site. The collection system currently consists of vertical extraction wells and collection piping throughout the waste mass. The collected LFG is conveyed to an LFG-to-energy (LFGTE) facility, which is owned by a third party

energy developer. Any excess LFG not used by the LFGTE facility will be directed to the existing flare for combustion. The existing system will be expanded to incorporate the currently permitted but undeveloped waste fill footprint and the expansion area. Routine monitoring of the GCCS is performed to verify the efficiency of the GCCS to collect and control generated LFG.

- To verify that the highest level of environmental protection is maintained, the following landfill monitoring systems are provided:
  - Groundwater Monitoring System. The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened to monitor groundwater quality. The water samples are tested at an offsite laboratory.
  - Gas Monitoring System. The purpose of the landfill gas monitoring system is to verify that landfill gas does not migrate off site. Landfill gas probes are placed along the perimeter of the permit boundary.
  - These monitoring systems are sampled and tested periodically. The results are filed with the TCEQ and are public record.
- Site Operations. The site will be operated by properly trained personnel. A detailed site operating plan will be included in the permit amendment application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with TCEQ regulations. The Camelot Landfill will continue to be inspected by the TCEQ on a regular basis to ensure the site is in compliance with state regulations.

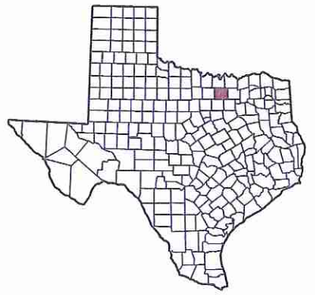




LEGEND

EXISTING PERMIT BOUNDARY

PROPOSED PERMIT BOUNDARY



KEY TO COUNTIES

GENERAL HIGHWAY MAP

DENTON COUNTY

TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

1990

1990 CENSUS FIGURES

HIGHWAYS REVISED TO

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

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DATE: 12/2010 | DRAWN BY: VRS
FILE: 1339-351-11 | DESIGN BY: RJS
CAD: 1-SITE LOC MAP.DWG | REVIEWED BY: JPY

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

SITE LOCATION MAP

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants

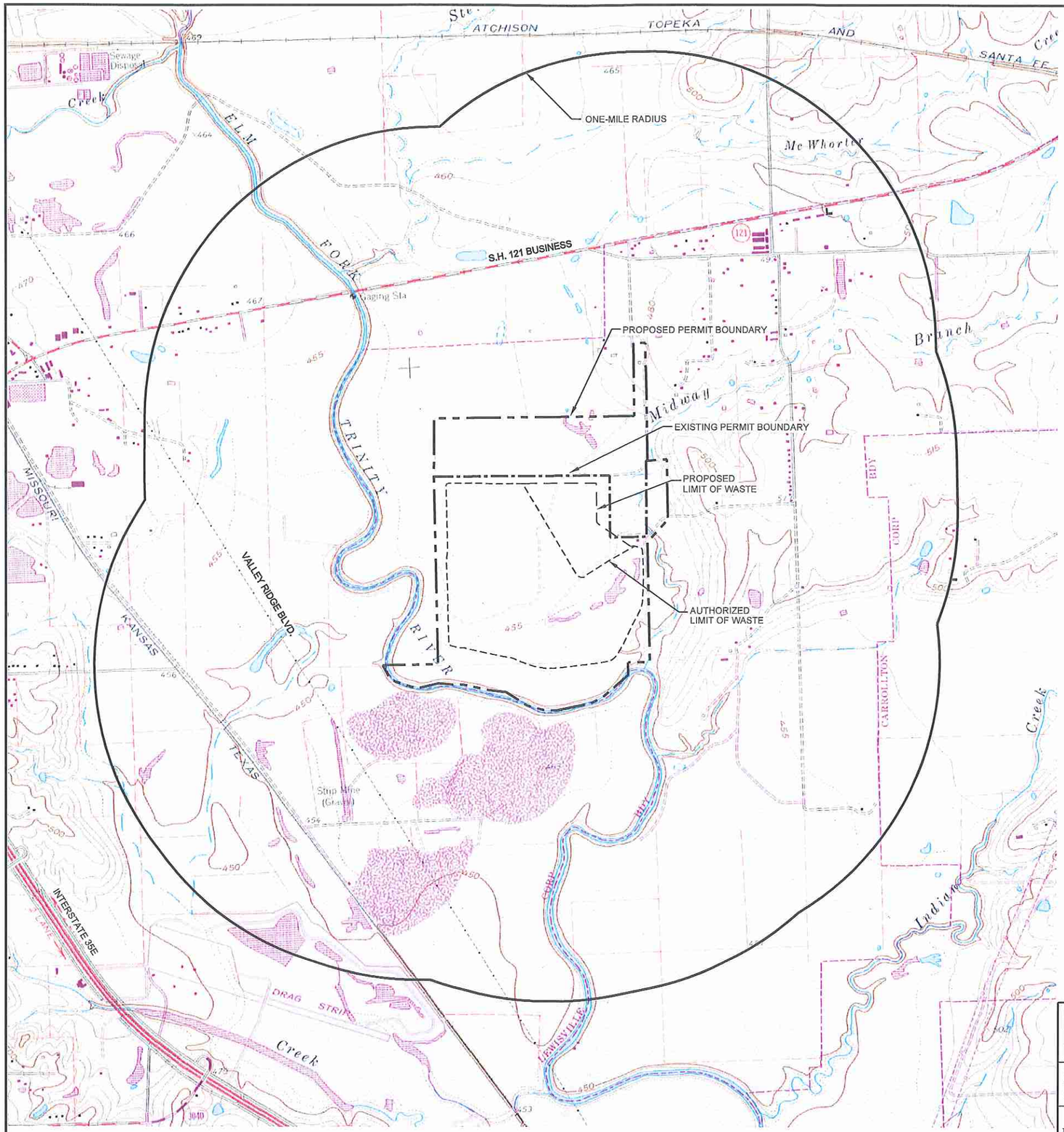
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 1



0 1000 2000
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

TEXAS

LEWISVILLE EAST, TEX.
N3352.5–W9652.5/7.5
1960
PHOTOREVISED 1981
DMA 4053 I NW–SERIES 7262

CARROLLTON, TEX.
NW/4 CARROLLTON 15' QUADRANGLE
N3252.5–W9652.5/7.5
1959
DMA 4049 IV NW–SERIES 9883

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1957. Field checked 1960

Polyconic projection. 10,000-foot grid ticks based on Texas coordinate system, north central zone. 1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 10 meters south and 27 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation to 532 feet

NOTES:

1. SITE LOCATION BASE MAP ADAPTED FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS ABOVE.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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FILE: 1339-351-11
CAD: 2-GEN. TOPO. MAP.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

GENERAL TOPOGRAPHIC MAP

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DENTON COUNTY, TEXAS

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SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 2

LEGEND:

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH PROVIDED BY METROPOLITAN AERIAL SURVEYS, FROM AERIAL PHOTOGRAPHY FLOWN ON AUGUST 28, 2010.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

I/IID-35

0:\1339\351\EXPANSION 2009\COORDINATION LETTER\3-AERIAL.dwg, 1/28/2011 12:31:54 PM, rsellers

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DATE: 12/2010
FILE: 1339-351-11
CAD: 3-AERIAL.DWG

DRAWN BY: VRS
DESIGN BY: RJS
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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

AERIAL PHOTOGRAPHY

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DENTON COUNTY, TEXAS

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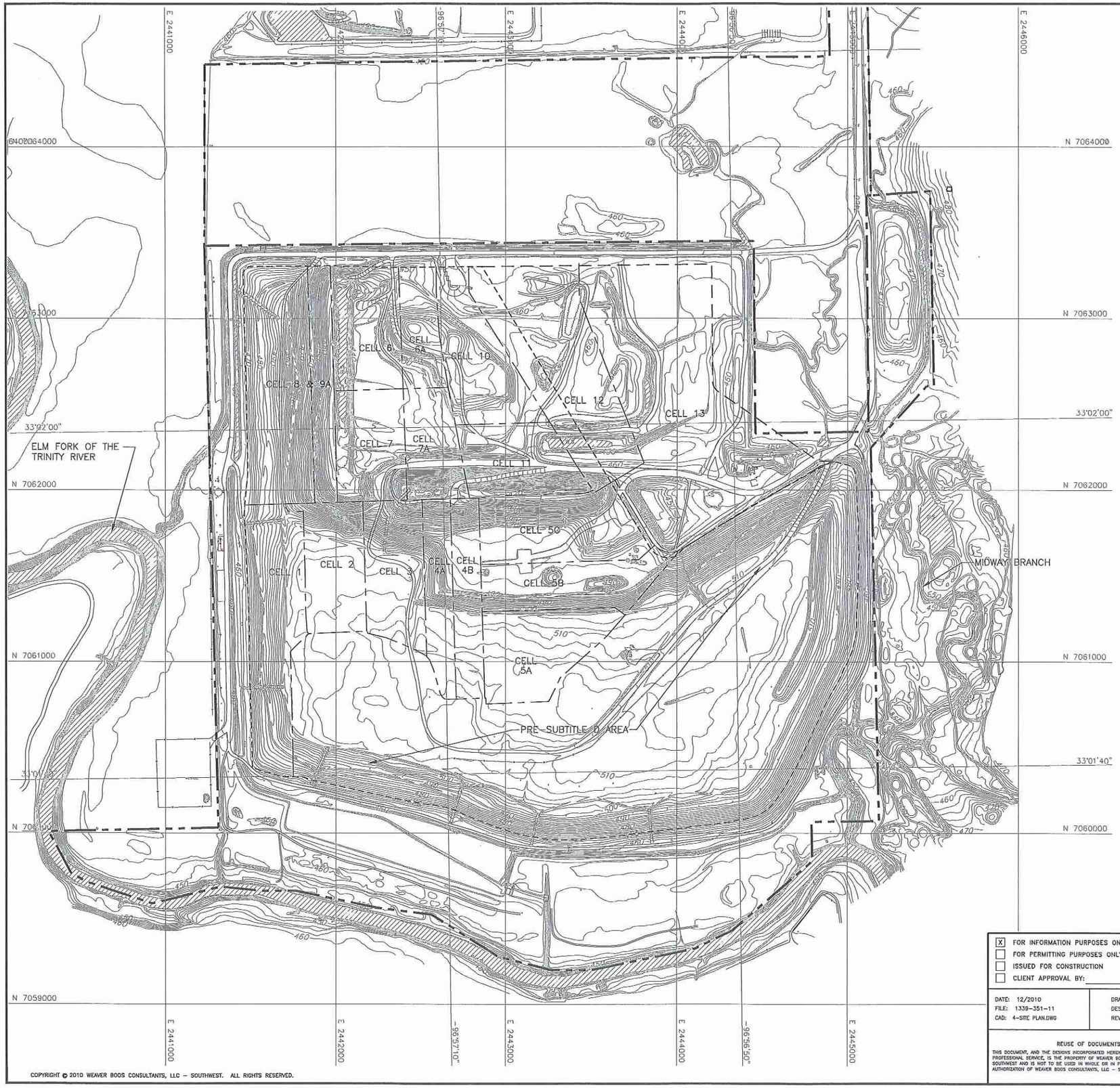
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 3



0 300 600
SCALE IN FEET

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- N 7063000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- SECTOR BOUNDARY

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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DATE: 12/2010
FILE: 1339-351-11
CAD: 4-SITE PLAN.DWG

DRAWN BY: VRS
DESIGN BY: RJS
REVIEWED BY: JPY

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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

SITE PLAN

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DENTON COUNTY, TEXAS

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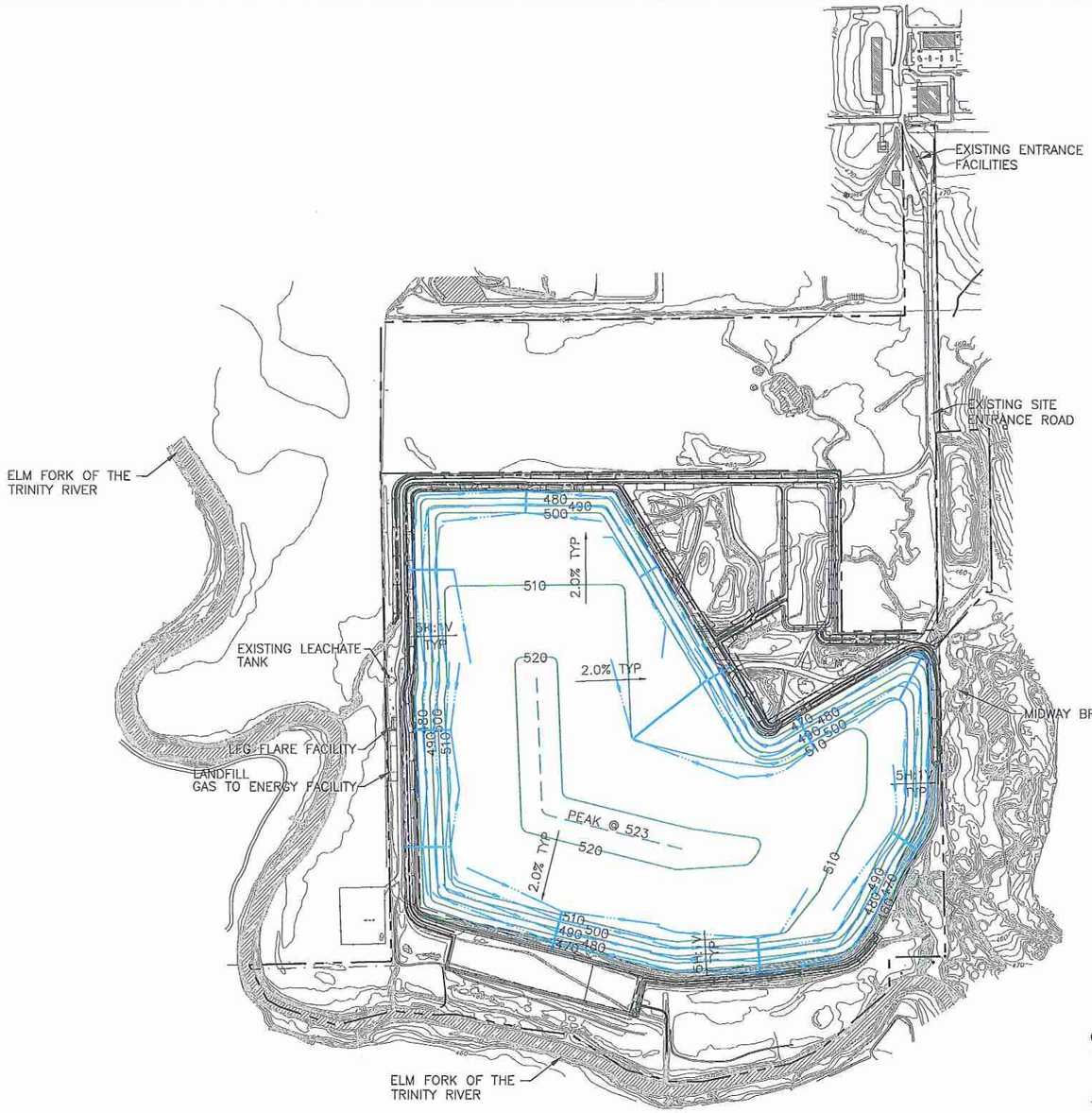
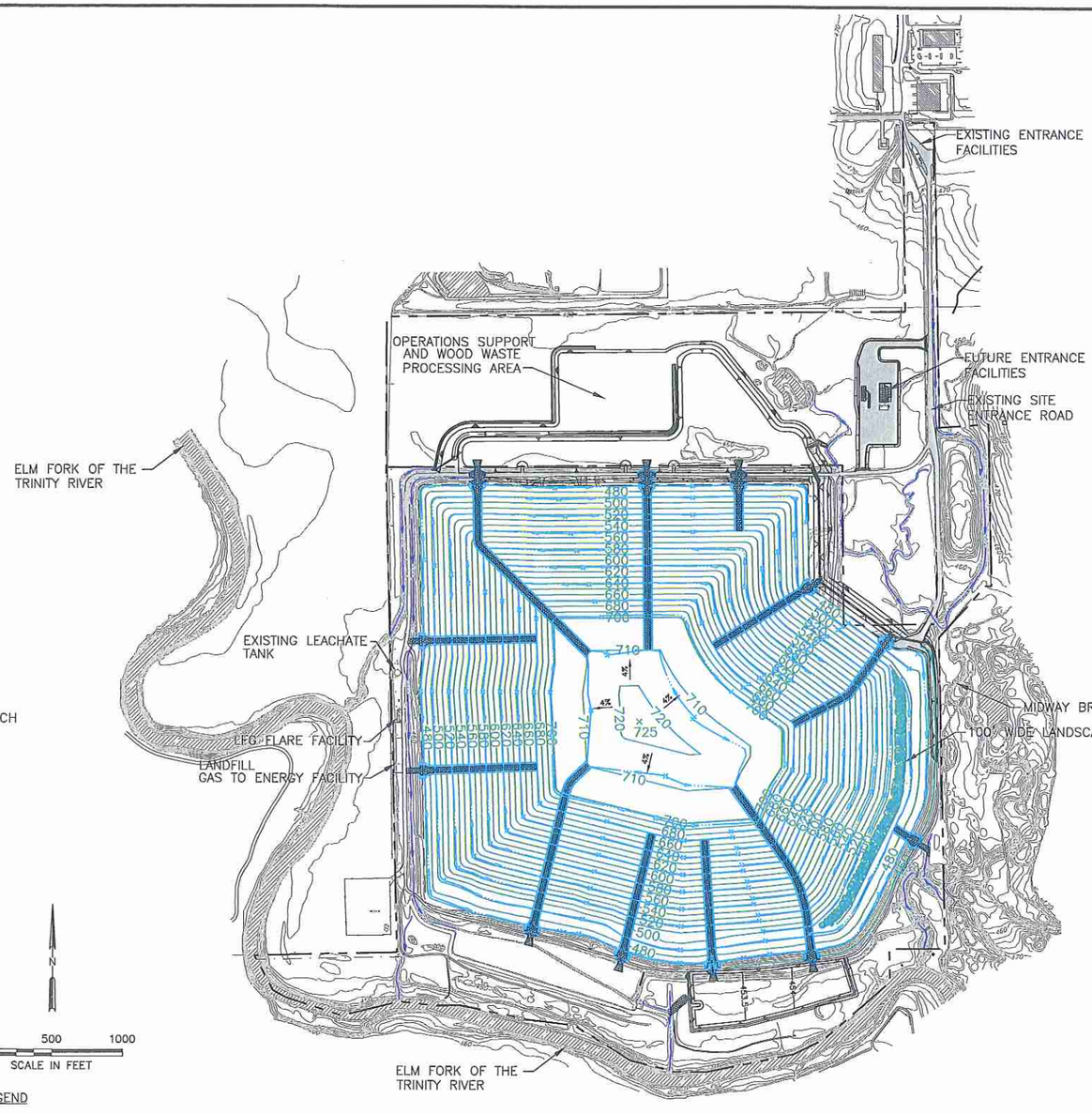
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 4



PERMITTED LANDFILL COMPLETION PLAN



PROPOSED LANDFILL COMPLETION PLAN

N

0 500 1000
SCALE IN FEET

LEGEND

- PROPOSED PERMIT BOUNDARY
- EXISTING PERMIT BOUNDARY
- PROPOSED LIMIT OF WASTE
- AUTHORIZED LIMIT OF WASTE
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN DECEMBER 2010.

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DATE: 12/2010
FILE: 1339-351-11
CAD: 5-COMPARISON.DWG
DRAWN BY: JDW
DESIGN BY: MDM
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CITY OF FARMERS BRANCH

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EXISTING AND PROPOSED LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
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DENVER, CO
FORT WORTH, TX
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GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE 5

APPENDIX B

ACCESS ROAD AND INTERSECTION PHOTOGRAPHS

EASTBOUND S.H. 121B AT HUFFINES BOULEVARD INTERSECTION

WESTBOUND S.H. 121B AT HUFFINES BOULEVARD INTERSECTION

NORTHBOUND HUFFINES BOULEVARD AT S.H. 121B INTERSECTION

SOUTHBOUND HUFFINES BOULEVARD AT S.H. 121B INTERSECTION

SOUTHBOUND HUFFINES BOULEVARD AT MIDWAY ROAD INTERSECTION

LANDFILL ENTRANCE FROM HUFFINES BOULEVARD

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DATE: 02/2011
FILE: 1339-351-11
CAD: B-1-PHOTOS.DWG

DRAWN BY: SRF
DESIGN BY: CRM
REVIEWED BY: JPY

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CITY OF FARMERS BRANCH

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LANDFILL ACCESS ROAD PHOTOGRAPHS

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FIGURE B-1

EASTBOUND MIDWAY ROAD AT HOLFORDS
PRAIRIE ROAD INTERSECTION

WESTBOUND MIDWAY ROAD AT HOLFORDS
PRAIRIE ROAD INTERSECTION

SOUTHBOUND HOLFORDS PRAIRIE ROAD AT
MIDWAY ROAD INTERSECTION

I/IID-40

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DATE: 02/2011 FILE: 1339-351-11 CAD: B-2-PHOTOS.DWG DRAWN BY: SRF DESIGN BY: CRM REVIEWED BY: JPY	REVISIONS NO. / DATE / DESCRIPTION	Weaver Boos Consultants TBPE REGISTRATION NO. F-3727
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NORTHBOUND HOLFORDS PRAIRIE ROAD AT
S.H. 121B INTERSECTION

SOUTHBOUND HOLFORDS PRAIRIE ROAD AT
S.H. 121B INTERSECTION

EASTBOUND S.H. 121B AT HOLFORDS PRAIRIE ROAD INTERSECTION

WESTBOUND S.H. 121B AT HOLFORDS PRAIRIE ROAD INTERSECTION

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DATE: 02/2011
FILE: 1339-351-11
CAD: B-3 PHOTOS.DWG

DRAWN BY: SRF
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LANDFILL ACCESS ROAD PHOTOGRAPHS

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SOUTH BEND, IN
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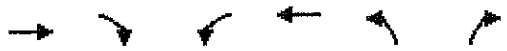
ST. LOUIS, MO

FIGURE B-3

APPENDIX C

SYNCHRO 7 OUTPUT FILES



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Volume (vph)	1489	82	60	1431	0	90
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1400	1400	1400	1400	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	1489	82	60	1431	0	90
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	2666	1190	1330	2666	0	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	67.0	8.3	5.4	64.4		6.7
Adj Reference Time (s)	71.0	12.3	9.4	68.4		10.7
Permitted Option						
Adj Saturation A (vph)	1333		89	1333	0	
Reference Time A (s)	67.0		81.2	64.4	0.0	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	67.0			81.2		
Adj Reference Time (s)	71.0			85.2		
Split Option						
Ref Time Combined (s)	67.0		5.4	64.4	0.0	
Ref Time Seperate (s)	67.0		5.4	64.4	0.0	
Reference Time (s)	67.0		64.4	64.4	0.0	
Adj Reference Time (s)	71.0		68.4	68.4	0.0	

Summary	EB WB	NB	Combined
Protected Option (s)	80.4	NA	
Permitted Option (s)	85.2	Err	
Split Option (s)	139.5	0.0	
Minimum (s)	80.4	0.0	80.4

Right Turns	EBR	NBR
Adj Reference Time (s)	12.3	10.7
Cross Thru Ref Time (s)	0.0	71.0
Oncoming Left Ref Time (s)	9.4	0.0
Combined (s)	21.7	81.7

Intersection Summary			
Intersection Capacity Utilization	68.1%	ICU Level of Service	C

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	2	88	77	16	125
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	40	2	165	0	0	141
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95
Turning Factor (vph)	0.95	0.85	0.93	0.85	0.95	0.99
Saturated Flow (vph)	1805	1615	3364	0	0	3597
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		No			No
Reference Time (s)		0.1		0.0		
Adj Reference Time (s)		8.0		0.0		
Permitted Option						
Adj Saturation A (vph)	120		1682		0	241
Reference Time A (s)	39.9		5.9		0.0	19.2
Adj Saturation B (vph	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			5.9			19.2
Adj Reference Time (s)			9.9			23.2
Split Option						
Ref Time Combined (s)	2.7		5.9		0.0	4.7
Ref Time Seperate (s)	2.7		3.1		1.1	4.1
Reference Time (s)	2.7		5.9		4.7	4.7
Adj Reference Time (s)	8.0		9.9		8.7	8.7

Summary	WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	Err	23.2	
Split Option (s)	8.0	18.6	
Minimum (s)	8.0	18.6	26.6

Right Turns	WBR
Adj Reference Time (s)	8.0
Cross Thru Ref Time (s)	9.9
Oncoming Left Ref Time (s)	0.0
Combined (s)	17.9

Intersection Summary			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

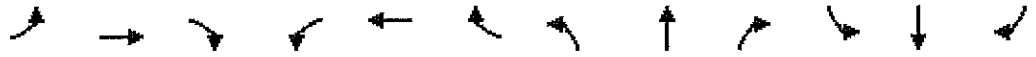
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1453	92	24	1396	16	126	7	10	10	7	16
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1400	1400	1400	1400	1400	1400	1900	1900	1900	1900	1900	1900
Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	10	1453	92	24	1396	16	0	133	10	0	17	16
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1330	2666	1190	1330	2666	1190	0	1810	1615	0	1844	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	0.9	65.4	9.3	2.2	62.8	1.6			0.7			1.2
Adj Reference Time (s)	10.5	71.9	15.8	10.5	69.3	10.5			9.5			9.5
Permitted Option												
Adj Saturation A (vph)	89	1333		89	1333		0	125		0	184	
Reference Time A (s)	13.5	65.4		32.5	62.8		0.0	127.7		0.0	11.1	
Adj Saturation B (vph	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		16.4	16.8		8.7	9.1	
Reference Time (s)		65.4			62.8			16.8			9.1	
Adj Reference Time (s)		71.9			69.3			22.3			14.6	
Split Option												
Ref Time Combined (s)	0.9	65.4		2.2	62.8		0.0	8.8		0.0	1.1	
Ref Time Seperate (s)	0.9	65.4		2.2	62.8		8.4	0.4		0.7	0.4	
Reference Time (s)	65.4	65.4		62.8	62.8		8.8	8.8		1.1	1.1	
Adj Reference Time (s)	71.9	71.9		69.3	69.3		14.3	14.3		9.5	9.5	

Summary	EB WB	NB SB	Combined
Protected Option (s)	82.4	NA	
Permitted Option (s)	71.9	22.3	
Split Option (s)	141.3	23.8	
Minimum (s)	71.9	22.3	94.2

Right Turns	EBR	WBR	NBR	SBR
Adj Reference Time (s)	15.8	10.5	9.5	9.5
Cross Thru Ref Time (s)	9.5	14.3	71.9	69.3
Oncoming Left Ref Time (s)	10.5	10.5	9.5	14.3
Combined (s)	35.8	35.3	90.9	93.2

Intersection Summary			
Intersection Capacity Utilization	78.5%	ICU Level of Service	D

Reference Times and Phasing Options do not represent an optimized timing plan.



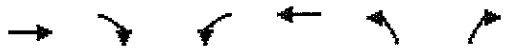
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	66	30	15	84	74	87	5	62	168	23	34	15
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	0	111	0	0	245	0	0	235	0	0	72	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.93	0.85	0.95	0.89	0.85	0.95	0.95	0.85
Saturated Flow (vph)	0	1806	0	0	1768	0	0	1694	0	0	1811	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			No			No	
Reference Time (s)			0.0			0.0			0.0			0.0
Adj Reference Time (s)			0.0			0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	0	1056		0	1678		0	1678		0	428	
Reference Time A (s)	0.0	12.6		0.0	17.5		0.0	16.8		0.0	20.2	
Adj Saturation B (vph	NA	NA		0	0		0	0		NA	NA	
Reference Time B (s)	NA	NA		13.6	24.6		8.3	24.6		NA	NA	
Reference Time (s)		12.6			17.5			16.8			20.2	
Adj Reference Time (s)		16.6			21.5			20.8			24.2	
Split Option												
Ref Time Combined (s)	0.0	7.4		0.0	16.6		0.0	16.6		0.0	4.8	
Ref Time Seperate (s)	4.4	2.0		5.6	5.1		0.3	4.4		1.5	2.3	
Reference Time (s)	7.4	7.4		16.6	16.6		16.6	16.6		4.8	4.8	
Adj Reference Time (s)	11.4	11.4		20.6	20.6		20.6	20.6		8.8	8.8	

Summary	EB WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	21.5	24.2	
Split Option (s)	32.0	29.4	
Minimum (s)	21.5	24.2	45.7

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	38.1%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Volume (vph)	1749	96	70	1681	0	105
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1400	1400	1400	1400	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	1749	96	70	1681	0	105
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	2666	1190	1330	2666	0	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	78.7	9.7	6.3	75.7		7.8
Adj Reference Time (s)	82.7	13.7	10.3	79.7		11.8
Permitted Option						
Adj Saturation A (vph)	1333		89	1333	0	
Reference Time A (s)	78.7		94.7	75.7	0.0	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	78.7			94.7		
Adj Reference Time (s)	82.7			98.7		
Split Option						
Ref Time Combined (s)	78.7		6.3	75.7	0.0	
Ref Time Seperate (s)	78.7		6.3	75.7	0.0	
Reference Time (s)	78.7		75.7	75.7	0.0	
Adj Reference Time (s)	82.7		79.7	79.7	0.0	

Summary	EB WB	NB	Combined
Protected Option (s)	93.1	NA	
Permitted Option (s)	98.7	Err	
Split Option (s)	162.4	0.0	
Minimum (s)	93.1	0.0	93.1

Right Turns	EBR	NBR
Adj Reference Time (s)	13.7	11.8
Cross Thru Ref Time (s)	0.0	82.7
Oncoming Left Ref Time (s)	10.3	0.0
Combined (s)	24.0	94.5

Intersection Summary			
Intersection Capacity Utilization	78.8%	ICU Level of Service	D

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	62	3	136	120	25	194
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	62	3	256	0	0	219
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95
Turning Factor (vph)	0.95	0.85	0.93	0.85	0.95	0.99
Saturated Flow (vph)	1805	1615	3363	0	0	3597
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		No			No
Reference Time (s)		0.2		0.0		
Adj Reference Time (s)		8.0		0.0		
Permitted Option						
Adj Saturation A (vph)	120		1682		0	239
Reference Time A (s)	61.8		9.1		0.0	29.9
Adj Saturation B (vph	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			9.1			29.9
Adj Reference Time (s)			13.1			33.9
Split Option						
Ref Time Combined (s)	4.1		9.1		0.0	7.3
Ref Time Seperate (s)	4.1		4.9		1.7	6.4
Reference Time (s)	4.1		9.1		7.3	7.3
Adj Reference Time (s)	8.1		13.1		11.3	11.3

Summary	WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	Err	33.9	
Split Option (s)	8.1	24.4	
Minimum (s)	8.1	24.4	32.6

Right Turns	WBR
Adj Reference Time (s)	8.0
Cross Thru Ref Time (s)	13.1
Oncoming Left Ref Time (s)	0.0
Combined (s)	21.1

Intersection Summary			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	1707	108	28	1640	18	148	8	11	12	8	18
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1400	1400	1400	1400	1400	1400	1900	1900	1900	1900	1900	1900
Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	12	1707	108	28	1640	18	0	156	11	0	20	18
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1330	2666	1190	1330	2666	1190	0	1810	1615	0	1843	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	1.1	76.8	10.9	2.5	73.8	1.8			0.8			1.3
Adj Reference Time (s)	10.5	83.3	17.4	10.5	80.3	10.5			9.5			9.5
Permitted Option												
Adj Saturation A (vph)	89	1333		89	1333		0	125		0	181	
Reference Time A (s)	16.2	76.8		37.9	73.8		0.0	149.9		0.0	13.3	
Adj Saturation B (vph	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		17.8	18.3		8.8	9.3	
Reference Time (s)		76.8			73.8			18.3			9.3	
Adj Reference Time (s)		83.3			80.3			23.8			14.8	
Split Option												
Ref Time Combined (s)	1.1	76.8		2.5	73.8		0.0	10.3		0.0	1.3	
Ref Time Seperate (s)	1.1	76.8		2.5	73.8		9.8	0.5		0.8	0.5	
Reference Time (s)	76.8	76.8		73.8	73.8		10.3	10.3		1.3	1.3	
Adj Reference Time (s)	83.3	83.3		80.3	80.3		15.8	15.8		9.5	9.5	

Summary	EB WB	NB SB	Combined
Protected Option (s)	93.8	NA	
Permitted Option (s)	83.3	23.8	
Split Option (s)	163.7	25.3	
Minimum (s)	83.3	23.8	107.2

Right Turns	EBR	WBR	NBR	SBR
Adj Reference Time (s)	17.4	10.5	9.5	9.5
Cross Thru Ref Time (s)	9.5	15.8	83.3	80.3
Oncoming Left Ref Time (s)	10.5	10.5	9.5	15.8
Combined (s)	37.4	36.8	102.3	105.7

Intersection Summary			
Intersection Capacity Utilization	89.3%	ICU Level of Service	E

Reference Times and Phasing Options do not represent an optimized timing plan.

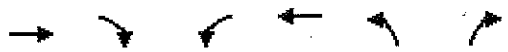
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕			↕	
Volume (vph)	87	39	20	110	96	114	6	81	219	30	45	20
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	0	146	0	0	320	0	0	306	0	0	95	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.93	0.85	0.95	0.89	0.85	0.95	0.95	0.85
Saturated Flow (vph)	0	1806	0	0	1768	0	0	3389	0	0	1811	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			No			No	
Reference Time (s)			0.0			0.0			0.0			0.0
Adj Reference Time (s)			0.0			0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	0	1056		0	1679		0	3358		0	308	
Reference Time A (s)	0.0	16.6		0.0	22.9		0.0	10.9		0.0	37.1	
Adj Saturation B (vph	NA	NA		0	0		0	0		NA	NA	
Reference Time B (s)	NA	NA		15.3	29.7		8.2	18.8		NA	NA	
Reference Time (s)		16.6			22.9			10.9			37.1	
Adj Reference Time (s)		20.6			26.9			14.9			41.1	
Split Option												
Ref Time Combined (s)	0.0	9.7		0.0	21.7		0.0	10.8		0.0	6.3	
Ref Time Seperate (s)	5.8	2.6		7.3	6.6		0.2	5.7		2.0	3.0	
Reference Time (s)	9.7	9.7		21.7	21.7		10.8	10.8		6.3	6.3	
Adj Reference Time (s)	13.7	13.7		25.7	25.7		14.8	14.8		10.3	10.3	

Summary	EB WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	26.9	41.1	
Split Option (s)	39.4	25.1	
Minimum (s)	26.9	25.1	52.0

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Volume (vph)	1722	95	69	1655	0	104
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1400	1400	1400	1400	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	1722	95	69	1655	0	104
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	2666	1190	1330	2666	0	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	77.5	9.6	6.2	74.5		7.7
Adj Reference Time (s)	81.5	13.6	10.2	78.5		11.7
Permitted Option						
Adj Saturation A (vph)	1333		89	1333	0	
Reference Time A (s)	77.5		93.4	74.5	0.0	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	77.5			93.4		
Adj Reference Time (s)	81.5			97.4		
Split Option						
Ref Time Combined (s)	77.5		6.2	74.5	0.0	
Ref Time Seperate (s)	77.5		6.2	74.5	0.0	
Reference Time (s)	77.5		74.5	74.5	0.0	
Adj Reference Time (s)	81.5		78.5	78.5	0.0	

Summary	EB WB	NB	Combined
Protected Option (s)	91.7	NA	
Permitted Option (s)	97.4	Err	
Split Option (s)	160.0	0.0	
Minimum (s)	91.7	0.0	91.7

Right Turns	EBR	NBR
Adj Reference Time (s)	13.6	11.7
Cross Thru Ref Time (s)	0.0	81.5
Oncoming Left Ref Time (s)	10.2	0.0
Combined (s)	23.8	93.2

Intersection Summary			
Intersection Capacity Utilization	77.7%	ICU Level of Service	D

Reference Times and Phasing Options do not represent an optimized timing plan.

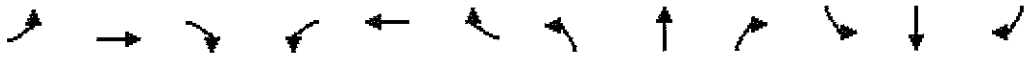
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	47	3	121	91	25	173
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	47	3	212	0	0	198
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95
Turning Factor (vph)	0.95	0.85	0.94	0.85	0.95	0.99
Saturated Flow (vph)	1805	1615	3385	0	0	3595
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		No			No
Reference Time (s)		0.2		0.0		
Adj Reference Time (s)		8.0		0.0		
Permitted Option						
Adj Saturation A (vph)	120		1692		0	202
Reference Time A (s)	46.9		7.5		0.0	29.1
Adj Saturation B (vph	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			7.5			29.1
Adj Reference Time (s)			11.5			33.1
Split Option						
Ref Time Combined (s)	3.1		7.5		0.0	6.6
Ref Time Seperate (s)	3.1		4.3		1.7	5.7
Reference Time (s)	3.1		7.5		6.6	6.6
Adj Reference Time (s)	8.0		11.5		10.6	10.6

Summary	WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	Err	33.1	
Split Option (s)	8.0	22.1	
Minimum (s)	8.0	22.1	30.1

Right Turns	WBR
Adj Reference Time (s)	8.0
Cross Thru Ref Time (s)	11.5
Oncoming Left Ref Time (s)	0.0
Combined (s)	19.5

Intersection Summary			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	1680	106	27	1614	18	145	8	11	12	8	18
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1400	1400	1400	1400	1400	1400	1900	1900	1900	1900	1900	1900
Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	12	1680	106	27	1614	18	0	153	11	0	20	18
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1330	2666	1190	1330	2666	1190	0	1810	1615	0	1843	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	1.1	75.6	10.7	2.4	72.7	1.8			0.8			1.3
Adj Reference Time (s)	10.5	82.1	17.2	10.5	79.2	10.5			9.5			9.5
Permitted Option												
Adj Saturation A (vph)	89	1333		89	1333		0	125		0	181	
Reference Time A (s)	16.2	75.6		36.5	72.7		0.0	146.9		0.0	13.3	
Adj Saturation B (vph	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		17.6	18.1		8.8	9.3	
Reference Time (s)		75.6			72.7			18.1			9.3	
Adj Reference Time (s)		82.1			79.2			23.6			14.8	
Split Option												
Ref Time Combined (s)	1.1	75.6		2.4	72.7		0.0	10.1		0.0	1.3	
Ref Time Seperate (s)	1.1	75.6		2.4	72.7		9.6	0.5		0.8	0.5	
Reference Time (s)	75.6	75.6		72.7	72.7		10.1	10.1		1.3	1.3	
Adj Reference Time (s)	82.1	82.1		79.2	79.2		15.6	15.6		9.5	9.5	

Summary	EB WB	NB SB	Combined
Protected Option (s)	92.6	NA	
Permitted Option (s)	82.1	23.6	
Split Option (s)	161.3	25.1	
Minimum (s)	82.1	23.6	105.8

Right Turns	EBR	WBR	NBR	SBR
Adj Reference Time (s)	17.2	10.5	9.5	9.5
Cross Thru Ref Time (s)	9.5	15.6	82.1	79.2
Oncoming Left Ref Time (s)	10.5	10.5	9.5	15.6
Combined (s)	37.2	36.6	101.1	104.3

Intersection Summary			
Intersection Capacity Utilization	88.1%	ICU Level of Service	E

Reference Times and Phasing Options do not represent an optimized timing plan.

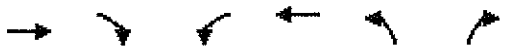
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↕			↕	
Volume (vph)	55	25	13	70	61	73	4	52	140	19	29	12
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	0	93	0	0	204	0	0	196	0	0	60	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.93	0.85	0.95	0.89	0.85	0.95	0.95	0.85
Saturated Flow (vph)	0	1805	0	0	1767	0	0	3389	0	0	1814	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			No			No	
Reference Time (s)			0.0			0.0			0.0			0.0
Adj Reference Time (s)			0.0			0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	0	1059		0	1674		0	3357		0	307	
Reference Time A (s)	0.0	10.5		0.0	14.6		0.0	7.0		0.0	23.4	
Adj Saturation B (vph	NA	NA		0	0		0	0		NA	NA	
Reference Time B (s)	NA	NA		12.7	21.9		8.1	14.9		NA	NA	
Reference Time (s)		10.5			14.6			7.0			23.4	
Adj Reference Time (s)		14.5			18.6			11.0			27.4	
Split Option												
Ref Time Combined (s)	0.0	6.2		0.0	13.9		0.0	6.9		0.0	4.0	
Ref Time Seperate (s)	3.7	1.7		4.7	4.2		0.1	3.7		1.3	1.9	
Reference Time (s)	6.2	6.2		13.9	13.9		6.9	6.9		4.0	4.0	
Adj Reference Time (s)	10.2	10.2		17.9	17.9		10.9	10.9		8.0	8.0	

Summary	EB WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	18.6	27.4	
Split Option (s)	28.0	18.9	
Minimum (s)	18.6	18.9	37.6

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Volume (vph)	2200	121	88	2113	0	132
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1400	1400	1400	1400	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	2200	121	88	2113	0	132
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	2666	1190	1330	2666	0	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	99.0	12.2	7.9	95.1		9.8
Adj Reference Time (s)	103.0	16.2	11.9	99.1		13.8
Permitted Option						
Adj Saturation A (vph)	1333		89	1333	0	
Reference Time A (s)	99.0		119.1	95.1	0.0	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	99.0			119.1		
Adj Reference Time (s)	103.0			123.1		
Split Option						
Ref Time Combined (s)	99.0		7.9	95.1	0.0	
Ref Time Seperate (s)	99.0		7.9	95.1	0.0	
Reference Time (s)	99.0		95.1	95.1	0.0	
Adj Reference Time (s)	103.0		99.1	99.1	0.0	

Summary	EB WB	NB	Combined
Protected Option (s)	115.0	NA	
Permitted Option (s)	123.1	Err	
Split Option (s)	202.2	0.0	
Minimum (s)	115.0	0.0	115.0

Right Turns	EBR	NBR
Adj Reference Time (s)	16.2	13.8
Cross Thru Ref Time (s)	0.0	103.0
Oncoming Left Ref Time (s)	11.9	0.0
Combined (s)	28.1	116.8

Intersection Summary			
Intersection Capacity Utilization	97.4%	ICU Level of Service	F

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	78	4	170	150	32	243
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	78	4	320	0	0	275
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95
Turning Factor (vph)	0.95	0.85	0.93	0.85	0.95	0.99
Saturated Flow (vph)	1805	1615	3363	0	0	3597
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		No			No
Reference Time (s)		0.3		0.0		
Adj Reference Time (s)		8.0		0.0		
Permitted Option						
Adj Saturation A (vph)	120		1682		0	232
Reference Time A (s)	77.8		11.4		0.0	38.1
Adj Saturation B (vph	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			11.4			38.1
Adj Reference Time (s)			15.4			42.1
Split Option						
Ref Time Combined (s)	5.2		11.4		0.0	9.2
Ref Time Seperate (s)	5.2		6.1		2.1	8.1
Reference Time (s)	5.2		11.4		9.2	9.2
Adj Reference Time (s)	9.2		15.4		13.2	13.2

Summary	WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	Err	42.1	
Split Option (s)	9.2	28.6	
Minimum (s)	9.2	28.6	37.8

Right Turns	WBR
Adj Reference Time (s)	8.0
Cross Thru Ref Time (s)	15.4
Oncoming Left Ref Time (s)	0.0
Combined (s)	23.4

Intersection Summary			
Intersection Capacity Utilization	31.5%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	2146	136	35	2062	23	186	10	14	15	10	23
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1400	1400	1400	1400	1400	1400	1900	1900	1900	1900	1900	1900
Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	15	2146	136	35	2062	23	0	196	14	0	25	23
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1330	2666	1190	1330	2666	1190	0	1810	1615	0	1843	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	1.4	96.6	13.7	3.2	92.8	2.3			1.0			1.7
Adj Reference Time (s)	10.5	103.1	20.2	10.5	99.3	10.5			9.5			9.5
Permitted Option												
Adj Saturation A (vph)	89	1333		89	1333		0	125		0	181	
Reference Time A (s)	20.3	96.6		47.4	92.8		0.0	188.4		0.0	16.6	
Adj Saturation B (vph	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		20.4	21.0		9.0	9.6	
Reference Time (s)		96.6			92.8			21.0			9.6	
Adj Reference Time (s)		103.1			99.3			26.5			15.1	
Split Option												
Ref Time Combined (s)	1.4	96.6		3.2	92.8		0.0	13.0		0.0	1.6	
Ref Time Seperate (s)	1.4	96.6		3.2	92.8		12.4	0.6		1.0	0.6	
Reference Time (s)	96.6	96.6		92.8	92.8		13.0	13.0		1.6	1.6	
Adj Reference Time (s)	103.1	103.1		99.3	99.3		18.5	18.5		9.5	9.5	

Summary	EB WB	NB SB	Combined
Protected Option (s)	113.6	NA	
Permitted Option (s)	103.1	26.5	
Split Option (s)	202.4	28.0	
Minimum (s)	103.1	26.5	129.6

Right Turns	EBR	WBR	NBR	SBR
Adj Reference Time (s)	20.2	10.5	9.5	9.5
Cross Thru Ref Time (s)	9.5	18.5	103.1	99.3
Oncoming Left Ref Time (s)	10.5	10.5	9.5	18.5
Combined (s)	40.2	39.5	122.1	127.3

Intersection Summary			
Intersection Capacity Utilization	108.0%	ICU Level of Service	G

Reference Times and Phasing Options do not represent an optimized timing plan.

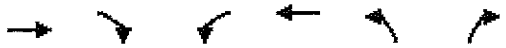
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	101	45	23	142	107	132	32	75	255	35	52	23
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	0	169	0	0	381	0	0	362	0	0	110	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.93	0.85	0.95	0.89	0.85	0.95	0.95	0.85
Saturated Flow (vph)	0	1806	0	0	1768	0	0	1692	0	0	1811	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			No			No	
Reference Time (s)			0.0			0.0			0.0			0.0
Adj Reference Time (s)			0.0			0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	0	1112		0	1659		0	1606		0	747	
Reference Time A (s)	0.0	18.2		0.0	27.6		0.0	27.0		0.0	17.7	
Adj Saturation B (vph	NA	NA		0	0		0	0		NA	NA	
Reference Time B (s)	NA	NA		17.4	33.9		10.1	33.7		NA	NA	
Reference Time (s)		18.2			27.6			27.0			17.7	
Adj Reference Time (s)		22.2			31.6			31.0			21.7	
Split Option												
Ref Time Combined (s)	0.0	11.2		0.0	25.9		0.0	25.7		0.0	7.3	
Ref Time Seperate (s)	6.7	3.0		9.4	7.4		2.1	5.4		2.3	3.4	
Reference Time (s)	11.2	11.2		25.9	25.9		25.7	25.7		7.3	7.3	
Adj Reference Time (s)	15.2	15.2		29.9	29.9		29.7	29.7		11.3	11.3	

Summary	EB WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	31.6	31.0	
Split Option (s)	45.1	41.0	
Minimum (s)	31.6	31.0	62.6

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	52.2%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Volume (vph)	2164	119	87	2079	0	130
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1400	1400	1400	1400	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	2164	119	87	2079	0	130
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	2666	1190	1330	2666	0	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	97.4	12.0	7.8	93.6		9.7
Adj Reference Time (s)	101.4	16.0	11.8	97.6		13.7
Permitted Option						
Adj Saturation A (vph)	1333		89	1333	0	
Reference Time A (s)	97.4		117.7	93.6	0.0	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	97.4			117.7		
Adj Reference Time (s)	101.4			121.7		
Split Option						
Ref.Time Combined (s)	97.4		7.8	93.6	0.0	
Ref Time Seperate (s)	97.4		7.8	93.6	0.0	
Reference Time (s)	97.4		93.6	93.6	0.0	
Adj Reference Time (s)	101.4		97.6	97.6	0.0	

Summary	EB WB	NB	Combined
Protected Option (s)	113.3	NA	
Permitted Option (s)	121.7	Err	
Split Option (s)	199.0	0.0	
Minimum (s)	113.3	0.0	113.3

Right Turns	EBR	NBR
Adj Reference Time (s)	16.0	13.7
Cross Thru Ref Time (s)	0.0	101.4
Oncoming Left Ref Time (s)	11.8	0.0
Combined (s)	27.8	115.1

Intersection Summary			
Intersection Capacity Utilization	95.9%	ICU Level of Service	F

Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	59	4	152	114	32	217
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120					
Volume Combined (vph)	59	4	266	0	0	249
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95
Turning Factor (vph)	0.95	0.85	0.94	0.85	0.95	0.99
Saturated Flow (vph)	1805	1615	3385	0	0	3594
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		No			No
Reference Time (s)		0.3		0.0		
Adj Reference Time (s)		8.0		0.0		
Permitted Option						
Adj Saturation A (vph)	120		1693		0	196
Reference Time A (s)	58.8		9.4		0.0	37.1
Adj Saturation B (vph	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			9.4			37.1
Adj Reference Time (s)			13.4			41.1
Split Option						
Ref Time Combined (s)	3.9		9.4		0.0	8.3
Ref Time Seperate (s)	3.9		5.4		2.1	7.2
Reference Time (s)	3.9		9.4		8.3	8.3
Adj Reference Time (s)	8.0		13.4		12.3	12.3

Summary	WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	Err	41.1	
Split Option (s)	8.0	25.7	
Minimum (s)	8.0	25.7	33.7

Right Turns	WBR
Adj Reference Time (s)	8.0
Cross Thru Ref Time (s)	13.4
Oncoming Left Ref Time (s)	0.0
Combined (s)	21.4

Intersection Summary			
Intersection Capacity Utilization	28.1%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

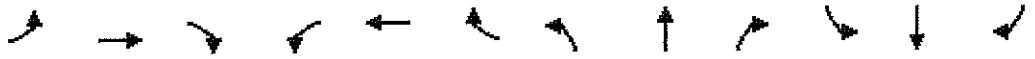
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	2111	133	34	2028	23	183	9	14	15	9	23
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1400	1400	1400	1400	1400	1400	1900	1900	1900	1900	1900	1900
Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	15	2111	133	34	2028	23	0	192	14	0	24	23
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1330	2666	1190	1330	2666	1190	0	1809	1615	0	1841	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	1.4	95.0	13.4	3.1	91.3	2.3			1.0			1.7
Adj Reference Time (s)	10.5	101.5	19.9	10.5	97.8	10.5			9.5			9.5
Permitted Option												
Adj Saturation A (vph)	89	1333		89	1333		0	124		0	174	
Reference Time A (s)	20.3	95.0		46.0	91.3		0.0	185.1		0.0	16.5	
Adj Saturation B (vph	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		20.2	20.7		9.0	9.6	
Reference Time (s)		95.0			91.3			20.7			9.6	
Adj Reference Time (s)		101.5			97.8			26.2			15.1	
Split Option												
Ref Time Combined (s)	1.4	95.0		3.1	91.3		0.0	12.7		0.0	1.6	
Ref Time Seperate (s)	1.4	95.0		3.1	91.3		12.2	0.6		1.0	0.6	
Reference Time (s)	95.0	95.0		91.3	91.3		12.7	12.7		1.6	1.6	
Adj Reference Time (s)	101.5	101.5		97.8	97.8		18.2	18.2		9.5	9.5	

Summary	EB WB	NB SB	Combined
Protected Option (s)	112.0	NA	
Permitted Option (s)	101.5	26.2	
Split Option (s)	199.3	27.7	
Minimum (s)	101.5	26.2	127.8

Right Turns	EBR	WBR	NBR	SBR
Adj Reference Time (s)	19.9	10.5	9.5	9.5
Cross Thru Ref Time (s)	9.5	18.2	101.5	97.8
Oncoming Left Ref Time (s)	10.5	10.5	9.5	18.2
Combined (s)	39.9	39.2	120.5	125.5

Intersection Summary			
Intersection Capacity Utilization	106.5%	ICU Level of Service	G

Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	55	24	12	70	61	72	39	51	139	19	28	12
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120											
Volume Combined (vph)	0	91	0	0	203	0	0	229	0	0	59	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.93	0.85	0.95	0.90	0.85	0.95	0.95	0.85
Saturated Flow (vph)	0	1806	0	0	1768	0	0	1712	0	0	1812	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			No			No	
Reference Time (s)			0.0			0.0			0.0			0.0
Adj Reference Time (s)			0.0			0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	0	1049		0	1686		0	1521		0	1024	
Reference Time A (s)	0.0	10.4		0.0	14.4		0.0	18.1		0.0	6.9	
Adj Saturation B (vph	NA	NA		0	0		0	0		NA	NA	
Reference Time B (s)	NA	NA		12.7	21.8		10.6	24.0		NA	NA	
Reference Time (s)		10.4			14.4			18.1			6.9	
Adj Reference Time (s)		14.4			18.4			22.1			10.9	
Split Option												
Ref Time Combined (s)	0.0	6.0		0.0	13.8		0.0	16.0		0.0	3.9	
Ref Time Seperate (s)	3.7	1.6		4.7	4.2		2.6	3.6		1.3	1.9	
Reference Time (s)	6.0	6.0		13.8	13.8		16.0	16.0		3.9	3.9	
Adj Reference Time (s)	10.0	10.0		17.8	17.8		20.0	20.0		8.0	8.0	

Summary	EB WB	NB SB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	18.4	22.1	
Split Option (s)	27.8	28.0	
Minimum (s)	18.4	22.1	40.5

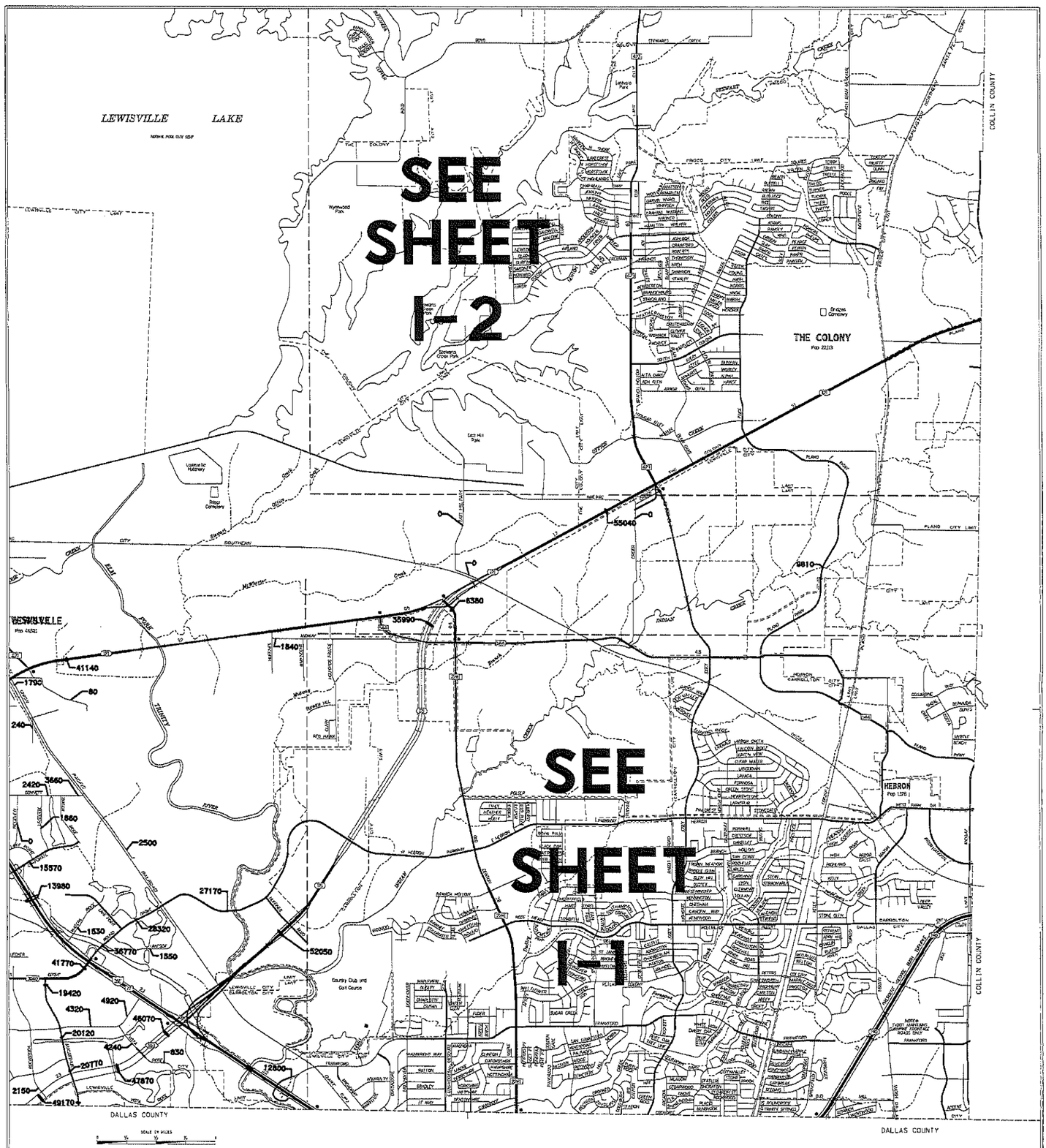
Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	33.8%	ICU Level of Service	A

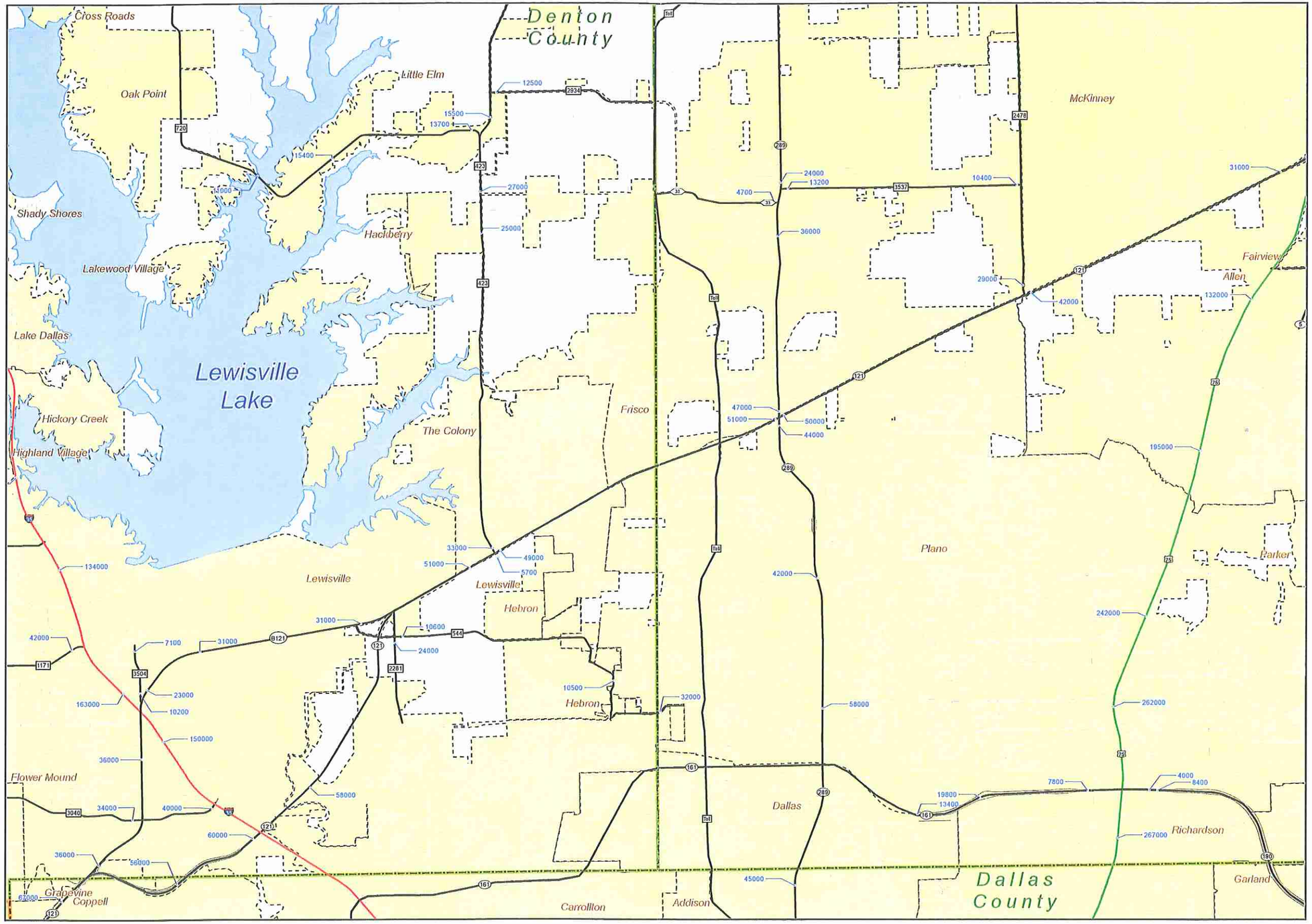
Reference Times and Phasing Options do not represent an optimized timing plan.

APPENDIX D

TRAFFIC COUNT INFORMATION



DENTON COUNTY TEXAS 061



AADT — Unicorn Towns

Highways

Route Prefix: BF, BI, BS, BU

Streets: FM, SH, FS, SL, IH, SS, PR, Toll, RE, UA, RM, UP, RR, US, RS

Streets, Streets, City_Roads, Water_Bodies, District, County, Cities

Miles 0 1 2

2008 DALLAS DISTRICT TRAFFIC MAP

PREPARED BY THE
Texas Department of Transportation
Transportation Planning and Programming Division
IN COOPERATION WITH THE
U.S. Department of Transportation

N

1 2 3 4 5 6 7 8 9

Texas Department of Transportation

SHEET 5 OF 16 BASE SHEETS

APPENDIX I/IIE

LAND USE STUDY

LAND USE ANALYSIS
Camelot Landfill Expansion
MSW 1312B

Prepared by:
John Worrall Consulting LLC
509 Camino Barranca
Round Mountain, TX 78663
830.825.3029

Preface

This report was prepared specifically to address those portions of TCEQ rules pertaining to land use compatibility. The relevant rule portions, as excerpted from 30 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

LU-1	Metropolitan Context
LU-2	Zoning-1 Mile
LU-3	Zoning-2 Mile
LU-4	Land Use
LU-5	Growth Trends-Metropolitan Region
LU-6	Growth Trends-Five Mile

Introduction

The Camelot Landfill was originally permitted by the Texas Department of Health in 1979. The permit was amended in 1981 and operation of the landfill began soon thereafter. The landfill site was subsequently annexed by the City of Lewisville. The site is located in Denton County in the north central portion of the Dallas-Fort Worth metropolitan area (Metroplex), about 20 miles northwest of downtown Dallas. Refer to Figure LU-1.

The proposed permit amendment would revise the TCEQ-authorized limits of waste, both vertically (from the current permitted elevation of 523 feet-msl to 725 feet-msl) and laterally (from the current permit boundary of approximately 351 acres to approximately 470 acres.) The waste disposal area is proposed to expand from approximately 198 acres to approximately 237 acres.

The 119 acre lateral expansion is entirely northward and encompasses most of a separate existing permit boundary (approximately 103 acres) for a Type I landfill permitted by Highland Park in 1979 but never opened after permitting. But for approximately 16 acres, the lateral expansion is, therefore, essentially a consolidation of two permit boundaries (MSW 946-Highland Park and MSW 1312A-Camelot), both permitted in 1979.

The current Camelot Landfill is one of three landfills operating within one mile, and one of four permitted within one mile.

Zoning

The site is in Lewisville and is adjacent to Carrollton. Also within two miles are unincorporated portions of Denton County, which are not zoned.

The property within the current permit boundary is zoned *SU—Specific Use*. The area proposed to be added to the permit boundary will include tracts that are zoned *LI—Light Industrial* and *AO—Agricultural Open Space*. The proposed permit boundary, city limits, and current zoning districts are shown in Figure LU-2.

Zoning in the immediate vicinity of the proposed amended Camelot Landfill permit boundary is as follows:
--South and southwest of Camelot Landfill (across the Elm Fork of the Trinity River), the City of Lewisville has zoned the DFW Landfill *HI—Heavy Industrial.*
--Immediately north of the Camelot Landfill permit boundary, Lewisville has zoned the property *HI, LI,* and *SU.* (Note: the Lewisville Type IV Landfill--about 2800 feet northwest of Camelot Landfill--is also zoned *SU,* as is 26% of the land in Lewisville within one mile of the Camelot Landfill site.)
--Immediately west of Camelot Landfill, Lewisville has zoned the property *AO—Agricultural Open Space.*
--Immediately east of the northern portion of Camelot Landfill the property is zoned *AO, SU* and *LI-Light Industrial* by the City of Lewisville; immediately east of the southern portion of Camelot Landfill the property is zoned *PD 153—Planned Development,* by the City of Carrollton.

Zoning in the City of Lewisville, within one mile of (and including) the Camelot permit boundary is summarized as follows.

Table 1--Lewisville zoning districts, within one mile

Zoning District	**Acres**	**Percentage**
AO-Agricultural Open Space	924	26%
SU-Specific Use	915	26%
LI-Light Industrial	675	19%
HI-Heavy Industrial	663	19%
PU-Public Use	293	08%
GB-General Business	35	01%
MF 1&2—Multi-Family	28	01%
WH-Warehouse	12	--
CP-City Park	6	--
Total Lewisville	3551	100%

Zoning in Lewisville, within one mile, with acreage totals for each zoning district, is seen in Figure LU-2. Zoning within two miles is seen in Figure LU-3.

All of the land in Carrollton, within one mile, is zoned *PD.*

It appears that the Camelot site does not require approval as a nonconforming use, nor a special permit from Lewisville or Carrollton.

Character of Surrounding Land Uses

(Note that this characterization of existing land uses includes the land within the proposed 470 acre Camelot Landfill permit boundary, which is characterized as being 351 acres of industrial and 119 acres of open land.)

Within one mile of the permit boundary, 43.4% of the land is classified as "Open" (see Figure LU-4). Most of this open land is in the City of Lewisville and much of it is floodplain associated with the Elm Fork of the Trinity River. All land uses within one mile of the permit boundary are classified as follows:

Table 2--Land use within one mile

Land Use	**Acres**	**%**	**Remarks**
Open	2163	43.4	Vacant, undeveloped, 1 permitted landfill (MSW 946)
Industrial	1159	23.3	3 operating landfills (DFW, Lewisville, Camelot)
Recreation	994	19.9	Nature reserve, golf, athletic fields
Residential (SF)	424	8.5	1572 single family units
Residential (MF)	136	2.7	2149 multi-family units
Office/Commercial	60	1.2	78 establishments
Other	48	1.0	8 churches, 3 schools, 1 daycare, 1 fire station
Total	4984	100.0	

The second largest land use category is "Industrial", comprising 23.3% of the land area within one mile of the permit boundary. The largest of the existing industrial land uses are the DFW Landfill (415 acres permitted), the current Camelot Landfill (351 acres permitted), and the Lewisville Landfill (337 acres total; 74 acres located within one mile). All industrial land uses are within the City of Lewisville.

The third largest type of land use is "Recreation" (19.9%). Recreational land uses include a large nature reserve (Lake Lewisville Environmental Learning Center) to the north, a large athletic complex (Railroad Park) to the west and a golf course to the east.

"Residential" land uses are the fourth largest land use category (11.2%), nearly all of which occurs in or adjacent to the City of Carrollton, south and east of the Camelot Landfill. Based upon field inventories (most recently conducted in January 2011), there are 2149 multi-family units and 1572 single family units within one mile of the permit boundary.

"Office/Commercial" land uses comprise 1.2% of the land area within one mile, consisting of 78 establishments.

"Other" uses within one mile include 8 churches, 3 schools, one daycare center and one fire station; all combined, these account for less than 1% of the land within one mile.

Growth Trends

Based upon household growth projections obtained from the North Central Texas Council of Governments (NCTCOG), the area within five miles of Camelot Landfill is expected to grow less than 200% over the twenty year time frame from 2010 through 2030 (Source: NCTCOG; North Central Texas 2030 Demographic Forecast; April, 2003). As depicted by Figure LU-5, this growth rate is typical of most of the Dallas Fort Worth metropolitan area. Higher rates of growth (up to more than 1000% over the 20 year time period) are generally projected to occur in the outer edges of the Metroplex.

In the northern part of the Metroplex (which includes the Camelot Landfill), the greatest rates of population growth are expected to occur farther than five miles north of the Camelot Landfill, notably in the cities of Frisco, McKinney, Prosper and Denton (see also Figure LU-5). The closest of these cities—Frisco, about 6 miles northeast of the site—had an absolute growth of 6,250 persons and a relative growth of 6.2% from January 1, 2009 through January 1, 2010, making it currently one of the fastest growing cities in the region. Frisco is also one of the fastest growing cities in the region when examined over the decade of 2000 through 2010. (Source: NCTCOG, 2010 Population Estimates; May, 2010). Transportation infrastructure improvements in the area (State Highway 121, Preston Road and the Dallas North Tollway) have attracted major employers (e.g., Frito Lay, JC Penney, EDS, Ericsson and others), which in turn have stimulated household growth.

Figure LU-6 depicts relative household growth projections (from 2010 to 2030) within five miles of the site, by traffic survey districts. The larger increases in projected household growth to the northeast are attributable to employment growth and regional roadway improvements, as noted above.

Proximity

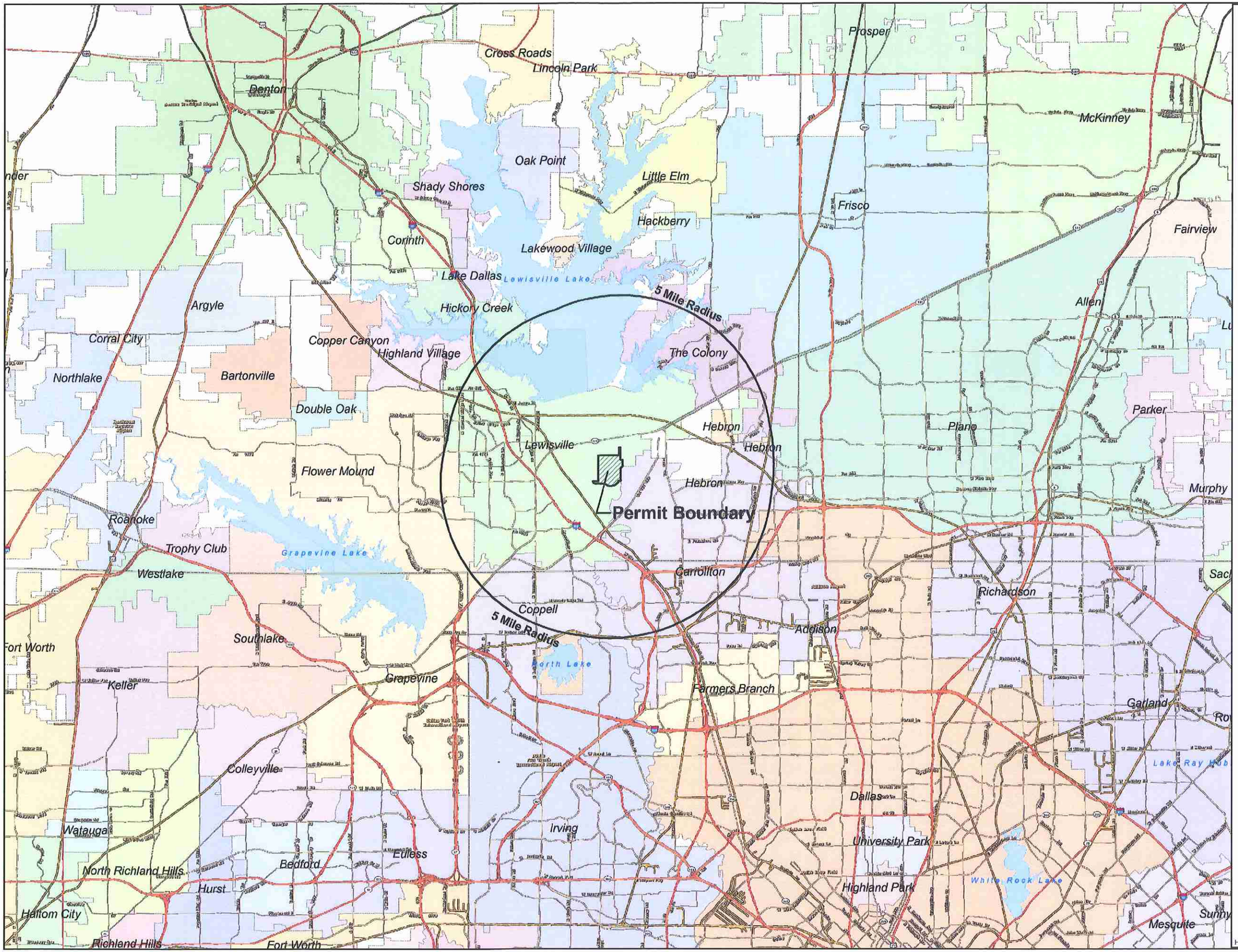
As of January 2011, there are 3721 residential units (2149 of which are multi-family) within one mile of the proposed permit boundary. The nearest residence, located approximately 680 feet east of the existing (and expanded) permit boundary, is a single family unit in the Highland Acres subdivision.

Also within one mile are 169 business establishments (91 industrial, 54 commercial and 24 office). The nearest business establishments abut the Camelot Landfill permit boundary on the east (golf course, classified as recreation), on the northeast (Narco Chemicals), and on the west (oil & gas well location). A crushed concrete operation is located just to the north of the site (across the proposed location of Corporate Drive), and the DFW Type I Landfill is located just to the south and southwest of the site (across the Elm Fork of the Trinity River).

There are eight churches within one mile of the permit boundary, the closest being 1500 feet east of the northern panhandle of the proposed permit boundary. The only three schools within one mile are private institutions: Primrose School of West Carrollton is 3500 feet south, Castle Hills Montessori is 4800 feet southeast, and Quest Middle School is 5000 feet west. There is one daycare center that is approximately 3700 feet south of the Camelot Landfill permit boundary.

The Texas Historical Commission Atlas indicates that an archaeological site was discovered during the construction of the Lewisville Dam, about four miles north of the Camelot permit boundary. The site has been inundated by Lewisville Lake. The nearest historic site is the Milliken House, about 2.4 miles northwest of the permit boundary, according to the Atlas. Additional historical and archaeological information is presented in the materials regarding coordination with the Texas Historical Commission (Appendix I/II.B).

There are no sites of exceptional aesthetic quality within one mile of the permit boundary.



JOHN WORRALL CONSULTING
Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-1
METROPOLITAN CONTEXT

LAND USE ANALYSIS
CAMELOT LANDFILL

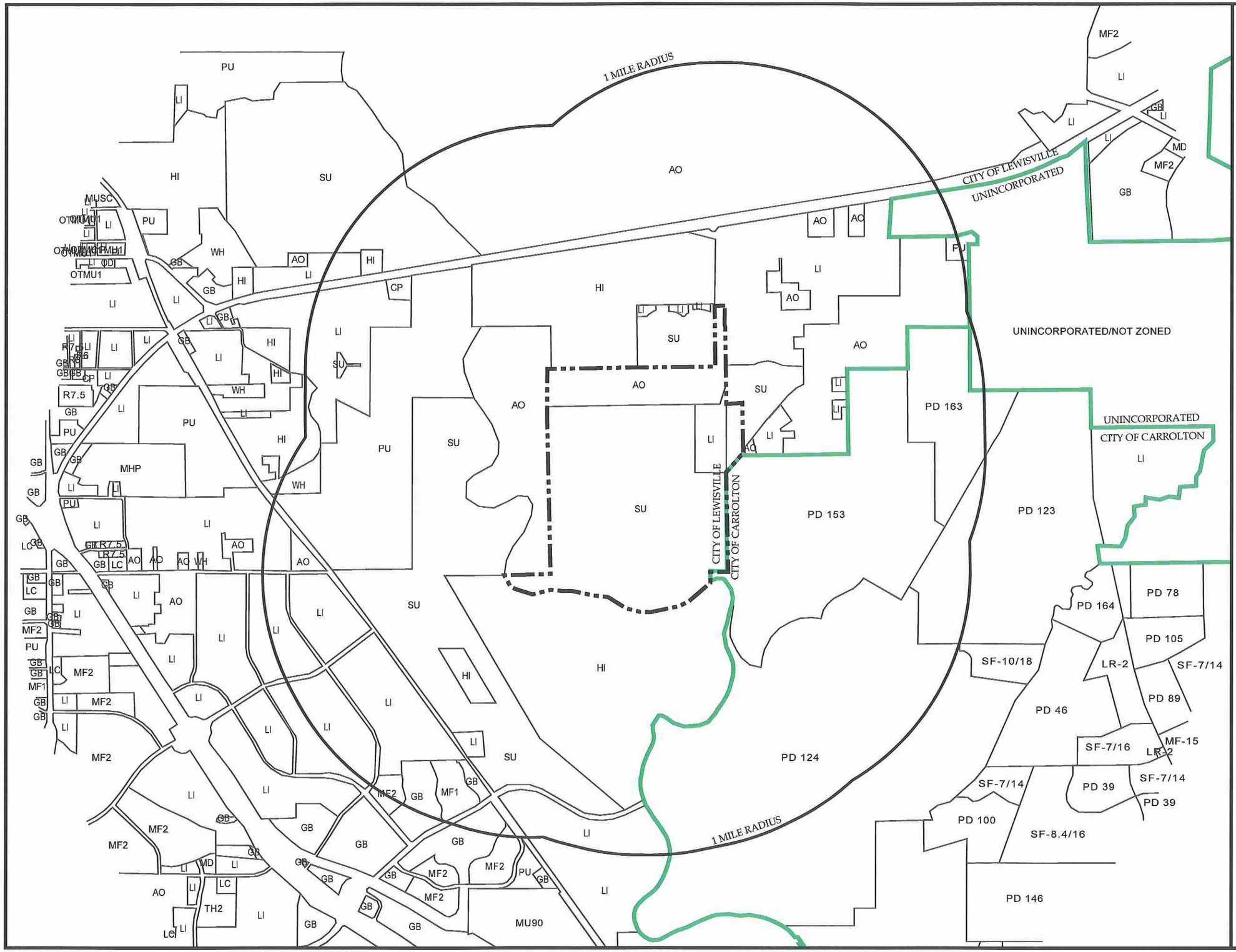
NORTH

SCALE : 1:192,000

DATA SOURCES:
North Central Texas Council of Governments
GIS Data Clearinghouse (Accessed Jan 2011)

0 1/2 1 2 3 4 5
Graphic Scale: Miles

H:\2011\113705\LU-1 Metro Context March 8, 2011



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Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-2
ZONING - 1 MILE

CITY	ZONING DISTRICT	ACREAGE
Lewisville	AO (Agriculture/Open)	924
	LI (Light Industrial)	675
	HI (Heavy Industrial)	663
	SU (Specific Use)	915
	PU (Public Use)	293
	WH (Warehouse)	12
	CP (City Park)	6
	GB (General Business)	35
	MF1 (Multi-Family 1)	20
	MF2 (Multi-Family 2)	8
Carollton	PD (Planned Development)	1,103
Unincorporated		33
Subtotal		**4,687**
ROW		297
1 MILE TOTAL		**4,984**

Legend

- Permit Boundary
- City Limit

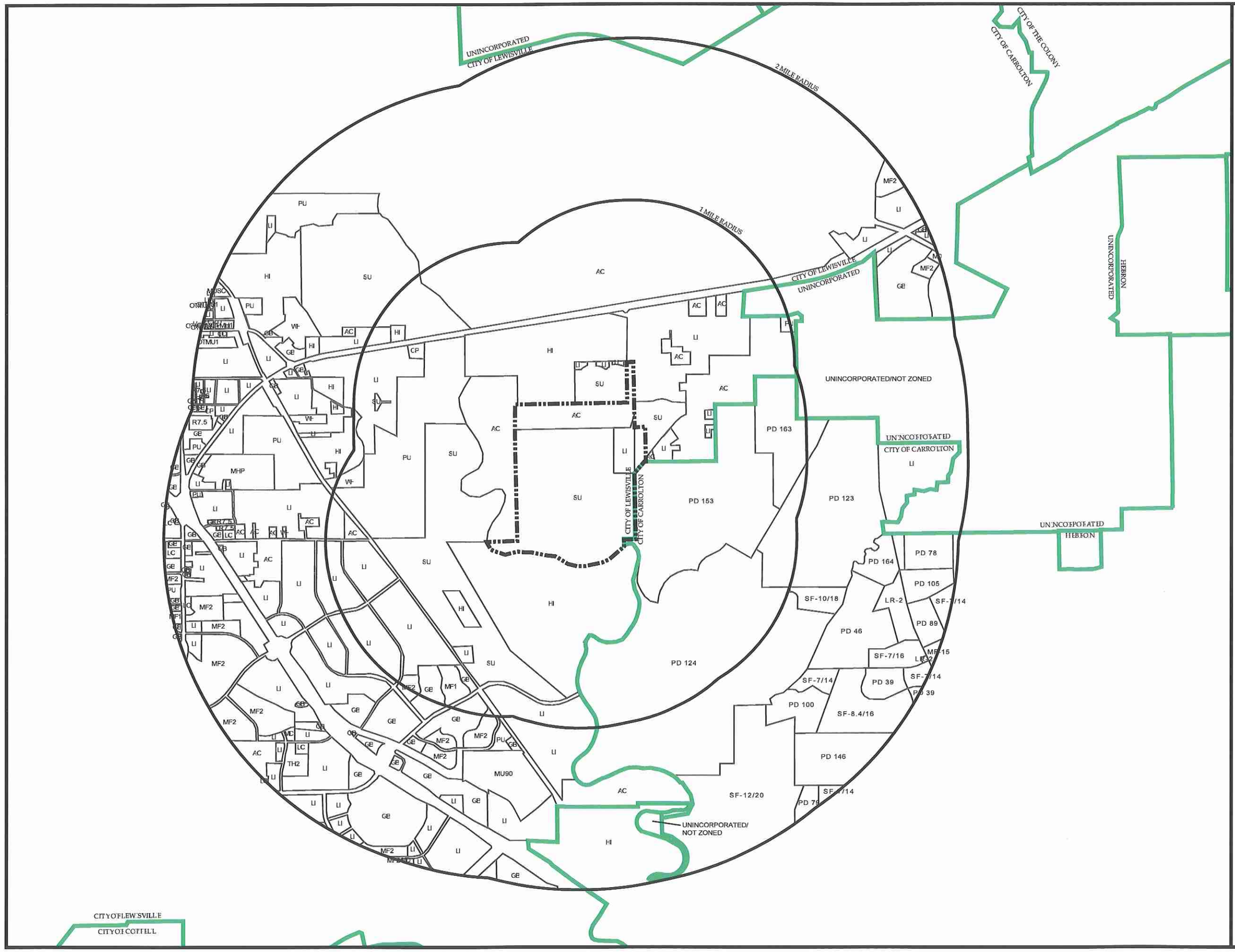
LAND USE ANALYSIS
CAMELOT LANDFILL

NORTH

SCALE : 1" = 2000'
0 1000 2000 4000

DATA SOURCES:
City of Lewisville Zoning Map, 2010
City of Carollton Zoning Atlas, accessed 02/15/2011

H:\2011\113705 - Camelot LF\LU-2 Zoning - 1 Mile February 14, 2011



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Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-3
ZONING - 2 MILE

Legend

- Permit Boundary
- City Limit

Zoning Districts (Lewisville)

- AO - Agricultural Open Space
- LI - Light Industrual
- HI - Heavy Industrial
- SU - Specific Use
- PU - Public Use
- CP - City Park
- GB - General Business
- MF1 - Multi-Family 1
- MF2 - Multi-Family 2
- MHP - Mobile Home Park
- OD - Office District
- OTC - Old Town Center
- OTMU1 - Old Town Mixed Use 1
- OTMU2 - Old Town Mixed Use 2
- R# - Single Family Residential
- WH - Warehouse

Zoning Districts (Carrolton)

- PD # - Planned Development
- SF-##/## - Single Family Residential
- MF-## - Multi Family
- LR-2 - Local Retail
- LI - Light Industrial
- HI - Heavy Industrial

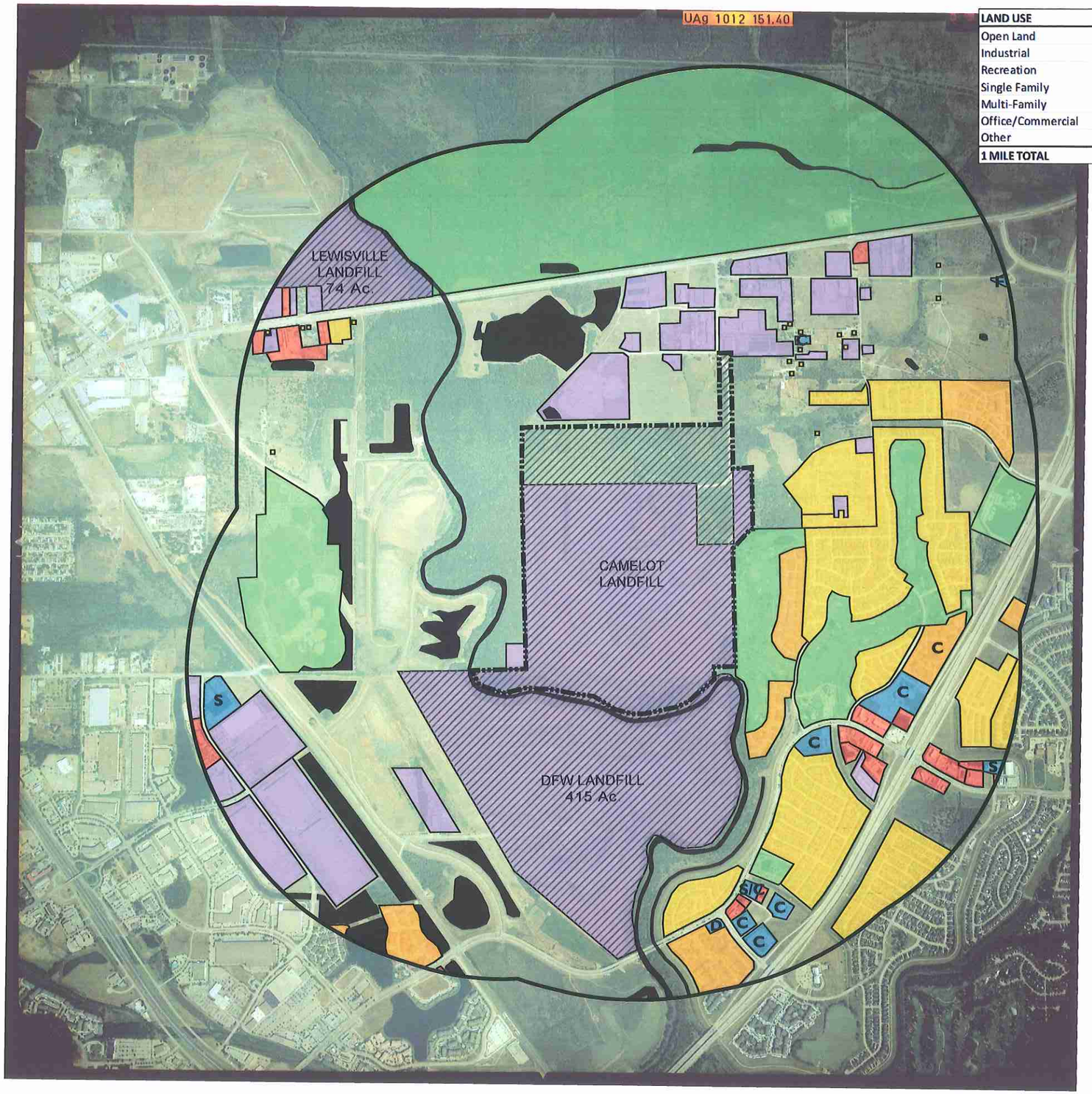
LAND USE ANALYSIS
CAMELOT LANDFILL

NORTH

SCALE : 1" = 3000'
0 1500 3000 6000

DATA SOURCES:
City of Lewisville Zoning Map, 2010
City of Carollton Zoning Atlas, accessed 02/15/2011

H:\2011\13705 - Camelot LF\LU-3 Zoning - 2 Mile February 21, 2011



LAND USE	ACREAGE	%	UNITS
Open Land	2,163	43.4%	n/a
Industrial	1,159	23.3%	90
Recreation	994	19.9%	n/a
Single Family	424	8.5%	1,577
Multi-Family	136	2.7%	2,149
Office/Commercial	60	1.2%	78
Other	48	1.0%	13
1 MILE TOTAL	4,984	100.0%	

JOHN WORRALL CONSULTING
Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-4
LAND USE

Legend

LAND USE

- Open (includes rights-of-way, vacant, and undeveloped land)
- Industrial
- Recreational
- Residential - Single Family
- Residential - Multi Family
- Office/Commercial
- Other (**C**hurch, **S**chool, **F**ire Station, **D**ay Care)

- Proposed Permit Boundary
- Water Body

LAND USE ANALYSIS
CAMELOT LANDFILL

NORTH

SCALE : 1" = 2000'
0 1000 2000 4000

DATA SOURCES:
Field Inventory, January 26, 2011

AERIAL PHOTOGRAPHY:
August 28, 2010

H:\2011\113705 - Camelot LF\LU-4 Land Use - 1 Mile February 03, 2011

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Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-5
GROWTH TRENDS -
METROPOLITAN REGION

Projected Household Growth
by Traffic Survey District
(Percentage 2010-2030)

- No Change
- 0 - 200%
- 201 - 400%
- 401 - 600%
- 601 - 800%
- 801 - 1000%
- 1001%+

LAND USE ANALYSIS

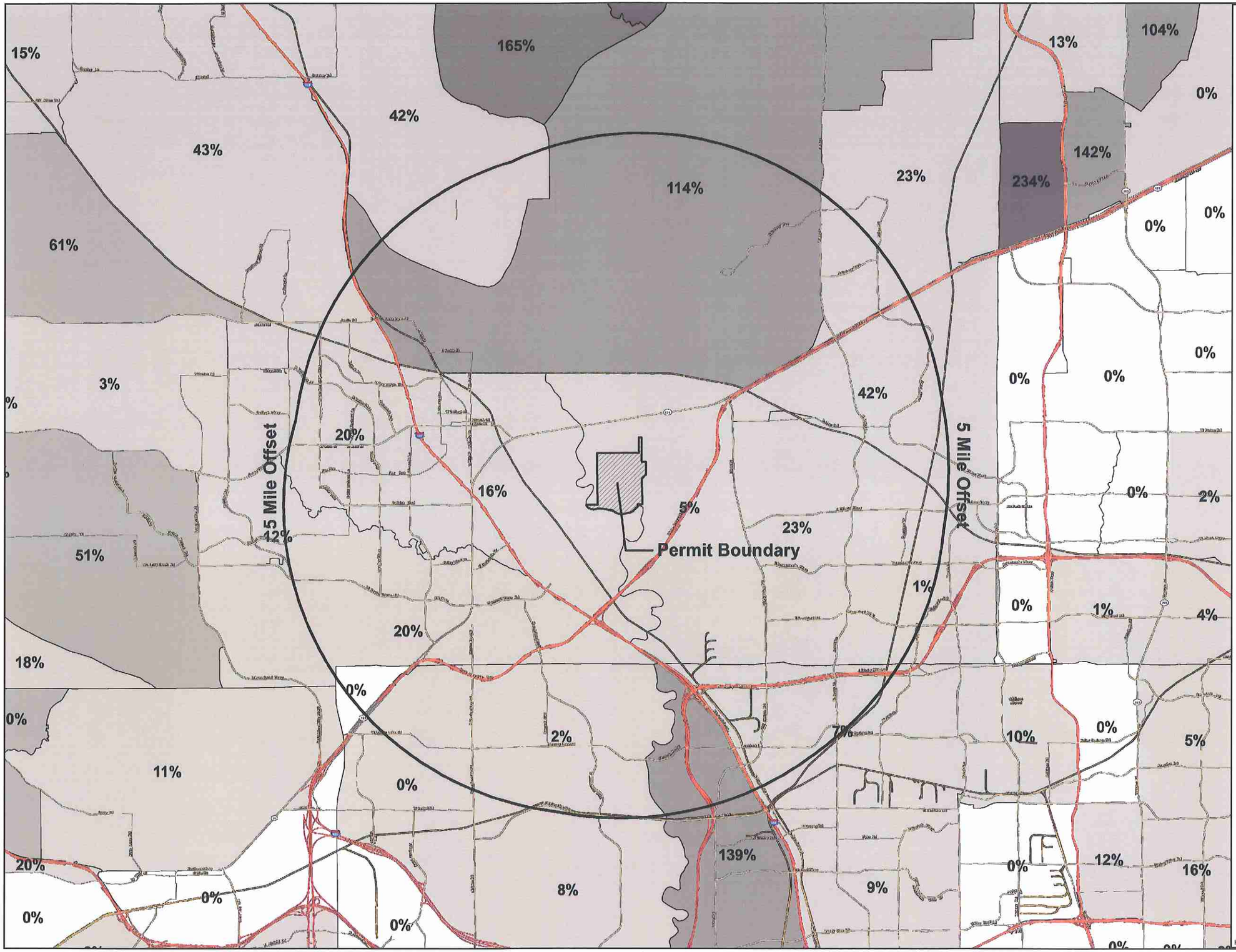
CAMELOT LANDFILL

NORTH

SCALE : 1:600,000

DATA SOURCES:
North Central Texas Council of Governments
2000-2030 Growth Forecast (April 2003)

H:\2011\113705 - Camelot LF\LU-5 Growth Study - Region March 14, 2011



JOHN WORRALL CONSULTING
Land Use
Aesthetics
Reclamation
phone 830-825-3029
email worrall.john@gmail.com

FIGURE LU-6
GROWTH TRENDS - 5 MILE

Projected Household Growth
by Traffic Survey District
(Percentage 2010-2030)

- No Change
- 0 - 50%
- 51 - 100%
- 101 - 150%
- 151 - 200%
- 201 - 250%
- 251 - 300%

LAND USE ANALYSIS
CAMELOT LANDFILL

NORTH

SCALE : 1" = 8000'
0 4000 8000 16000

DATA SOURCES:
North Central Texas Council of Governments
2000-2030 Growth Forecast (April 2003)

H:\2011\113705 - Camelot LF\LU-6 Growth Study - 5 Mile March 14, 2011

APPENDIX I/IIF

CITY OF FARMERS BRANCH CHARTER PROVISIONS

ARTICLE I. - INCORPORATION; FORM OF GOVERNMENT: POWERS

Sec. 1.01. - Incorporation.
Sec. 1.02. - Boundary.
Sec. 1.03. - Annexation of property.
[Sec. 1.04. - Reserved.]
Sec. 1.05. - Form of government.
Sec. 1.06. - Powers of city.
Sec. 1.07. - General powers adopted.
Sec. 1.08. - Power to acquire property for public purposes.

Sec. 1.01. - Incorporation.

The inhabitants of the City of Farmers Branch, Dallas County, Texas, within the corporate limits as now established or as hereafter established in the manner provided by law, shall continue to be a municipal body politic and corporate in perpetuity, under the name of the "City of Farmers Branch."

(Amd. no. 1, 5-1-1999)

Sec. 1.02. - Boundary.

Boundary description: (Omitted).

Editor's note— Section 1.02 sets out the metes and bounds description of the city limits. Since subsequent boundary changes may have rendered the description obsolete, it has been omitted.

Sec. 1.03. - Annexation of property.

The City may annex and disannex property by following the procedure and requirements set out in the Texas Property Code, Vernon's Texas Codes Annotated, and other applicable state statutes as they are from time to time amended.

(Amd. no. 1, 1-15-1983; amd. no. 27, 1-21-1989)

[Sec. 1.04. - Reserved.]

Sec. 1.05. - Form of government.

The municipal government provided by this Charter shall be known as the "council-manager form of government." Pursuant to its provisions and subject only to the limitations imposed by the Texas Constitution, and the laws of the State of Texas, and by this Charter, all powers of the City shall be vested in an elective council, hereinafter referred to as "the Council", which shall enact local legislation, adopt budgets, determine policies, appoint the judge of the municipal court, and appoint the City Manager, who shall execute the laws and administer the government of the City. All powers of the City shall be exercised in the manner prescribed by this Charter, or if the manner be not prescribed, then in such manner as may be prescribed by ordinance.

(Amd. no. 1, 5-1-1999; amd. no. 14, 5-9-2009)

Sec. 1.06. - Powers of city.

The City shall have all powers that now are or hereafter may be granted to municipalities by the constitution or laws of the State of Texas, and all such powers, whether expressed or implied, shall be exercised and enforced in the manner prescribed by this Charter, and when not prescribed therein, in such manner as may be provided by ordinance or resolution of the City Council of the City of Farmers Branch.

(Amd. no. 1, 5-1-1999)

Sec. 1.07. - General powers adopted.

The enumeration of particular powers in the Charter shall not be held or deemed to be exclusive, but in addition to the powers enumerated herein, implied thereby to appropriate to the exercise thereof, the City shall have and may exercise all other powers which, under the constitution and laws of the State of Texas, it would be competent for the Charter specifically to enumerate. The City of Farmers Branch shall have and exercise all the powers conferred upon cities by what is known as the Home Rule Amendment to the constitution of the State of Texas and the enabling act relative thereto, passed by the Thirty-Third Legislature of the State of Texas, found in the published laws of said Legislature, Regular Session, pages 307 to 317, and effective July 7, 1913, and all other laws passed [by] the legislature of the State of Texas, relating thereto, or which may hereafter be passed by said legislature in relation to such matters.

Sec. 1.08. - Power to acquire property for public purposes.

The City of Farmers Branch shall have the power to acquire, by condemnation, either private or public property located inside or outside of the corporate limits for the extension, improvement and enlargement of its water system, including riparian rights, water supply reservoirs, standpipes, water sheds, dams, the laying, building, maintenance and construction of water mains and the laying, erection, establishment or maintenance and construction of water mains and the laying, erection, establishment or maintenance of any appurtenances or facilities which will furnish to the inhabitants of the City an abundant supply of wholesome water; for sewerage plants and systems; rights-of-way for water and sewer lines; parks, playgrounds and schools, hospitals, fire stations, police stations, burial grounds and cemeteries, incinerators or other garbage disposal plants, streets, boulevards and alleys or other public ways, city jails, city halls and other municipal buildings or any right-of-way needed in connection with any property used for any purpose herein-above named; for the straightening or improving of the channel of any stream, branch or drain and for any other public purpose or public use. The procedure to be followed in any condemnation proceeding hereunder and authorized herein shall be in accordance with the provisions of the State law with reference to eminent domain.

(Amd. no. 27, 1-21-1989; amd. no. 1, 5-9-2009)

ARTICLE II. - THE COUNCIL

Sec. 2.01. - Number, selection, term.
Sec. 2.02. - Qualifications; code of ethics; removal from office.
Sec. 2.03. - Compensation; expenditures; and travel policy.
Sec. 2.04. - Vacancies in council.
Sec. 2.05. - Presiding officer; Mayor; Mayor Pro Tempore; Deputy Mayor Pro Tempore.
Sec. 2.06. - Powers.
Sec. 2.07. - Appointment of city manager.
Sec. 2.08. - Removal of city manager.
Sec. 2.09. - Removal of other appointive officials.
Sec. 2.10. - Council not to interfere in city manager's appointments or removals.
Sec. 2.11. - Creation of new departments or offices.
Sec. 2.12. - City Judge.
Sec. 2.13. - Induction of council into office; meetings.
Sec. 2.14. - Quorum; voting.
Sec. 2.15. - Rules of procedure; minutes.
Sec. 2.16. - Ordinances.
Sec. 2.17. - Publication of ordinances.
Sec. 2.18. - Independent annual audit.
Sec. 2.19. - Council to be judge of qualifications of its members; procedure for removal.

Sec. 2.01. - Number, selection, term.

The Council shall consist of six members, a mayor and five Councilmembers, elected by the voters from the City at large in the manner provided in Article VII, for a term of three years or until their successors have been elected and take office as provided in section 2.04.

(Amd. nos. 2, 28, 1-21-1989)

Sec. 2.02. - Qualifications; code of ethics; removal from office.

(a) The members of the Council shall be qualified voters of the City who have been residents of the City for at least one (1) year and who shall never have been convicted of a felony offense or any offense involving moral turpitude. Members of the Council shall hold no other public office except that of a Notary Public or they may be a member of the National Guard or naval or military reserve. When any elective or appointed official of the City, including members of appointed commissions or boards, files for election for any elected office or position, including but not limited to Federal, State, County or City office, other than the position presently held by that person and where the term of said position does not expire either before or simultaneously with the commencement of the term of the office or position that is being sought, his or her existing office shall be deemed vacated as of the date of filing.

(b) The City Council shall by ordinance adopt a Code of Ethics applicable to members of the City Council and to all appointed officers of the City.

(c) A member of the Council may be removed from office, in accordance with the procedures set out herein in Section 2.19 if the Councilmember:

- **(1)** lacks at any time during his or her term of office any qualification for the office prescribed by this Charter or by law,
- **(2)** willfully violates any express prohibition of this Charter,
- **(3)** is guilty of official misconduct as defined in Section 9.18,
- **(4)** is incompetent, as defined in Section 9.17,
- **(5)** is convicted of a felony offense or any offense involving moral turpitude,
- **(6)** fails to attend three (3) regular meetings or 25% of the regular meetings in any six (6) month period, without first being excused by the City Council, or
- **(7)** knowingly violates the City Council Code of Ethics.

(Amd. no. 1, 4-20-1968; amd. no. 1, 4-3-1971; amd. no. 3, 1-15-1983; amd. nos. 3, 28, 1-21-1989; amd. nos. 1, 3, 5-1-1999; amd. No. 14, 5-9-2009)

State law reference— Conflicts of interest, V.T.C.A., Government Code § 171.001 et seq.

Sec. 2.03. - Compensation; expenditures; and travel policy.

(a) Members of the Council shall serve without pay or compensation provided, however, they shall be entitled to reimbursement of necessary expenses incurred in the performance of their official duties when approved by the Council.

(b) The City Council shall by ordinance adopt a policy addressing expenditures by members of the Council in the performance of their official duties and providing methods for reporting and verifying such expenditures. The policy shall include provisions addressing expenditures for travel by members of the Council and their spouses.

Sec. 2.04. - Vacancies in council.

Vacancies occurring in all Council positions shall be filled by a special election to be held within one hundred twenty (120) days after the vacancy occurred.

(Amd. no. 2, 4-3-1971; amd. no. 4, 1-15-1983; amd. nos. 2, 4, 1-21-1989; amd. no. 2, 5-1-1999; amd. no. 2, 5-9-2009)

Sec. 2.05. - Presiding officer; Mayor; Mayor Pro Tempore; Deputy Mayor Pro Tempore.

The Mayor shall preside at meetings of the Council, and shall be recognized as head of the city government for all ceremonial purposes and by the governor for purposes of military law, but shall have no regular administrative duties. The Mayor may participate in the discussion of all matters coming before the Council, but shall not be entitled to vote on legislative or other matters except in case of a tie, when the Mayor shall have the right to cast the deciding vote, or unless such right to vote in other specific cases is expressly provided for in this Charter. The Council shall elect from among the Councilmembers a Mayor Pro Tempore and a Deputy Mayor Pro Tempore who shall perform the duties of Mayor in case of the absence or disability of the Mayor. In case of the absence or disability of the Mayor, the Mayor Pro Tempore, [and] the Deputy Mayor Pro Tempore, the remaining members of the Council shall elect one of their members to act as Mayor temporarily during such absence or disability. The Mayor Pro Tempore or Deputy Mayor Pro Tempore shall not be deprived of the right to vote on matters coming before the Council when acting as mayor. A vacancy in the office of Mayor shall be filled by the Council in the same manner as provided in section 2.04.

(Amd. no. 3, 4-3-1971; amd. no. 28, 1-21-1989; amd. no. 4, 5-1-1999)

Sec. 2.06. - Powers.

Except as otherwise provided by this Charter, all powers of the City and the determination of all matters of policy shall be vested in the Council. Without limitation of the foregoing powers of the Council, the Council shall also have the power to:

(1) Appoint and remove the City Manager and the City Judge;

(2) Upon the recommendation of the City Manager, establish other administrative departments and distribute the work of divisions;

(3) Adopt the budget of the City;

(4) Authorize the issuance of bonds by a bond ordinance;

(5) Inquire into the conduct of any office, department or agency of the City and make investigations as to municipal affairs;

(6) Appoint the members of the Planning and Zoning Commission;

(7) Appoint the members of the Zoning Board of Adjustment;

(8) Adopt and modify the official map of the City;

(9) Regulate and restrict the area, height, and number of stories of buildings and other structures, the size of yards and courts, the density of populations and the location and use of buildings for trade, industry, business, residence or other purpose, and such other zoning regulations as may be authorized by law;

(10) Adopt, modify and carry out plans proposed by the Planning and Zoning Commission for the replanning, reconstruction or redevelopment of any area or district;

(11) Provide for an independent audit;

(12) Appoint any and all other committees, commissions, and advisory boards it deems necessary;

(13) Exercise all other powers authorized under State law for Home Rule Cities.

(Amd. no. 4, 4-3-1971; amd. no. 5, 1-15-1983; amd. no. 27, 1-21-1989; amd. no. 5, 5-1-1999)

Sec. 2.07. - Appointment of city manager.

The Council, including the Mayor (who shall have the right to vote), shall appoint and upon the affirmative vote of four (4) members, a City Manager for an indefinite term who shall be the chief administrator and executive officer of the City. No member or former member of the Council shall ever be appointed City Manager. The City Manager shall have no authority over any appointive board or committee, which is appointed by the Council and receives its authority from the Council.

(Amd. 4-20-1968; amd. no. 5, 4-3-1971; amd. no. 6, 1-15-1983; amd. no. 14, 5-9-2009)

Sec. 2.08. - Removal of city manager.

The Council, including the Mayor (who shall have the right to vote), may, upon the affirmative vote of four (4) members, remove the City Manager from office. The action of the Council in removing the City Manager shall be final, it being the intention of this Charter to vest all authority and fix all responsibility for such removal in the Council.

(Amd. no. 6, 4-3-1971; amd. no. 6, 1-15-1983)

Sec. 2.09. - Removal of other appointive officials.

The Council may, upon affirmative vote of a majority of a quorum of the Council, remove members of its appointive boards or commissions without notice, except to the extent that such removal shall be otherwise controlled by State law.

(Amd. no. 7, 1-15-1983)

Sec. 2.10. - Council not to interfere in city manager's appointments or removals.

Neither the City Council nor any of its members shall direct or request the appointment to or removal from office of any person by the City Manager or any of the City Manager's subordinates. However, the Council may consult and advise with the City Manager, make inquiry regarding the appointments or removals and may express their opinion in regard thereto. In regard to administrative and executive duties under the City Manager, the Council and its members shall deal solely through the City Manager and neither the Council nor any member thereof shall give orders to any subordinates of the City Manager, either publicly or privately. Willful violations of the foregoing provision shall constitute an act of official misconduct and a ground for removal as set out in section 2.02.

(Amd. no. 7, 4-3-1971; amd. no. 28, 1-21-1989)

Sec. 2.11. - Creation of new departments or offices.

The Council, upon the recommendation of the City Manager, may create, change, and abolish offices, departments or agencies, other than the offices, departments and agencies established by this Charter.

Sec. 2.12. - City Judge.

The Council shall appoint a magistrate of the Municipal Court to be known as the City Judge to serve a term of one (1) year. The City Judge may be removed by the Council at any time for incompetence, misconduct, malfeasance, and nonfeasance, or disability. The City Judge shall receive such salary as may be fixed by the Council from time to time. The Council may appoint such alternate city judges as it may deem necessary from time to time, prescribe their compensation, and designate the order of priority to act in place of the City Judge in the event of the City Judge's unavailability, disability, or failure to act for any reason. Any person or persons so appointed to act as City Judge or alternate City Judge shall be an attorney at law who is duly licensed to practice law in the State of Texas and whose license is currently in good standing. All costs and fines imposed by the Municipal Court shall be paid into the City Treasury for the use and benefit of the City. In the event the municipal court is converted to a court of record, all aspects of the Court, including the selection and tenure of the judge, shall be consistent with the existing statute.

(Amd. no. 8, 4-3-1971; amd. no. 8, 1-15-1983; amd. no. 8, 1-21-1989; amd. no. 2, 5-1-1999)

Sec. 2.13. - Induction of council into office; meetings.

The first meeting of each newly elected Council, for induction into office, shall be on the first Tuesday following its election or the earliest date authorized by the Texas Election Code for the canvassing of local elections if such date is later than the first Tuesday following the election.. At such meeting, the first order of business shall be the canvassing of returns, declaring the results and the swearing in of such newly elected Councilmembers. The Council shall meet regularly at such times as it may decide, but not less frequently than once each month. Special meetings of the Council may be called by the Mayor or any two Councilmembers giving written notice of such meetings to the City Secretary, who shall notify each member

of the Council and the City Manager of the time and place of each meeting and the purpose for which it was called. All meetings of the Council shall be open to the public except as provided by State law.

(Amd. no. 9, 4-3-1971; amd. nos. 5, 28, 1-21-1989; amd. no. 3, 5-9-2009)

Sec. 2.14. - Quorum; voting.

Any four (4) members of the Council (which may include the Mayor) shall constitute a quorum necessary for the transaction of official business at any meeting of the Council. Voting shall be by "aye" or "no" on roll call or by a show of hands and a simple majority shall be required to carry a motion, unless otherwise specifically provided for in this Charter or by state law. Any member may call for a roll call vote at any time on any matter being voted on by the Council, and the vote of each member shall be recorded in the minutes of the meeting. Any Councilmember abstaining from voting, except when disqualified, shall be taken as an affirmative vote.

(Amd. no. 10, 4-3-1971)

Sec. 2.15. - Rules of procedure; minutes.

The Council shall determine its own rules and order of business. It shall keep minutes of its proceedings and the minutes shall be open to public inspection. Minutes of all meetings of the Council shall be prepared for review and acceptance by the Council at its next subsequent regular meeting. Upon their acceptance by the Council, the minutes shall be entered in the minute book of the Council and the City Secretary shall at the same time provide a permanent and adequate index showing the action of the Council in regard to all matters submitted to it at both regular and special meetings.

(Amd. no. 6, 1-21-1989; amd. no. 14, 5-9-2009)

Sec. 2.16. - Ordinances.

In addition to such acts of the Council as are required by statute or by this Charter to be by Ordinance, every act of the Council establishing a fine or other penalty or providing for the expenditure of funds or for the contracting of indebtedness, shall be by Ordinance. The enacting clause of all ordinances shall be: "Be it ordained by the City Council of the City of Farmers Branch."

Sec. 2.17. - Publication of ordinances.

All ordinances required to be published in a newspaper by State Law shall be published in accordance with the law.

(Amd. no. 6, 5-1-1999)

Sec. 2.18. - Independent annual audit.

Prior to the end of each fiscal year as defined in section 4.01 of this Charter, the Council shall designate certified public accountants who, as of the end of the fiscal year, shall make an independent audit of accounts and other evidences of financial transactions of the City government and shall submit their report to the Council and to the City Manager. Such accountants shall have no personal interest, direct or indirect, in the fiscal affairs of the City government or of any of its officers. They shall not maintain any accounts or records of the city business, but, within specifications approved by the Council, shall postaudit the books and documents kept by the Department of Finance and any separate subordinate accounts kept by any other office, department or agency of the City Government. A copy of such audit shall be kept in the Office of the City Secretary subject to inspection by any citizen and officer during regular office hours.

(Amd. no. 7, 1-21-1989; amd. no. 1, 5-1-1999)

Sec. 2.19. - Council to be judge of qualifications of its members: procedure for removal.

The Council shall be the judge of the election and qualifications of its members. If a member of the Council is charged with a ground for removal, as set out in section 2.02, such charges shall be set for hearing not less than ten (10) nor more than thirty (30) days from the date on which the written charges are presented. At such hearing, the accused shall have the right to present evidence in his or her defense, but shall be disqualified from voting as to his or her innocence or guilt. At the conclusion of the evidence, a vote shall be taken, and upon the affirmative vote of four (4) Councilmembers (excluding the Mayor), the accused member shall be removed from office and the member's seat declared vacant. The Council shall have the

power to subpoena witnesses and require the production of records, but the decision of the Council in the exercise of such power shall be subject to review by the courts.

(Amd. no. 11, 4-3-1971; amd. nos. 8, 28, 1-21-1989)

ARTICLE III. - THE CITY MANAGER

Sec. 3.01. - The city manager; qualifications.
Sec. 3.02. - The city manager; powers and duties.
Sec. 3.03. - Absence of city manager.
Sec. 3.04. - Administrative departments.
Sec. 3.05. - Directors of departments.
Sec. 3.06. - City secretary.

Sec. 3.01. - The city manager; qualifications.

The City Manager shall be chosen by the Council solely on the basis of his or her executive and administrative training, experience and ability, and without regard to political consideration. The City Manager need not when appointed be a resident of the City of Farmers Branch or the State of Texas, but during his or her tenure of office shall reside in the City of Farmers Branch.

(Amd. no. 28, 1-21-1989)

Sec. 3.02. - The city manager; powers and duties.

The City Manager shall be chief executive officer and the head of the administrative branch of the City government. The City Manager shall be responsible to the Council for proper administration of all affairs of the City under the City Manager's jurisdiction and, to that end, shall have power and shall be required to:

(1) Appoint and when necessary for the welfare of the City, remove any officer or employee of the City except as otherwise provided by this Charter and except as the City Manager may authorize the head of a department to appoint and remove subordinates in such department;

(2) Prepare and submit to the Council an annual budget and be responsible for its administration after adoption;

(3) Prepare and submit to the Council as of the end of the fiscal year a complete report on the finances and administrative activities of the City for the preceding year. The report shall be prepared on a basis prescribed by generally accepted accounting principles as applied to municipal governments. The report shall be submitted to the Council within 120 days of the end of the fiscal year. An extension of this deadline may be granted by the Council at its discretion;

(4) Keep the Council advised of the financial condition and future needs of the City and make such recommendations as may seem desirable;

(5) Perform such other duties as may be prescribed by this Charter or required by the Council, not inconsistent with this Charter;

(6) Attend all meetings of the City Council, except when the City Manager is under discussion, with the right to take part in the discussions, but having no vote; and he shall be notified of all special meetings of the Council;

(7) Establish and maintain, for submission to the council, basic organizational charts setting forth department heads, responsibilities and duties of each and a brief job description of all employees under such department heads;

(8) Submit a report to the City Council no later than ninety (90) days after the independent auditor's report has been submitted to the Council. The City Manager's report shall outline actions to be taken concerning the auditor's recommendations, including, but not limited to, specific responses to any internal control weakness identified by the auditors. The report shall include expected dates of implementations of any remedial action warranted.

(Amd. no. 12, 4-3-1971; amd. nos. 9, 10, 28, 1-21-1989; amd. no. 1, 5-1-1999; amd. no. 14, 5-9-2009)

Sec. 3.03. - Absence of city manager.

To perform the City Manager's duties during his or her temporary absence or disability, the Manager may designate by letter filed with the City Secretary a qualified administrative officer of the City. In the event of failure of the Manager to make such designation, the Council may by resolution appoint an officer of the City to perform the duties of the Manager until the Manager shall return or his or her disability shall cease.

(Amd. no. 28, 1-21-1989; amd. no. 1, 5-1-1999)

Sec. 3.04. - Administrative departments.

The City Council shall establish departments by ordinance upon the recommendation of the City Manager.

(Amd. no. 7, 5-1-1999)

Sec. 3.05. - Directors of departments.

At the head of each department there shall be a director, who shall be an officer of the City and shall have supervision and control of the department subject to the City Manager.

Two or more departments may be headed by the same individual, the Manager may head one or more departments, and directors of departments may also serve as chiefs of divisions.

Sec. 3.06. - City secretary.

The City Manager shall appoint an officer of the City, who shall have the title of the City Secretary, shall give notice of the Council meetings, shall keep minutes of its proceedings, shall authenticate by his or her signature and record in full in a book kept for the purpose all ordinances and resolutions and shall perform such other duties as shall be required by this Charter or by the City Manager.

(Amd. no. 28, 1-21-1989)

ARTICLE IV. - BUDGET

Sec. 4.01. - Fiscal year: Budget year: Accounting year.
Sec. 4.02. - Preparation and submission of budget.
Sec. 4.03. - Budget form.
Sec. 4.04. - Budget a public record.
Sec. 4.05. - Publication and notice of public hearing.
Sec. 4.06. - Hearing and adoption of budget.
Sec. 4.07. - Budget establishes appropriations and amount to be raised by ad valorem taxation.
Sec. 4.08. - Unallocated reserve fund.
Sec. 4.09. - Amendment and supplemental budgets.
Sec. 4.10. - Defect shall not invalidate tax levy.
Sec. 4.11. - Budget establishes appropriations; transfer of unencumbered appropriations.

Sec. 4.01. - Fiscal year: Budget year: Accounting year.

The fiscal year of the City government shall begin on the first day of October and shall end on the last day of September of each calendar year. The fiscal year shall constitute the budget and the accounting year.

Sec. 4.02. - Preparation and submission of budget.

Prior to the 1st day of August in each year, the City Manager shall prepare, file with the City Secretary, and furnish to each member of the Council a carefully itemized budget outlining anticipated receipts and proposed expenditures of the City, showing as definitely as possible appropriations desired for each project and the operation for the next succeeding fiscal year, comparing the same with the budget of the then current fiscal year, and stating the estimated receipts and expenditures of the current year. Concurrently with the submission of an operating budget, the City Manager shall prepare and present a capital projects budget outlining all proposed capital projects and sources of funding for a period of at least three years. The City Manager shall also outline all debt service payments and sources of funding. Each employee, officer, board and department shall furnish the City Manager such information as may be required by the Manager for the proper preparation of each budget. The proposed budget shall contain an estimate of the rate of tax required for the then current calendar year.

(Amd. no. 10, 1-15-1983; amd. nos. 11, 12, 28, 1-21-1989; amd. no. 8, 5-1-1999)

Sec. 4.03. - Budget form.

At the head of the budget there shall appear a summary of the budget in such a manner as to present to taxpayers a simple and clear summary of the detailed estimates of the budget. The City Manager shall at the same time submit a budget message explaining the need of the requested appropriations and stating what pending capital projects, if any, will likely require the issuance of bonds or warrants.

(Amd. no. 14, 5-9-2009)

Sec. 4.04. - Budget a public record.

The budget and budget message and all supporting schedules shall be a public record in the office of the City Secretary open to public inspection by anyone.

Sec. 4.05. - Publication and notice of public hearing.

The budget shall be filed with the City Secretary before the 30th day before the City establishes and sets its tax rate. The City Council shall call and hold a public hearing on the budget after the 25th day after the budget is filed with the City Secretary. Notice of the public hearing shall be published at least one time in a newspaper of general circulation not earlier than thirty (30) days nor later than ten (10) days before the date of the public hearing.

(Amd. no. 5, 4-20-1968; amd. no. 2, 5-1-1999)

Sec. 4.06. - Hearing and adoption of budget.

At the time advertised or at any time to which public hearing shall be adjourned, the Council shall hold a public hearing on the budget as submitted, at which all interested persons shall be given an opportunity to be heard for or against the estimates or any item therein. After the conclusion of such public hearing, the Council may make such changes, if any, in the budget as in their judgment the law warrants and the best interests of the taxpayers of the City demand. The budget, as amended, if there be changes, shall then be adopted by Ordinance which shall also fix the tax rate per $100.00 assessed value which shall apply to the current tax year. The City Manager shall file a copy of the budget with the County Clerk of Dallas County and with the Comptroller of the State of Texas.

Sec. 4.07. - Budget establishes appropriations and amount to be raised by ad valorem taxation.

The budget shall state the amount of money to be raised by ad valorem taxation.

(Amd. nos. 13, 14, 1-21-1989)

Sec. 4.08. - Unallocated reserve fund.

When recommended by the City Manager and in the discretion of the Council, the budget may contain a reasonable sum set aside as an unallocated reserve fund to meet unexpected and unforeseen contingencies in current operating costs of any budget project.

Sec. 4.09. - Amendment and supplemental budgets.

In case of grave public necessity, emergency expenditures to meet unusual and unforeseen conditions which could not, by reasonable diligent thought and attention, have been included in the original budget may from time to time be authorized, upon the affirmative vote of a majority of a quorum of the Council, as amendments or supplements to the original budget. Such supplements and amendments shall be approved in an Ordinance and shall be filed with the original budget.

(Amd. no. 10, 1-15-1983)

Sec. 4.10. - Defect shall not invalidate tax levy.

Defects in the form or preparation of the budget or the failure to perform any procedural requirement shall not invalidate any tax levy or the tax roll.

Sec. 4.11. - Budget establishes appropriations; transfer of unencumbered appropriations.

Amounts set forth in the budget as approved expenditures shall be appropriated to the objects and purposes identified therein. The City Council may authorize the City Manager to transfer unencumbered appropriations within a department to an extent identified by the Council in its grant of such authorization. The Council, by ordinance, may amend the budget by transferring any unencumbered amounts within any fund of the City.

(Amd. no. 14, 1-21-1989)

ARTICLE V. - BONDS, WARRANTS AND OTHER EVIDENCES OF INDEBTEDNESS

Sec. 5.01. - Power to issue.
Sec. 5.02. - Manner of issuance.

Sec. 5.01. - Power to issue.

In keeping with the Constitution of the State of Texas, and not contrary thereto, the City of Farmers Branch, shall have the right to issue all tax bonds, revenue bonds, funding and refunding bonds, time warrants and other evidences of indebtedness as now authorized or as may hereafter be authorized to be issued by cities and towns by the general laws of the State of Texas.

Sec. 5.02. - Manner of issuance.

Bonds and warrants of the City of Farmers Branch shall be issued in the manner provided by the general laws of the State of Texas applicable to cities and towns.

ARTICLE VI. - ASSESSMENT AND COLLECTION OF TAXES

[2]

Sec. 6.01. - Power to tax.
Sec. 6.02. - Where payable.
Sec. 6.03. - Property subject to tax.
Sec. 6.04. - Appraisal of property; method of assessment.
Sec. 6.05. - Tax liens, liabilities and suits.
Sec. 6.06. - Ratification.
Sec. 6.07. - General powers.
Sec. 6.08. - Assessor and collector of taxes.

Sec. 6.01. - Power to tax.

(a) The Council shall have the power to levy, assess, and collect any tax authorized by the Constitution and the general laws of the State of Texas to be levied, assessed, and collected by a municipal corporation.

(b) The council shall have the power to grant tax exemptions in accordance with the Constitution and statutes of the State of Texas.

Sec. 6.02. - Where payable.

(a) All taxes shall be payable at the Office of the Assessor and Collector of Taxes in the City of Farmers Branch at the City Hall Building or at such places both within and without the City of Farmers Branch as may be specifically designated by the Council.

(b) No demand for such taxes shall be necessary, but it is the duty of the taxpayer to make payment of all such taxes in cash within the time specified.

Sec. 6.03. - Property subject to tax.

All real and tangible personal property located in the City of Farmers Branch on January 1 of each year is taxable by the City unless exempt by law.

Sec. 6.04. - Appraisal of property; method of assessment.

All taxable property located within the corporate limits of the City of Farmers Branch shall be appraised and assessed in accordance with the Texas Property Tax Code.

Sec. 6.05. - Tax liens, liabilities and suits.

All taxable property located in the City on January 1 of each year shall stand charged from that date with a lien as allowed by the Texas Property Tax Code in favor of the City for the taxes due.

Sec. 6.06. - Ratification.

All taxes heretofore assessed are ratified and all ordinances relating to taxes now in force shall continue until amended or repealed by the Council.

Sec. 6.07. - General powers.

Unless otherwise provided by this Charter and by ordinances passed hereunder or by the Property Tax Code of the State of Texas, all property in the City liable for taxation shall be assessed in accordance with the general laws of the State of Texas insofar as applicable. In addition to the powers herein conferred with reference to the assessment and collection of taxes, the City of Farmers Branch shall have and may exercise all powers and authority now conferred or which may hereafter be conferred upon cities having a population of more than 5,000 inhabitants by the general laws of the State of Texas.

Sec. 6.08. - Assessor and collector of taxes.

The City Manager shall appoint a Tax Assessor and Collector for the City who meets all statutory requirements for the position. The Tax Assessor and Collector shall give bonds as may be required by the Council.

FOOTNOTE(S):

[2] **Editor's note—** Article VI, sections 6.01 through 6.08 inclusive, were amended at an election held January 21, 1989. (Back)

ARTICLE VII. - NOMINATIONS AND ELECTIONS

Sec. 7.01. - Elections.
Sec. 7.02. - Regulation of elections.
Sec. 7.03. - Nominations.
Sec. 7.04. - Number, selection and term of city council.
Sec. 7.05. - The official ballot.
Sec. 7.06. - Qualified voter.
Sec. 7.07. - Laws governing city elections.
Sec. 7.08. - Conducting and canvassing elections; runoff elections.
Sec. 7.09. - Oath of office.

Sec. 7.01. - Elections.

The regular City election shall be held annually on the uniform election date in May of each year as set by State law, at which time officers will be elected to fill those offices which become vacant that year. The City Council shall fix the hours and place for holding such election in accordance with State law. The City Council may, by resolution, order a special election, fix the time and place for holding same, and provide all means for holding such special election as set by State Law.

At the regular City Council election in 1989, Council places 1, 3 and 5 shall be filled by filling one place for a three-year term and two places for two-year terms. The place to be filled for the three-year term shall be selected by lot. At the regular City Council election in 1990, Council places 2 and 4 and the Mayor shall be filled by electing one position for a two-year term and two positions for three-year terms. The position to be filled for the two-year term shall be selected by lot. At the regular City Council election in 1991 and in all subsequent City Council elections, all Council places and the Mayor shall be filled for three-year terms.

(Amd. no. 1, 4-4-1964; amd. nos. 16, 17, 1-21-1989)

Sec. 7.02. - Regulation of elections.

The City Council shall make all regulations which it considers needful or desirable, not inconsistent with this Charter or the laws of the State of Texas, for the conduct of municipal elections, for the prevention of fraud in such elections and for the recount of ballots in case of doubt or fraud. Municipal elections shall be conducted by the appointed election authorities as specified in section 7.09 who shall also have power to make regulations not inconsistent with this Charter or with any regulations made by the Council or the laws of the State of Texas.

(Amd. no. 1, 5-1-1999)

Sec. 7.03. - Nominations.

Any person, having the qualifications required by this Charter, may be nominated for the Council by petition of sufficient qualified voters of the City to satisfy the requirements of State law, who shall be designated as the candidate's sponsors. Such petition must comply in all respects with the requirements of this Charter and State law. No voter shall sign more than one such petition for any one Council place and should a voter do so, the voter's signature shall be void except as to the petition first filed. With each signature shall be stated the place of residence of the signer, giving the street and number or other description sufficient to identify it and such other information as shall be required by State law. Nominating petitions shall be signed and filed not earlier than ninety days nor later than thirty (30) days before the election with the City Secretary. Nominations shall be accepted in writing by the nominees, and shall be acknowledged by such nominee before the City Secretary or other person authorized to administer oaths under the law of the State of Texas. The petition shall be in substantially the following form:

"We, the undersigned voters of the City of Farmers Branch, hereby nominate and sponsor _____, whose residence is _____, for the office of ....., place _____, to be voted for at the election to be held on the ;daterule; day of ;daterule;, 20;yrrule;; and we individually certify that we are qualified to vote for a candidate for the Council and that during the current election

we have not signed any other nominating petition for the one council place for which we are now nominating the above candidate."

Name, Street Number and Address from which last registered (if different)

_____ Date of Signing

(SPACES FOR SIGNATURES AND REQUIRED DATA)

Acceptance of Nomination

"I do hereby declare that I accept the nomination for the Council and agree to serve if elected. I am ;yrrule; years of age, a qualified voter of the City of Farmers Branch, a resident of the United States, and have been a resident of the City of Farmers Branch or an area now within the corporate limits of the City for at least one year. I am not in arrears in the payment of any taxes or other liability due the City. At the present time I reside at _____ Street in the City of Farmers Branch."

Signature of candidate _____ Date and hour of filing _____ Received by _____ (Signature of city secretary)

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME the undersigned authority, on this day personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument and who acknowledged to me that the same was subscribed as his or her free act and deed for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS ;daterule; Day of ;daterule;, 20;yrrule;.

_____ Notary Public, Dallas County, Texas

(Amd. no. 14, 4-3-1971; amd. nos. 18, 28, 1-21-1989)

Sec. 7.04. - Number, selection and term of city council.

The Council, consisting of a Mayor and five Councilmembers, shall be selected as follows:

(a) The Mayor shall be elected by a majority vote of the qualified voters voting at the election.

(b) The five Councilmembers shall be elected to individual places, designated by number, from the City at large and each shall be elected by a majority vote of the qualified voters voting at the election.

(c) The Mayor and each Councilmember shall hold office for a period of three years and until his or her successor is duly elected and qualified.

(Amd. nos. 2, 28, 1-21-1989)

Sec. 7.05. - The official ballot.

The names of all candidates for office, except such as may have been withdrawn, died or become ineligible, shall be placed on the ballot without party designations and in the order determined in a drawing of lots conducted by the City Council.

Sec. 7.06. - Qualified voter.

Every person resident in the City of Farmers Branch who is a qualified voter under the laws of the State of Texas shall be entitled to vote in any City election.

(Amd. no. 12, 1-15-1983; amd. no. 1, 5-1-1999)

Sec. 7.07. - Laws governing city elections.

All City elections shall be governed, except as otherwise provided by this Charter, by the laws of the State of Texas governing general and municipal elections.

Sec. 7.08. - Conducting and canvassing elections; runoff elections.

The election judges and other necessary election officials for conducting all such elections shall be appointed by the City Council. The election judges shall conduct the elections, determine, record and report the results as provided by the general election laws of the State of Texas. The City Council shall meet not earlier than the 3rd day or later than the 6th day after election day, open the returns, canvass and officially declare the results of the election as to candidates and questions and issue certificates of election to candidates elected as hereinbefore provided. In the event no candidate for a given office has received the necessary majority, the Mayor shall, on the first day following the completion of the official canvas, call a second election to be held on a date authorized for such purpose by State law as adopted by resolution of

the City Council. At the second election, the ballot shall list the names of the two (2) candidates receiving the first and second highest number of votes for a given office (in the first election) in the order determined in a drawing of lots conducted by the City Council. Should one of such candidates withdraw, die, or become ineligible, the other shall be declared elected to office without a second election. Any tie shall be decided by lot. All elections shall be governed by the Texas Election Code and the laws applicable to municipal elections.

(Amd. no. 13, 1-15-1983; amd. no. 19, 1-21-1989; amd. no. 2, 5-1-1999)

Sec. 7.09. - Oath of office.

Every officer of the City shall, before entering upon the duties of the office, take and subscribe to the statement of elected or appointed officer and the oath of office pursuant to the Texas Constitution Art. XVI, Sec. 1(e) and (f).

(Amd. no. 28, 1-21-1989; amd. no. 2, 5-1-1999)

ARTICLE VIII. - FRANCHISES AND PUBLIC UTILITIES

Sec. 8.01. - Powers of the city.
Sec. 8.02. - Franchises, use of city property, power of council.
Sec. 8.03. - Franchise value not to be allowed.
Sec. 8.04. - Right of regulation.
Sec. 8.05. - Consent of property owners.
Sec. 8.06. - Extensions.
Sec. 8.07. - Temporary permits.
Sec. 8.08. - Other conditions.
Sec. 8.09. - Franchise records.
Sec. 8.10. - Accounts of municipally owned utilities.
Sec. 8.11. - Relations of rates and services.
Sec. 8.12. - Rate changes.

Sec. 8.01. - Powers of the city.

In addition to the city's power to buy, own, construct, maintain, and operate utilities, within or without the City limits, and to manufacture and distribute electricity, gas, or anything else that may be needed or used by the public, the City shall have further powers as may now or hereafter be granted under the Constitution and laws of the State of Texas.

Sec. 8.02. - Franchises, use of city property, power of council.

The City Council shall have power to control and to grant, amend, renew or extend by ordinance all franchises, and all use of the City's property, owned in fee title or otherwise, streets, alleys, easements, right -of-ways and all commercial and business uses of said City property by public utilities and all providers of radio, television transmission, cable, internet communications, telecommunications service, electronic communication and all other uses of City property. The City's exercise of power shall be in conformity with applicable Federal and State laws, rules and regulations and applicable City ordinances that implement this section.

(Amd. No. 10, 5-1-1999)

Sec. 8.03. - Franchise value not to be allowed.

In fixing reasonable rates and charges for utility service within the City and in determining the just compensation to be paid by the City for public utility property which the City may acquire by condemnation or otherwise, nothing shall be included as the value of any franchise granted by the City under this Charter.

Sec. 8.04. - Right of regulation.

All grants, renewals, extensions, or amendments or public utility franchises, whether it be so provided in the ordinance or not, shall be subject to the right of the City:

(1) To repeal the same by ordinance at any time for failure to begin construction or operation within the time prescribed or for failure otherwise to comply with the terms of the franchise, such power to be exercised only after due notice and hearing.

(2) To require an adequate and reasonable extension of plant and service, and the maintenance of the plant and fixtures at the standard necessary to render the highest reasonable quality of utility service to the public.

(3) To establish reasonable standards of service and quality of products and prevent unjust discrimination in service or rates.

(4) (a)
To prescribe the form of accounts kept by each such utility; provided, that if the utility shall keep its accounts in accordance with the uniform system of accounts for said utility prescribed by the National Association of Railroad and Public Utility Commissioners, the Federal Power Commission, the Federal Communications Commission, the Railroad Commission of Texas, or

their successors, or other State or Federal utility regulating agencies, this shall be deemed sufficient compliance with this paragraph.

(b) At any time to examine and audit the accounts and other records of any such utility and to require annual and other reports, including reports on local operations by each such public utility.

(5) To impose such reasonable regulations and restrictions as may be deemed desirable or conducive to the safety, welfare, and accommodation of the public.

Sec. 8.05. - Consent of property owners.

The consent of abutting and adjacent property owners shall not be required for the construction, extension, maintenance or operation of any public utility; but nothing in this Charter or in any franchise granted thereunder shall ever be construed to deprive any such property owners of any right of action for damage or injury to his or her property as now or hereafter provided by law.

(Amd. no. 28, 1-21-1989)

Sec. 8.06. - Extensions.

All extensions of public utilities within the City limits shall become a part of the aggregate property of the public utility, shall be operated as such, and shall be subject to all the obligations and reserved rights contained in this Charter and in any original grant hereafter made. The right to use and maintain any extension shall terminate with the original grant and shall be terminable as provided in section 8.04(1). In case of an extension of public utility operated under a franchise hereafter granted, such right shall be terminable at the same time and under the same conditions as the original grant.

Sec. 8.07. - Temporary permits.

Permits unconditionally revocable at the will of the governing body for minor or temporary privileges in the streets, public ways and public places of the city may be granted and revoked by ordinance from time to time, and such permits shall not be deemed franchises as the term is used in this Charter.

Sec. 8.08. - Other conditions.

All franchises heretofore granted are recognized as contracts between the City of Farmers Branch and the grantee, and the contractual rights as contained in any such franchises, shall not be impaired by the provisions of this Charter, except that the power of the City of Farmers Branch to exercise the right of eminent domain in the acquisition of any utility property is in all things reserved, as is the right to require adequate and reasonable extension of plant and service and the maintenance of the plant fixtures at the standard necessary to render the highest reasonable quality of utility service to the public. Every public utility franchise hereafter granted shall be held subject to all the terms and conditions contained in the various sections of this article to the full extent permitted by State and Federal law whether or not such terms are specifically mentioned in the franchises. Nothing in this Charter shall operate to limit in any way, as specifically stated, the discretion of the council of the electors of the City in imposing terms and conditions as may be reasonable and lawful in connection with any franchise grant, including the right to require such compensation or rental as may be permitted by the laws of the State of Texas and the United States.

(Amd. nos. 20, 27, 1-21-1989)

Sec. 8.09. - Franchise records.

Within six months after this Charter takes effect, every public utility and every owner of public utility franchises shall file with the City, as may be prescribed by ordinance, certified copies of all franchises owned or claimed, or under which such utility is operated in the City of Farmers Branch. The City shall compile and maintain a public record of public utility franchises.

Sec. 8.10. - Accounts of municipally owned utilities.

Accounts shall be kept for each public utility owned or operated by the City, in such manner as to show the true and complete financial results of such city ownership and operation, including all assets, appropriately subdivided into different classes, all liability subdivided by classes, depreciation reserve, other reserves, and surplus; also revenues; operating expenses including depreciation, interest payments, rental, and other disposition of annual income. The accounts shall show the actual capital cost to the City of each public utility owned, also the cost of all extensions, additions, and improvements and the source of the funds, expended for such capital purposes. They shall show as nearly as possible the cost of any service furnished to or rendered by any such utility to any other City or governmental department. The Council shall annually cause to be made by a certified public accountant, and shall publish, a report showing the financial

condition of said public utility and the financial results of such City ownership and operation, giving the information specified in this section and such additional data as the council shall deem expedient.

Sec. 8.11. - Relations of rates and services.

The City Council shall have all powers now or hereafter granted to municipalities by the Constitution and laws of the State of Texas, to regulate by ordinance the rates and service of every public utility operating in the City of Farmers Branch. Notwithstanding the foregoing, the Public Utility Regulatory Act of Texas as it shall from time to time be amended, or any succeeding legislation, shall control where applicable.

(Amd. no. 14, 1-15-1983; amd. no. 20, 1-21-1989)

Sec. 8.12. - Rate changes.

No person or corporation enjoying any franchise to operate a public utility within the City of Farmers Branch shall ever make any change to fix any rate for public service to its patrons or the inhabitants of the City of Farmers Branch without first being authorized by the governing body of the City by an ordinance or order approving the same, and no public utility shall contest any rate or charge or order fixed by the governing body of the City under the authority otherwise conferred in the Charter of the City in any suit or cause of action in any court until after such utility has filed a motion for a rehearing with the governing body of the City specifically setting out the grounds of complaint or charge and until the governing body of the City shall have passed upon the said motion for rehearing. Notwithstanding the foregoing, the Public Utility Regulatory Act of Texas shall control where applicable.

(Amd. no. 14, 1-15-1983)

ARTICLE IX. - MISCELLANEOUS PROVISIONS

Sec. 9.01. - No officer or employee to accept gift, etc., from public utility.
Sec. 9.02. - Personal financial interest in contracts or sales to the city; disclosure; violations.
Sec. 9.03. - Church and school property not exempt from special assessments.
Sec. 9.04. - Notice of damage or injury required.
Sec. 9.05. - City exempt from appeal bonds.
Sec. 9.06. - Execution, garnishment and assignment.
Sec. 9.07. - No lien on public property; contractors, etc., to notify city of claims.
Sec. 9.08. - Bonds of contractors.
Sec. 9.09. - Condemnation of dangerous structures.
Sec. 9.10. - Building permits.
Sec. 9.11. - Bonds of city official, employee or department director.
Sec. 9.12. - When provisions take effect.
Sec. 9.13. - Right to amend the Charter.
Sec. 9.14. - Ordinances, rules and relations validated.
Sec. 9.15. - Separability clause.
Sec. 9.16. - Nepotism.
Sec. 9.17. - Incompetency.
Sec. 9.18. - Official misconduct.
Sec. 9.19. - Indemnification of officials and employees.
Sec. 9.20. - Charter review.

Sec. 9.01. - No officer or employee to accept gift, etc., from public utility.

No officer or employee of the City of Farmers Branch shall ever accept, directly or indirectly, any gift, favor, privilege or employment from any public utility corporation enjoying a grant of any franchise, privilege or easement from said City, during the term of office of such officer, or during such employment of such employee, except as may be authorized by law or ordinance. Any officer or employee of the City who shall violate the provisions of this section shall be guilty of a misdemeanor and may be punished by any fine that may be prescribed by ordinance for this offense, and shall forthwith be removed from office.

Sec. 9.02. - Personal financial interest in contracts or sales to the city; disclosure; violations.

(a) No City officer or employee shall have a personal financial interest, whether direct or indirect, in any contract with or sale to the city of land, materials, supplies or services, provided, however, the term "personal financial interest" does not include employee wages, salaries or benefits and no City officer or employee shall act as agent, broker or representative for other persons or corporations in dealing with the City, whether financially remunerated or not for performing such services. Any City officer or employee who has such a personal financial interest, whether direct or indirect, shall declare that interest to the council or board or department involved and shall refrain from voting upon or otherwise participating in his or her capacity as a City officer or employee in the making of a sale or in the making or performing of such contract or in appearing or acting in such representative capacity. Any City officer or employee who willfully conceals such a personal financial interest or willfully violates the requirements of this section shall be guilty of malfeasance in office or position and shall forfeit his or her office or position. Violation of this section with the knowledge, express or implied, of the person or corporation contracted with or making a sale to the City shall render the contract or sale voidable by the City Manager or the City Council.

(b) A City officer having a personal interest in a matter other than as described in Subsection (a) hereof shall use individual discretion in deciding whether to abstain from voting on the matter. Officers shall adhere to the highest ethical standards in making such determination. An officer who abstains from voting because of any personal interest described in this section 9.02 shall be "disqualified" within the meaning of section 2.14 hereof.

(Amd. no. 6, 4-20-1968; amd. nos. 21, 22, 28, 1-21-1989)

Sec. 9.03. - Church and school property not exempt from special assessments.

No property owned by any party or entity shall be exempt from any special taxes, assessments, permit fees, impact fees, or similar charges or fees authorized by this Charter or City Ordinance.

(Amd. no. 5, 5-9-2009)

Sec. 9.04. - Notice of damage or injury required.

The City shall receive written verified notice as a condition precedent to the filing of a claim or law suit against the City not later than six (6) months after the day that the incident occurred. The notice shall be filed with the City Secretary and shall described the following: (1) damage or injury claim; (2) time, date and location where incident occurred; (3) description of incident; (4) estimate of damages.

The City of Farmers Branch shall never be liable on account of any damage or injury to person or to personal property arising from or occasioned by any defect in any public street, highway, alley, grounds or public work of the City of Farmers Branch unless the specific defect causing the damage or injury shall have been actually known to the City Manager at least twenty-four (24) hours prior to the occurrence of the injury or damage or unless the attention of the City Manager shall have been called thereto by a notice thereof in writing at least twenty-four (24) hours prior to the occurrence of the injury or damage and proper diligence has not been exercised to rectify the defect. The notice herein required to be given to the City Manager of the specific defect causing the damage or injury shall apply where the defect arose from any omission of the City itself, through its agents, servants or employees, or acts of third parties.

(Amd. no. 23, 1-21-1989; amd. no. 6, 5-9-2009)

Sec. 9.05. - City exempt from appeal bonds.

It shall not be necessary in any action, suit or proceeding in which the City of Farmers Branch is a part, for any bond, undertaking or security to be executed in behalf of said City, but all such actions, suits, appeals or proceedings shall be conducted in the same manner as if such bond, undertaking or security had been given, and said City shall be liable as if such obligation had been duly given and executed.

Sec. 9.06. - Execution, garnishment and assignment.

The property, real and personal, belonging to said City shall not be liable to be sold or appropriated under any writ of execution or cost bill, nor shall the funds belonging to said City, in the hands of any person, be liable to garnishment on account of any debt it may owe to funds it may have on hand due any person, nor shall the City or any of its officers or agents be required to answer to writ of garnishment on any account whatsoever, nor shall said City be liable to the assignee of any wages of any officer, agent or employee of said City, whether earned or unearned, upon any claim or account whatsoever, and as to the City such assignment shall be absolutely void.

Sec. 9.07. - No lien on public property; contractors, etc., to notify city of claims.

No lien of any kind can ever exist against the public buildings, public halls, parks or public works of the City of Farmers Branch. All subcontractors, materialmen, mechanics and laborers upon any public works of the City of Farmers Branch are hereby required to notify the City of all claims they may have on account of such work against the City, and when such notice has been given, the City shall have required a statutory Payment Bond and the City may retain an amount from any funds due the contractor sufficient to satisfy all valid claims; provided that such notice shall be given timely as it relates to the Payment Bond and prior to any final settlement.

(Amd. no. 7, 5-9-2009)

Sec. 9.08. - Bonds of contractors.

The governing body of the City shall require good and sufficient bonds of all contractors in accordance with applicable state statutes and to the extent the governing body deems it necessary and advisable.

(Amd. no. 15, 1-15-1983; amd. no. 27, 1-21-1989)

Sec. 9.09. - Condemnation of dangerous structures.

Whenever, in the opinion of the governing body of the City, any building, fence, shed, awning or structure of any kind or part thereof is liable to fall down and injure persons or property, the governing body may order the owner or agent of the same, or occupant of the premises, to take down and remove the same within such time as it may direct, and may punish by fine all persons failing so to do. Upon failure to comply, the governing body shall have the additional power to remove the same at the expense of the City on account of the owner of the property and assess the expenses thereof, including condemnation

proceedings, as a special tax against the land, and the same may be collected as other special taxes provided for in this Charter, or by suit in any court of competent jurisdiction.

The governing body of the City shall have full power to condemn all dangerous buildings or obstructions of any kind and may provide regulations therefor by Ordinance.

(Amd. no. 28, 1-21-1989)

Sec. 9.10. - Building permits.

The City of Farmers Branch shall have power to prohibit the erection or construction of any building or structure of any kind within the City of Farmers Branch without a permit first having been issued by the City for the construction or erection of such building or structure, and may authorize a fee to be charged for such permit, and in pursuance of said authority may authorize the inspection by the City of all buildings or structures during the progress of their construction and may require that all buildings shall be constructed in conformity with the building regulations which exist in said City or which shall hereafter be passed.

Sec. 9.11. - Bonds of city official, employee or department director.

In addition to any bonding provisions herein provided, the City Council may require any City official, department director or City employee, before entering upon his or her duties, to execute a good and sufficient bond with a surety company doing business in the State of Texas, and approved by the City Council, as surety thereon, said bond to be in such amount as the Council may demand, payable to the City of Farmers Branch, and conditioned for the faithful performance of the duties of his or her office; premium of such bond to be paid by the City.

(Amd. no. 28, 1-21-1989)

Sec. 9.12. - When provisions take effect.

This Charter and all amendments thereto shall be in effect from and after approval by the voters of the City and the approval of an ordinance of the City by the City Council declaring the same adopted.

(Amd. no. 12, 5-1-1999)

Sec. 9.13. - Right to amend the Charter.

This Charter may be amended no more than once every two years as provided by the laws of the State of Texas.

Sec. 9.14. - Ordinances, rules and relations validated.

All ordinances, resolutions, rules and regulations of the City of Farmers Branch heretofore ordained, passed or enacted, that are in force at the time this Charter becomes effective, and which are not in conflict with such Charter, shall remain in full force and vigor until altered, amended or repealed by the governing body of the City after such Charter takes effect.

Sec. 9.15. - Separability clause.

If any section or part of [a] section of this Charter shall be held invalid by a court of competent jurisdiction, such holding shall not affect the remainder of this Charter nor the context in which such section or part of [a] section so held invalid may appear, except to the extent that an entire section or part of [a] section may be inseparably connected in meaning and effect with the section or part to which holding shall directly apply.

Sec. 9.16. - Nepotism.

(a) No person shall be hired to be an employee of the City, or appointed to any paid office of the City, if that person's relationship to the Mayor, any member of the City Council, or the City Manager is any of the following:

(1) Spouse; (2) Father; (3) Mother; (4) Stepfather; (5) Stepmother; (6) Daughter; (7) Son; (8) Sister; (9) Brother; (10) Stepbrother; (11) Stepsister; (12) Brother-in-law; (13) Sister-in-law; (14) Grandfather; (15) Grandmother; (16) Granddaughter; (17) Grandson; (18) Aunt; (19) Uncle; (20) Nephew; (21) Niece; (22) First Cousin; (23) Great Grandfather; (24) Great Grandmother; (25) Great Granddaughter; (26) Great Grandson; (27) Great Uncle; (28) Great Aunt; (29) Great Nephew; (30) Great Niece; or (31) Second Cousin.

(b)

No person shall be hired to be an employee of the City, or appointed to any paid office of the City, if the relationship of that person's spouse to the Mayor, any member of the City Council, or the City Manager is any of the following:

(1) Father; (2) Mother; (3) Brother; (4) Sister; (5) Daughter; (6) Son; (7) Grandmother; (8) Grandfather; (9) Granddaughter; (10) Grandson; (11) Aunt; (12) Uncle; (13) Nephew; (14) Niece; or (15) First Cousin.

(Amd. no. 15, 4-3-1971; amd. no. 24, 1-21-1989)

Sec. 9.17. - Incompetency.

By "incompetency", as used herein, is meant gross ignorance of official duties, or gross carelessness in the discharge of them; or an officer may be found to be incompetent when, by reason of some serious physical or mental defect, not existing at the time of the officer's election, he or she has become unfit or unable to discharge promptly and properly the duties of his or her office.

(Amd. no. 16, 4-3-1971; amd. no. 28, 1-21-1989)

Sec. 9.18. - Official misconduct.

By "official misconduct", as used herein with reference to City officials, is meant any unlawful behavior in relation to the duties of office, which is willful in its character and includes any willful or corrupt failure, refusal or neglect of an officer to perform any duty enjoined on such officer by law and also shall include knowing violation of the City Council's Code of Ethics.

(Amd. no. 17, 4-3-1971; amd. nos. 3, 28, 1-21-1989)

Sec. 9.19. - Indemnification of officials and employees.

The City Council shall purchase or provide and maintain liability insurance to protect City employees and elected and appointed officers in connection with claims brought against such persons arising out of acts or omissions of such persons in the course and scope of the performance of their City duties.

(Amd. no. 25, 1-21-1989)

Sec. 9.20. - Charter review.

Prior to the first day of July of each year ending in "3" or "8", the City Council shall appoint a committee for the purpose of determining whether amendments to this Charter are needed and to make appropriate recommendations to the City Council. The committee shall include no fewer than one (1) representative from every voting precinct in the City, unless the precinct includes fewer than 100 registered voters, in which case the precinct would be combined with one or more contiguous City precincts.

(Amd. no. 26, 1-21-1989; amd. no. 13, 5-1-1999)

ARTICLE X. - RECALL

[3]

Sec. 10.01. - Scope of recall.
Sec. 10.02. - Petitions for recall.
Sec. 10.03. - Form of recall petition.
Sec. 10.04. - Various papers constituting petition.
Sec. 10.05. - Presentation of petition to the council.
Sec. 10.06. - Public hearing to be held.
Sec. 10.07. - Election to be called.
Sec. 10.08. - Ballots in recall election.
Sec. 10.09. - Result of recall election.
Sec. 10.10. - Recall, restrictions thereon.
Sec. 10.11. - Failure of the council to call an election.

Sec. 10.01. - Scope of recall.

Any elected City official, whether elected to office by the qualified voters of the City to fill a vacancy, shall be subject to recall and removal from office by the qualified voters of the City on grounds of incompetency, misconduct or malfeasance in office.

(Amd. no. 2, 5-1-1999)

Sec. 10.02. - Petitions for recall.

Before the question of recall of such officer shall be submitted to the qualified voters of the City, a petition demanding such question to be so submitted shall first be filed with the person performing the duties of City Secretary; which said petition shall be signed by qualified voters equal in number to at least fifteen percent (15%) of those who were qualified voters on the date of the last regular municipal election as determined from the list of qualified voters maintained by the tax collector of Dallas County. Each signer of such recall petition shall personally sign his or her name thereto in ink or indelible pencil, and shall write after his or her name and place of residence, giving name of street and number, or place of residence, and shall also write thereon the day, the month and the year his or her signature was affixed.

(Amd. no. 28, 1-21-1989)

Sec. 10.03. - Form of recall petition.

The recall petition mentioned above must be addressed to the Council of the City of Farmers Branch, must distinctly and specifically point out the ground or grounds upon which such petition for removal is predicted, and, if there be more than one ground, such as for incompetency, misconduct or malfeasance in office, shall specifically state each ground with such certainty as to give the officer sought to be removed notice of the matters and things with which he or she is charged. The signature shall be verified by oath in the following form:

STATE OF TEXAS
COUNTY OF DALLAS
I, _____, being first duly sworn, on oath depose and say that I am one of the signers of the above petition; and that the statements made therein are true, and that each signature appearing thereto was made in my presence on the day and date it purports to have been made, and I solemnly swear that the same is the genuine signature of the person whose name it purports to be.

_____

Subscribed and sworn to before me this day of ;daterule;, 20;yrrule;.

.....
Notary Public, Dallas County, Texas

(Amd. no. 28, 1-21-1989)

Sec. 10.04. - Various papers constituting petition.

The petition may consist of one or more copies, or subscription lists, circulated separately, and the signatures thereto may be upon the paper or papers containing the form of petition, or upon other paper attached thereto. Verifications provided for in the next preceding section of this article may be made by one or more petitioners, and the several parts of copies of the petition may be filed separately and by different persons, but no signatures to such petition shall remain effective or be counted which were placed thereon more than forty-five (45) days prior to the filing of such petition or petitions with the person performing the duties of City Secretary. All papers comprising a recall petition shall be filed with the person performing the duties of City Secretary on the same day, and the said secretary shall immediately notify, in writing, the officer so sought to be removed, by mailing such notice to his or her Farmers Branch address.

Sec. 10.05. - Presentation of petition to the council.

Within fifteen (15) days after the date of the filing of the papers constituting the recall petition, the person performing the duties of City Secretary shall verify the petition and the signatures and certify the petition as to all of the legal requirements as established by this Charter and State law. The City Secretary shall submit the petition and the certification of same to the City Council. The City Secretary's certification shall be final and not subject to change or challenge.

(Amd. no. 8, 5-9-2009)

Sec. 10.06. - Public hearing to be held.

The officer whose removal is sought may, within five (5) days after such recall petition has been presented to council, request that a public hearing be held to permit the officer to present facts pertinent to the charges specified in the recall petition. In this event, the Council shall order such public hearing to be held, not less than five (5) days nor more than fifteen (15) days after receiving such request for a public hearing.

(Amd. no. 28, 1-21-1989)

Sec. 10.07. - Election to be called.

If the petition has been certified to be in accordance with the Charter, and the officer whose removal is sought does not resign, then it shall be the duty of the City Council to order an election for the next uniform election date as authorized by the Texas Election Code.

(Amd. no. 4, 1-15-1983; amd. no. 9, 5-9-2009)

Sec. 10.08. - Ballots in recall election.

Ballots used at recall elections shall conform to the following requirements:

(1) With respect to each person whose removal is sought, the question shall be submitted:
"Shall _____ be removed from the office of _____ by recall?

(2) Immediately below each such question there shall be printed the following words, one above the other, in the order indicated:
"Yes" "No"

Sec. 10.09. - Result of recall election.

If a majority of the votes cast at a recall election shall be "No", that is, against the recall of the person named on the ballot, he or she shall continue in office for the remainder of his or her unexpired term, subject to recall as before. If a majority of the votes cast at such an election be "Yes", that is, for the recall of the person named on the ballot, he or she shall, regardless of any technical defects in the recall petition, be deemed removed from office and the vacancy be filled as vacancies in the council are filled, as provided in this Charter.

(Amd. no. 28, 1-21-1989)

Sec. 10.10. - Recall, restrictions thereon.

No recall petition shall be filed against any officer of the city within three (3) months after his or her election, nor within three (3) months after an election for such officer's recall.

(Amd. no. 28, 1-21-1989)

Sec. 10.11. - Failure of the council to call an election.

In case all of the requirements of this Charter shall have been met and the Council shall fail or refuse to receive the recall petition, or order such recall election, or discharge any other duties imposed upon said Council by the provisions of this Charter with reference to such recall, then the County Judge of Dallas County, Texas, shall discharge any of such duties herein provided to be discharged by the person performing the duties of City Secretary or by the Council. Notwithstanding the foregoing, the dates of all City elections shall be governed by the Texas Election Code.

(Amd. no. 4, 1-15-1983)

FOOTNOTE(S):

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(3) **Editor's note—** Article X, sections 10.01 through 10.11 were added at an election held April 20, 1968. (Back)

ARTICLE XI. - INITIATIVE AND REFERENDUM

[4]

Sec. 11.01. - General power of initiative and referendum.
Sec. 11.02. - Initiative.
Sec. 11.03. - Form of initiative and referendum petition.
Sec. 11.04. - Various papers constituting petition.
Sec. 11.05. - Referendum.
Sec. 11.06. - Voluntary submission of legislation.
Sec. 11.07. - Form of ballots.
Sec. 11.08. - Publication of proposed and referred ordinances.
Sec. 11.09. - Adoption of ordinances.
Sec. 11.10. - Inconsistent ordinances.
Sec. 11.11. - Ordinances passed by popular vote, repeal or amendment.
Sec. 11.12. - Further regulations by the council.
Sec. 11.13. - Franchise ordinances.

Sec. 11.01. - General power of initiative and referendum.

The qualified voters of the City of Farmers Branch, in addition to the method of legislation hereinbefore provided, shall have the power of direct legislation by the initiative and referendum.

Sec. 11.02. - Initiative.

Qualified voters of the City may initiate legislation by submitting a petition addressed to the Council which requests the submission of a proposed ordinance or resolution to a vote of the qualified voters of the City said petition must be signed by qualified voters equal in number to at least fifteen percent (15%) of those who were qualified voters on the date of the last regular municipal election as determined from the list of qualified voters maintained by the designated authority of Dallas County, and each copy of the petition shall have attached to it a copy of the proposed legislation. Each signer of such petition shall personally sign his or her name and address in ink or indelible pencil, and shall write after his or her name, place of residence, giving the name of the street and number, or place of residence, and shall also write thereon the date, the month and the year his signature was affixed.

(Amd. no. 28, 1-21-1989; amd. no. 11, 5-9-2009)

Sec. 11.03. - Form of initiative and referendum petition.

The petition mentioned above must be addressed to the City Council of the City of Farmers Branch, and must have attached to it a copy of the proposed legislation. The signature shall be verified by oath in the following form:

STATE OF TEXAS
COUNTY OF DALLAS
I, _____, being first duly sworn, on oath depose and say that I am one of the signers of the above petition: and that the statements made therein are true, and that each signature appearing thereto was made in my presence on the day and date it purports to have been made, and I solemnly swear that the same is the genuine signature of the person whose name it purports to be.
Sworn to and subscribed before me this ;daterule; day of ;daterule; 20;yrrule;.
.....
Notary Public, Dallas County, Texas

Sec. 11.04. - Various papers constituting petition.

The petition may consist of one (1) or more copies, or subscription lists, circulated separately, and the signatures thereto may be upon the paper or papers containing the form of petition, or upon other paper attached thereto. Verifications provided for in the next preceding section of this article may be made by one

or more petitioners, and the several parts of copies of the petition may be filed separately and by different persons; but no signatures to such petition shall remain effective or be counted which were placed thereon more than forty-five (45) days prior to the filing of such petition or petitions with the person performing the duties of City Secretary. All papers comprising an initiative or referendum petition shall be filed with the person performing the duties of City Secretary on the same day. Within fifteen (15) days after the filing of such petition, the person performing the duties of City Secretary shall verify the petition and the signatures and certify the petition as to all of the legal requirements as established by this Charter and State law. The City Secretary shall submit the petition and the certification of same to the City Council.

Upon receipt of the petition, certification and ordinance or resolution, it shall become the duty of the City Council, within twenty (20) days after the receipt thereof, to pass and adopt such ordinance or resolution without alteration except with the written approval of all of the circulators of the petition (Section 11.03), or to call a special election on the next uniform election date on the question of adopting or rejecting the proposed ordinance or resolution.

(Amd. no. 4, 1-15-1983; amd. no. 12, 5-9-2009)

Sec. 11.05. - Referendum.

Qualified voters of the City of Farmers Branch may require that any ordinance or resolution, with the exception of ordinances or resolutions appropriating money, fixing salaries or levying taxes, zoning or granting of franchises passed by the Council be submitted to the voters of the City for approval or disapproval, by submitting a petition for this purpose within thirty (30) days after the final passage of said ordinance or resolution, or within thirty (30) days after its publication. Said petition must be signed by qualified voters equal in number to at least fifteen percent (15%) of those who were qualified voters on the date of the last regular municipal election as determined from a list of qualified voters maintained by the designated authority of Dallas County. Each signer of such petition shall personally sign his or her name and address in ink or indelible pencil, and shall write after his or her name his or her place or residence, giving the name of the street and number, or place of residence, and shall write thereon the date, the month and the year his signature was affixed. Said petition shall be submitted to the person performing the duties of City Secretary. Immediately upon the filing of said petition, the person performing the duties of City Secretary shall verify the petition and the signatures and certify the petition as to all of the legal requirements as established by this Charter and State law. The City Secretary shall submit the petition and the certification of same to the City Council. The City Secretary's certification shall be final and not subject to change or challenge. Thereupon, the Council shall immediately reconsider such ordinance or resolution and, if it does not entirely repeal the same, shall submit it to a proper vote as provided in Section 11.04 of this Charter. Such ordinance or resolution shall remain in effect unless the majority of the qualified voters voting thereon at such election shall vote against such ordinance or resolution. Notwithstanding the foregoing, the dates of all City elections shall be governed by the Texas Election Code.

(Amd. no. 28, 1-21-1989; amd. no. 2, 5-1-1999; amd. no. 13, 5-9-2009)

Sec. 11.06. - Voluntary submission of legislation.

The Council, upon its motion and by a majority vote of its members, may submit to popular vote at any election for adoption or rejection any proposed ordinance, resolution or measure or may submit for repeal any existing ordinance, resolution or measure, in the same manner and with the same force and effect as provided in this article for submission on petition, and may in its discretion call a special election for this purpose.

Sec. 11.07. - Form of ballots.

The ballots used when voting upon such proposed and referred ordinance, resolution or measure shall set forth their nature sufficiently to identity them and shall also set forth upon separate lines the words:

"For the Ordinance" and "Against the Ordinance" or "For the Resolution" and "Against the Resolution".

Sec. 11.08. - Publication of proposed and referred ordinances.

The person performing the duties of City Secretary shall publish at least once in the official newspaper of the City the proposed or referred ordinance or resolution within fifteen (15) days before the date of the election, and shall give such other notices and do such other things relative to such election as are required in general municipal elections or by the ordinance or resolution calling said election.

Sec. 11.09. - Adoption of ordinances.

If a majority of the qualified voters voting on any proposed ordinance or resolution or measure shall vote in favor thereof, it shall thereupon, or at any time fixed therein, become effective as a law or as a mandatory order to the Council.

Sec. 11.10. - Inconsistent ordinances.

If the provisions of two (2) to [or] more proposed ordinances or resolutions approved at the same election are inconsistent, the ordinance or resolution receiving the highest number of votes shall prevail.

Sec. 11.11. - Ordinances passed by popular vote, repeal or amendment.

No ordinance or resolution which may have been passed by the Council upon a petition or adopted by popular vote under the provisions of this article shall be repealed or amended except by the Council in response to the referendum petition or submission as provided in section 11.05 of this Charter.

Sec. 11.12. - Further regulations by the council.

The Council may pass ordinances or resolutions providing other and further regulations for carrying out the provisions of this article consistent herewith.

Sec. 11.13. - Franchise ordinances.

Nothing contained in this Article shall be construed to be in conflict with any of the provisions of this Charter, pertaining to ordinances granting franchises when valuable rights shall have accrued thereunder.

FOOTNOTE(S):

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[4] **Editor's note—** Article XI, sections 11.00 through 11.13 were added at an election April 20, 1968. (Back)

APPENDIX I/IIG

TPDES PERMIT

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Texas Pollutant Discharge Elimination System
Storm Water Multi-Sector General Permit

The Notice of Intent (NOI) for the facility listed below was received on November 16, 2006. The intent to discharge storm water associated with industrial activity under the terms and conditions imposed by the Texas Pollutant Discharge Elimination System (TPDES) storm water multi-sector general permit TXR050000 is acknowledged. Your facility's TPDES multi-sector storm water general permit number is:

TXR05K396
Coverage Effective: November 19, 2001

TCEQ's storm water multi-sector general permit requires certain storm water 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 storm water pollution prevention plan (SWP3) that is tailored to your industrial site. As a facility authorized to discharge under the storm water multi-sector general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

PROJECT/SITE:
CAMELOT LANDFILL
DENTON County
580 HUFFINES BLVD
LEWISVILLE, TX 75056

OPERATOR:
CAMELOT LANDFILL TX LP
580 HUFFINES BLVD
LEWISVILLE, TX 75056

This permit expires on August 14, 2011, unless otherwise amended. For additional information, see the TCEQ web site at www.tceq.state.tx.us or contact the Storm Water Processing Center by email at swpermit@tceq.state.tx.us or by telephone at (512) 239-3700. A copy of this document should be kept with your SWP3.

Issued Date: 3/30/2007

FOR THE COMMISSION

I/IIG-1

APPENDIX I/IIH

TCEQ PERMIT NO. MSW-946 INFORMATION

MARK P.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

April 4, 2000

The Honorable Bob Phelps
Mayor of Farmers Branch
P.O. Box 819010
Farmers Branch, TX 75381-9010

Re: Municipal Solid Waste - Dallas County
City of Farmers Branch - Permit No. MSW- 946
Permit Transfer
Tracking No. 625

Dear Mayor Phelps:

Enclosed is a copy of the above referenced permit transfer for a municipal solid waste facility issued pursuant to Chapter 361, Texas Health & Safety Code. The documentation, including the application, prepared and submitted to support the transfer request shall be considered a part of this permit, and shall be considered as operational requirements of this permit.

If you have any questions concerning this letter or if we may be of any assistance to you regarding municipal solid waste, you may contact Mr .Jerry Allred, at MC-124, P.O. Box 13087, Austin, Texas 78711; telephone number (512) 239-3732.

Sincerely,

Dorca Zaragoza-Stone

Dorca Zaragoza-Stone, Manager
MSW Permits Section
Waste Permits Division

DZS/JDA/lcs

cc: Mr. Pete Pistole, Solid Waste Manager, City of Farmers Branch

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Permit No. MSW- 946 (Transferred)

Coordinates: N 33°02.00' W 96°57.00'

PERMIT FOR A MUNICIPAL SOLID WASTE FACILITY
issued under provisions of the Texas Solid Waste Disposal Act, Chapter 361, Health and Safety Code and 30 Texas Administrative Code (TAC) Chapter 330

Permittee:
The City of Farmers Branch
P.O. Box 819010
Farmers Branch, TX 75381-9010

Site Owner:
(Same as Permittee)_

LEGAL DESCRIPTION OF SITE: The legal description, attached hereto, is hereby made a part of this permit.

SIZE AND LOCATION OF SITE: This site consists of 102.58 acres of land and is located approximately 0.8 mile southeast of the bridge on State Highway 121 at the Elm Fork of the Trinity River, 0.6 mile south of State Highway 121 and 1.75 miles southeast of the intersection of FM Highway 544 and FM Highway 2218 in the City of Hebron in Denton County.

OPERATIONAL CLASSIFICATION OF SITE: Type I

WASTE DISPOSAL METHODS USED AT SITE: Trench and area method of disposal with compaction of solid waste and cover with a minimum of six (6) inches of compacted earth not less often than once each day of operation.

DESCRIPTION OF WASTE MATERIALS PROCESSED AT SITE: Solid waste under the regulatory jurisdiction of the Texas Natural Resource Conservation Commission, when disposed of or processed in accordance with 30 TAC Chapter 330.

FINDINGS OF FACT AND CONCLUSIONS OF LAW: Attached hereto for reference.

STANDARD PROTECTION: Acceptance of this permit constitutes an acknowledgment that the permittee will comply with all of the terms, provisions, conditions, limitations and other restrictions embodied in this permit; with 30 TAC Chapter 330; and with the pertinent laws of the State of Texas.

SPECIAL PROVISIONS: See Attachment - "Special Provisions for Municipal Solid Waste Permit No. MSW-946."

This permit will be valid until canceled or revoked by the Texas Natural Resource Conservation Commission or until the site is completely filled and rendered unusable, whichever occurs first.

APPROVED, ISSUED, AND EFFECTIVE in accordance with 30 Texas Administrative Code Chapter 330.

ISSUED DATE:

APR 0 4 2000

For the Commission

PERMIT HISTORY

The original permit was issued to the City of Highland Park on the 15th day of March 1979.

SPECIAL PROVISIONS FOR MUNICIPAL SOLID WASTE PERMIT NO. 946

A. Property Rights:

It is the responsibility of the herein-named permittee to possess or acquire a sufficient interest in or right to the use of the property herein described for the purposes for which this permit is issued. The granting of this permit does not convey any property rights or interest in either real or personal property, nor does it authorize any injury to private property or invasion of personal rights, nor any infringement of Federal, State or local laws or regulations outside the scope of the authority under which this permit is issued.

B. Surface Water Protection:

1. An "Application for Approval of a Levee Project" shall be submitted to the Texas Department of Water Resources under provisions of Section 16.238 of the Texas Water Code within three (3) months after the date of this permit. The permittee shall promptly transmit to the Texas Department of Health a copy of the Texas Department of Water Resources' approval or denial of the levee project. Failure to obtain approval of the levee project shall be grounds for reevaluation of this permit. Construction of levees required to provide protection from a 50-year frequency flood shall be completed within four (4) months after receipt of levee project approval from the Texas Department of Water Resources, unless an extension of time is approved by the Texas Department of Health prior to the expiration of the stated period of time.

2. Rainfall runoff within the landfill trenches or area that has become contaminated by solid waste shall not be discharged from the site unless authorized by the Texas Department of Water Resources.

C. Groundwater Protection:

1. Not less than seven (7) days prior to depositing any solid waste in any area or excavation, the permittee shall submit to the Department a certificate, in a format to be provided by the Department, from a registered professional engineer qualified to evaluate soils characteristics and data that testing by a soils laboratory of soil layers, in their undisturbed, natural or original condition, that will form the bottom and sides of such area or excavation has been performed and proper lining provided where necessary to ensure compliance with the Department's groundwater protection requirements.

2. The permittee shall submit a periodic report at six-month intervals, beginning from the date of issuance of the permit and in a format to be provided by the Department, providing confirmation that the area or excavation for which a certificate as required by special provision C-1, above, was submitted is still in use and also providing an estimated date for completion of landfilling at such area or excavation.

D. Odor and Air Pollution Control:

1. Any ponded water at the site must not become a source of obnoxious odors.

2. All applicable Texas Air Control Board regulations concerning air pollution control shall be observed.

E. Site Development and Operation:

Site development and operation shall be in accordance with the site plans and procedures submitted with the permit application and in accordance with the Department's "Municipal Solid Waste Management Regulations". Any significant deviation from such plans and procedures must have prior approval by the Department.

F. Site Closing:

Site completion and closure procedures shall be in accordance with the Department's "Municipal Solid Waste Management Regulations".

G. Surety Bond:

Not required.

LEGAL DESCRIPTION OF TRACT
OF LAND FOR USE BY
THE TOWN OF HIGHLAND PARK
AS A SOLID WASTE DISPOSAL SITE

STATE OF TEXAS I

COUNTY OF DENTON I

All that certain lot, tract, or parcel of land, lying and being situated in the County of Denton, State of Texas, and being all of a certain 47.67 acre tract as conveyed by Assignment from Paul D. Pickett to M.L. Ledbetter; said Instrument dated August 31, 1954 and recorded in Volume 398, Page 316, Deed Records of Denton County, Texas; a part of said tract being out of the Samuel Hayden Survey, Abstract No. 537 and a part being out of the A.J. Chowning Survey, Abstract No. 1638 and a part being out of the Patrick O'Leary Survey, Abstract No. 974; also all of a certain 55 acre tract as conveyed by Assignment dated August 20, 1954 from Billy Ross McMahon to M.L. Ledbetter, as shown of record in Volume 398, Page 318, Deed Records of Denton County, Texas, said land all being out of the Patrick O'Leary Survey, Abstract No. 974; all of the above land being more particularly described by metes and bounds as follows:

Beginning at a steel pin and a fence corner post at the Northwest Corner of a private road or lane, and being the Northwest Corner of the P. Higgins Survey, Abstract No. 525 and the Northeast Corner of the A.J. Chowning Survey, Abstract No. 1638 and in the South Boundary Line of the Samuel Hayden Survey, Abstract No. 537 and being an inner ell corner on the past mentioned 47.67 acre tract;

Thence: South 00 deg. 23'50" West, along fence line and the West Boundary Line of mentioned private road or lane and the West Boundary Line of the P. Higgins Survey, Abstract No. 525, and passing the Southeast Corner of the A.J. Chowning Survey, Abstract No. 1638 and the Northeast Corner of the Patrick O'Leary Survey, Abstract No. 974; continuing on said course a total distance of 1731.79 feet to a steel pin and fence corner post for a corner on the above mentioned 47.67 acre tract;

Thence: South 25 deg. 32'30" West, along fence line and the Northwesterly Boundary Line of the past mentioned private lane or road the Southeasterly Boundary Line of the 47.67 acre tract, 286.85 feet to a steel pin and fence corner post for the Southeast Corner of mentioned tract;

Thence: North 89 deg. 13'30" West, along fence line and passing the Southwest Corner of said 47.67 acre tract and the Southeast corner of the past mentioned 55 acre tract; continuing on said course and along fence line, a total distance of 3735.57 feet to a fence corner post for the Southwest corner of the past mentioned 55 acre tract and being in the West Boundary Line of the Patrick O'Leary Survey, Abstract No. 974 and in the East Boundary Line of the P. Higgins Survey, Abstract No. 526;

Thence: North 01 deg. 28'40" East, along fence line and the West Boundary Line of the past mentioned 55 acre tract and the West Boundary Line of the Patrick O'Leary survey, Abstract No. 974 and the East Boundary Line of the P. Higgins Survey, Abstract No. 526, 1094.16 feet to a fence corner post for the Northwest Corner of the past mentioned 55 acre tract, same being the Northwest Corner

of the Patrick O'Leary Survey, Abstract No. 974 and the Southwest Corner of the A.J. Chowning Survey, Abstract No. 1638;

Thence: South, 89 deg. 32'10" East, along fence line and the North Boundary Line of the Patrick O'Leary Survey, Abstract No. 974, and the North Boundary Line of said 55 acre tract, and the South Boundary Line of the A.J. Chowning Survey, Abstract No. 1638, and passing at 22 feet a fence corner post where fence runs North from this point; continuing on said course and passing the Northeast Corner of the past mentioned 55 acre tract and the Northwest Corner of said 47.67 acre tract; continuing on said course, a total distance of 3656.4 feet to a steel pin and fence corner post for inner ell corner on said 47.67 acre tract;

Thence: North, 00 deg. 21'20" East, along fence line and passing the North Boundary Line of the A.J. Chowning Survey, Abstract No. 1638 and the Southwest Corner of the Samuel Hayden Survey, Abstract No. 537; continuing on said course a total distance of 1233.25 feet to a steel pin for the Northwest Corner of the 47.67 acre tract, same being at the South end of a public road running North to Texas State Highway No. 121 whose width averages about 34 feet;

Thence: South, 89 deg. 11' East, along the North Boundary Line of the 47.67 acre tract, 220.00 feet to a steel pin and fence corner post for the Northeast corner of said tract;

Thence: South, 01 deg. 38'40" West, along fence line, 355.00 feet to a steel pin and fence corner post for the most Eastern Southeast Corner of said 47.67 acre tract and being in the South Boundary Line of the Samuel Hayden Survey and in the North Boundary Line of the P. Higgins Survey, Abstract No. 525;

Thence: North, 88 deg. 52' West, along fence line, 31.00 feet to point of beginning and containing 1.76 acres of land out of the Samuel Hayden Survey, Abstract No. 537, and 3.65 acres of land out of the A.J. Chowning Survey, Abstract No. 1638, and 97.17 acres of land out of the Patrick O'Leary Survey, Abstract No. 974, making a total of 102.58 acres of land.

cc: Denton City-County Health District

PERMIT APPLICATION NO. 946	X	BEFORE THE TEXAS DEPARTMENT
THE TOWN OF HIGHLAND PARK	X	OF
DENTON COUNTY, TEXAS	X	HEALTH

FINDINGS OF FACT

(1) An application for a permit to operate a municipal solid waste landfill along with all necessary supporting data, was properly submitted by the applicant; due notice was given; and a public hearing was held at Town of Highland Park, City Council Chambers, City Hall in Dallas, Texas, on December 19, 1978; and all parties were given an opportunity to appear, be represented by counsel, and present testimony or other evidence either for or against the granting of a permit.

(2) The physical conditions existing at the subject site, along with the recommended special provisions transmitted herewith, render the site suitable for use as a landfill.

(3) Use of the subject site as a Type I municipal solid waste landfill is compatible with the present uses being made of the surrounding land.

CONCLUSIONS OF LAW

(1) All procedural requirements relative to notice, hearing and due process of law were met.

(2) The subject site, if operated in compliance with the Solid Waste Disposal Act (Article 4477-7, V.A.C.S.), the Texas Department of Health Municipal Solid Waste Management Regulations and the Special Provisions which accompany the permit transmitted herewith, will not adversely affect the public health or create a public nuisance.

(3) Operation of a Type I municipal solid waste landfill is a proper land use of the property described in the attached permit.

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

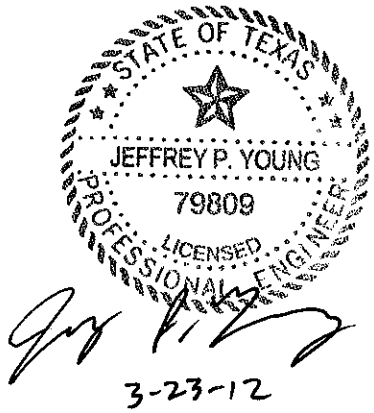
MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
SITE DEVELOPMENT PLAN NARRATIVE

Prepared for

City of Farmers Branch

March 2012



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109
817-735-9770

WBC Project No. 1339-351-11-02-6B

This document is intended for permitting purposes only.

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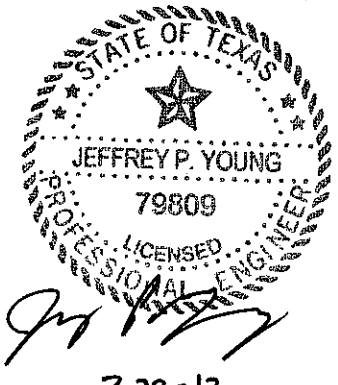

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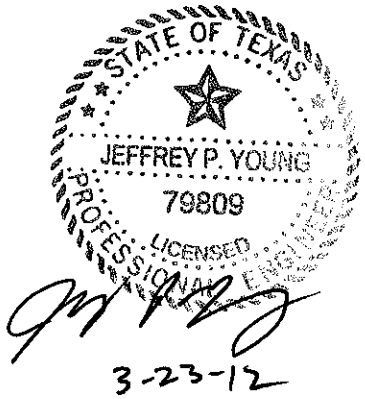

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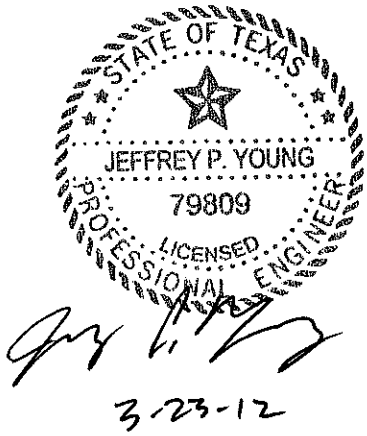

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LIST OF ACRONYMS

ASTM – American Society for Testing and Materials

BER – Ballast Evaluation Report

BMPs – best management practices

CFR – Code of Federal Regulations

CLOMR – Conditional Letter of Map Revision

CMP – corrugated metal pipe

CN – curve number

COC – chain-of-custody

CQA – construction quality assurance

CU – consolidated-undrained

EDE – elevation of the deepest excavation

EPA – United States Environmental Protection Agency

ETJ – extra territorial jurisdiction

FAA – Federal Aviation Administration

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map

FML – flexible membrane liner

FMLER – flexible membrane liner evaluation report

ft-msl – feet above mean sea level

FTB – film tear bond

FWS – U.S. Fish and Wildlife Service

LIST OF ACRONYMS (Continued)

GLER – geomembrane liner evaluation report

GWSAP – groundwater sampling and analysis plan

LCS – leachate collection system

LEL – lower explosive limit

LFG – landfill gas

LLDPE – linear low density polyethylene

LQCP – Liner Quality Control Plan

MCLs – maximum contaminant levels

msl – mean sea level

MSW – municipal solid waste

NAAQS – National Ambient Air Quality Standards

NCTCOG – North Central Texas Council of Governments

NFIP – National Flood Insurance Program

NOI – Notice of Intent

NSF – National Sanitation Foundation

NSPS – New Source Performance Standards

NWP – Nationwide Permit

NWS – National Weather Service

O&M – operations and maintenance

PCBs – polychlorinated biphenyls

PI – Point of Intersection

LIST OF ACRONYMS (Continued)

PVI – Point of Vertical Intersection

POR – Professional of Record

POTW – publicly owned treatment works

QA/QC – quality-assurance/quality-control

RCRA – Resource Conservation Recovery Act

SBP – soil boring plan

SCS – Soil Conservation Service

SDP – site development plan

SLER – soils and liner evaluation report

SOP – site operating plan

SSC – statistically significant change

TAC – Texas Administrative Code

TCEQ – Texas Commission on Environmental Quality

TDH – Texas Department of Health

TPDES – Texas Pollutant Discharge Elimination System

TPWD – Texas Parks and Wildlife Department

TWDB – Texas Water Development Board

TxDOT – Texas Department of Transportation

UEL – upper explosive limit

USACE – United States Army Corps of Engineers

USCS – Unified Soil Classification System

USGS – United States Geological Survey

LIST OF ACRONYMS (Continued)

USLE – universal soil loss equation

UTM – Universal Transverse Mercator System

WBC – Weaver Boos Consultants

1 INTRODUCTION (§330.63(a))

This Site Development Plan (SDP) for the Camelot Landfill has been prepared consistent with the MSW regulations within Title 30 TAC Chapter 330, including §330.63. This SDP provides the design details needed to provide for the safeguarding of the health, welfare, and physical property of the people and the environment through consideration of geology, soil conditions, drainage, land use, zoning, and adequacy of access roads and highways.

This section addresses §330.63. Additional specific regulatory cites addressed by each section of Part III are listed in the heading.

The purpose of this Major Permit Amendment is to secure authorization for a vertical and horizontal expansion of the Camelot Landfill. The existing active 198.3-acre waste disposal area will be expanded by 38.5 acres. The existing permit boundary, surveyed in November 2010 as 350.77 acres, will be expanded by 118.85 acres to 469.62 acres. The maximum permitted final cover elevation will be increased from 523 ft-msl to 725 ft-msl and the resulting capacity increase is 37,700,000 cy. Other site improvements include the following.

- Expanded stormwater management system.
- Relocation of waste in the historic fill area associated with TCEQ Permit No. MSW-946.
- Relocation of waste from the 5.1-acre inactive MSW unit in the northeast portion of the site to create an additional buffer zone (greenfield/open space) area.
- Installation of a slurry wall around the southern and eastern portion of the site as part of the containment system design.
- Enhanced landfill gas and groundwater monitoring systems.

2 GENERAL FACILITY DESIGN (§330.63(b))

2.1 Facility Access (§330.63(b)(1))

2.1.1 Access From Highway

The site entrance is located at 580 Huffines Blvd. in Lewisville, approximately 1,800 feet south of SH-121 Business. The site is accessed by heading south on Huffines Blvd. from SH-121 Business. Access is controlled by a gate at the permit boundary. The gate is locked when the site is not in operation.

Prior to completion of the eastern expansion of Corporate Drive, the landfill entrance facilities will be moved approximately 1,500 feet south of their existing location.

2.1.2 Access Control

Vehicle access to the landfill will be controlled at the site entrance by signs that direct all landfill traffic to the scalehouse during site operating hours. Personnel on duty at the entrance regulate access to the landfill. Outside operating hours, the gate to the site will be locked to prevent unauthorized vehicle access. As shown in Parts I/II, Drawing I/IIA.12 – Access Control Plan, access to the site is controlled by a minimum 4-foot high, 3-strand barbed wire fence, a gated entrance, natural barriers (e.g., existing trees, dense foliage, and the Elm Fork of the Trinity River), and a closed circuit television system monitoring the entrance and exit.

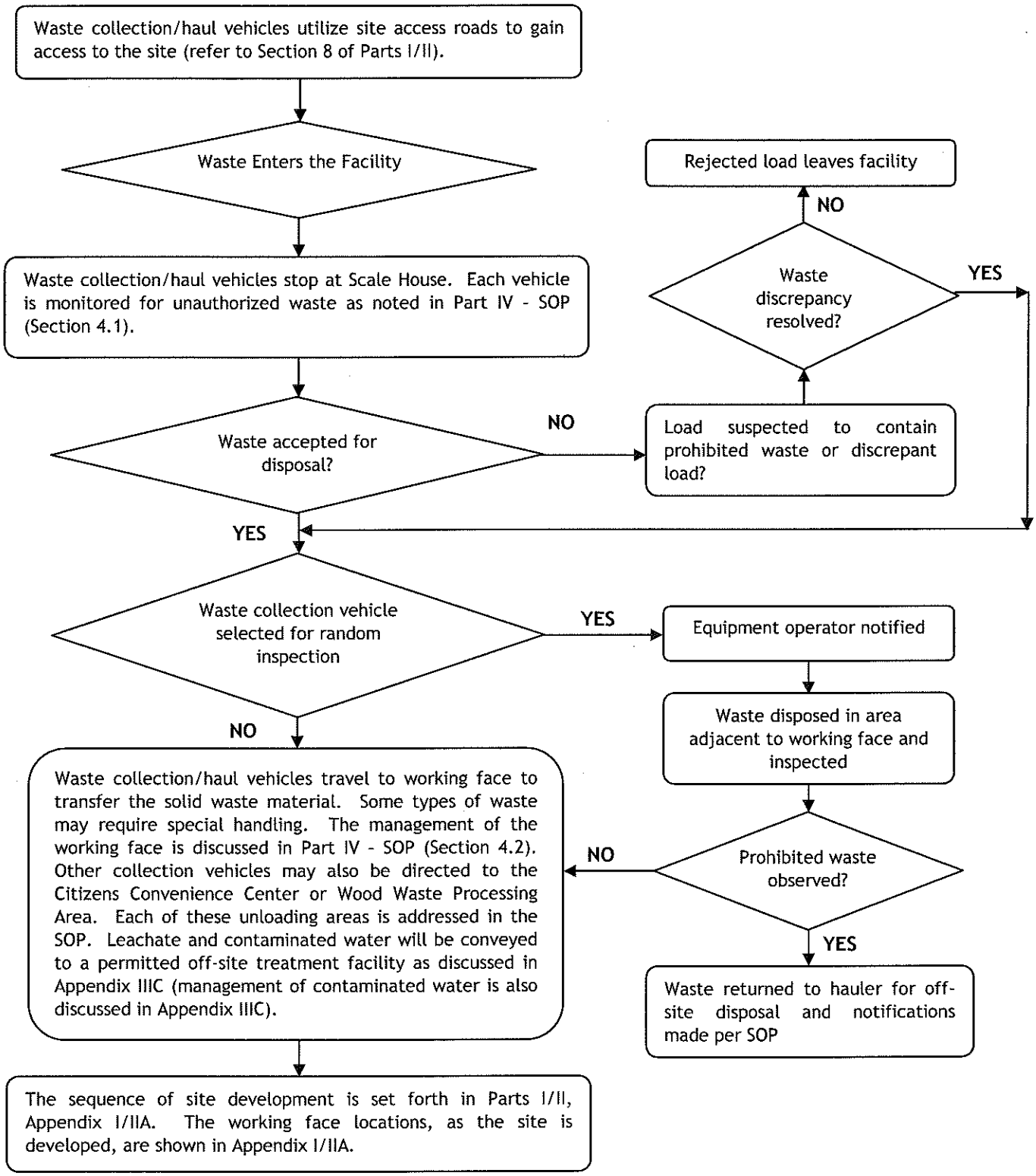
The City of Farmers Branch will restrict entry to the landfill to designated site operations personnel, solid waste haulers authorized to use the facility, TCEQ personnel, and properly identified persons whose entry is authorized by the Landfill Manager or his designee. The City of Farmers Branch reserves the right to deny access to the landfill to persons not demonstrating a legitimate purpose for visiting. Visitors are allowed on the active area of the landfill only when accompanied by the Landfill Manager or his designee (refer to Part IV – SOP, Section 4 for additional information).

2.2 Waste Movement (§330.63(b)(2))

2.2.1 Waste Movement Flow Diagram (§330.63(b)(2)(A))

Figure III-1 (shown on the following page) provides a waste movement flow diagram for the Camelot Landfill. The flow diagram provides a summary of the disposal sequence for waste that is accepted at the facility. Detailed waste acceptance procedures are detailed in Part IV – SOP.

Figure III-1
Waste Movement Flow Diagram



2.2.2 Waste Disposal Schematic View (§330.63(b)(2)(B))

Figure III-2 provides a schematic view of the Camelot Landfill. Additional detailed drawings of the various phases of site sequencing and development are provided in Parts I/II, Appendix I/IIA; Part III, Appendix IIIA; and throughout the SDP. Drawings of the Citizens Convenience Center are provided in Parts I/II, Appendix I/IIA.

2.2.3 Ventilation and Odor Control (§330.63(b)(2)(C))

Landfill disposal operation will occur in open areas within the permitted waste disposal footprint; therefore, adequate ventilation will be provided. The Citizens Convenience Center will also be located in a well ventilated area (open air), as noted in Parts I/II, Appendix I/IIA (Drawings I/IIA.13 and I/IIA.14. The containers located at the Citizens Convenience Center will be unloaded at the working face on a routine basis to minimize odors. The future Wood Waste Processing Area will be operated to provide adequate ventilation and odor control (refer to Part IV – SOP, Section 4.10). The operator will prevent nuisance odors from leaving the boundary of the facility.

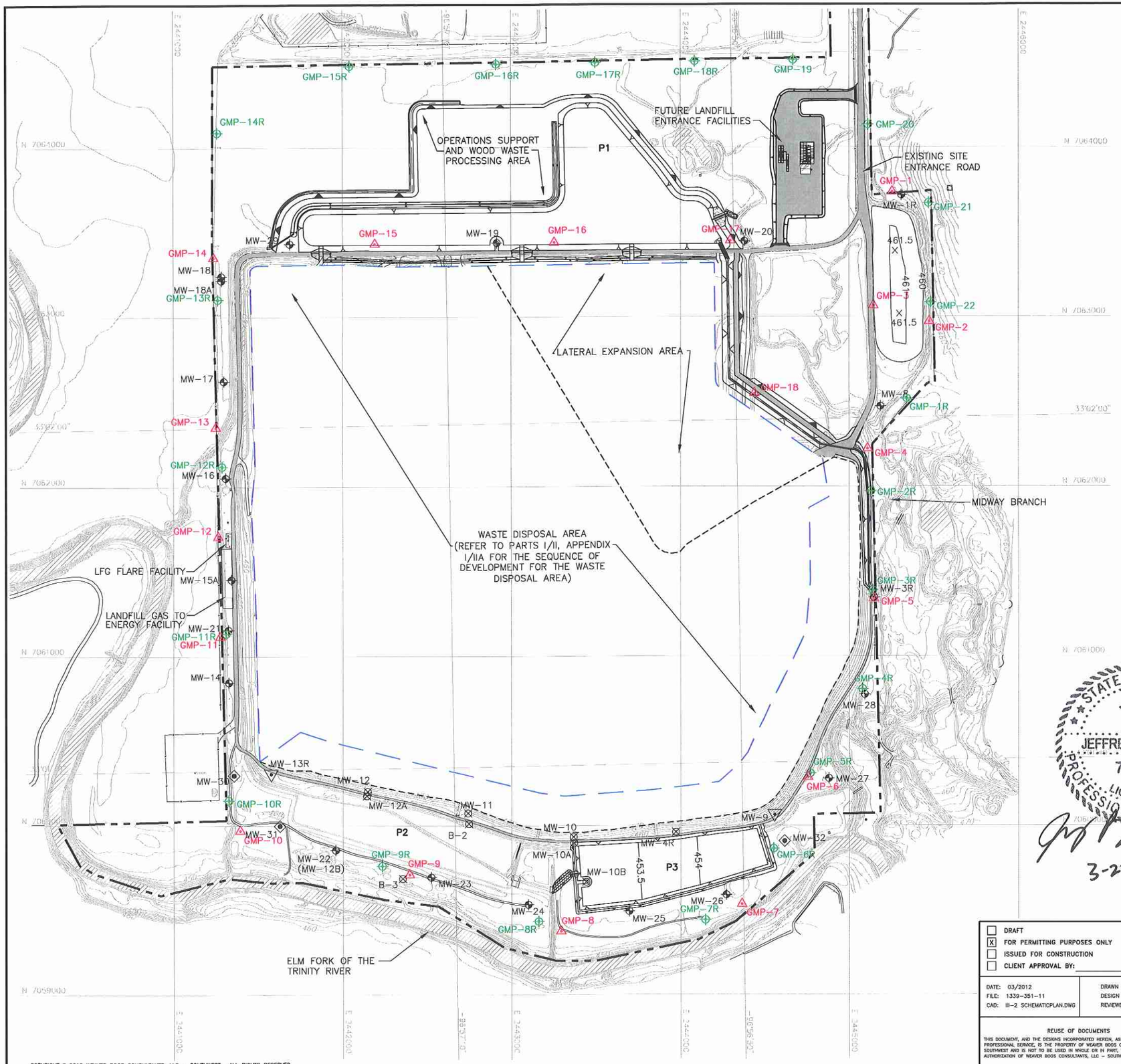
The site will comply with all the applicable air quality rules and regulations. The site will be required to operate in accordance with the New Source Performance Standards (NSPS) for MSW landfills.

Steps will be taken to limit the impact of the facility's operation on air quality. Among the measures set forth in Part IV – SOP to be employed are the following:

- Accidental fires will be controlled.
- Open burning of waste will not be permitted.
- Incoming waste will be promptly compacted into the working face area.
- Ponded water at the site will be controlled.

Odors shall be controlled at the site and will be reduced if they occur in accordance with this Odor Management Plan. A detailed Odor Control Plan is included in Part IV – SOP (Section 4.10). Sources of landfill odor can vary considerably and may include the wastes being delivered to the landfill, the open working face, surface emissions from the covered portion of the landfill, or the leachate collection system. Many of the wastes received at a landfill are a source of odor upon receipt, such as sludge and dead animals. Other wastes have the potential for becoming a source of odor by their biodegradable characteristics, generating gases as they advance through the decomposition process. Leachate may also be a source of odor if not properly handled or disposed of in a timely manner. Among the measures listed in Part IV – SOP that may be employed to reduce potential odors are the following.

- Minimize the size of the working face area.
- Increase the thickness of soil daily cover and/or ADC applied to the working face.



0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- AUTHORIZED LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- 500 EXISTING CONTOUR (SEE NOTE 1)
- 600 REGRADED BUFFER ZONE AREA
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- MW-13R EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTE:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 1983. ELEVATIONS ARE BASED ON NAVD 1988.
2. PROPOSED PERMIT BOUNDARY WAS PREPARED BY PEISER SUREYING CO. IN NOVEMBER 2010.
3. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED IN APPENDIX I/IIA.
4. APPENDIX IIIA INCLUDES INFORMATION ON THE LANDFILL DESIGN.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: III-2 SCHEMATICPLAN.DWG

DRAWN BY: JDW
DESIGN BY: JLG
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SCHEMATIC SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

FIGURE III-2

0:\1339\351\EXPANSION 2009\PART III-SDP\III-2 SCHEMATIC.dwg, jwilson, 1:2

- Prevent ponded water.
- Assess the effectiveness of the LFG extraction system, if applicable, and make all necessary repairs to the system or expand the system, as needed, to control odors.
- Identify any waste stream that requires special attention to control odor. If the Scale Operator notes a load with significant odors, they will notify the working face personnel. The load will be promptly covered with soil or solid waste when it arrives at the working face.
- Inspect the leachate collection and storage system to confirm that it is functioning as designed (e.g., inspect piping and storage tank system to verify no leaks have occurred).

2.2.4 Generalized Construction Details (§330.63(b)(2)(D))

Generalized construction details for the landfill and Citizens Convenience Center are included in Parts I/II, Appendix I/IIA and in this SDP (e.g., Appendix IIIA). Details of the leachate management system are included in Appendix IIIC, and details of the Wood Waste Processing Area are included in Part IV, Appendix IVD.

2.3 Water Pollution Control (§330.63(b)(4))

The site is designed to prevent discharge of pollutants into waters of the state or waters of the United States, as defined by the Texas Water Code and the Federal Clean Water Act, respectively. The Camelot Landfill is subject to TCEQ's storm water permit requirements. A copy of the TPDES permit is included in Appendix I/IIG. Surface water monitoring will be conducted consistent with TPDES requirements.

Consistent with Title 30 TAC §330.63(b)(4), Section 4.21 of Part IV describes how liquids resulting from the operation of the Citizens Convenience Center will be managed so as not to cause surface or groundwater pollution.

A 10-acre area north of the North Detention Pond may be used in the future for operations support (e.g., Citizens Convenience Center or a Wood Waste Processing Area). Water pollution control measures for the Wood Waste Processing Area are discussed in Part IV – SOP, Appendix IVD.

2.4 Protection of Endangered Species (§330.63(b)(5))

Information regarding the protection of endangered species in accordance with §330.61(n) and §330.63(b)(5) is provided in Parts I/II, Section 12 – Protection of Endangered Species; and Part IV, Section 4.14. No endangered or threatened species have been documented at the site nor has a critical habitat for such species been identified at the site. Neither the facility nor its operation will result in the destruction or adverse modification of the critical habitat of endangered or threatened species. If endangered or threatened species are encountered during site operations, Texas Parks and Wildlife and U.S. Fish and Wildlife

will be notified. A site specific Threatened and Endangered Species Habitat Assessment is included in Parts I/II, Appendix I/IIB (refer to the TPWD and FWS tabs).

3 FACILITY SURFACE WATER DRAINAGE REPORT (§330.63(c))

3.1 General

This facility has been designed to comply with the requirements of §330.303 and §330.63(c). Part III, Appendix IIIF contains the Surface Water Drainage Plan, and Appendix IIIO contains floodplain information for the site (also refer to Section 3.7).

In accordance with 30 TAC §330.15(h), the facility has been designed to prevent discharge of pollutants into waters of the State or waters of the United States, as follows:

- No discharge of solid waste or pollutants into or adjacent to waters of the State, including wetlands, that is in violation of the requirements of the Texas Water Code, §26.121 will occur. During the active life of the facility all stormwater coming into contact with solid waste will be retained as contaminated water and treated or disposed of as outlined in Part III, Appendix IIIC – Leachate and Contaminated Water Management Plan.
- No discharge of pollutants into or adjacent to waters of the United States, including wetlands, that violates any requirement of the Clean Water Act, including, but not limited to, the TPDES requirements, pursuant to §402 as amended, and demonstrated in Part III, Appendix IIIF – Surface Water Drainage Plan, will occur. A copy of the TPDES permit is included in Parts I/II, Appendix I/IIG. Surface water monitoring will be conducted consistent with the TPDES requirements.
- No discharge of dredged or fill materials to waters of the United States, including wetlands, that is in violation of the requirements under the Federal Clean Water Act, §404, as amended, as demonstrated in Parts I/II, Appendix I/IIB (USACE coordination letter) will occur. As noted in Parts I/II, Appendix I/IIB, two stormwater management facilities are proposed to be constructed near or within Section 404 jurisdictional areas. The construction of these facilities is permitted under Nationwide Permit No. 43 and has been approved by the USACE (refer to Parts I/II, Section 11.2 for additional information).
- No discharge of nonpoint source pollutants to waters of the United States, including wetlands, that violates any requirement of an area-wide or statewide water quality management plan that has been approved under the Federal Clean Water Act, §208 or §319, as amended will occur. The site will comply with §208 of the Federal Clean Water Act, provided it meets the requirements outlined by the TCEQ rules and guidelines.

3.2 Site Drainage Patterns

The 469.62-acre Camelot Landfill permit boundary is located approximately 2 miles south of Lake Lewisville. The Elm Fork Trinity River forms the southern boundary of the site. Midway Branch, a tributary of the Elm Fork, flows along the east side of the permit boundary.

The local drainage basin, which includes the permit boundary and offsite areas discharging onto or directly receiving flow from the permit boundary, is 2.82 square miles (0.17 percent of the Elm Fork's drainage basin upstream of the site). The majority of the area within the permit boundary discharges south or west into the Elm Fork. A smaller portion of the area within the permit boundary drains east into Midway Branch and ultimately discharges into the Elm Fork approximately 200 feet southeast of the permit boundary. As discussed in Section 4 of Appendix IIIF – Surface Water Drainage Plan, the existing drainage conditions at the permit boundary, will not be adversely altered by the proposed development.

For the proposed expansion, the final cover system will include erosion control structures to effectively minimize erosion of final cover soils. The proposed drainage system also includes a perimeter channel system and detention ponds that will convey stormwater collected from the landfill area to the western portion of the site. The perimeter channels have been designed to carry the 25-year storm event to the detention ponds. The detention ponds have been designed to release the collected stormwater at a rate that is consistent with the existing permitted drainage conditions.

The site is designed to prevent discharge of pollutants into waters of the state or waters of the United States, as defined by the Texas Water Code and the Federal Clean Water Act, respectively. The Itasca Landfill is subject to TCEQ's storm water permit requirements. A copy of the TPDES permit is included in Appendix I/IIG. Surface water monitoring will be conducted consistent with TPDES requirements. Given the above, the applicant understands and is in full compliance with TPDES under the Clean Water Act, Section 402 as amended.

3.3 Perimeter Drainage System

The stormwater controls for the landfill have been designed consistent with the TCEQ regulations for Type I MSW landfills. The runon/runoff stormwater controls have been designed for a 25-year storm event. These include drainage controls for the final cover, perimeter drainage channels, culverts, and detention ponds. Details for the perimeter drainage system and associated calculations are included in Part III, Appendix IIIF-B.

The drainage system is detailed in Part III, Drawing IIIF.1 – Drainage Structure Plan. Drainage from the landfill itself is directed through a system of swales, chutes, and perimeter channels to the stormwater detention ponds. The detention ponds and pond outlet structures are detailed in Part III, Appendix IIIF – Surface Water Drainage Plan.

3.4 Below Grade Stormwater Controls

Control of stormwater runon and runoff within excavation areas will be achieved using temporary diversion berms, channels, and containment areas as needed. The temporary stormwater control structures are used to divert uncontaminated stormwater runoff into temporary storage areas as shown in Parts I/II, Drawings I/IIA.4 through I/IIA.8 – Sector Development Plans. The stormwater will be used for liner construction, control of dust, and establishing vegetation. If discharge of uncontaminated stormwater is required, it will be discharged consistent with TPDES requirements.

Contaminated stormwater consists of stormwater that has come into contact with waste. Control of the contaminated stormwater will be provided through temporary diversion berms, channels, and containment areas. Temporary runon and runoff controls are shown in Parts I/II, Drawings I/IIA.4 through I/IIA.8 – Sector Development Plans and detailed in Appendix IIIC – Leachate and Contaminated Water Management Plan, Appendix IIIC-C – Containment Berm and Diversion Berm Calculations. Leachate may be recirculated on areas where a composite liner and LCS are in place. Contaminated stormwater will be diverted and contained on approved areas only. Contaminated stormwater and leachate will be managed in accordance with the guidelines set forth in Appendix IIIC – Leachate and Contaminated Water Management Plan.

3.5 Aerial Fill Stormwater Controls

Additional stormwater controls will be necessary as the site is brought above grade. Temporary diversion berms, channels, and containment areas will continue to be used for control of uncontaminated and contaminated stormwater runon and runoff. Runon and runoff temporary diversion berm sizing is provided in Part III, Appendix IIIC – Leachate and Contaminated Water Management Plan, Appendix IIIC-C – Containment Berm and Diversion Berm Calculations. Separation of the contaminated stormwater and uncontaminated stormwater runoff will be provided. Diversion berms, channels, and containment areas will be implemented for the aerial fill portions of the landfill. Sector development plans for above grade scenarios are presented in Parts I/II, Drawings I/IIA.4 through I/IIA.8 – Sector Development Plans.

The final cover will incorporate drainage swales and letdown structures or chutes for conveyance of stormwater off of the final cover. These swales and chutes have been designed to protect the final cover from erosion. As areas of the final cover are completed, vegetation will be established to provide additional erosion protection. Details of the final cover design are provided in Part III, Appendix IIIA-A – Liner, Overliner, and Final Cover System Details. Drainage details are provided in Part III, Appendix IIIF – Surface Water Drainage Plan.

Surface water runon and runoff will be managed consistent with the TCEQ regulations. Specifically, areas that have received waste but will be inactive for longer than 180 days will be provided with intermediate cover. As such, runoff from these areas will be

considered uncontaminated consistent with §330.207. Also, the site design and proper operating practices will minimize contaminated water. Routine daily cover, in combination with the other operating practices, will minimize the generation of contaminated water. Contaminated water will be managed consistent with the practices outlined in Part III, Appendix IIIC – Leachate and Contaminated Water Management Plan.

The Camelot Landfill will use various interim and permanent erosion and sedimentation controls throughout the life of the site. The interim controls will be used around active areas and external embankment sideslopes and top dome surfaces. These controls will include temporary letdown structures, soil berms, and vegetation of intermediate cover areas to minimize the erosion potential from these areas. These interim controls will be used during all phases of landfill development to provide effective erosion stability for the external sideslopes and top dome surfaces. Refer to Appendix IIIF-F – Erosion Control Plan for All Phases of Landfill Operation for more information.

3.6 Erosion and Sedimentation Control

Erosion and sedimentation control is provided on site during construction activities and is incorporated into the design of the perimeter drainage system and final cover system. During construction of the various cells, perimeter berms, perimeter drainage channels, and detention ponds, erosion and sedimentation control will be provided through the use of temporary diversion berms, drainage channels, silt fences, and hay bales. Erosion potential from external sideslopes and top dome surfaces will be minimized during all phases of landfill development. These measures will provide for control of erosion and sediment prior to stormwater flows leaving the site during the active life and after closure of the site. An erosion and sedimentation control plan is presented in Part III, Appendix IIIF – Surface Water Drainage Plan. Appendix IIIF-F includes erosion control measures that are applicable to active site conditions prior to installation of final cover.

Permanent erosion control features have been included in the site design. These features include design of perimeter channels for non-erodible velocities. In areas where erosion has been anticipated, erosion protection of the channels in the form of gabions, rock riprap, or turf reinforcement matting is provided. Permanent erosion protection measures are also shown in Appendix IIIF – Surface Water Drainage Plan. In addition to grass cover, permanent erosion features included in the final cover design are drainage swales and chutes shown on Parts I/II, Drawing I/IIA.8 – Landfill Completion Plan.

3.7 Floodplain Information (§330.63(c)(2))

Detailed floodplain information is included in Section 11.1 of Parts I/II, Appendix IIIF and Appendix IIIO of this application. Figure I/II-11.1 in Parts I/II compares the existing permitted site condition (TCEQ Permit No. 1312A) and the effect the proposed revision to the site development plan will have on the 100-year floodplain under TCEQ Permit

No. 1312B. As discussed in Appendix IIIO – Floodplain Information, flood storage will be created to offset the flood storage consumed by the proposed landfill expansion. The site is located within the Trinity River corridor and a Trinity River Corridor Development Certificate (CDC) has been obtained from the City of Lewisville and the USACE for the continued development of the landfill. In addition, a CLOMR has also been obtained from FEMA to allow for the proposed development within the 100-year floodplain. The CDC and CLOMR permit applications and permits are included in Appendix IIIO, and represent the approvals required to develop the site so that the waste disposal area will be protected from the 100-year floodplain. Figure I/II-11.2 in Parts I/II shows the revised limits of the 100-year floodplain shown on the revised Flood Insurance Rate Map (FIRM) included in the approved FEMA CLOMR request.

3.8 Wetlands Information

The area within the proposed expanded permit boundary of the Camelot Landfill was evaluated for compliance with wetlands provisions, including the determination and identification requirements in 30 TAC §330.61(m)(2) and (3) and the wetlands location restriction in 30 TAC §330.553(b). The expanded landfill unit at the Camelot Landfill will not be located in wetlands and development of the site will comply with the wetlands location restriction.

A waters of the U.S. and wetlands determination/delineation was performed by Goshawk Environmental Consulting, Inc. Their September 17, 2010 report is included in Appendix I/IIB, beginning at page I/IIB-135 (other wetlands materials, including correspondence with the USACE, are also included in Appendix I/IIB). The report identified waters of the U.S. and wetlands, both jurisdictional and non-jurisdictional, located within the proposed expanded permit boundary. These features are shown on Parts I/II, Figures I/II-11.3 and I/II-11.4.

The only jurisdictional wetlands on the site are located in the northeastern portion of the expanded permit boundary, north and east of proposed detention pond P1, in an area of the site not proposed for development. As noted on Figure I/II-11.4, two stormwater management facilities are proposed to be constructed near or within stream channels identified as Section 404 jurisdictional areas. The two structures are (1) a 25-foot-wide concrete and gabion-lined spillway and (2) gabion mattresses that will control erosion from stormwater flow from a drainage letdown. The construction of these stormwater management facilities is authorized by Nationwide Permit No. 43. No other aspect of the proposed site development will require Department of the Army authorization under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899.

As shown on Figure I/II-11.4, approximately 5.9 acres of non jurisdictional wetlands were identified within the proposed expanded permit boundary, including approximately 5.5 acres located within the existing permit boundary. No USACE permit is required for development of these 5.5 acres of non jurisdictional wetlands, located in areas of the site previously excavated for soil borrow and temporary water storage. Development of the

site will continue to include the use, reconfiguration, removal and/or relocation of, and the removal of water from and placement of soil in these and similar excavated areas in advance of expansion of the landfill unit.

Consistent with the goal set out in Title 30 TAC §330.553(b)(4), the site has been designed to include the creation of more than 30 acres of stormwater detention ponds that will function similar to wetland areas. As shown on Figure I/II-11.4, vegetation will be established in the detention ponds, which will retain water because of their relatively flat bottom grades.

4 LANDFILL UNIT DESIGN (§330.63(d)(4))

Consistent with Title 30 Texas Administrative Code (TAC) §330.63(d)(4), this Site Development Plan was prepared to address the requirements for the landfill unit at the Camelot Landfill. The following subsections discuss provisions for all-weather operations and access, the proposed landfill method, minimum and maximum design elevations, solid waste acceptance rates, site life, cross-sections and design details, and a liner quality control plan. In addition to these items as required by §330.63(d)(4), additional information regarding the geotechnical analyses, the liner design, and leachate management are also discussed.

4.1 All-Weather Operation (§330.63(d)(4)(A))

The landfill perimeter roads, haul road, and interior access roads (see Parts I/II, Drawings I/IIA.4 through I/IIA.8 – Sector Development Plans) will be constructed of crushed stone, gravel, or other suitable material and will provide access from the entrance road to the fill area. Huffines Blvd. from SH-121 Business to the landfill entrance facilities will be asphalt paved roadway. The landfill haul road and perimeter access road will be crushed stone, all-weather road. The paved access road and crushed stone haul road will serve as mud control for waste hauling vehicles prior to exiting the site and returning to the site access roads. The crushed stone haul road and perimeter road will be maintained for all-weather access by site personnel. Additional mud control measures will be taken if these mud control measures do not effectively minimize tracking of mud onto public roads.

On-site stockpiles of crushed stone, concrete rubble, masonry demolition debris, or other similar material will be provided as needed for use in maintaining passable access roads. Grading equipment or other appropriate equipment will be used, as necessary, to control or remove mud accumulations on the perimeter access road around the landfill, the landfill haul road, and the paved entrance facility area.

The landfill haul road and perimeter roads will be passable under inclement weather conditions to allow access to the working face area. To enhance operating efficiency during wet weather, a disposal area close to the all-weather roads may be reserved for wet-weather operations.

4.2 Landfill Methods (§330.63(d)(4)(B))

The proposed landfill development method for the site is a combination of area-excavation fill followed by aerial fill to the proposed landfill completion height. The

landfill drawings depicting existing site conditions, excavation, final fill height, sector fill layout, sector sections, sequence of development plans, site contour maps, and landfill completion plan are included in Parts I/II, Appendix I/IIA – Facility Layout Maps.

The excavation side slopes will be no steeper than 3 horizontal to 1 vertical (3H:1V), the aerial fill side slopes will range from 5H:1V to 4H:1V, and the aerial fill top slope will be approximately 4 percent. Final cover placement will generally follow the sequence of development as shown in Parts I/II, Drawings I/IIA.4 through I/IIA.8, and will be ongoing as the site is developed. Sectors will be closed according to the closure plan provided in Part III, Appendix IIIK – Closure Plan.

4.3 Liner and Final Cover System Design ((§330.63(d)(4)(C))

4.3.1 Liner System for the Undeveloped Portion of the Solid Waste Disposal Area

The proposed composite liner systems are designed to meet the requirements of Title 30 TAC §330.331(a)(2) and §330.331(e). The composite liner system that will be constructed within the undeveloped sectors is described below.

Table III-1
Liner System Components

Standard Subtitle D Composite Liner System
24-inch-thick Soil Protective Cover
Drainage Geocomposite Leachate Collection System Layer
60-mil HDPE Geomembrane
2-foot-thick Compacted Clay Liner (CCL)

A summary of the liner system design and the liner system details are included in Part III, Appendix IIIA – Landfill Unit Design Information. Information regarding liner materials and construction quality assurance are included in Part III, Appendix IIID – Liner Quality Control Plan, in accordance with §330.63(d)(4)(G). The elevation of the deepest excavation is 387 ft-msl, which occurs in the LCS sumps in Sectors 12 and 13.

4.3.2 Overliner System for the Pre-Subtitle D Area

The proposed overliner system is part of the solid waste containment system for the pre-Subtitle D area of the landfill that has been designed to meet the requirements listed in §330.331(a)(1). The proposed overliner system is designed to convey leachate generated over the existing pre-Subtitle D area to leachate collection sumps located along the perimeter of the overliner area, as well as to sumps located in the Subtitle D area. The overliner system is described below, with layers listed from top to bottom.

Table III-2
Overliner System Components

Standard Subtitle D Composite Liner System
24-inch-thick Protective Cover Layer
Drainage Geocomposite Leachate Collection Layer
Textured 40-mil LLDPE Geomembrane
Geosynthetic Clay Liner (GCL)

The proposed overliner system design and details are also summarized in Appendix IIIA – Landfill Unit Design Information. The Point of Compliance (POC) Demonstration is included in Appendix IIIB. The purpose of the POC demonstration is to demonstrate that the proposed waste containment system design will meet the waste containment system requirements specified in §330.331(a) by showing that the predicted concentrations of selected leachate chemical constituents do not exceed maximum contaminant levels (as listed in Table 2 in §330.331(a)(1)) in the uppermost aquifer at the POC. The waste containment system design includes the overliner system and a slurry wall that will be constructed around the perimeter of the pre-Subtitle D area as shown on Drawing A.16 in Appendix IIIA-A.

4.3.3 Leachate Collection System

An LCS has been designed to remove leachate from the Subtitle D areas of the landfill (including the overliner). The LCS layout is shown on Drawing A.1 – Excavation Plan in Appendix IIIA-A. Design of the proposed LCS and a demonstration of the adequacy of the existing LCS is discussed in Part III, Appendix IIIC – Leachate and Contaminated Water Management Plan. LCS details are provided in Part III, Appendix IIIA – Landfill Unit Design Information. Information regarding materials and construction quality assurance are included in Part III, Appendix IIID – Liner Quality Control Plan (Section 3.6).

4.3.4 Final Cover System

The final cover system includes a composite final cover system and an existing alternative soil final cover system. The final cover systems will provide a low maintenance cover, protect against erosion, reduce rainfall percolation through the cover system, and subsequently minimize leachate generation with the landfill. As depicted on Parts I/II, Drawing I/IIA.8 – Landfill Completion Plan, a maximum of 4 percent topslopes and 4H:1V sideslopes are provided to minimize erosion and facilitate drainage of the landfill. Final cover will be constructed over the existing pre-Subtitle D and Subtitle D waste disposal areas. The final cover system is described in the following table with layers listed from top to bottom.

Table III-3
Final Cover System Components

Subtitle D Composite Final Cover System	
Top Slopes	**Side Slopes**
24-inch-thick erosion layer	24-inch-thick erosion layer
Single-sided drainage geocomposite	Double-sided drainage geocomposite
40 mil LLDPE geomembrane (smooth)	40 mil LLDPE geomembrane (textured)
18-inch-thick compacted clay infiltration layer with $k \leq 10^{-5}$ cm/s	18-inch-thick compacted clay infiltration layer with $k \leq 10^{-5}$ cm/s

The alternative soil final cover system was certified via a permit modification approved by TCEQ in August 2011 (under TCEQ Permit No. MSW-1312A). The approval letter from TCEQ is included in Appendix IIIK-A. The alternative soil final cover system is discussed further in Appendix IIIA, Section 6.2.

A demonstration that the final cover design will provide effective long-term erosional stability is included in Part III, Appendix IIIF – Surface Water Drainage Plan (Appendix IIIF-D). The final cover system will be constructed as outlined in Part III, Appendix IIIK – Closure Plan.

Landfill gas generated in the landfill will be collected by extraction wells, as discussed in Appendix IIII – Landfill Gas Management Plan. The landfill gas system will reduce gas pressure buildup under the final cover and control odor and gas emissions from the site. The maximum elevation of final cover is 725.0 ft-msl and the maximum waste elevation is 721.5 ft-msl.

4.3.5 Groundwater Monitoring System

The purpose of the groundwater monitoring system is to verify the integrity of the containment systems discussed in the previous sections and to confirm that area groundwater is not adversely impacted by the landfill. This is accomplished by obtaining groundwater samples from the monitoring wells on the perimeter of the landfill, which are screened in the uppermost groundwater zone. Refer to Appendices IIIG and IIIH for additional information.

4.4 Estimated Rate of Solid Waste Deposition (§330.63(d)(4)(D))

The Camelot Landfill primary serves residences and businesses in the City of Farmers Branch, Denton County, and surrounding areas. It is projected that this service area generates approximately 305,478 tons per year or 348,123 cubic yards (assuming an in-place density of 1,755 lb/cy) of solid waste (1,068 tons per day based on a 286-day operating schedule).

The population equivalent, as defined in §330.3, is "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 population equivalent for the average waste stream over the active life of the site (29.3 years – refer to Appendix IIIN) was calculated as follows:

$$\frac{(1{,}073{,}358^{1} \text{ tons/year}) \times (2{,}000 \text{ pounds/ton})}{(5 \text{ pounds/person/day}) \times (365 \text{ days/year})} = 1{,}176{,}283 \text{ persons}$$

[1] Average yearly waste inflow (based on a 286-day operating year) was calculated using the average daily waste inflow rate over the life of the site (3,753 tons/day x 286 days/year = 1,072,786 tons/year). Refer to Appendix IIIN for more information.

The major classifications of solid waste to be accepted by this facility for disposal include residential and commercial MSW. Such waste consists of household wastes, yard waste, commercial waste, construction-demolition waste, and special wastes as authorized by the TCEQ. Consistent with Title 30 TAC §330.15, the site will not accept liquid wastes, regulated hazardous wastes, prohibited PCBs, infectious medical wastes, or other wastes prohibited by TCEQ regulations. Waste classifications are provided in Parts I/II, Section 2.1.2 – Waste Acceptance Plan.

4.5 Typical Unit Cross-Sections (§§330.63(d)(4)(E) and (F))

Typical unit cross-sections are included in Appendix IIIA-B. The cross-sections are developed consistent with the requirements of §330.63(d)(4)(E) and (F).

4.6 Waste Relocation Plan

Existing waste within the inactive MSW unit located in the northeast portion of the site and the historical waste fill area located north of the current fill area will be relocated to the main disposal area within the Camelot Landfill. The general sequence of development of the landfill is shown on Parts I/II, Appendix I/IIA, Drawing I/IIA.4 through Drawing I/IIA.7. As shown on Drawing I/IIA.5, the waste relocation will occur for the historic waste fill area prior to the development of the northern detention pond and waste in the inactive waste unit will be relocated prior to the development of Cell 12. The waste removal procedure is discussed in Part IV – SOP, Section 4.25.

As discussed in Parts I/II, Section 3.1, the limits of the historic waste fill associated with the 102.58-acre tract is shown on Figure I/II-3.1 in Parts I/II. The estimated limits is based on site topography and visual observations made during a July 2011 site visit. There are no drawings in the record for this permit that show the historic waste fill area. There is also no record that final cover was placed on this area; however, the historic waste fill area does include a soil cover that is vegetated. After the waste from this area is relocated, compacted soil backfill will be placed, if needed, to achieve the final detention pond grades shown on the drawings in Appendix IIIF.

As shown on Figure I/II-3.1 in Parts I/II, there is also an inactive unit on the northeast portion of the site associated with TCEQ Permit No. MSW-1312A. This area was filled in the early 1980s on an approved liner system. This unit is listed as "inactive" since no waste has been placed in this area since the implementation of Subtitle D in 1993. No final cover has been placed over this MSW unit. After waste excavation activities are complete, compacted soil backfill will be placed to the grades shown on Drawing A.1 in Appendix IIIA-A. This area will be graded to create a uniform slope that will prevent ponding of stormwater.

5 COMPLIANCE WITH §330.63(e) THROUGH §330.63(j)

The following table provides references to each SDP appendix that was developed to meet the specified rule.

Rule	SDP Appendix
§330.63(e)	Appendix IIIG – Geology Report and Appendix IIIJ – Geotechnical Report
§330.63(f)	Appendix IIIH – Groundwater and Sampling Analysis
§330.63(g)	Appendix IIII – Landfill Gas Management Plan
§330.63(h)	Appendix IIIK – Closure Plan
§330.63(i)	Appendix IIIL – Postclosure Care Plan
§330.63(j)	Appendix IIIM – Closure and Postclosure Care Cost Estimates

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
APPENDIX IIIA
LANDFILL UNIT DESIGN INFORMATION

Prepared for

City of Farmers Branch

March 2012

Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-6B.1

This document is intended for permitting purposes only.

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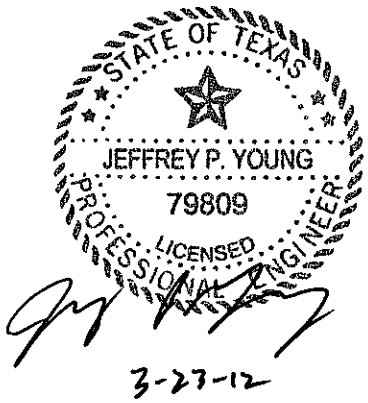

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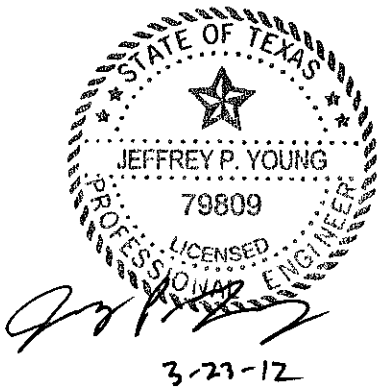

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LANDFILL UNIT DESIGN INFORMATION

1.0 Introduction

The purpose of this appendix is to present the details of the liner system, overliner system, slurry wall, and final cover system consistent with Title 30 Texas Administrative Code (TAC) §330.331, §330.333, and §330.457. The following subsections have been developed to provide detailed information for the proposed liner systems, existing liner systems, overliner system to be constructed over the pre-Subtitle D vertical expansion areas, slurry wall (or soil-bentonite cutoff wall), and final cover systems.

This appendix addresses §330.331, §330.333, and §330.457.

2.0 Proposed Liner System for the Subtitle D Area

The proposed composite liner systems are designed to meet the requirements of Title 30 TAC §330.331(a)(2) and §330.331(e). The composite liner system that will be constructed within the undeveloped sectors is described below.

Table IIIA-1
Liner System Components

Standard Subtitle D Composite Liner System
24-inch-thick Soil Protective Cover
Drainage Geocomposite Leachate Collection System Layer
60-mil HDPE Geomembrane
2-foot-thick Compacted Clay Liner (CCL)

Drawing A.1 (Appendix IIIA-A) presents the excavation plan for the undeveloped areas at the Camelot Landfill. This drawing also references the location of the various liner system details. Material specifications, construction, and testing requirements for the liner system are provided in Appendix IIID – LQCP.

As shown on Typical Sections A through H (Figures B.4 through B.11 in Appendix IIIA-B) and on Drawing A.1 in Appendix IIIA-A, the existing permitted waste disposal area will be expanded with this major permit amendment application. The existing limits of waste will be expanded in the northeastern portion of the site by approximately 38.5 acres.

The uppermost groundwater at the site occurs in the alluvial stratum as discussed in Appendix IIIG – Geology Report. A hydrostatic pressure relief system design is provided in Appendix IIID – LQCP to ensure that potential groundwater hydrostatic pressure at the base of the liner system will be controlled. The detailed design of the temporary hydrostatic pressure relief (dewatering) system along with ballast demonstrations are provided in Appendix IIID – LQCP.

The proposed liner system, as shown on Drawings A.4 through A.6 in Appendix IIIA-A, is designed with a leachate collection system. The design of the leachate collection system components, including the drainage geocomposite leachate collection layer, leachate collection piping, chimney drains, sumps, and pumps, are provided in Appendix IIIC – Leachate and Contaminated Water Management Plan. Material specifications, construction, and testing requirements for the leachate collection system are provided in Appendix IIID – LQCP.

A geotechnical report including a stability demonstration for the liner system is provided in Appendix IIIJ – Geotechnical Report. A summary of the liner design information that is included in the Geotechnical Report is provided below.

- **Excavation Stability.** The stability of the proposed excavation slopes was evaluated at critical sections (i.e., where the 3H:1V sideslopes are the longest). The excavation slopes were analyzed using undrained strength parameters (total stress) as well as drained strength parameters (effective stress). The slope stability analysis resulted in an acceptable factor of safety for each analyzed condition. All factors of safety generated were greater than the minimum recommended factor of safety of 1.3 for short-term and 1.5 for long-term conditions.
- **Liner System Stability.** In addition to the generalized slope stability summarized above, the interfaces of the components of the liner systems were evaluated using infinite slope stability analysis. All the calculated factor of safety values for interface slope stability are acceptable.
- **Liner System Settlement and Strain Analysis.** The liner system was evaluated for settlement and strain due to loading of liner soil, waste, and cover soils. The maximum strain on the liner system, caused by the estimated differential settlement, is 0.0023 percent. This strain value is within the acceptable range for each liner system component.

3.0 Existing Liner Systems

As of September 2011, the site has about 156.5 acres of existing liner. Approximately 68.1 acres consist of composite Subtitle D liner system and 88.4 acres are liners that were constructed between 1981 and 1993. The existing composite liner systems for the developed Subtitle D sectors are described in Table IIIA-2.

Table IIIA-2
Existing Liner System Components

Cells 1, 2, 4B, and 5	Cells 3, 4A, 8, and 9A
24-inch-thick Soil Protective Cover	12-inch-thick Soil Protective Cover plus 12-inch-thick Tire Chip Layer
Drainage Geocomposite Leachate Collection System Layer	Drainage Geocomposite Leachate Collection System Layer
60-mil HDPE Geomembrane Liner	60-mil HDPE Geomembrane Liner
2-foot-thick CCL	2-foot-thick CCL

The existing composite liner systems include a hydrostatic pressure relief system, as discussed in the LQCP (Appendix IIID).

The liner systems for the pre-Subtitle D areas vary (e.g., the pre-Subtitle D area includes in-situ and 3-foot-thick compacted clay liners). Refer to Parts I/II, Section 3.2.1 for additional information regarding the existing pre-Subtitle D liner system.

The impact of differential settlement on the performance of the currently constructed leachate collection systems in the Subtitle D areas is analyzed in Appendix IIIJ-B and summarized in Table IIIA-3.

Table IIIA-3
Leachate Collection Layer Analysis Summary for the Developed Subtitle D Areas

Cell	Design Slope between Cell Ridgeline and Leachate Collection Pipe (percent)	Design Slope of Leachate Collection Pipe (percent)	Post-Settlement Slope between Cell Ridgeline and Leachate Collection Pipe (percent)	Post-Settlement Slope of Leachate Collection Pipe (percent)
1, 2, 4B, 5	1.17	0.50	1.16	0.44
3, 4A, 8, 9A	1.17	0.50	1.16	0.44

As shown, the slope between (1) the cell ridgeline and the leachate collection pipe and (2) the slope of the leachate collection pipe from the upstream portion of the cell to the sump is reduced by an insignificant amount due to the development of the landfill. A demonstration that the existing leachate collection system will continue to function in a manner that meets all regulatory requirements is included in Appendix IIIC.

4.0 Overliner System for the Pre-Subtitle D Area (Cells O1 through O6)

The proposed overliner system for the pre-Subtitle D area of the landfill has been designed consistent with the requirements listed in Title 30 TAC §330.331(a)(1). The

proposed system is designed to convey leachate generated over the existing pre-Subtitle D area to leachate collection sumps located along the perimeter of the overliner area, as well as to sumps located in the Subtitle D area. The proposed system is described in Table IIIA-4.

The proposed top of overliner plan is shown on Drawing A.2 in Appendix IIIA-A. Details for the proposed overliner system are presented on Drawings A.9 through A.12 in Appendix IIIA-A. Material specifications, construction, and testing requirements for the proposed overliner system are provided in Appendix IIID – LQCP.

The design of the proposed overliner system is presented in Appendix IIIB – Overliner Point of Compliance Demonstration. The purpose of the POC demonstration is to demonstrate that the proposed waste containment system design will meet the POC requirements specified in §330.331(a) by showing that the predicted concentrations of selected leachate chemical constituents do not exceed maximum contaminant levels (as listed in Table 1 in §330.331(a)(1)) in the uppermost aquifer at the POC. The waste containment system design includes the overliner system and a slurry wall that will be constructed around the perimeter of the pre-Subtitle D area (refer to Section 5.0 for more information on the proposed slurry wall).

Additionally, the demonstration discussed in Section 5 of Appendix IIIB shows that the proposed overliner system, which includes a GCL/40-mil LLDPE FML/leachate collection system/protective cover, will result in a greater level of protection than the composite liner specified in Title 30 TAC §330.331(a)(2) and §330.331(b). As noted in Title 30 TAC §330.331, a point of compliance demonstration would not be needed if the prescriptive overliner system listed in Title 30 TAC §330.331(a)(2) was used (note that the prescriptive liner just replaces the GCL with 2 feet of clay). As noted in Appendix IIIB, the selected overliner system that includes a GCL not only creates a more effective hydraulic barrier, it also has the ability to withstand differential settlement better than a compacted clay liner. Furthermore, Section 6 of Appendix IIIB demonstrates that the overliner has been added to the solid waste containment system to provide for a very conservative design. Appendix IIIB includes a POC demonstration that shows the site design would meet the POC criteria specified in Title 30 TAC §330.331(a)(1), even without the installation of the overliner system.

Table IIIA-4
Overliner System Components

Component	Description
Geosynthetic Clay Liner (GCL)	The reinforced GCL will be installed on top of the prepared soil foundation layer. Section 4 of Appendix IIID – LQCP provides detailed specifications and construction procedures for the overliner GCL. The overliner foundation will be prepared in accordance with Section 2 of Appendix IIID – LQCP.
40-mil LLDPE Textured Geomembrane Liner	The 40-mil LLDPE geomembrane textured on both sides will be installed on top of the GCL. Section 3.4 of the Appendix IIID – LQCP provides detailed specifications and construction procedures for the overliner geomembrane.
Leachate Collection Layer	The leachate collection layer will consist of a geocomposite layer (single-sided for slopes less than 4 percent; double-sided for slopes greater than 4 percent) that will be placed directly over the textured 40-mil LLDPE geomembrane to collect and convey leachate to the leachate collection system sumps through pipes. The geocomposite will consist of a 250-mil-thick HDPE geonet with a 6 oz/sy non-woven geotextile heat-bonded to one or both sides of the geonet. Calculations specifying the required properties of the geocomposite drainage layer are presented in Appendix IIIC. The design calculations included in Appendix IIIC demonstrate that the specified drainage geocomposite will have the capacity to convey leachate to the collection pipes. The geocomposite is modeled for a variety of loading conditions. In addition, the calculations account for settlement of the waste below the overliner system and various environmental factors that will reduce the transmissivity of the geocomposite. CQA procedures for the geocomposite layer are detailed in Appendix IIID, Section 3.6.
Leachate Collection Piping	The leachate collection layer discussed above will convey collected leachate to leachate collection system trenches which will contain a perforated leachate collection pipe surrounded by drainage stone and separated from the protective cover layer by a geotextile. The leachate collection pipes will direct collected leachate to sumps that will be located along the outer perimeter of the overliner area as well as to sumps that will be located in the Subtitle D area (refer to Drawing A.2 in Appendix IIIA-A). The proposed leachate collection pipes will be SDR 17 HDPE smooth wall pipe or equivalent. The leachate collection system is designed with cleanout risers at the end of each of the collection pipes to allow the pipes to be periodically flushed to remove any collected sediment. Proposed leachate collection pipe design calculations are provided in Appendix IIIC. These calculations (1) demonstrate the adequacy of the pipes to convey leachate to the sumps, (2) verify the structural stability of the pipes, and (3) verify that the perforation requirements are met.
Leachate Collection Sumps and Pumps	Temporary leachate storage will be provided in the leachate collection sumps. The leachate collection sumps have been sized based on the amount of leachate generated. Each leachate collection system area will have a sump which will store a minimum of 1,809 cubic feet of leachate. Additional storage will be provided in onsite above-ground storage tanks. Sump volume calculations are provided in Appendix IIIC. Details of the leachate sumps are provided on Drawing A.11 in Appendix IIIA-A.

As noted in Appendix IIID, prior to the construction of the overliner system, the existing intermediate cover will be reworked to provide a 12-inch overliner foundation layer between existing waste and the GCL. The existing LFG wells will be extended, as shown on Drawing A.12 in Appendix IIIA-A, and existing LFG headers and sumps will be relocated (refer to Appendix III I for more information).

In addition, Cells O1 through O4 of the pre-Subtitle D overliner area will be reconfigured by the placement of general fill (less than two feet on average) to create uniform grades to facilitate overliner placement. The remainder of the overliner area grades will be at or below permitted top of waste grades listed in TCEQ Permit No. 1312A. The slope of the overliner varies between 2.0 percent and 20 percent.

A geotechnical report, including a stability demonstration for the proposed overliner system, is provided in Appendix IIIJ – Geotechnical Report and is summarized below.

- **Overliner System Stability.** The stability of the overliner system was evaluated. The interfaces of the overliner system components were evaluated to determine the factor of safety against sliding failure. The minimum factor of safety generated is greater than the minimum required factor of safety in all cases.
- **Overliner System Settlement and Strain Analysis.** The overliner system was evaluated for settlement and strain due to loading of liner soil, waste, and cover soils. The after-settlement grades of the overliner system are shown on Figure 3-3 in Appendix IIIC. This drawing was developed from the settlement analysis included in Appendix IIIJ (Appendix IIIJ-B-2). The maximum strain calculated is negative, which indicates that all components are in compression and not subject to strain.

5.0 Slurry Wall Design

A slurry wall, or soil bentonite cutoff wall, is included as a component of the waste containment system design. The slurry wall will be constructed within 3 years of the issuance of TCEQ Permit No. MSW-1312B. The extent of the slurry wall is shown on Drawing A.16. As shown, the slurry wall extends around the southern and eastern perimeter of the pre-Subtitle D area. The slurry wall will be keyed 3 feet into the unweathered shale stratum as shown on Drawings A.17, A.18, and A.19, and will provide an additional hydraulic barrier between the pre-Subtitle D area and groundwater. As shown on Drawing A.19, the slurry wall backfill will have a permeability of no more than $1x10^{-7}$ cm/s. Appendix IIIA-C – Construction Quality Assurance Plan for the Slurry Trench Cutoff Wall includes the construction quality assurance activities associated with the construction of the slurry wall.

Slurry walls are commonly used to control groundwater movement. The major characteristics of slurry wall construction are the use of a bentonite and water slurry during excavation to support the trench excavation without the use of other lateral supports such as shoring. Slurry walls are built by excavating a narrow trench, which in this case will be 3 feet wide, while pumping slurry into the trench and maintaining its level at or near the top of the trench during the excavation. The trench is extended to key into the aquitard material (i.e., the unweathered shale) to form a bottom seal. The proposed slurry wall will be keyed a minimum of 3 feet into the aquiclude below the alluvial stratum.

Bentonite clay is a montmorillonite clay and the most common amendment in soil-bentonite slurry walls. Bentonite has the ability to swell as much as 20 times its volume upon contact with water. The slurry trench construction method is a proven method to construct a barrier wall. The soil-bentonite trench technique has been in use in the United States for over 25 years. After the trench has been excavated using a bentonite slurry, more slurry is mixed with the soil adjacent to the trench. A bulldozer and/or hydraulic excavator is used to work the materials to a smooth consistency, and it is then pushed into the trench so that the backfill slope displaces the bentonite slurry. Excavating and backfilling in phases make the operation continuous with relatively small quantities of new slurry required to key the trench fill and to mix backfill.

The effectiveness of the slurry wall as a component of the waste containment design system is assessed in Appendix IIIB – POC Demonstration. As discussed in Section 4.0, the purpose of the POC demonstration is to demonstrate that the proposed waste containment system design will meet the POC requirements specified in §330.331(a) by showing that the predicted concentrations of selected leachate chemical constituents do not exceed maximum contaminant levels (as listed in Table 1 in §330.331(a)(1)) in the uppermost aquifer at the POC. The slurry wall is an integral part of the POC demonstration in that it provides an additional hydraulic barrier between the pre-Subtitle D limits and groundwater.

6.0 Final Cover System

Once the site reaches the permitted waste fill grades, a composite final cover system will be installed to limit the infiltration of stormwater into the deposited waste. The final cover system that has been designed for use at the site is discussed in Section 6.1. In addition, the existing final cover that will remain in place is discussed in Section 6.2 and is shown on Drawing A.3.

6.1 Proposed Final Cover System

The final cover system for areas that currently do not have final cover is shown in Table IIIA-5. The landfill completion plan is shown on Drawing A.3 in Appendix IIIA-A. Details of the final cover system are presented on Drawings A.7 and A.8 in Appendix IIIA-A. Material specifications along with construction and testing procedures for the final cover system are provided in Appendix IIIE – Final Cover System Quality Control Plan (FCSQCP).

Table IIIA-5
Final Cover System Components

Subtitle D Composite Final Cover System for All Areas (§330.457(a)(1) and (2))	
Top Slopes	**Side Slopes**
24-inch-thick erosion layer	24-inch-thick erosion layer
Single-sided drainage geocomposite	Double-sided drainage geocomposite
40 mil LLDPE geomembrane (smooth)	40 mil LLDPE geomembrane (textured)
18-inch-thick compacted clay infiltration layer with $k \leq 10^{-5}$ cm/s	18-inch-thick compacted clay infiltration layer with $k \leq 10^{-5}$ cm/s

Permanent final cover erosion control structures include swales and chutes that will be constructed upon installation of the final cover. The design of the final cover system erosion control structures is provided in Appendix IIIF – Surface Water Drainage Report. As part of the final cover construction, an erosion layer capable of sustaining native vegetation will be constructed. Areas that receive final cover will be seeded upon completion of final cover placement. A soil loss and sheet flow velocity demonstration for the erosion layer is included in Appendix IIIF-D. The erosion layer will include a vegetation layer that provides for an 90 percent ground coverage. If there are areas that do not maintain at least 90 percent coverage they will be re-seeded until at least 90 percent coverage is maintained.

The stormwater controls for the landfill have been designed consistent with the TCEQ regulations for Type I MSW landfills. The stormwater runon/runoff controls have been designed for a 25-year frequency storm event. These include drainage controls for the final cover, perimeter drainage channels, culverts, and detention ponds, including pond outfalls. Details for the perimeter drainage system and associated calculations are included in Appendix IIIF.

In addition, a 100-foot-wide landscape bench is included on the eastern slope of the pre-Subtitle D area. Details of the landscape bench are provided on Drawings A.13 and A.14 in Appendix IIIA-A. The landscape bench will provide additional screening along the east sideslope of the landfill. As shown on Drawing A.14 in Appendix IIIA-A, the erosion layer thickness will be increased to 4 feet to accommodate the specified trees. In addition, a second double-sided drainage geocomposite will be installed on the bench to provide a root barrier.

Each tree species shown on Drawing A.13 in Appendix IIIA-A was selected because of their shallow root structure and lack of a tap root. The additional geocomposite will provide an effective root barrier by providing two additional geotextile layers (a single geotextile is commonly used as a root barrier for landfill final cover systems). In addition, the geocomposite that separates the erosion layer from the bottom drainage geocomposite will provide additional protection by the creation of an "air pruning" zone which is created by the geonet that is located between the two geotextiles. Air pruning is commonly used by tree growers in the nursery industry. This concept asserts that fibrous roots growing into the air layer (or air pruning zone) die back due to a lack of suitable soil and moisture.

Drainage swales and final cover system drainage collection pipes are located on each side of the bench to minimize the amount of stormwater that flows onto the bench and the amount of stormwater infiltration that will be collected by the drainage layer. The design of the final cover drainage collection pipe is included in Appendix IIIE-A.

6.2 Existing Final Cover System

The constructed final cover in the south and east portions of the pre-Subtitle D area will remain in place as shown on Drawing A.3. The details for the final cover tie-in between

the existing constructed alternative soil final cover and the composite final cover are shown on Drawing A.8. Other tie-in details for final cover are provided on Drawing A.15.

An alternative soil final cover was certified via a permit modification approved by TCEQ in August 2011. The permit modification demonstrated that the existing vegetation and soil material on the pre-Subtitle D sideslope is a functioning final cover system. The final cover was verified to be at least 4 feet thick. The approval letter from TCEQ is included in Appendix IIIK-A.

Similar to the proposed final cover areas, permanent final cover erosion control structures include swales and chutes that will be constructed on the existing final cover. The design of the final cover system erosion control structures is provided in Appendix IIIF-B. A soil loss and sheet flow velocity demonstration for the erosion layer is included in Appendix IIIF-D.

6.3 Final Cover Stability Analysis

A stability analysis for the existing and proposed final cover systems is provided in Appendix IIIJ – Geotechnical Report and is summarized below.

- **Final Cover Stability.** The stability of the proposed final cover slopes was evaluated at the most critical sections (e.g., where the 4H:1V slopes are the longest). The final cover slopes were analyzed using drained and undrained strength parameters (effective and total stress, respectively). The minimum factors of safety generated were all greater than the minimum recommended factor of safety of 1.3 (total stress analysis) and 1.5 (effective stress analysis).
- **Final Cover System Stability.** The interfaces of the components of each final cover system were evaluated using infinite slope stability analysis. The minimum factor of safety calculated for the final cover system is greater than the acceptable factor of safety of 1.5 for long-term stability.
- **Final Cover System and MSW Settlement and Strain Analysis.** Each final cover system was also evaluated for settlement and strain due to consolidation of the waste material within the landfill. The maximum strain calculated is negative, which indicates that all components are in compression and not subject to strain.

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

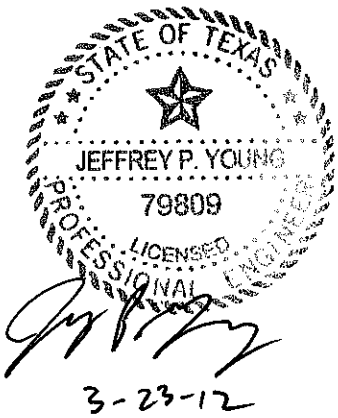
MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
APPENDIX IIIA-A
LINER, OVERLINER, AND FINAL COVER SYSTEM DETAILS

Prepared for

City of Farmers Branch

March 2012



Prepared by

3-23-12

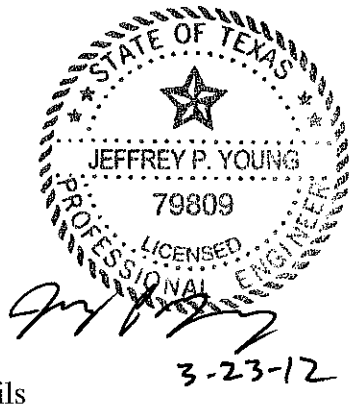
Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

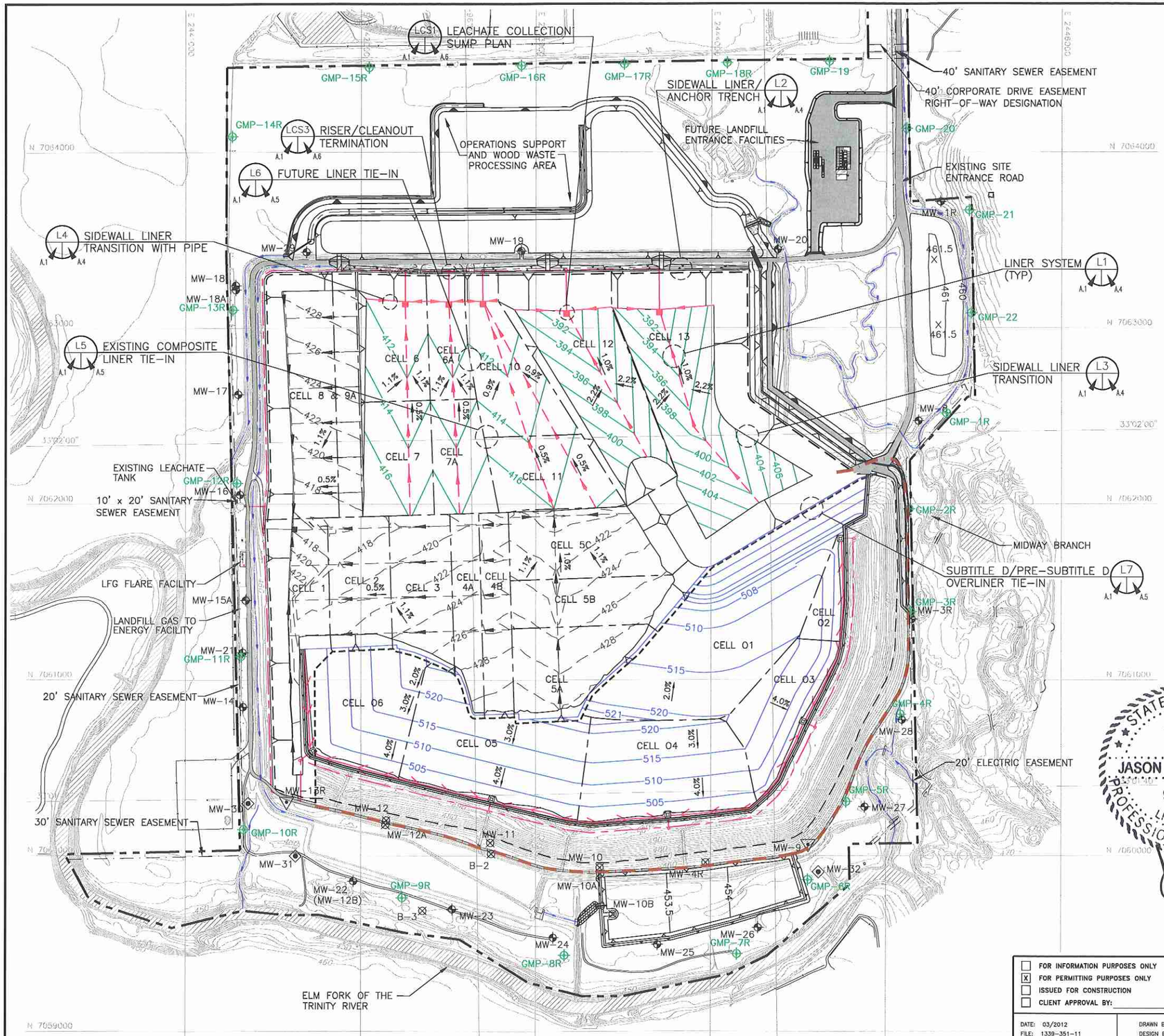
WBC Project No. 1339-351-11-02-6B.1

This document is intended for permitting purposes only.

CONTENTS

DRAWING A.1 – Excavation Plan
DRAWING A.2 – Overliner Plan
DRAWING A.3 – Landfill Completion Plan
DRAWING A.4 – Liner System Details
DRAWING A.5 – Liner System Tie-In Details
DRAWING A.6 – Leachate Collection System Details
DRAWING A.7 – Final Cover Details
DRAWING A.8 – Final Cover Details
DRAWING A.9 – Overliner System Details
DRAWING A.10 – Overliner System Details
DRAWING A.11 – Overliner Leachate Collection System Details
DRAWING A.12 – Overliner System Typical LFG Extraction Well Details
DRAWING A.13 – East Sideslope Bench Plan
DRAWING A.14 – East Sideslope Bench Final Cover Details
DRAWING A.15 – Final Cover Tie-In Details
DRAWING A.16 – Slurry Wall Site Plan
DRAWING A.17 – Slurry Wall Section A
DRAWING A.18 – Slurry Wall Section B
DRAWING A.19 – Slurry Wall Details





LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- LIMITS OF PRE-SUBTITLE D WASTE
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- 500 EXISTING CONTOUR
- EASEMENT
- CELL BOUNDARY
- 398 PROPOSED EXCAVATION CONTOUR
- 600 REGRADED BUFFER ZONE AREA
- PROPOSED LEACHATE LINE
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED LEACHATE RISER
- 422 AS-BUILT TOP OF SUBTITLE D CLAY LINER (SEE NOTE 7)
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- EXISTING LEACHATE RISER
- 515 PROPOSED TOP OF OVERLINER CONTOUR
- PROPOSED OVERLINER LEACHATE LINE
- PROPOSED OVERLINER LEACHATE COLLECTION SUMP
- LEACHATE FORCEMAIN
- 3H:1V SLOPE (TYPICAL)
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- MW-13R EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL
- PERIMETER ACCESS ROAD
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.
3. SEE APPENDIX IIIC FOR LEACHATE FORCEMAIN AND STORAGE TANK INFORMATION.
4. MINIMUM EXCAVATION ELEVATION AT LCS SUMP IS 387 FT-MSL.
5. SUBTITLE D AREA LCS PIPES SLOPE WITH A MINIMUM OF 0.5% TO SUMPS. LCS LATERAL DRAINAGE SLOPE IS A MINIMUM OF 0.9% ALONG THE FLOW PATH. OVERLINER LCS PIPES SLOPES SHOWN ON DRAWING A.2.
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED IN PARTS I/II, APPENDIX I/IIA.
7. NOTED CONTOURS REPRESENT THE TOP OF CLAY FOR THE EXISTING SUBTITLE D LINERS.
8. REFER TO APPENDIX IIID FOR DEWATERING SYSTEM DESIGN INFORMATION.
9. EXCAVATION SLOPES AND SLOPES OUTSIDE THE LIMIT OF WASTE (E.G. CHANNELS) ARE TYPICALLY 3(H):1(V).

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-28-12

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- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.1-EXCAVATION.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

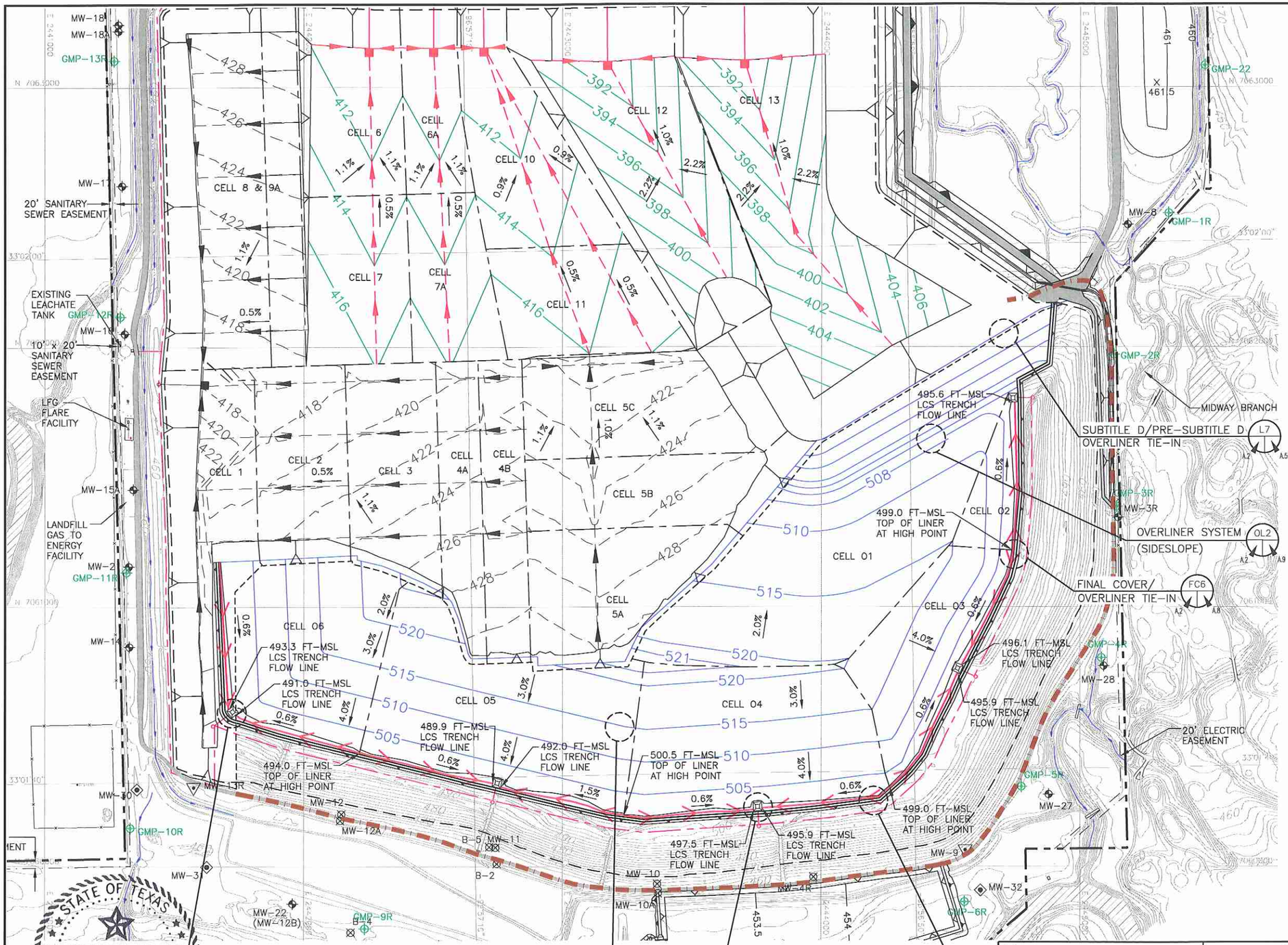
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXCAVATION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING A.1



LEGEND

- PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- LIMITS OF PRE-SUBTITLE D WASTE
- N 706,4000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- EASEMENT
- CELL BOUNDARY
- 398 — PROPOSED EXCAVATION CONTOUR
- PROPOSED LEACHATE LINE
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED LEACHATE RISER
- 422 — AS-BUILT TOP OF SUBTITLE D CLAY LINER (SEE NOTE 7)
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- EXISTING LEACHATE RISER
- 515 — PROPOSED TOP OF OVERLINER CONTOUR
- PROPOSED OVERLINER LEACHATE LINE
- PROPOSED OVERLINER LEACHATE COLLECTION SUMP
- LEACHATE FORCEMAIN
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- MW-30 — PROPOSED GROUNDWATER MONITORING WELL
- GMP-20 — PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 — OBSERVATION WELL
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- 600 — REGRADED BUFFER ZONE AREA

0 200 400
SCALE IN FEET

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
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4. MINIMUM EXCAVATION ELEVATION AT LCS SUMP IS 387 FT-MSL.
5. SUBTITLE D AREA LCS PIPES SLOPE WITH A MINIMUM OF 0.5% TO SUMPS. LCS LATERAL DRAINAGE SLOPE IS A MINIMUM OF 0.9% ALONG THE FLOW PATH. OVERLINER LCS PIPES SLOPE WITH A MINIMUM OF 0.6%.
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED IN PARTS I/II, APPENDIX I/IIA.
7. NOTED CONTOURS REPRESENT THE TOP OF CLAY FOR THE EXISTING SUBTITLE D LINERS.
8. REFER TO APPENDIX IIID FOR DEWATERING SYSTEM DESIGN INFORMATION.
9. REFER TO APPENDIX IIIJ FOR OVERLINER LEACHATE COLLECTION PIPE PROFILES.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
FILE: 1339-351-11
CAD: A.2-OVERLINER PLAN.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT OVERLINER PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

SHEET IIIA-A.2

DRAWING A.2

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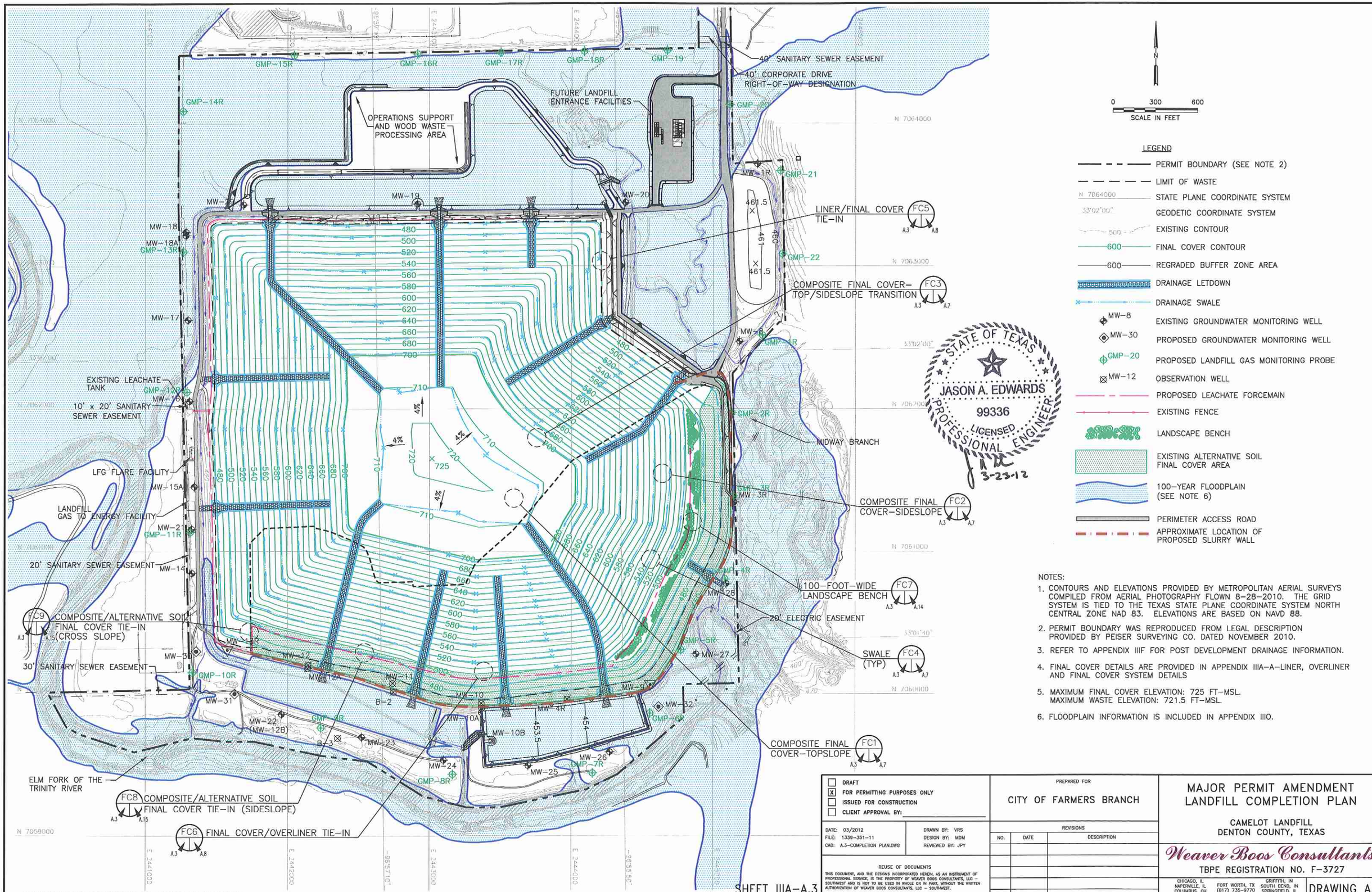

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.
3. REFER TO APPENDIX IIIF FOR POST DEVELOPMENT DRAINAGE INFORMATION.
4. FINAL COVER DETAILS ARE PROVIDED IN APPENDIX IIIA-A-LINER, OVERLINER AND FINAL COVER SYSTEM DETAILS
5. MAXIMUM FINAL COVER ELEVATION: 725 FT-MSL. MAXIMUM WASTE ELEVATION: 721.5 FT-MSL.
6. FLOODPLAIN INFORMATION IS INCLUDED IN APPENDIX IIIO.

- [ ] DRAFT
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- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.3-COMPLETION PLAN.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.3

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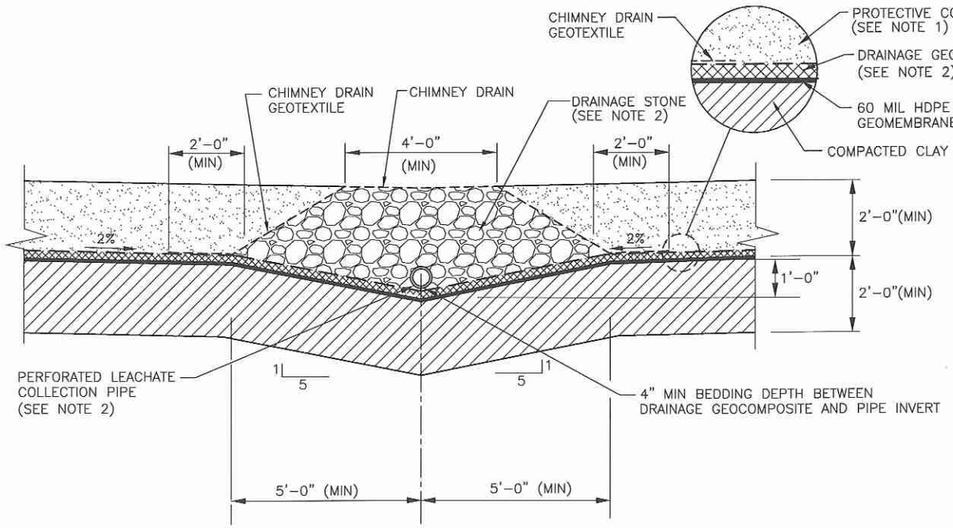

LINER SYSTEM (TYP) L1

PARTS I/II: I/IIA.3.; PART III: A.1,B.4,B.8,B.9,B.10,B.11 A.4

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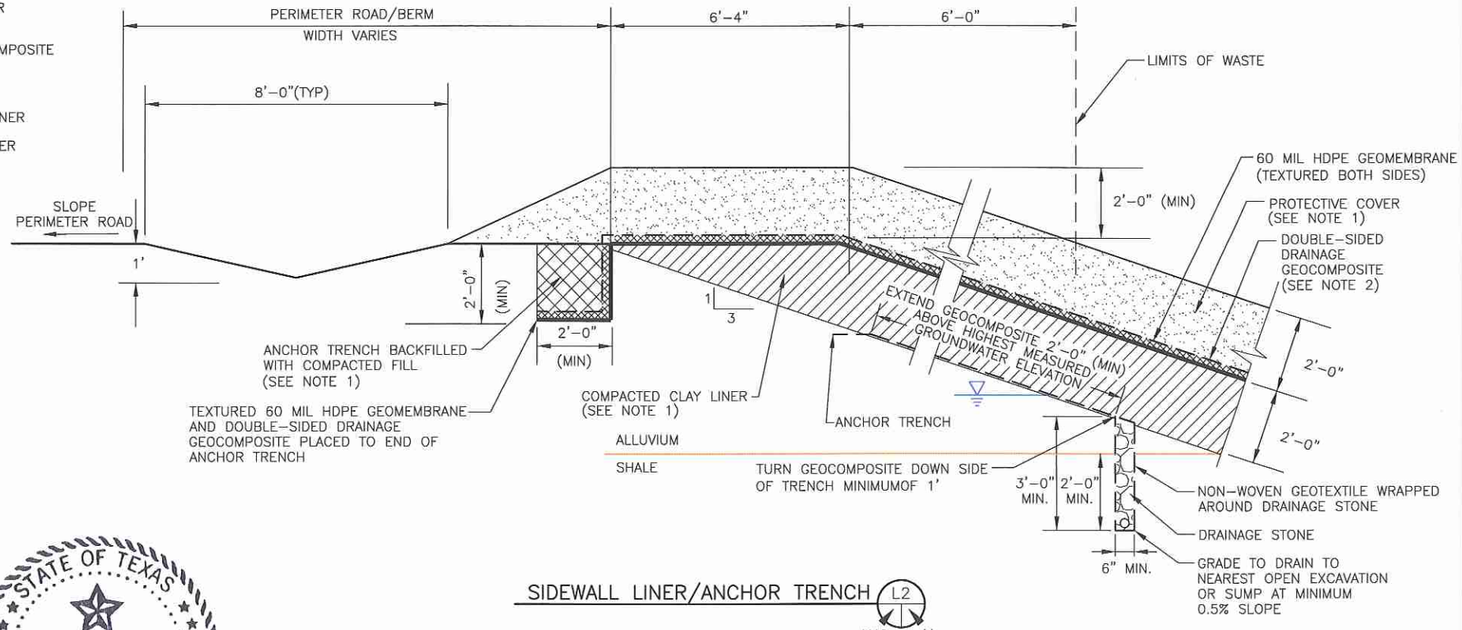

SIDEWALL LINER/ANCHOR TRENCH L2

A1,A8 A4

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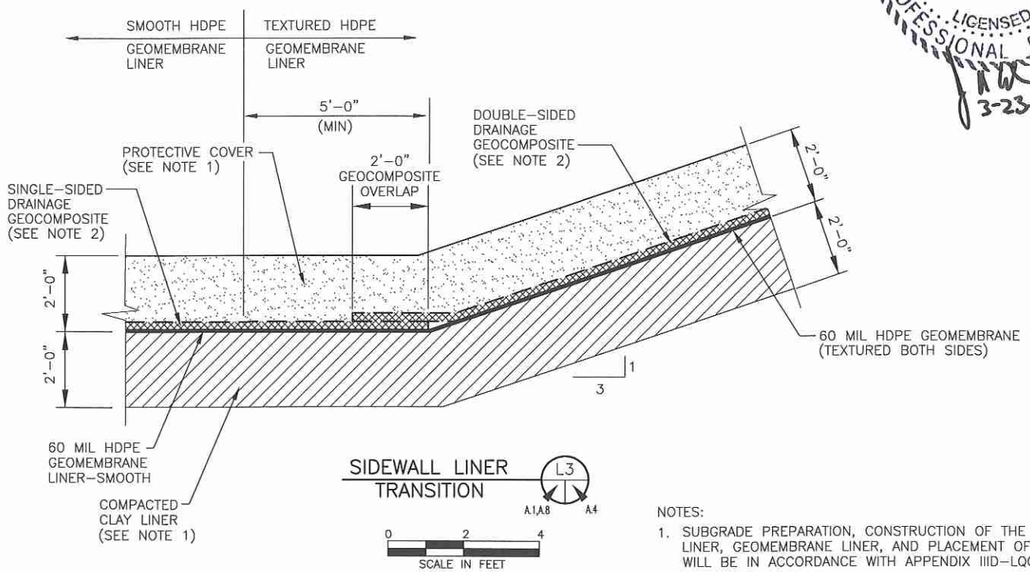

SIDEWALL LINER TRANSITION L3

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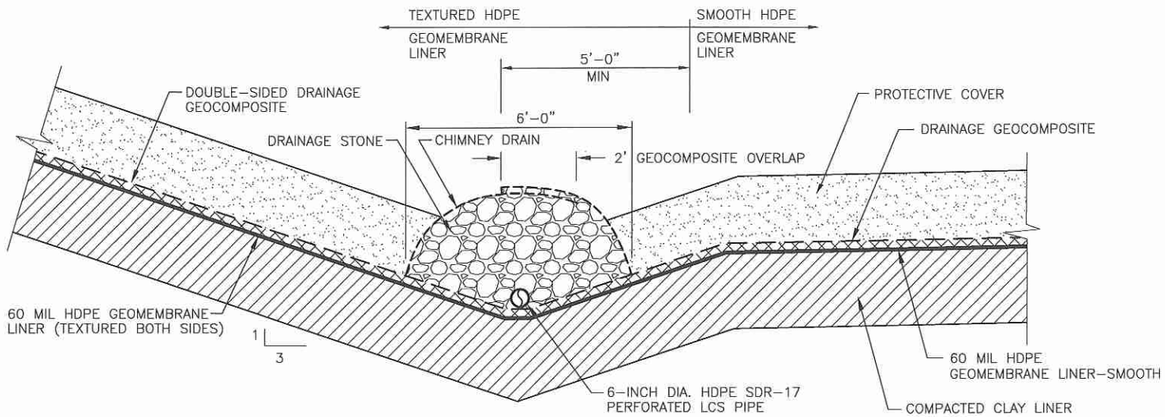

SIDEWALL LINER TRANSITION WITH PIPE L4

A1 A4

0 2 4
SCALE IN FEET

NOTES:

1. SUBGRADE PREPARATION, CONSTRUCTION OF THE COMPACTED CLAY LINER, GEOMEMBRANE LINER, AND PLACEMENT OF PROTECTIVE COVER WILL BE IN ACCORDANCE WITH APPENDIX IIID-LQCP.
2. DESIGN INFORMATION FOR THE LEACHATE COLLECTION SYSTEM (LCS) COMPONENTS ARE INCLUDED IN APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN. SPECIFICATIONS FOR LCS COMPONENTS ARE INCLUDED IN APPENDIX IIID-LQCP. DRAINAGE GEOCOMPOSITE FOR UNDEVELOPED LINER AREAS CONSISTS OF A 250-MIL GEONET WITH 6 OZ/SY GEOTEXTILE HEAT BONDED ON THE TOP SIDE FOR THE BOTTOM LINER AND HEAT BONDED GEOTEXTILE (6 OZ/SY) ON BOTH SIDES FOR GEOCOMPOSITE ON 3H:1V SIDESLOPES.
3. DEPENDING ON THE SLOPE, SMOOTH OR TEXTURED HDPE GEOMEMBRANE WILL BE USED (REFER TO SECTION 3 OF APPENDIX IIID-LQCP).
4. REFER TO APPENDIX IIID, APPENDIX IIID-C FOR DEWATERING SYSTEM DESIGN INFORMATION AND DETAIL DRAWINGS.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

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- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A-4 LINER SYSTEM.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

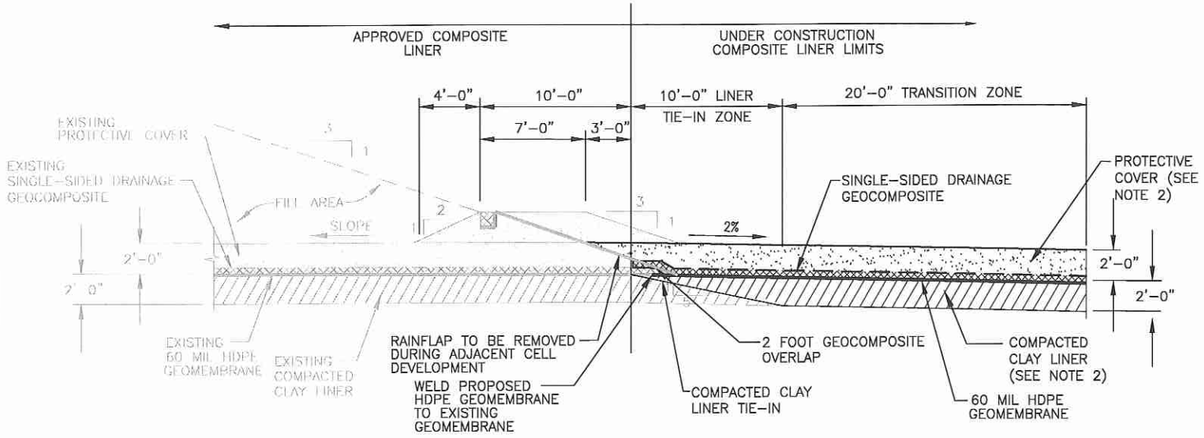
MAJOR PERMIT AMENDMENT
LINER SYSTEM DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

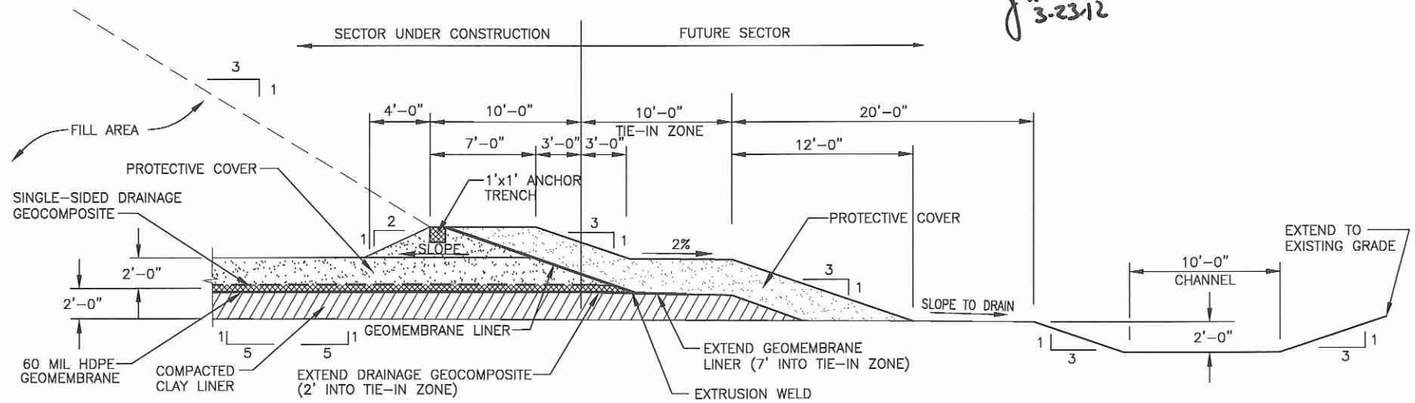
SHEET IIIA-A.4

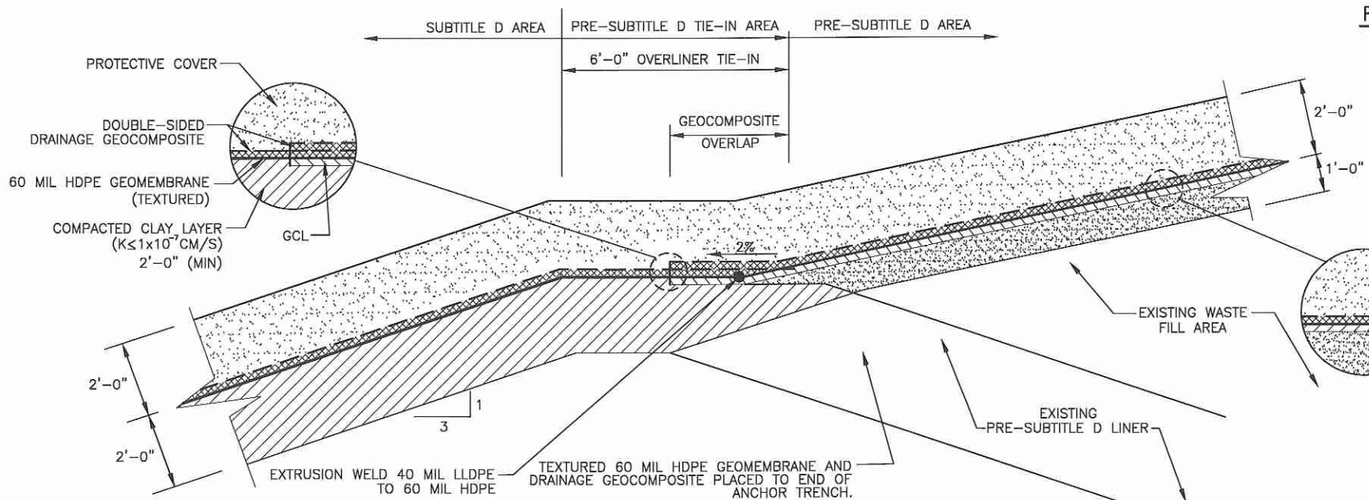
DRAWING A.4



EXISTING COMPOSITE LINER TIE–IN L5

0 5 10
SCALE IN FEET
A.1 A.5





SUBTITLE D/PRE–SUBTITLE D OVERLINER TIE–IN L7 A5

0 2 4
SCALE IN FEET
PART III: A.1,A.2,B.5,B.10,B.11

FUTURE LINER TIE–IN L6

0 5 10
SCALE IN FEET
A.1 A.5

NOTES:

1. A SLOPE TRANSITION WILL BE NEEDED FOR THE PROPOSED SECTOR GRADES TO MATCH THE CONSTRUCTED GRADES. SLOPES WITHIN THE TRANSITION ZONE WILL VARY BUT SHALL BE NO GREATER THAN 3H:1V.
2. SUBGRADE PREPARATION, CONSTRUCTION OF THE COMPACTED CLAY LINER, GEOMEMBRANE LINER, AND PLACEMENT OF PROTECTIVE COVER WILL BE IN ACCORDANCE WITH APPENDIX IIID–LQCP.
3. DRAINAGE GEOCOMPOSITE FOR UNDEVELOPED AREAS CONSISTS OF A 250–MIL GEONET WITH 6 OZ/SY GEOTEXTILE HEAT BONDED ON THE TOP SIDE FOR THE TOP SLOPES AND HEAT BONDED GEOTEXTILE (6 OZ/SY) ON BOTH SIDES FOR GEOCOMPOSITE ON 3H:1V SIDESLOPES.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
FILE: 1339–351–11
CAD: A.5 LINER SYSTEM.DWG
DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

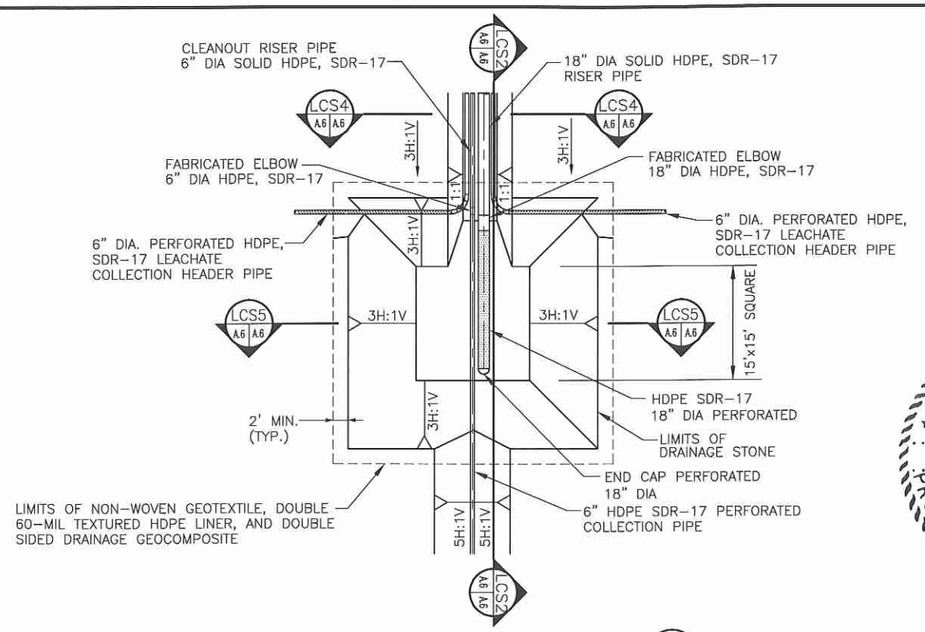
MAJOR PERMIT AMENDMENT LINER SYSTEM TIE–IN DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING A.5

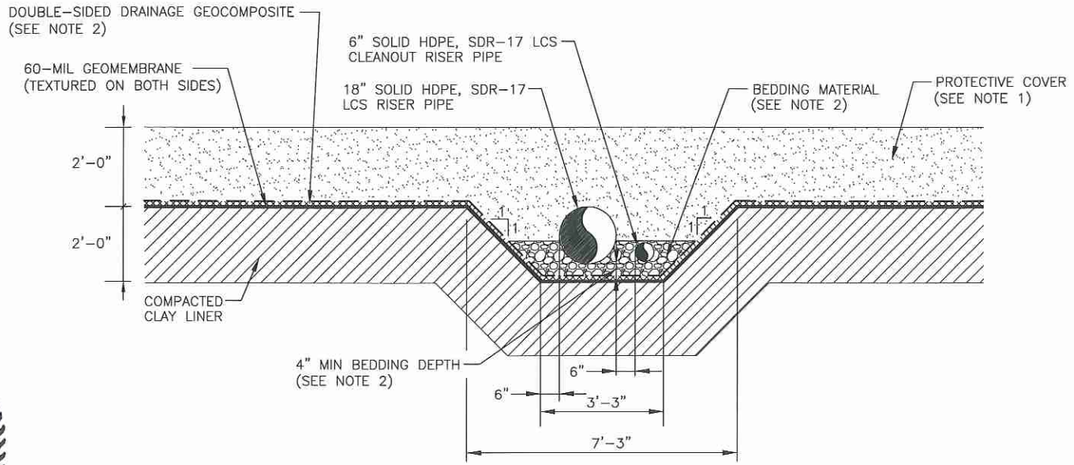
SHEET IIIA–A.5



LEACHATE COLLECTION SUMP PLAN (LCS1 A.1 A.6)

NTS

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12



LEACHATE RISER PIPES (LCS4 A.6 A.6)

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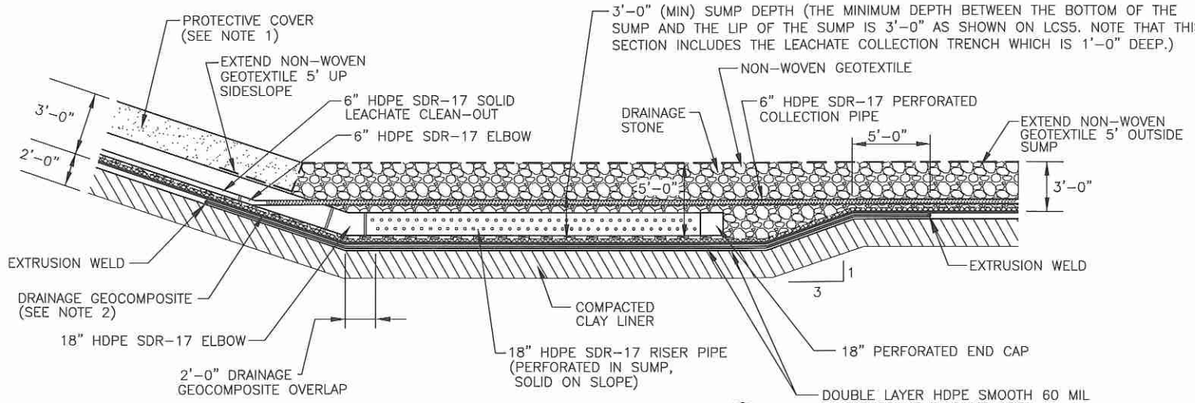
SCALE IN FEET



TYPICAL LEACHATE SUMP SECTION (LCS2 A.6 A.6)

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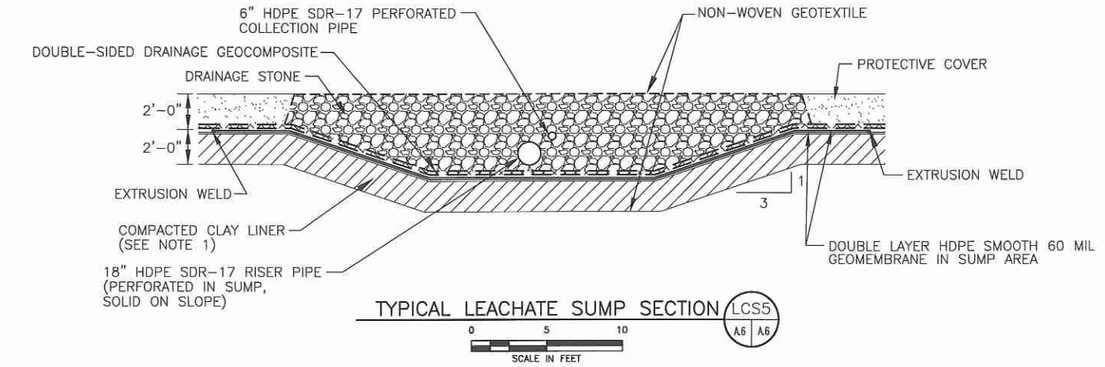
SCALE IN FEET



TYPICAL LEACHATE SUMP SECTION (LCS5 A.6 A.6)

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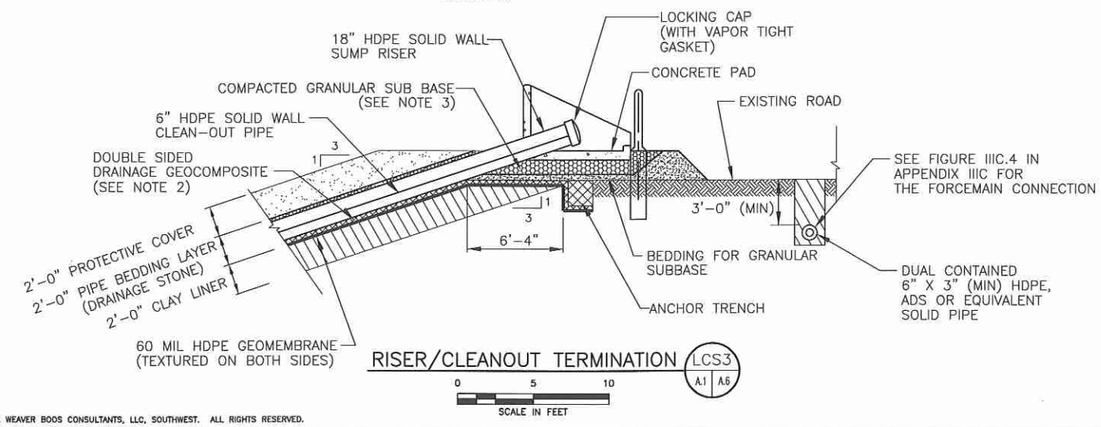
SCALE IN FEET



RISER/CLEANOUT TERMINATION (LCS3 A.1 A.6)

0 5 10
SCALE IN FEET

NOTES:

1. SUBGRADE PREPARATION, CONSTRUCTION OF THE COMPACTED CLAY LINER, GEOMEMBRANE LINER, AND PLACEMENT OF PROTECTIVE COVER WILL BE IN ACCORDANCE WITH APPENDIX IIID-LQCP.
2. DESIGN INFORMATION FOR THE LEACHATE COLLECTION SYSTEM (LCS) COMPONENTS ARE INCLUDED IN APPENDIX IIIC-LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN. SPECIFICATIONS FOR LCS COMPONENTS ARE INCLUDED IN APPENDIX IIID-LQCP. DRAINAGE GEOCOMPOSITE FOR UNDEVELOPED LINER AREAS CONSISTS OF A 250-MIL GEONET WITH 6 OZ/SY GEOTEXTILE HEAT BONDED ON THE TOP SIDE FOR THE BOTTOM LINER AND HEAT BONDED GEOTEXTILE (6 OZ/SY) ON BOTH SIDES FOR GEOCOMPOSITE ON 3H:1V SIDESLOPES.
3. REFER TO APPENDIX IIID, SECTION 2.3.5 FOR MATERIAL SPECIFICATIONS.

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☐ CLIENT APPROVAL BY:

DATE: 03/2012
FILE: 1339-351-11
CAD: A.6-LEACHATE COLL.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

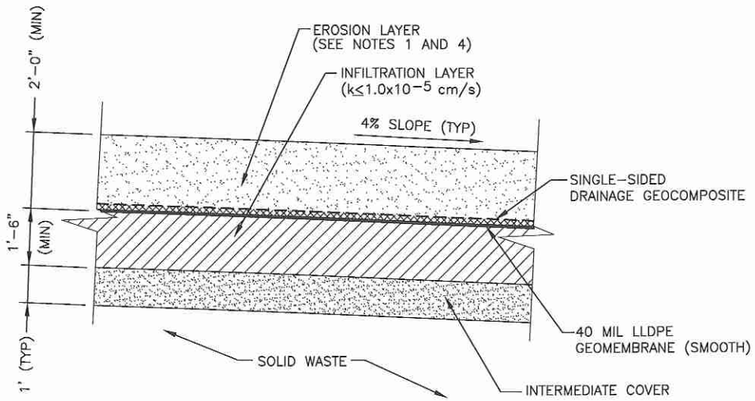
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
LEACHATE COLLECTION SYSTEM DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

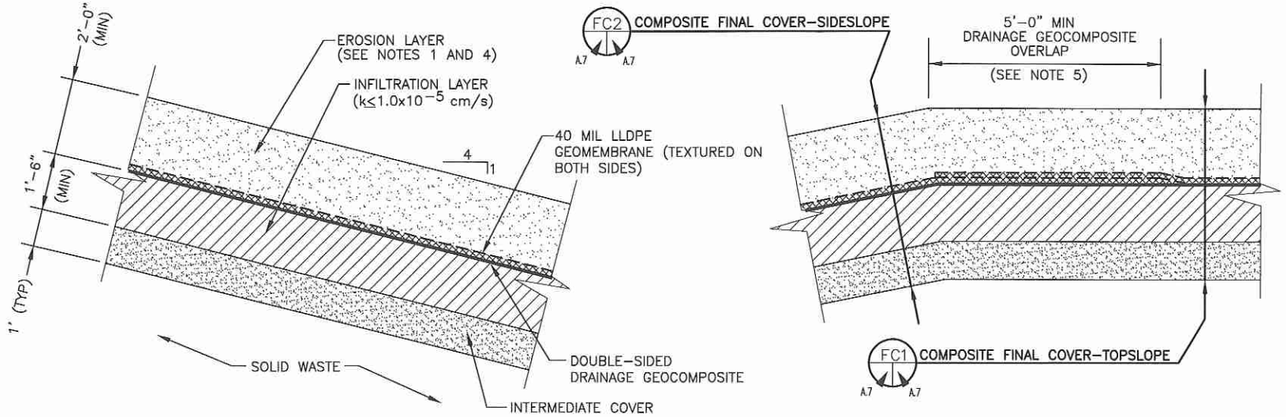
DRAWING A.6



COMPOSITE FINAL COVER–TOPSLOPE (FC1)

PARTS I/II: I/IIA.3; PART III: A.3,A.7,B.5,B.9,B.10 — A.7

0 2 4
SCALE IN FEET



COMPOSITE FINAL COVER–SIDESLOPE (FC2)

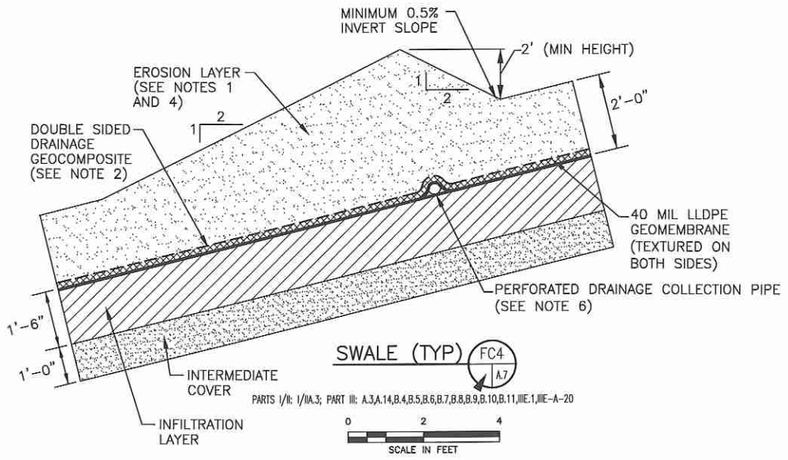
PARTS I/II: I/IIA.3; PART III: A.3,A.7,A.8,A.14,B.4,B.5,B.6,B.7,B.8,B.9,B.10,B.11,IIIE.1 — A.7

0 2 4
SCALE IN FEET

COMPOSITE FINAL COVER–TOP/SIDESLOPE TRANSITION (FC3)

PARTS I/II: I/IIA.3; PART III: B.5,B.9,B.10,IIIE.1 — A.7

0 2 4
SCALE IN FEET



SWALE (TYP) (FC4 A.7)

PARTS I/II: I/IIA.3; PART III: A.3,A.14,B.4,B.5,B.6,B.7,B.8,B.9,B.10,B.11,IIIE.1,IIIE-A-20

0 2 4
SCALE IN FEET

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. FINAL COVER OF EROSION LAYER WILL BE CAPABLE OF SUSTAINING SELECTED VEGETATION.
2. DRAINAGE LAYER CONSISTS OF A 250–MIL GEOCOMPOSITE–HDPE GEONET OVERLAIN BY A 6 OZ/SY GEOTEXTILE LINER (SINGLE–SIDED ON TOPSLOPES AND DOUBLE–SIDED ON SIDESLOPES), OR ENGINEER APPROVED EQUIVALENT.
3. FINAL COVER COMPONENTS WILL BE CONSTRUCTED ACCORDING TO FCSQCP (APPENDIX IIIE).
4. EROSION LAYER MAY CONSIST OF BOTH ONSITE AND OFF–SITE SOILS. BORROW SOURCE TO BE SELECTED BY OWNER PRIOR TO CONSTRUCTION.
5. SINGLE–SIDED DRAINAGE GEOCOMPOSITE WILL OVERLAP THE DOUBLE–SIDED DRAINAGE GEOCOMPOSITE WITHIN THE FINAL COVER SLOPE TRANSITION.
6. REFER TO APPENDIX IIIE–A FOR THE DRAINAGE COLLECTION PIPE DESIGN. AS AN OPTION TO THE DRAINAGE COLLECTION PIPE THE DRAINAGE GEOCOMPOSITE MAY BE DAYLIGHTED 2 FEET ABOVE THE SWALE FLOWLINE.

SHEET IIIA–A.7

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DATE: 03/2012
FILE: 1339–351–11
CAD: A.7–FINAL COVER DETS.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

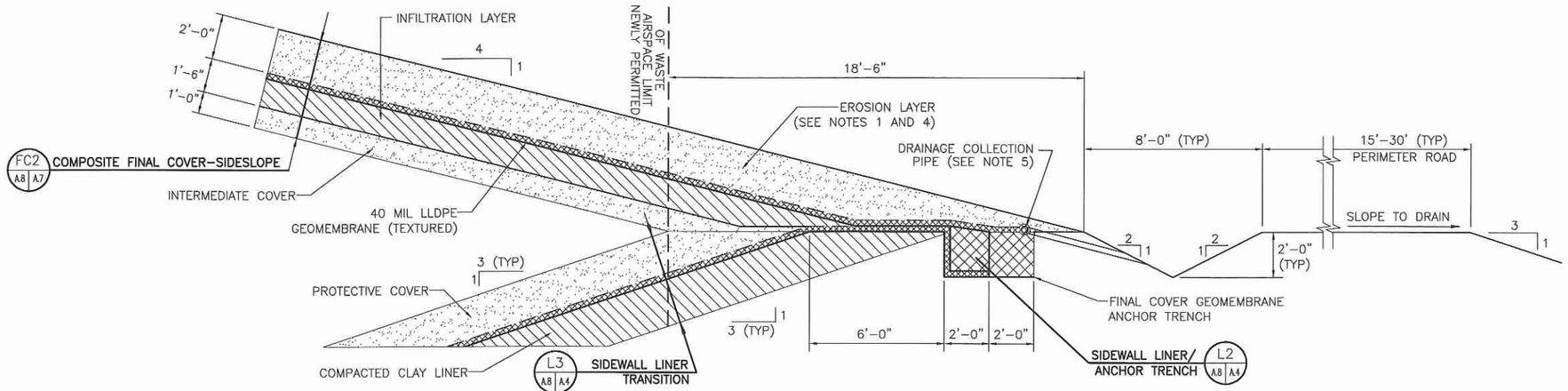
NO.	DATE	DESCRIPTION

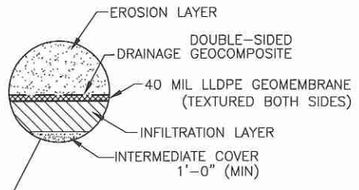
MAJOR PERMIT AMENDMENT
FINAL COVER DETAILS

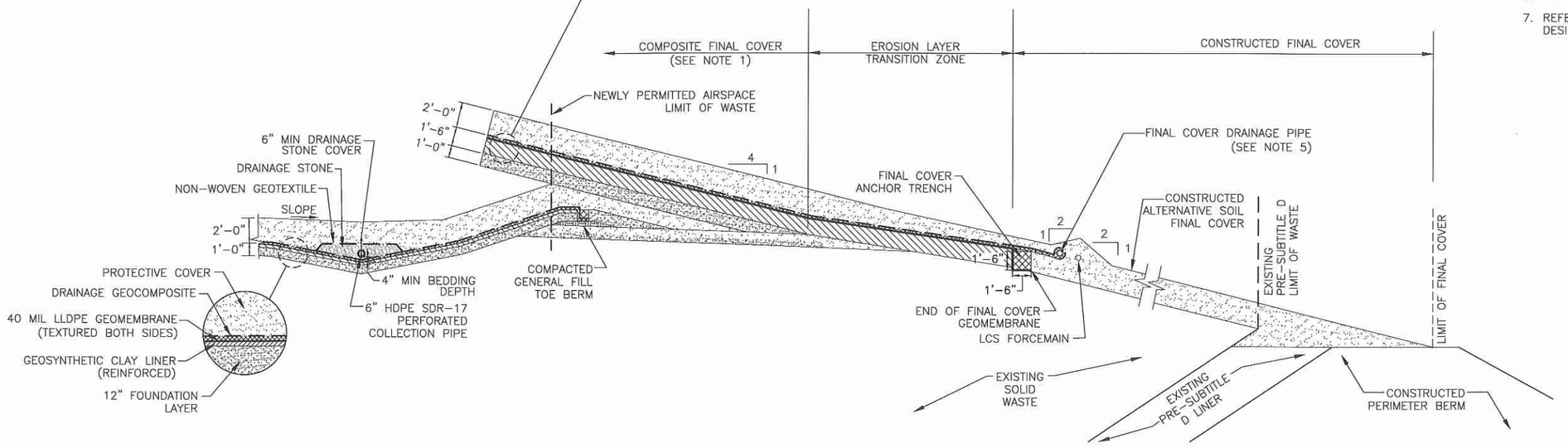
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.7







FC6 A8 FINAL COVER/OVERLINER TIE-IN

PARTS I/II/IIA.3, PART IIA.2,A.3,B.5,B.6,B.7,B.8,B.9,B.10,B.11

0 5 10
SCALE IN FEET

NOTES:

1. EROSION LAYER WILL BE CAPABLE OF SUSTAINING SELECTED VEGETATION.
2. FINAL COVER DRAINAGE LAYER CONSISTS OF A 250-MIL GEOCOMPOSITE-HDPE GEONET OVERLAIN BY A 6 OZ/SY GEOTEXTILE LAYER (SINGLE-SIDED ON TOPSLOPES AND DOUBLE-SIDED ON SIDESLOPES), OR ENGINEER APPROVED EQUIVALENT.
3. FINAL COVER COMPONENTS WILL BE CONSTRUCTED ACCORDING TO FCQCP (APPENDIX IIIE).
4. EROSION LAYER MAY CONSIST OF BOTH ONSITE AND OFF-SITE SOILS. BORROW SOURCE TO BE SELECTED BY OWNER PRIOR TO CONSTRUCTION.
5. REFER TO APPENDIX IIIE-A FOR THE DRAINAGE COLLECTION PIPE DESIGN. AS AN OPTION TO THE DRAINAGE COLLECTION PIPE THE DRAINAGE GEOCOMPOSITE MAY BE DAYLIGHTED 2 FEET ABOVE THE SWALE FLOWLINE.
6. REFER TO APPENDIX IIIF FOR THE PERIMETER CHANNEL DESIGN.
7. REFER TO APPENDIX IIID, APPENDIX IIID-C FOR DEWATERING SYSTEM DESIGN INFORMATION AND DETAIL DRAWINGS.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
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CAD: A.8-FINAL COVER DETS.DWG
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DESIGN BY: MDM
REVIEWED BY: JPY

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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT FINAL COVER DETAILS

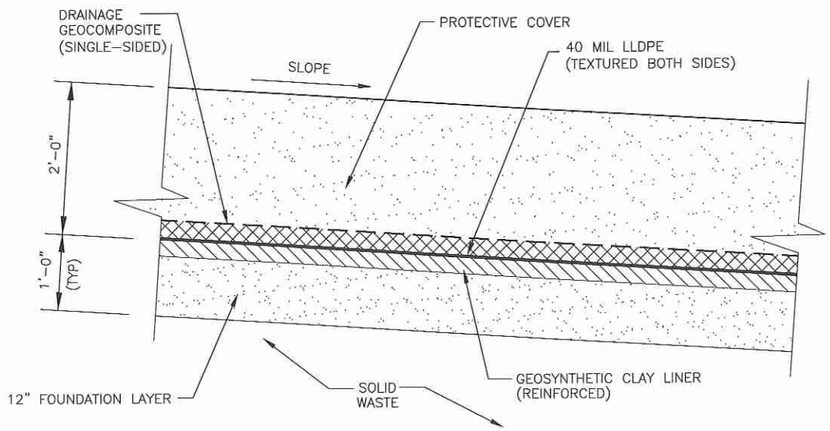
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.8

SHEET IIIA-A.8

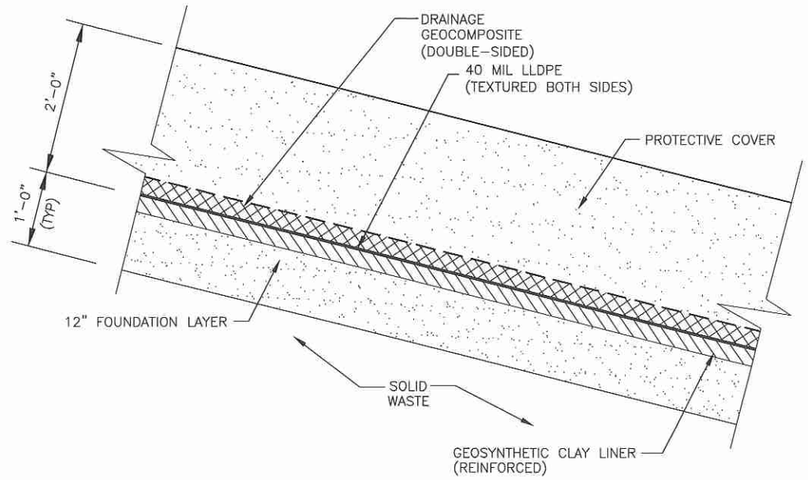


OVERLINER SYSTEM (TOPSLOPE) OL1 / A9

A2,B.5,B.6,B.7,B.8,B.9,B.10,B.11

0 1 2

SCALE IN FEET



OVERLINER SYSTEM (SIDESLOPE) OL2 / A9

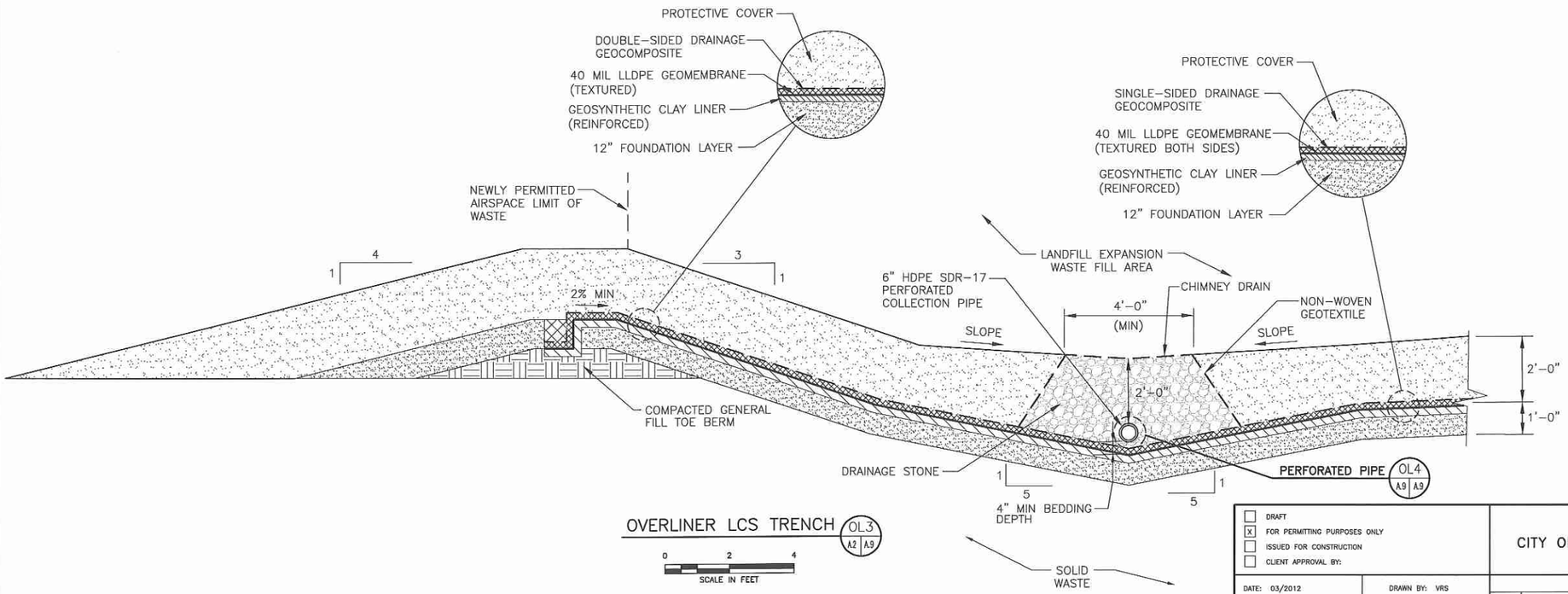
PARTS I/I.1/II.A.3, PART III.A.2,B.5,B.10,B.11

0 1 2

SCALE IN FEET

NOTES:

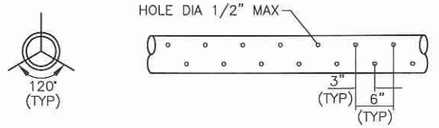
1. SUBGRADE PREPARATION, CONSTRUCTION OF THE COMPACTED CLAY LINER, AND PLACEMENT OF PROTECTIVE COVER WILL BE IN ACCORDANCE WITH APPENDIX IIID–LQCP.
2. DRAINAGE GEOCOMPOSITE FOR OVERLINER AREAS CONSISTS OF A 250–MIL GEONET WITH 6 OZ/SY GEOTEXTILE HEAT BONDED ON THE TOP SIDE FOR THE <4% SLOPES AND HEAT BONDED GEOTEXTILE (6 OZ/SY) ON BOTH SIDES FOR GEOCOMPOSITE ON >4% SLOPES.
3. THE DETAIL IS SHOWN WITH INITIAL CONDITION SLOPES. THE SETTLEMENT ANALYSIS THAT INCLUDES THE DETERMINATION OF AFTER SETTLEMENT SLOPES FOR THE LEACHATE COLLECTION LAYER AS WELL AS FOR THE LEACHATE COLLECTION PIPING IS INCLUDED IN APPENDIX IIIJ (APPENDIX IIIJ–B). ALSO A DEMONSTRATION SHOWING THAT THE LEACHATE COLLECTION SYSTEM WILL FUNCTION AS DESIGNED IS INCLUDED IN APPENDIX IIIC.



OVERLINER LCS TRENCH OL3 / A2 A9

0 2 4

SCALE IN FEET



PERFORATED PIPE OL4 / A9 A9

0 1 2

SCALE IN FEET

STATE OF TEXAS
MARILYN D. MORRISON
102273
LICENSED PROFESSIONAL ENGINEER
5.23.12

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DATE: 03/2012
FILE: 1339–351–11
CAD: A.9–OVERLINER DETS.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

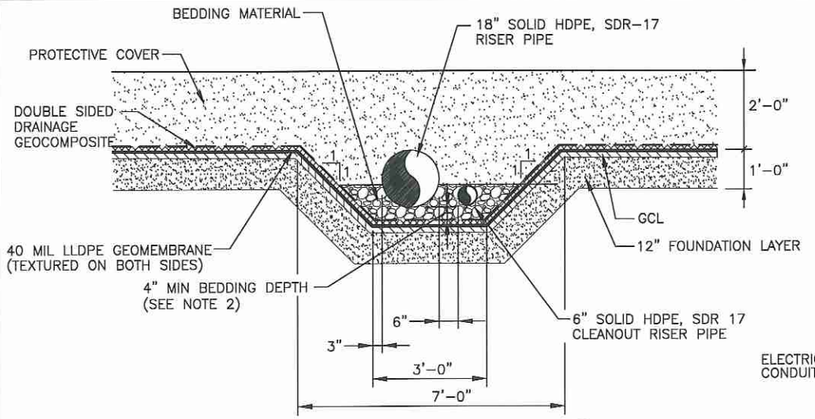
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
OVERLINER SYSTEM DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

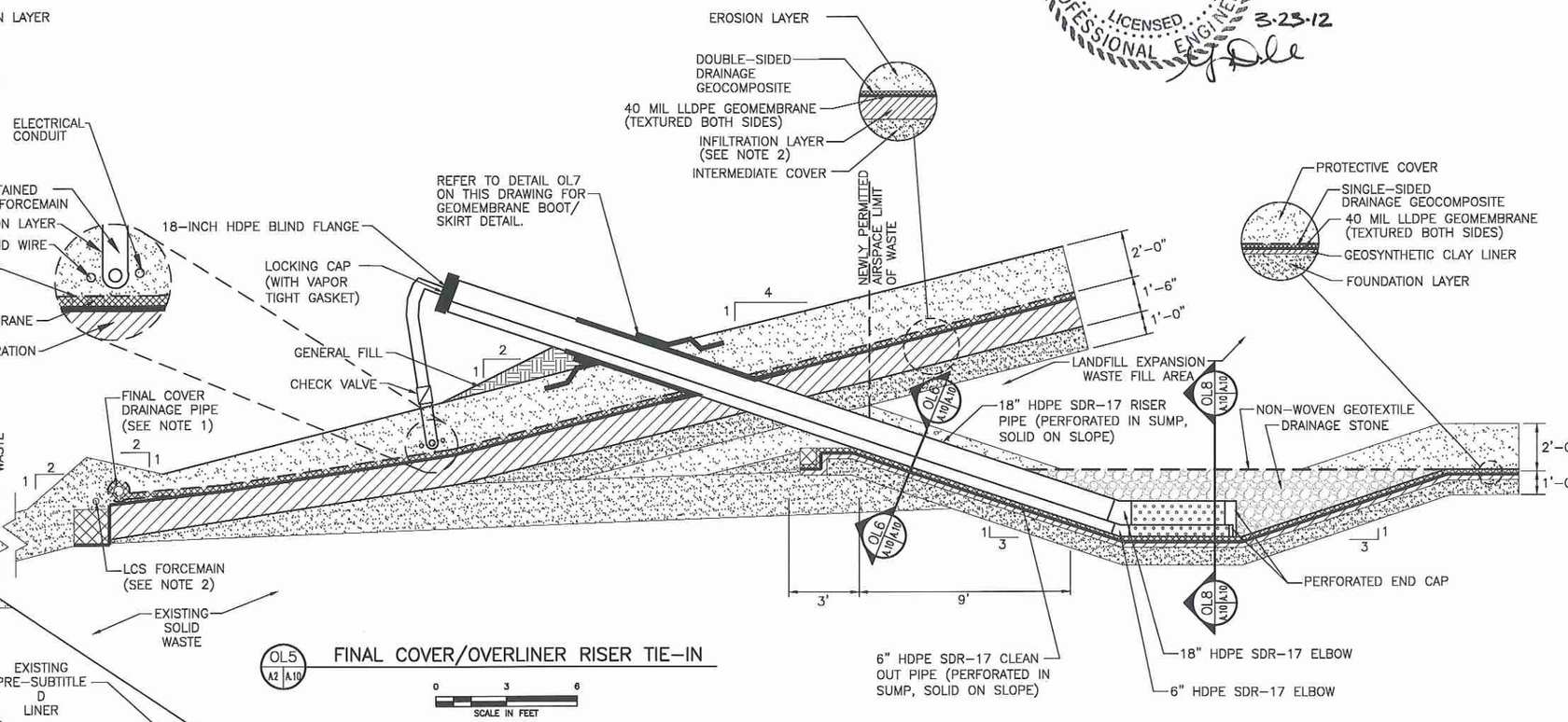
Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO

DRAWING A.9



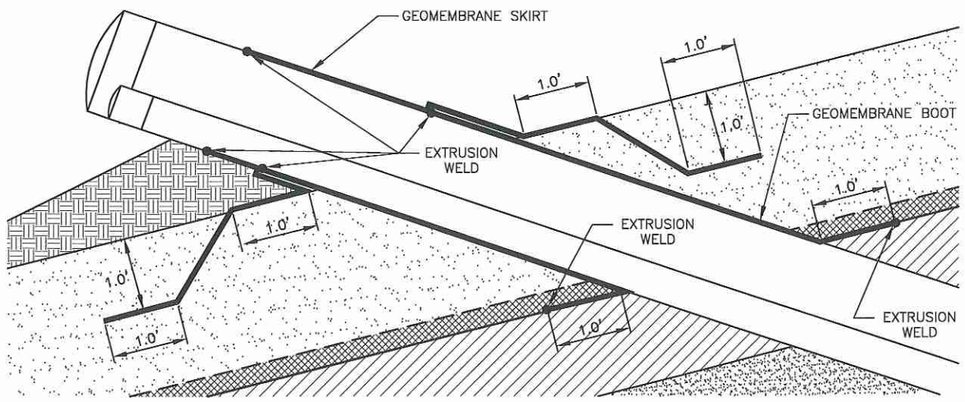
LEACHATE RISER PIPES (OL6 | A.10 | A.10)

0 2 4
SCALE IN FEET



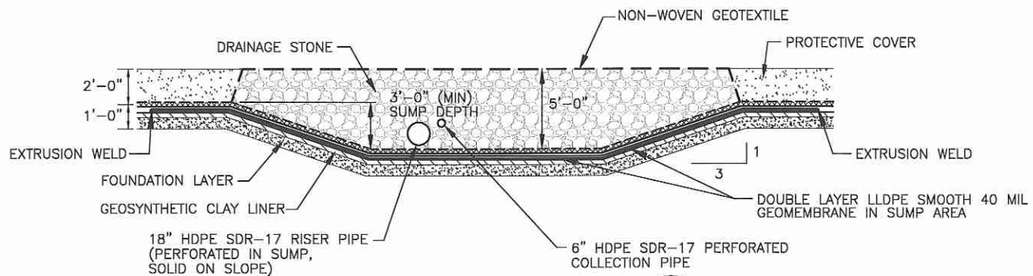
FINAL COVER/OVERLINER RISER TIE-IN (OL5 | A2 | A.10)

0 3 6
SCALE IN FEET



GEOMEMBRANE BOOT/SKIRT (OL7 | A.10 | A.10)

0 1 2
SCALE IN FEET



TYPICAL LEACHATE SUMP SECTION (OL8 | A.10 | A.10)

0 5 10
SCALE IN FEET

NOTES:

1. REFER TO APPENDIX IIIE-A FOR THE FINAL COVER DRAINAGE LAYER DESIGN AND GEOCOMPOSITE DRAIN AT TERMINATION AT DRAINAGE PIPE.
2. REFER TO APPENDIX IIIC FOR THE DESIGN INFORMATION OF THE LCS FORCEMAIN.

SHEET IIIA-A.10

STATE OF TEXAS
MARILYN D. MORRISON
102273
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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- [x] FOR PERMITTING PURPOSES ONLY
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- [ ] CLIENT APPROVAL BY:

DATE: 03/2012
FILE: 1339-351-11
CAD: A.10-OVERLINER DETS.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
OVERLINER SYSTEM DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
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FORT WORTH, TX
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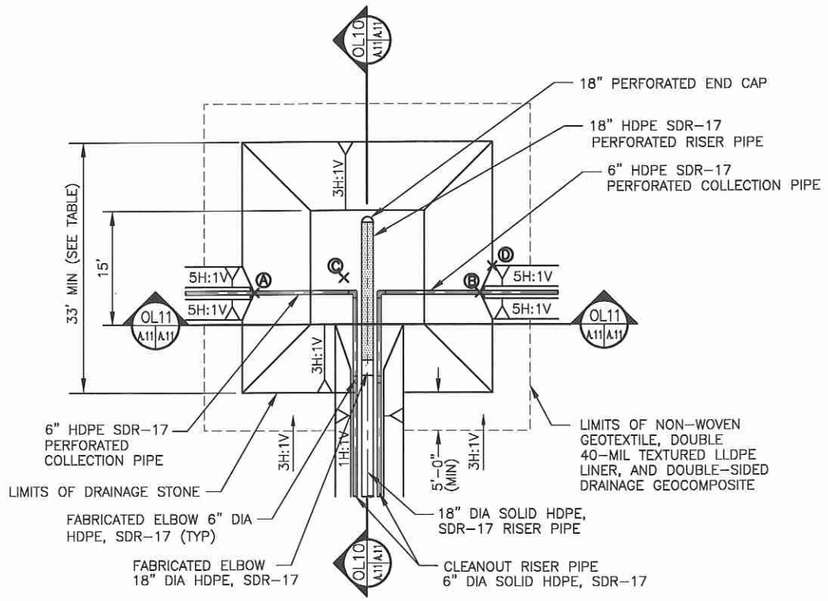
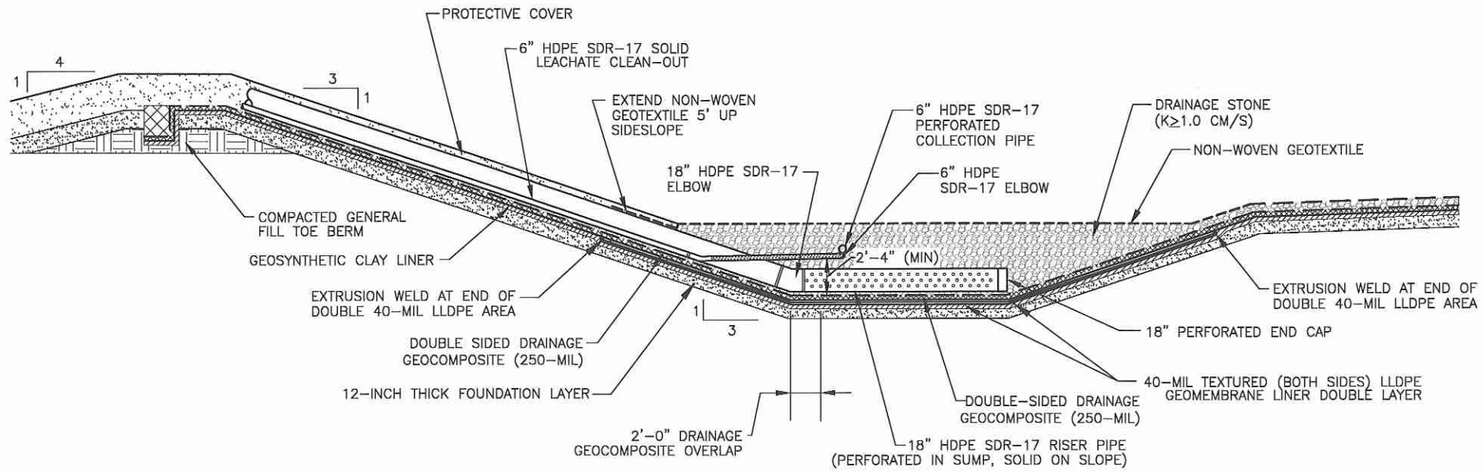
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.10



OL9A A2|A11 TYPICAL OVERLINER LEACHATE COLLECTION SUMP PLAN (CELLS 02, 03, 04, AND 05–SEE NOTE 1)

NTS

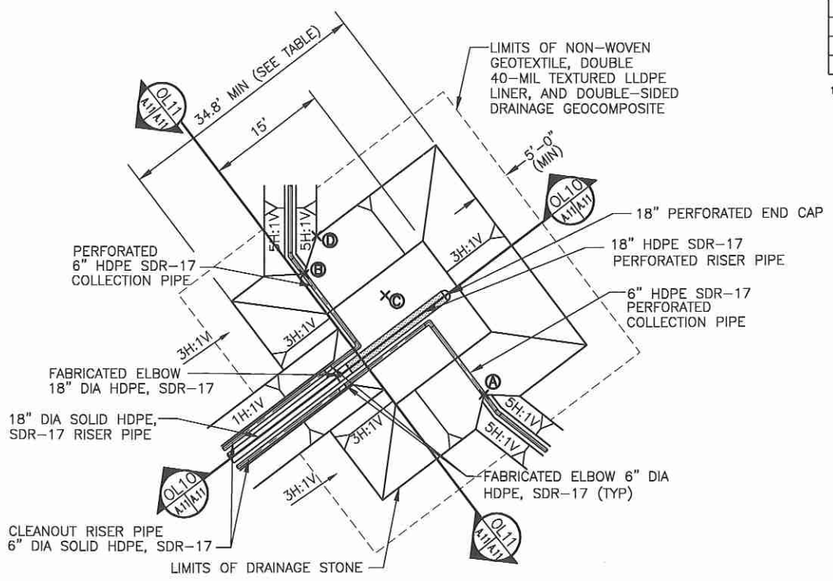


TYPICAL LEACHATE SUMP SECTION OL10 A11|A11

SCALE IN FEET

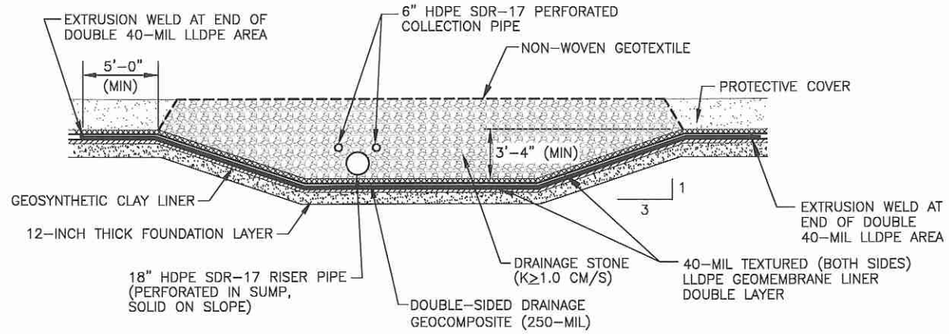
CELL	ELEVATION AT POINT LOCATION (FT-MSL)[1]				SUMP DEPTH (FT)
	A	B	C	D	
02	495.6	N/A	493.3	496.6	3.3
03	495.9	496.1	493.6	497.1	3.5
04	497.5	495.9	493.6	498.5	4.9
05	489.9	492.0	487.6	493.0	5.4
06	493.1	490.8	488.5	494.1	5.6

[1] A, B = INVERT ELEVATION OF 6" LEACHATE COLLECTION PIPE AS IT ENTERS THE SUMP;
C = BOTTOM OF SUMP ELEVATION;
D = TOP OF SUMP ELEVATION;
SUMP DEPTH = D-C



OL9B A2|A11 TYPICAL OVERLINER LEACHATE COLLECTION SUMP PLAN (CELL 06)

NTS



TYPICAL LEACHATE SUMP SECTION OL11 A11|A11

SCALE IN FEET

STATE OF TEXAS
MARILYN D. MORRISON
102273
PROFESSIONAL ENGINEER
LICENSED
3-23-12

NOTE:

1. CELL 02 HAS ONLY ONE 6" LCS PIPE ENTERING ITS SUMP.

SHEET IIIA-A.11

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CAD: A.11-OVERLINER DETS.DWG | REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
OVERLINER LEACHATE COLLECTION SYSTEM DETAILS
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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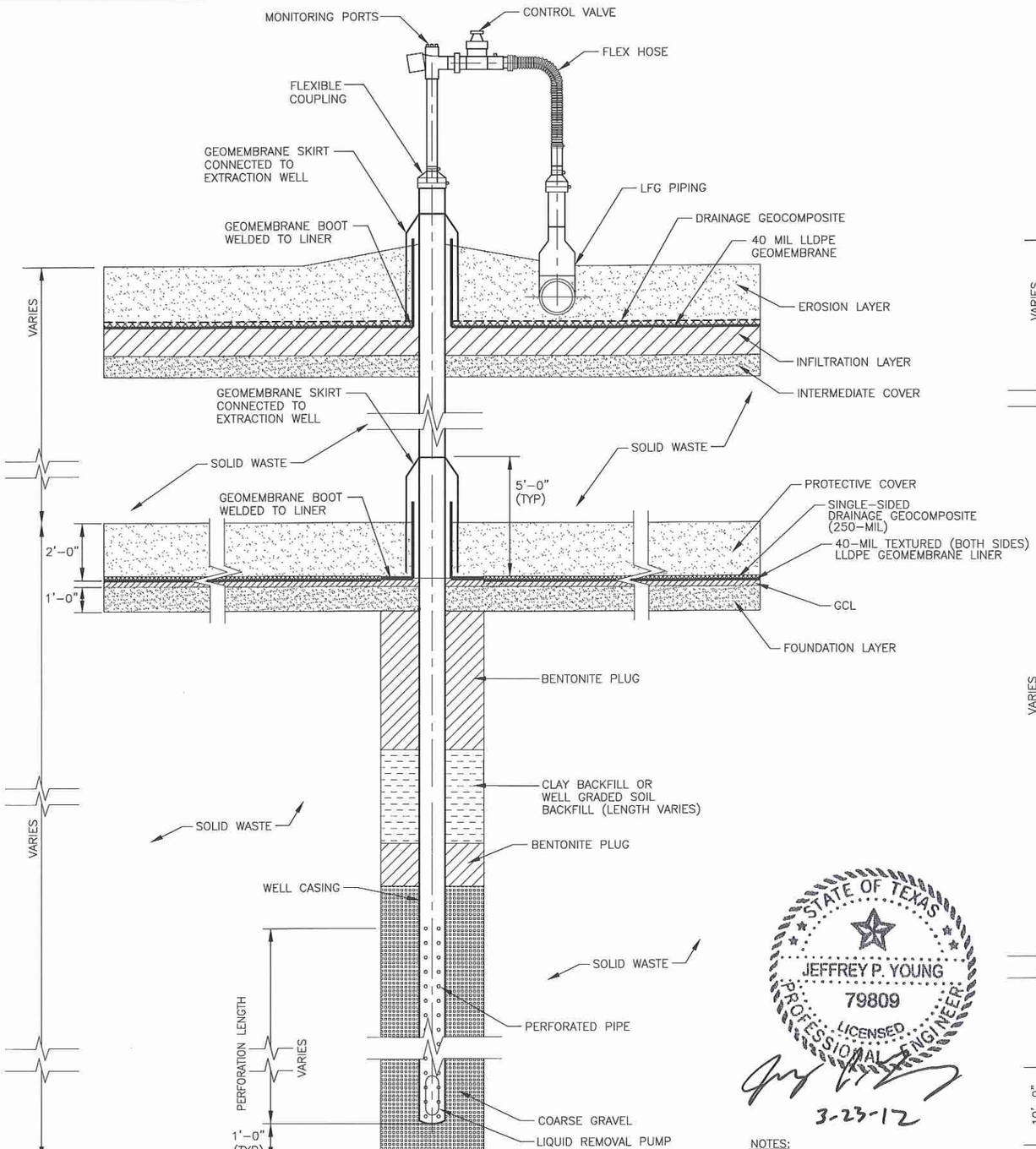
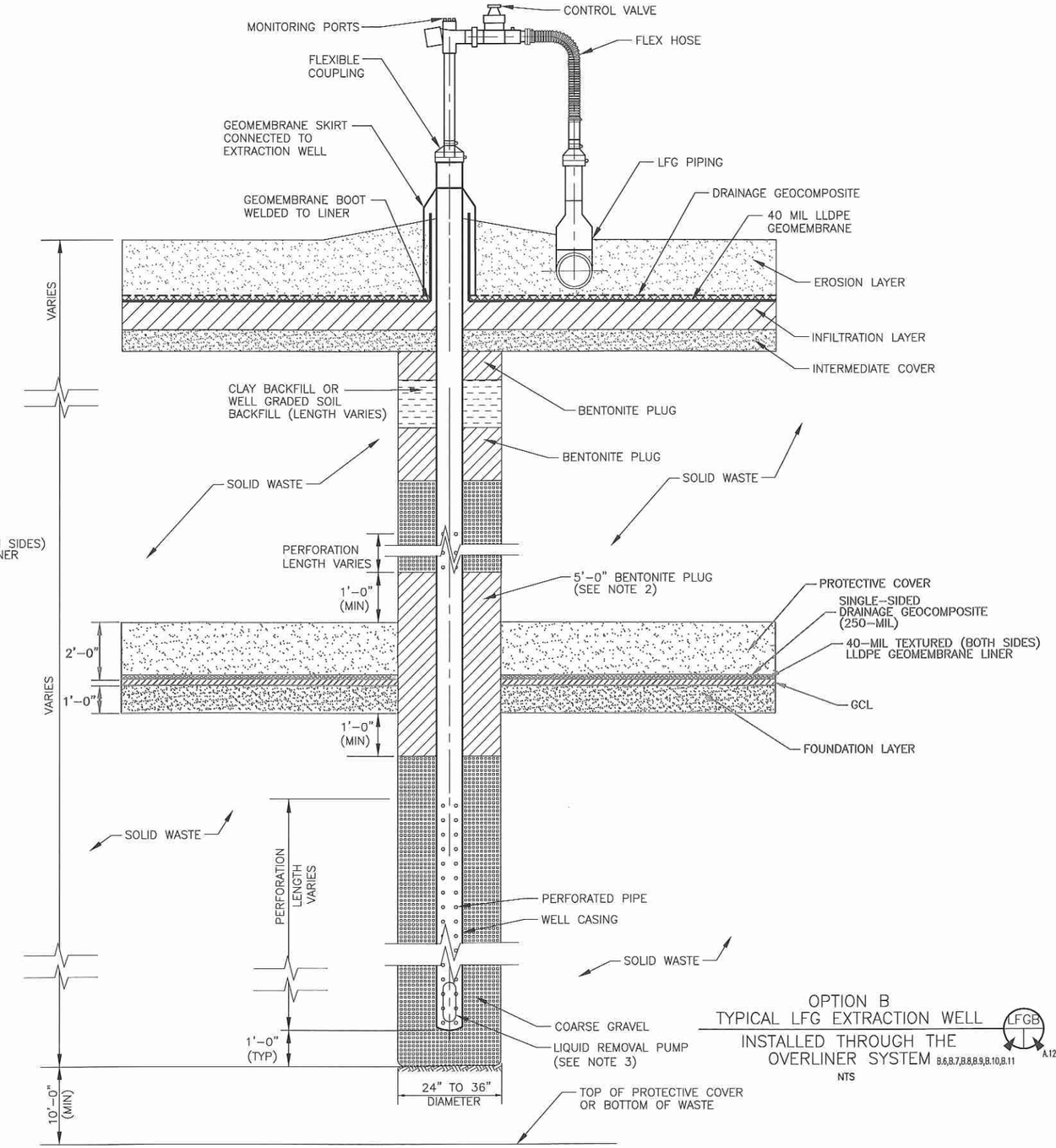
DRAWING A.11

O:\1339\351\EXPANSION 2009\PART III-SDP\IIIA\A\IIIA.11-OVERLINER DETAILS.dwg, sford, 1:2



OPTION A
TYPICAL LFG EXTRACTION WELL
INSTALLED WITH THE OVERLINER SYSTEM
NTS
B.6,B.7,B.8,B.9,B.10,B.11
LFGA A.12



OPTION B
TYPICAL LFG EXTRACTION WELL
INSTALLED THROUGH THE
OVERLINER SYSTEM B.6,B.7,B.8,B.9,B.10,B.11
NTS
LFGB A.12

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CAMELOT LANDFILL WILL TYPICALLY EXTEND EXISTING LFG EXTRACTION WELLS AND INSTALL NEW EXTRACTION WELLS, WHICH NEED TO EXTEND THROUGH THE OVERLINER SYSTEM, CONSISTENT WITH OPTION A SHOWN ON THIS DRAWING. HOWEVER, IF IT IS NOT FEASIBLE TO EXTEND THE EXISTING WELLS OR INSTALL NEW WELLS CONSISTENT WITH OPTION A, THEN THE SITE MAY ALSO INSTALL THE LFG EXTRACTION WELLS CONSISTENT WITH OPTION B.
2. THE BENTONITE PLUG IS PLACED TO ACT AS A LIQUID TIGHT SEAL. THE MINIMUM THICKNESS OF THE 5'-0" BENTONITE PLUG WILL ALLOW FOR A WATER TIGHT SEAL AROUND THE ANNULUS OF THE WELL CASING SHOULD ANY SETTLEMENT OCCUR.
3. PUMPS WILL BE INSTALLED AS NEEDED.

SHEET IIIA-A.12

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

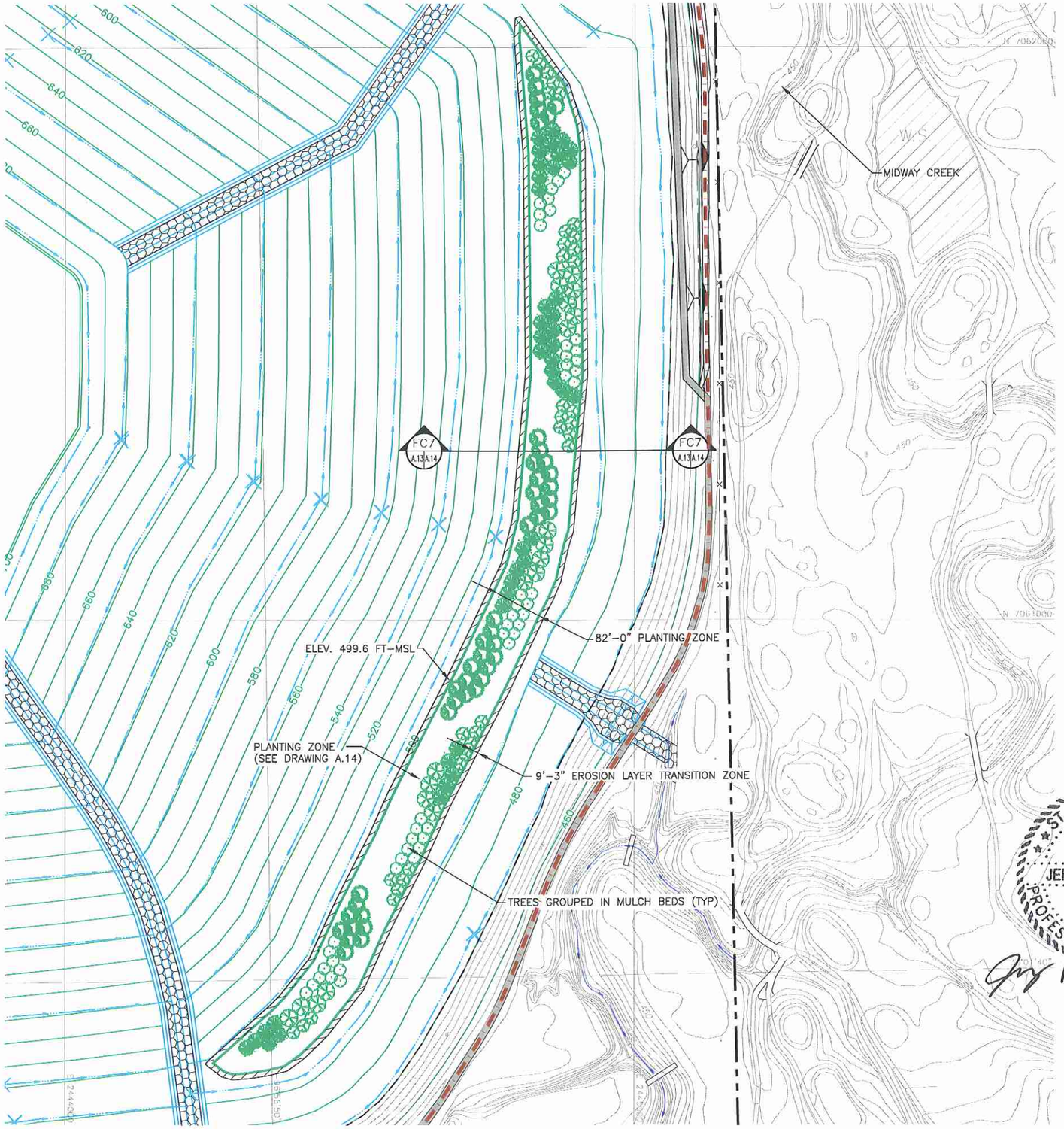
NO.	DATE	DESCRIPTION

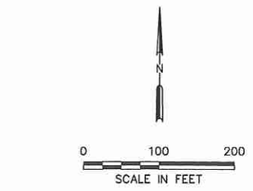
MAJOR PERMIT AMENDMENT
OVERLINER SYSTEM
TYPICAL LFG EXTRACTION WELL DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.12





LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- 600 — FINAL COVER CONTOUR
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- EROSION LAYER TRANSITION ZONE
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

PLANTING PLAN *

PLANT SYMBOL	QTY. (MIN)	BOTANICAL NAME	COMMON NAME	SPECIFICATION
	45	PINUS TAEDA	LOBLOLLY PINE	12' HT. MIN., PLAND 20' O.C.
	43	PINUS THUNDERGII	JAPANESE BLACK PINE	8' HT. MIN., PLAND 20' O.C.
	20	BETULA NIGRA	RIVER BIRCH	14' HT. MIN., PLAND 25' O.C.
	48	ACER BUERGERANUM	TRIDENT MAPLE	12' HT. MIN., PLAND 20' O.C.
	34	LAGERSTOEMIA INDICA	CRAPEMYRTLE	12' HT. MIN., PLAND 20' O.C.

* REFER TO DRAWING A.14 FOR PLANTING DETAILS.

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.

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REVIEWED BY: JPY

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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
EAST SIDESLOPE BENCH PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
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SPRINGFIELD, IL
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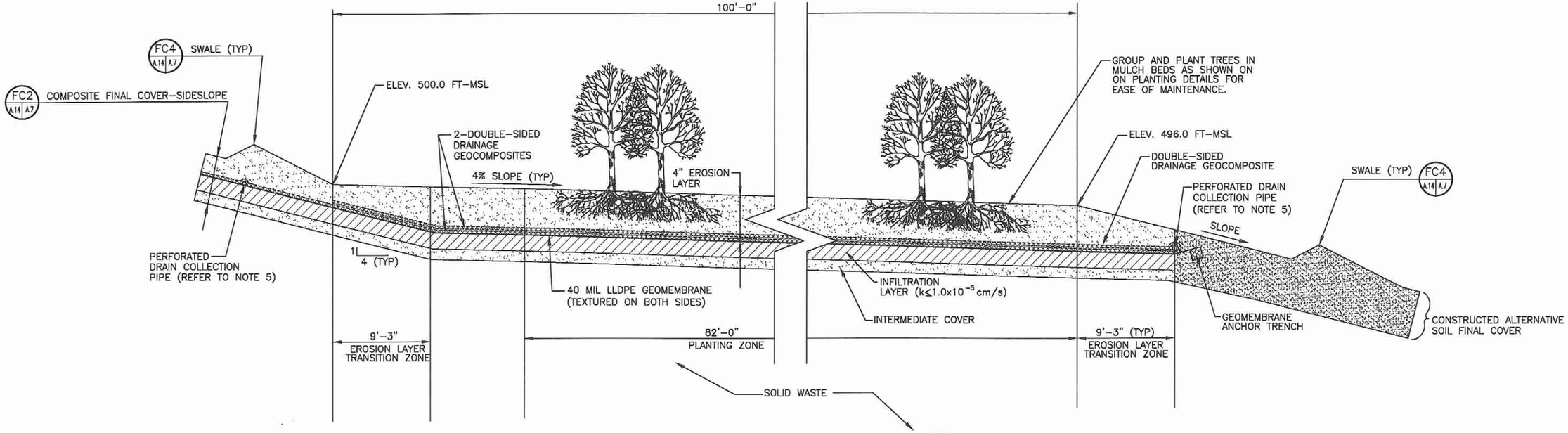
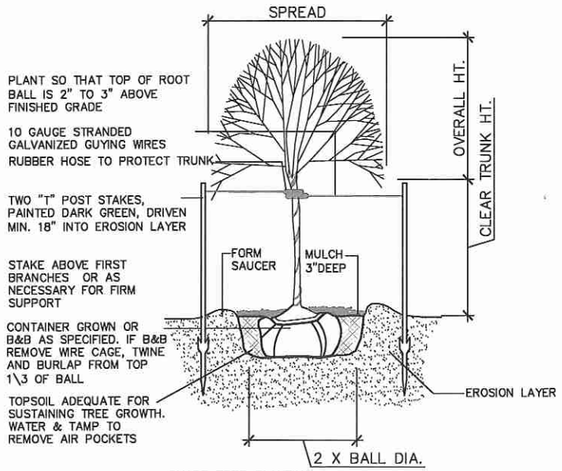
DRAWING A.13

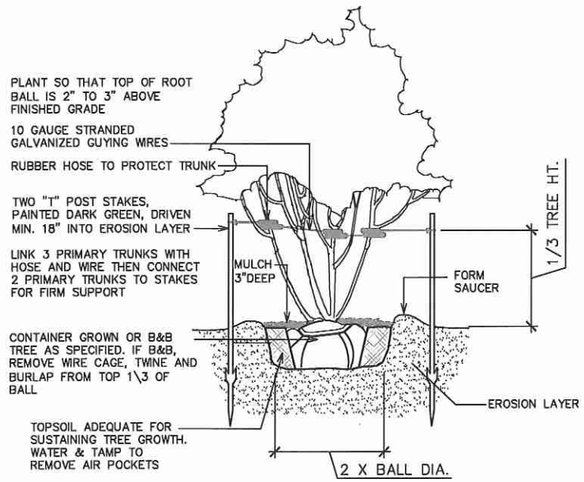
SHEET IIIA-A.13



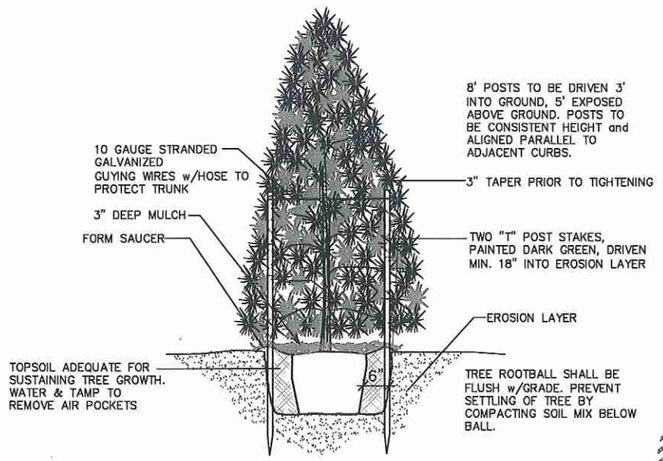
NOTES:
1. SAUCERS TO BE CIRCULAR IN SHAPE AND CONSISTENT IN SIZE. SLOPE SIDES TO GENTLE, UNIFORM PROFILE.
2. STAKES TO BE ALIGNED IN DIRECTION OF PREVALENT WINDS.
3. VERIFY DEPTH OF GEOMEMBRANE AND OTHER SUBGRADE LANDFILL MATERIALS PRIOR TO DRIVING STAKES TO AVOID PUNCTURES.
4. DO NOT DRIVE STAKES DEEPER THAN 4' EROSION LAYER.



SHADE TREE PLANTING



ORNAMENTAL TREE PLANTING



EVERGREEN TREE PLANTING

NOTES:

1. EROSION LAYER WILL BE CAPABLE OF SUSTAINING SELECTED VEGETATION.
2. DRAINAGE LAYER CONSISTS OF A 250-MIL GEOCOMPOSITE-HDPE GEONET WITH 6 OZ/SY GEOTEXTILES HEAT BONDED TO BOTH SIDES.
3. FINAL COVER COMPONENTS WILL BE CONSTRUCTED ACCORDING TO FCSQCP (APPENDIX IIIE).
4. EROSION LAYER MAY CONSIST OF BOTH ONSITE AND OFF-SITE SOILS.
5. REFER TO APPENDIX IIIE-A FOR THE DRAINAGE COLLECTION PIPE DESIGN. AS AN OPTION TO THE DRAINAGE COLLECTION PIPE THE DRAINAGE GEOCOMPOSITE MAY BE DAYLIGHTED 2 FEET ABOVE THE SWALE FLOWLINE WITH A 2% MINIMUM SLOPE.

SHEET IIIA-A.14

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PROFESSIONAL ENGINEER
3-23-12

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NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
EAST SIDESLOPE BENCH
FINAL COVER DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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FORT WORTH, TX (817) 735-9770
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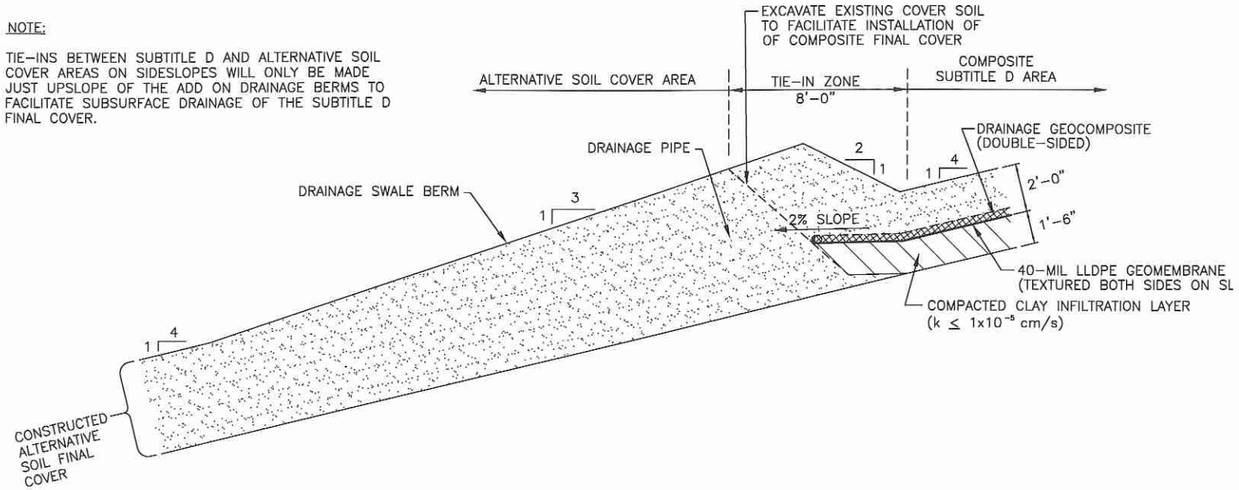
DRAWING A.14

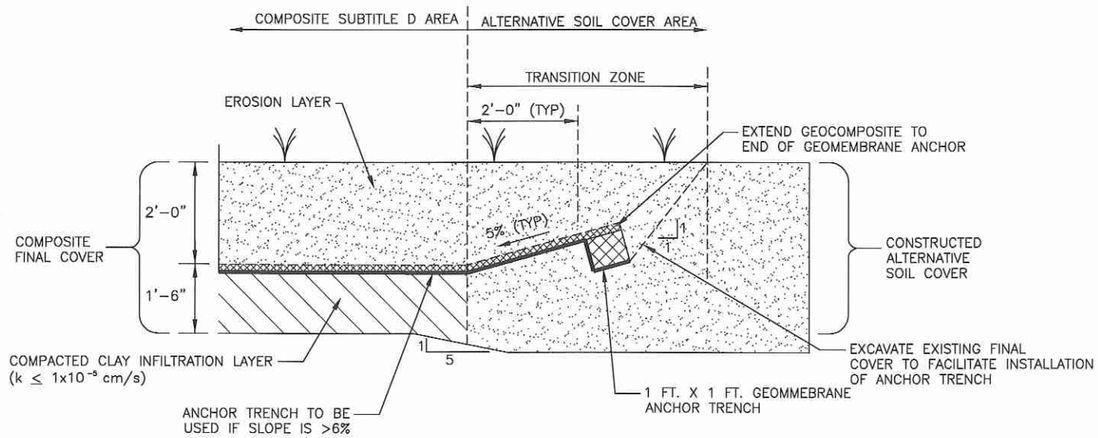
NOTE:

TIE–INS BETWEEN SUBTITLE D AND ALTERNATIVE SOIL COVER AREAS ON SIDESLOPES WILL ONLY BE MADE JUST UPSLOPE OF THE ADD ON DRAINAGE BERMS TO FACILITATE SUBSURFACE DRAINAGE OF THE SUBTITLE D FINAL COVER.



COMPOSITE/ALTERNATIVE SOIL FINAL COVER TIE–IN (SIDESLOPE) FC8 (A.3 | A.15)

NTS



COMPOSITE/ALTERNATIVE SOIL FINAL COVER TIE–IN (CROSS SLOPE) FC9 (A.3 | A.15)

NTS

GENERAL NOTES:

1. FINAL COVER SYSTEM WILL BE CONSTRUCTED IN ACCORDANCE WITH APPENDIX IIIE FINAL COVER SYSTEM QUALITY CONTROL PLAN.
2. ALTERNATIVE SOIL FINAL COVER IS INCLUDED IN APPENDIX IIIK–CLOSURE PLAN.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

SHEET IIIA–A.15

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FILE: 1339–351–11
CAD: IIIA.15–TIE–IN DETAILS.DWG
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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT FINAL COVER TIE–IN DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
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(817) 735–9770
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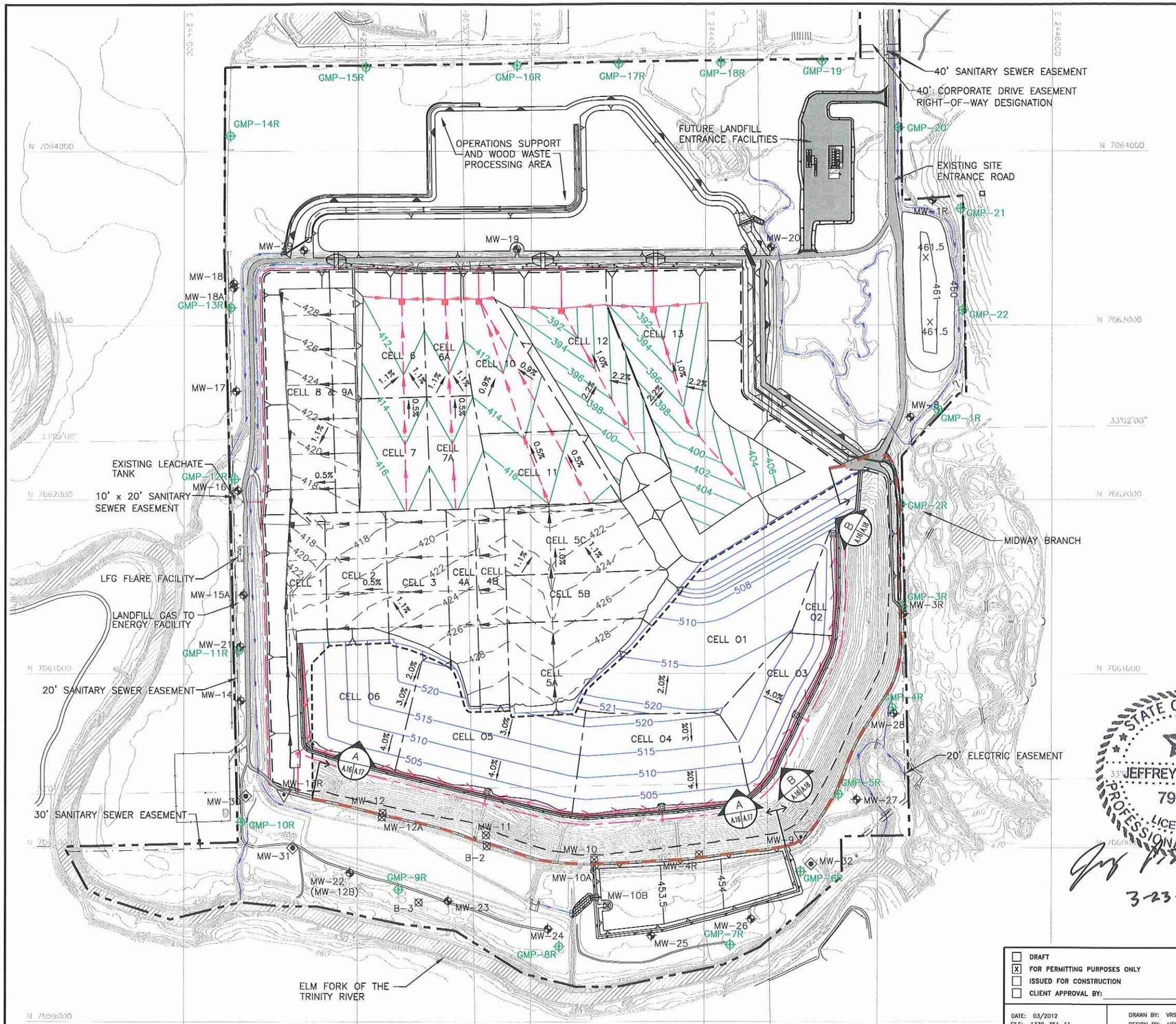
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.15



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- LIMITS OF PRE-SUBTITLE D WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING CONTOUR
- EASEMENT
- CELL BOUNDARY
- 398 — PROPOSED EXCAVATION CONTOUR
- 600 — REGRADED BUFFER ZONE AREA
- PROPOSED LEACHATE LINE
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED LEACHATE RISER
- 422 — AS-BUILT TOP OF SUBTITLE D CLAY LINER (SEE NOTE 7)
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- EXISTING LEACHATE RISER
- 515 — PROPOSED TOP OF OVERLINER CONTOUR
- PROPOSED OVERLINER LEACHATE LINE
- PROPOSED OVERLINER LEACHATE COLLECTION SUMP
- LEACHATE FORCEMAIN
- 3H:1V SLOPE (TYPICAL)
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- MW-13R — EXISTING GROUNDWATER MONITORING WELL (TO BE DECOMMISSIONED)
- MW-30 — PROPOSED GROUNDWATER MONITORING WELL
- GMP-8 — EXISTING LANDFILL GAS MONITORING PROBE (TO BE ABANDONED)
- GMP-20 — PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 — OBSERVATION WELL
- PERIMETER ACCESS ROAD
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

N

0 300 600
SCALE IN FEET

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.

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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SLURRY WALL SITE PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO

FORT WORTH, TX
(817) 735-9770

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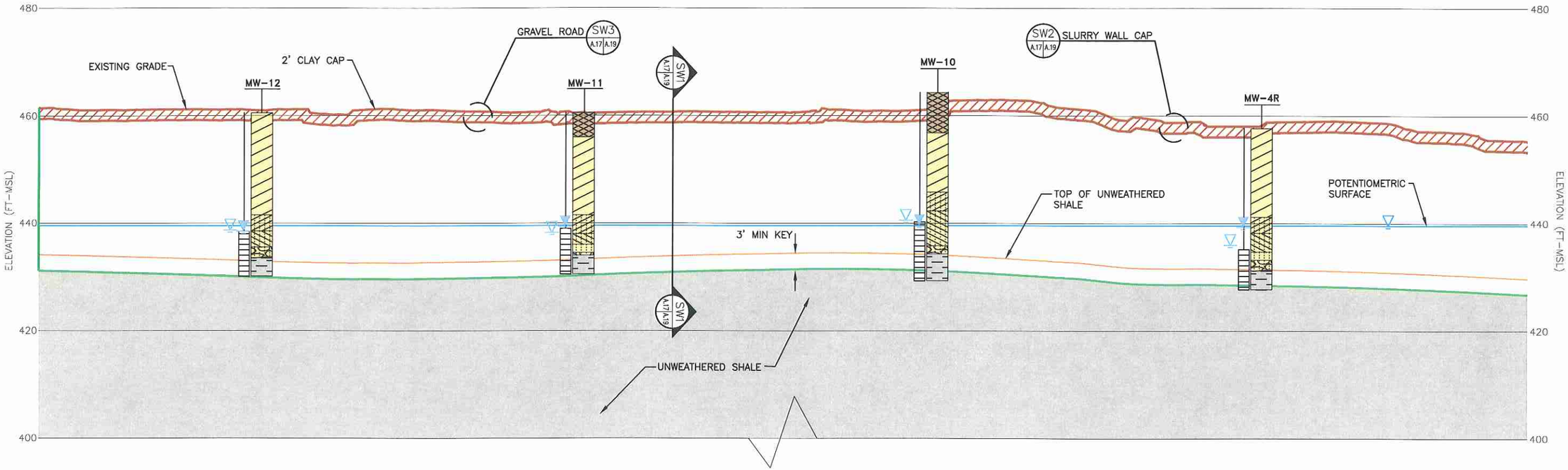
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING A.16

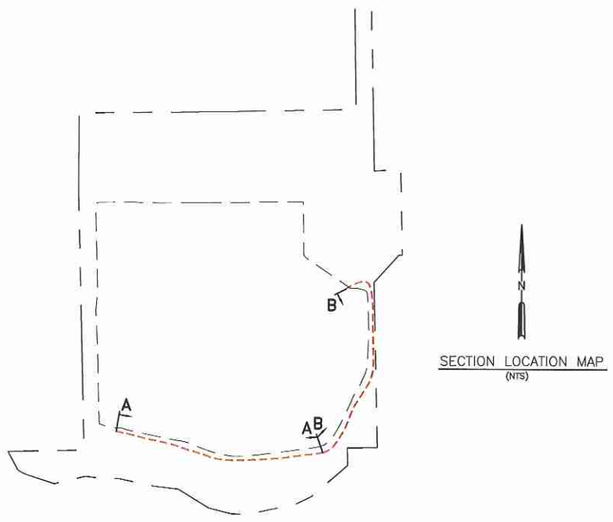
SHEET IIIA-A.16



SECTION A — A (A.16 | A.17)

0 100 200 SCALE IN FEET HORIZONTAL

0 10 20 SCALE IN FEET VERTICAL



SECTION LOCATION MAP (NTS)

BORING LEGEND

- ALLUVIAL STRATA
  - UPPER CLAY ZONE
    - CLAY AND SILTY CLAY
    - SANDY CLAY
  - LOWER SAND ZONE
    - SAND
    - CLAYEY SAND
    - SILTY SAND
    - GRAVELLY SAND
  - LOWER SAND ZONE
    - SANDY GRAVEL
    - CLAYEY GRAVEL
  - EARTHEN FILL
- SHALE STRATA
  - WEATHERED SHALE
  - UNWEATHERED SHALE

MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND SCREEN (BOTTOM)

STATIC GROUNDWATER ELEVATION (FT-MSL) FROM GROUNDWATER MONITORING GAUGING DATA

GROUNDWATER ELEVATION AT TIME OF DRILLING (FT-MSL)

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED PROFESSIONAL ENGINEER
3-23-12

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CAD: A.17 SECTION A.DWG

DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

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REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SLURRY WALL SECTION A

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
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FORT WORTH, TX
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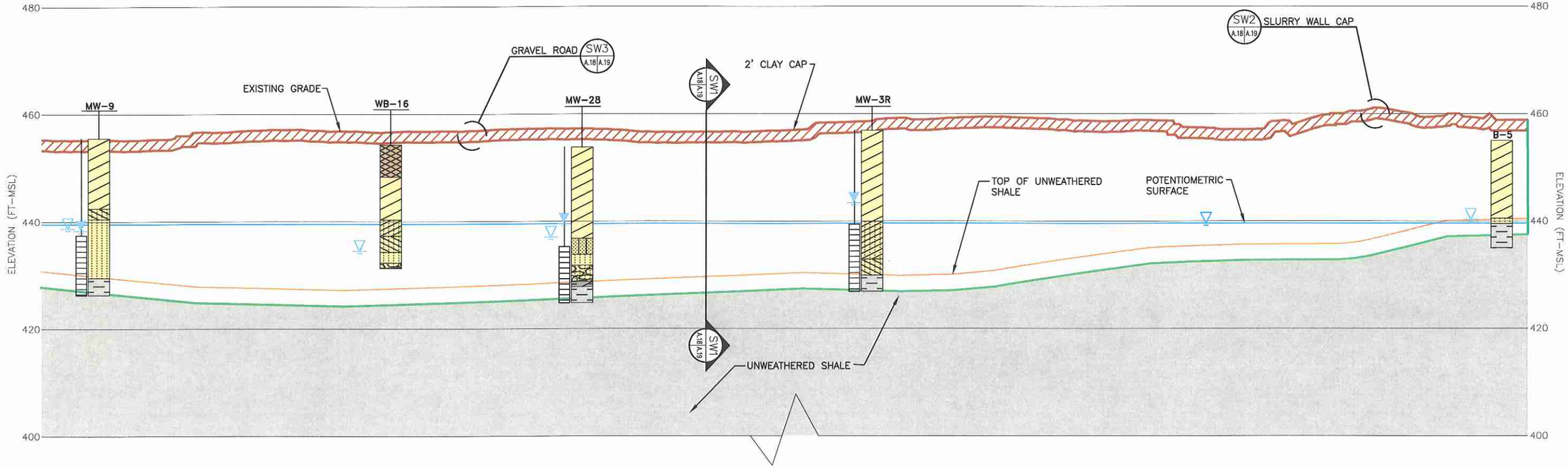
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

SHEET IIIA-A.17

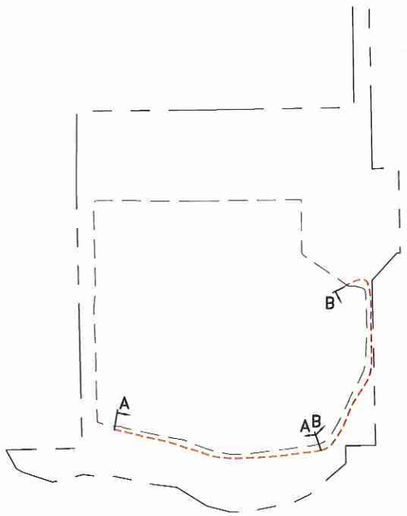
DRAWING A.17



SECTION B (B / A.16 | A.18)

0 100 200 SCALE IN FEET HORIZONTAL

0 10 20 SCALE IN FEET VERTICAL



SECTION LOCATION MAP (NTS)

BORING LEGEND

- ALLUVIAL STRATA
  - UPPER CLAY ZONE
    - CLAY AND SILTY CLAY
    - SANDY CLAY
  - LOWER SAND ZONE
    - SAND
    - CLAYEY SAND
    - SILTY SAND
    - GRAVELLY SAND
- ALLUVIAL STRATA
  - LOWER SAND ZONE
    - SANDY GRAVEL
    - CLAYEY GRAVEL
  - EARTHEN FILL
- SHALE STRATA
  - WEATHERED SHALE
  - UNWEATHERED SHALE

MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND SCREEN (BOTTOM)

STATIC GROUNDWATER ELEVATION (FT-MSL) FROM GROUNDWATER MONITORING GAUGING DATA

GROUNDWATER ELEVATION AT TIME OF DRILLING (FT-MSL)

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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☒ FOR PERMITTING PURPOSES ONLY
☐ ISSUED FOR CONSTRUCTION
☐ CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: A.18 SECTION B.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS		
NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SLURRY WALL SECTION B

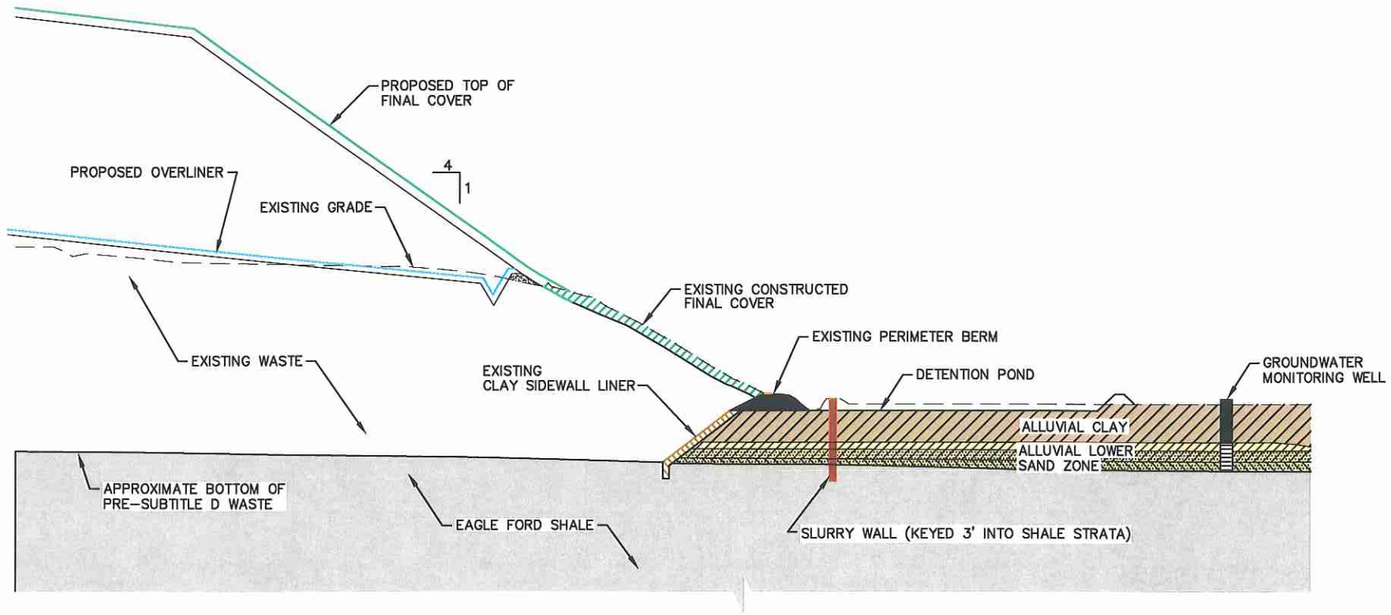
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

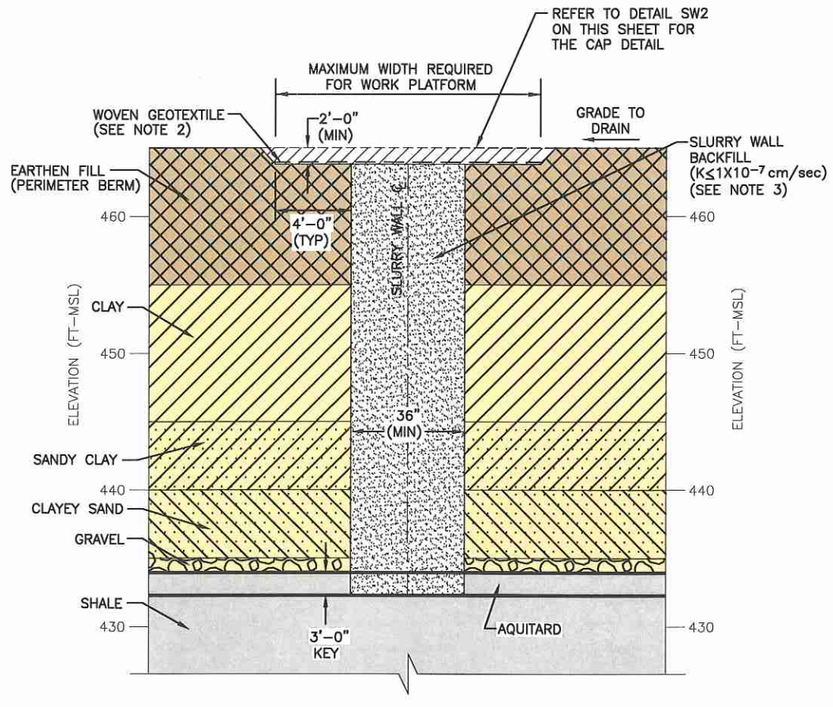
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

SHEET IIIA-A.18

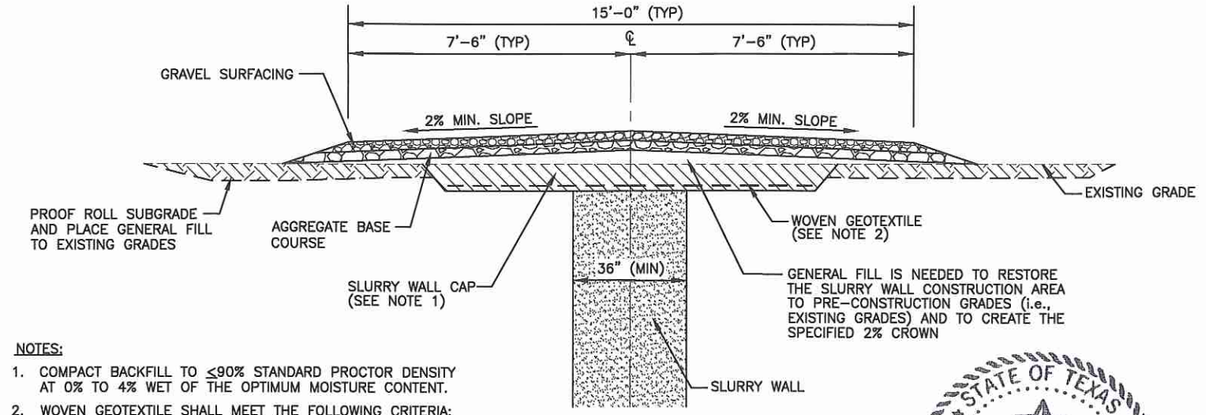
DRAWING A.18



TYPICAL SECTION
NTS



TYPICAL SLURRY WALL SECTION
NTS
SW1 / A.19 / A.17,A.18



NOTES:

1. COMPACT BACKFILL TO ≤90% STANDARD PROCTOR DENSITY AT 0% TO 4% WET OF THE OPTIMUM MOISTURE CONTENT.
2. WOVEN GEOTEXTILE SHALL MEET THE FOLLOWING CRITERIA:

APPARENT OPENING SIZE	<0.21 MM
GRAB TENSILE STRENGTH	>157 LBS
ELONGATION	≥50%
PUNCTURE STRENGTH	>56 LBS
TRAPEZOID TEAR	>56 LBS

3. REFER TO APPENDIX IIIA-C FOR CONSTRUCTION QUALITY ASSURANCE PLAN FOR THE SLURRY TRENCH CUT-OFF WALL.
4. THE TYPICAL SUBSURFACE INFORMATION SHOWN ON DETAIL SW1 IS APPROXIMATE AND IS INTENDED TO REPRESENT A TYPICAL SUBSURFACE PROFILE ON THE SOUTHERN PORTION OF THE SITE.

GRAVEL ROAD
NTS
SW2 / A.19 / A.17,A.18

STATE OF TEXAS
JEFFREY P. YOUNG
79809
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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DATE: 03/2012
FILE: 1339-351-11
CAD: A.19 DETAILS.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
SLURRY WALL DETAILS

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

SHEET IIIA-A.19

DRAWING A.19

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

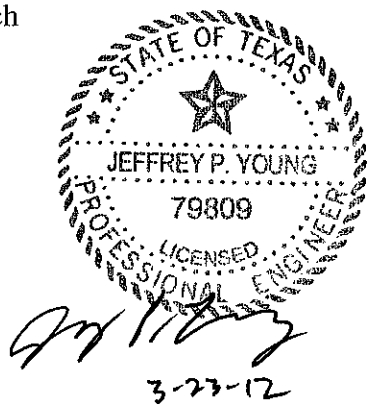
MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
APPENDIX IIIA-B
LANDFILL UNIT CROSS SECTIONS

Prepared for

City of Farmers Branch

March 2012



Prepared by

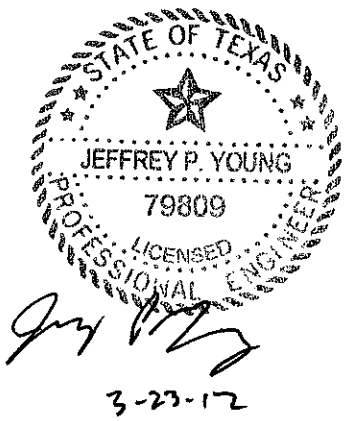
Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

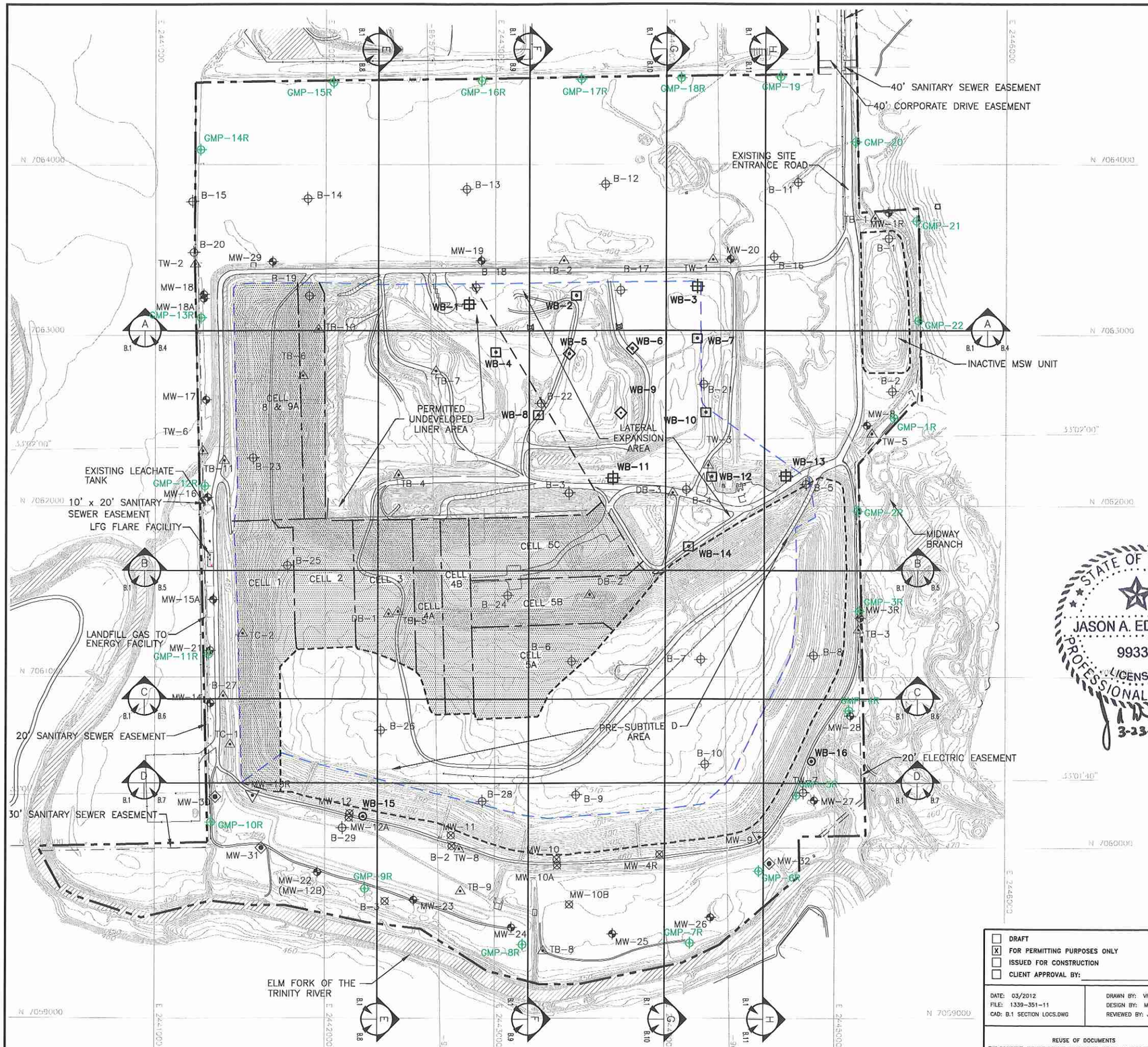
WBC Project No. 1339-351-11-02-6B.1

This document is intended for permitting purposes only.

CONTENTS

DRAWING B.1 – Typical Section Site Plan
DRAWING B.2 – Landfill Completion Plan
DRAWING B.3 – Excavation/Overliner Plan
DRAWING B.4 – Typical Section A
DRAWING B.5 – Typical Section B
DRAWING B.6 – Typical Section C
DRAWING B.7 – Typical Section D
DRAWING B.8 – Typical Section E
DRAWING B.9 – Typical Section F
DRAWING B.10 – Typical Section G
DRAWING B.11 – Typical Section H





0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- EXISTING PERMITTED PRE-SUBTITLE D LIMIT OF WASTE
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- 500 — EXISTING TOPOGRAPHIC CONTOUR
- EASEMENT
- MW-8 — PERMITTED GROUNDWATER MONITORING WELL
- GMP-1 — PERMITTED GAS MONITORING PROBE
- MW-12 — PERMITTED OBSERVATION WELL
- B-22 — RONE 1980 BORING LOCATION
- TC-1 — REED ENGINEERING 1994 BORING LOCATION
- WB-5 — WBC BORING AT LEAST 5 FEET BELOW EDE
- WB-2 — WBC BORING AT LEAST 30 FEET BELOW EDE
- WB-1 — WBC BORING AT LEAST 5 FEET BELOW EDE WITH PIEZOMETER INSTALLED
- WB-15 — WBC GEOTECHNICAL BORING FOR STRENGTH TESTING
- EXISTING SUBTITLE D COMPOSITE LINER AREA

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.

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CAD: B.1 SECTION LOCS.DWG
DRAWN BY: VRS
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

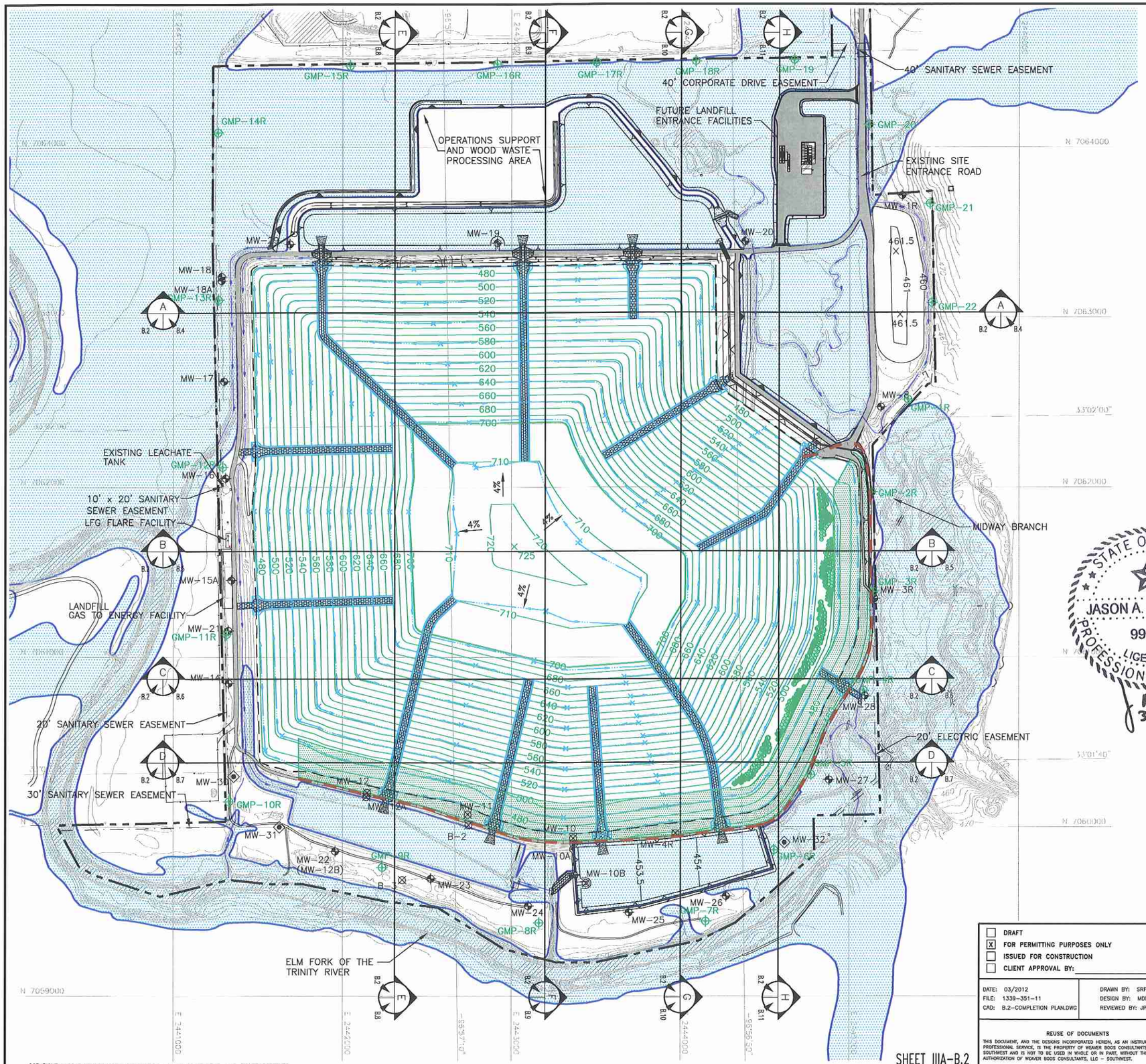
MAJOR PERMIT AMENDMENT
TYPICAL SECTION SITE PLAN

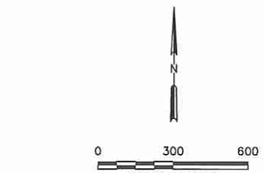
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.1

SHEET IIIA-B.1





LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- PROPOSED LIMIT OF WASTE
- N 7064000 STATE PLANE COORDINATE SYSTEM
- 33°02'00" GEODETIC COORDINATE SYSTEM
- EASEMENT
- 500 EXISTING CONTOUR
- 600 FINAL COVER CONTOUR
- 600 REGRADED BUFFER ZONE AREA
- DRAINAGE LETDOWN
- DRAINAGE SWALE
- EASEMENT BOUNDARY
- MW-8 EXISTING GROUNDWATER MONITORING WELL
- MW-30 PROPOSED GROUNDWATER MONITORING WELL
- GMP-20 PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 OBSERVATION WELL
- 100-YEAR FLOODPLAIN (SEE NOTE 4)
- PERIMETER ACCESS ROAD
- Y Y 3H:1V SLOPE (TYPICAL)
- CONSTRUCTED FINAL COVER
- LANDSCAPE BENCH
- PERIMETER ACCESS ROAD
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.
3. MAXIMUM FINAL COVER ELEVATION IS 725 FT-MSL. MAXIMUM TOP OF WASTE ELEVATION IS 721.5 FT-MSL.
4. FLOODPLAIN INFORMATION IS INCLUDED IN APPENDIX IIIO.

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CAD: B.2-COMPLETION PLAN.DWG
DRAWN BY: SRF
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

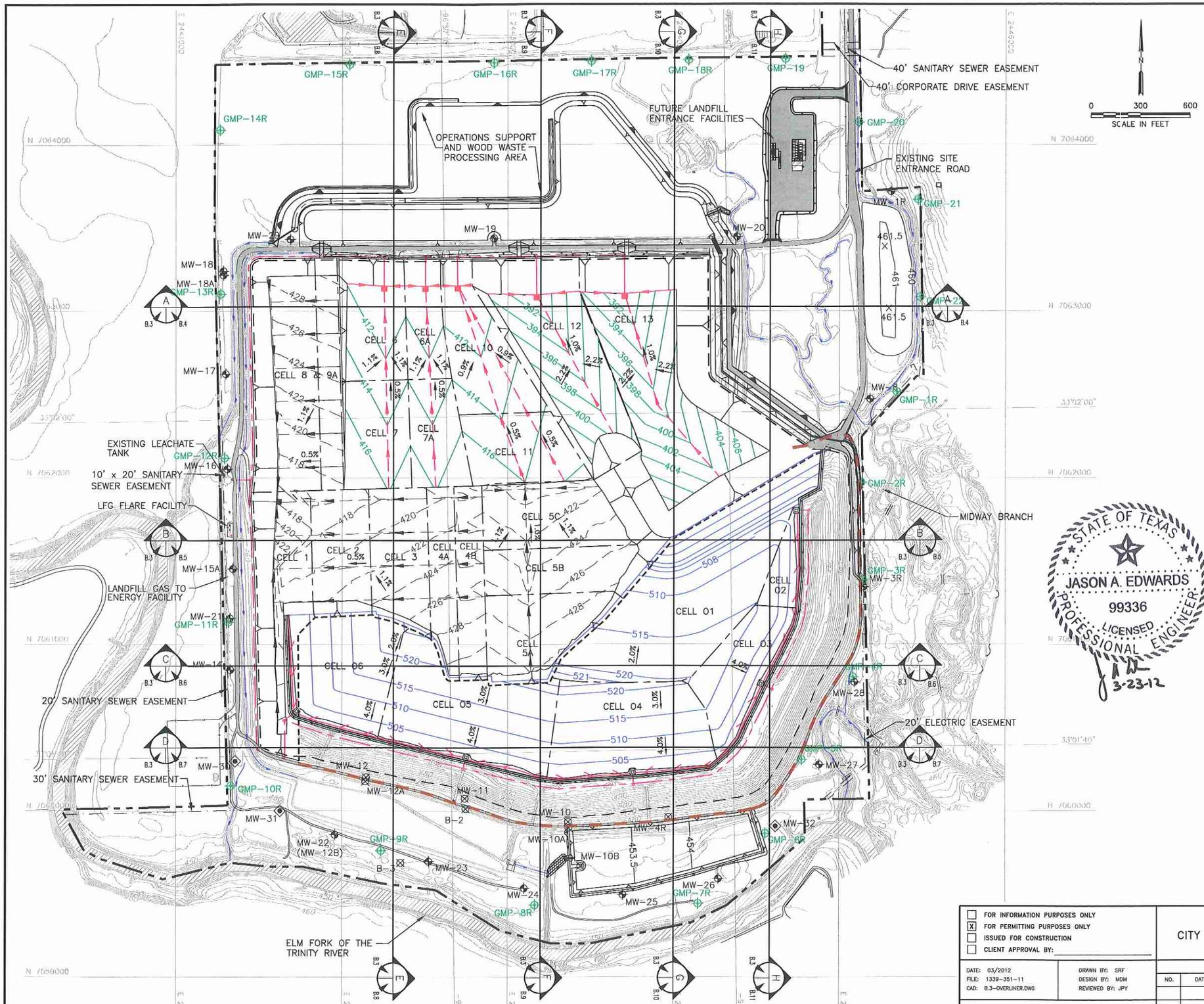
MAJOR PERMIT AMENDMENT
LANDFILL COMPLETION PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.2

SHEET IIIA-B.2



LEGEND

- PERMIT BOUNDARY (SEE NOTE 2)
- LIMIT OF WASTE
- LIMIT OF PRE-SUBTITLE D WASTE
- N 7064000 — STATE PLANE COORDINATE SYSTEM
- 33°02'00" — GEODETIC COORDINATE SYSTEM
- EASEMENT
- 500 — EXISTING CONTOUR
- CELL BOUNDARY
- 398 — PROPOSED EXCAVATION CONTOUR
- PROPOSED LEACHATE LINE
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED LEACHATE RISER
- 422 — AS-BUILT TOP OF SUBTITLE D CLAY LINER (SEE NOTE 5)
- EXISTING LEACHATE LINE
- EXISTING LEACHATE COLLECTION SUMP
- EXISTING LEACHATE RISER
- 515 — PROPOSED TOP OF OVERLINER CONTOUR
- 600 — REGRADED BUFFER ZONE AREA
- PROPOSED OVERLINER LEACHATE LINE
- PROPOSED OVERLINER LEACHATE COLLECTION SUMP
- EASEMENT
- MW-8 — EXISTING GROUNDWATER MONITORING WELL
- MW-30 — PROPOSED GROUNDWATER MONITORING WELL
- GMP-20 — PROPOSED LANDFILL GAS MONITORING PROBE
- MW-12 — OBSERVATION WELL
- PERIMETER ACCESS ROAD
- 3H:1V SLOPE (TYPICAL)
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL
- PROPOSED LEACHATE FORCEMAIN

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. CONTOURS AND ELEVATIONS PROVIDED BY METROPOLITAN AERIAL SURVEYS COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM NORTH CENTRAL ZONE NAD 83. ELEVATIONS ARE BASED ON NAVD 88.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PROVIDED BY PEISER SURVEYING CO. DATED NOVEMBER 2010.
3. MINIMUM EXCAVATION ELEVATION AT LCS SUMP IS 387 FT-MSL.
4. SUBTITLE D AREA LCS PIPES SLOPE WITH A MINIMUM OF 0.5% TO SUMPS. LCS LATERAL DRAINAGE SLOPE IS A MINIMUM OF 0.9% ALONG THE FLOW PATH. OVERLINER LCS PIPES SLOPE WITH A MINIMUM 0.6% TO SUMPS.
5. NOTED CONTOURS REPRESENT THE TOP OF CLAY FOR THE EXISTING SUBTITLE D LINERS.

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CAD: B.3-OVERLINER.DWG

DRAWN BY: SRF
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT EXCAVATION/OVERLINER PLAN

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
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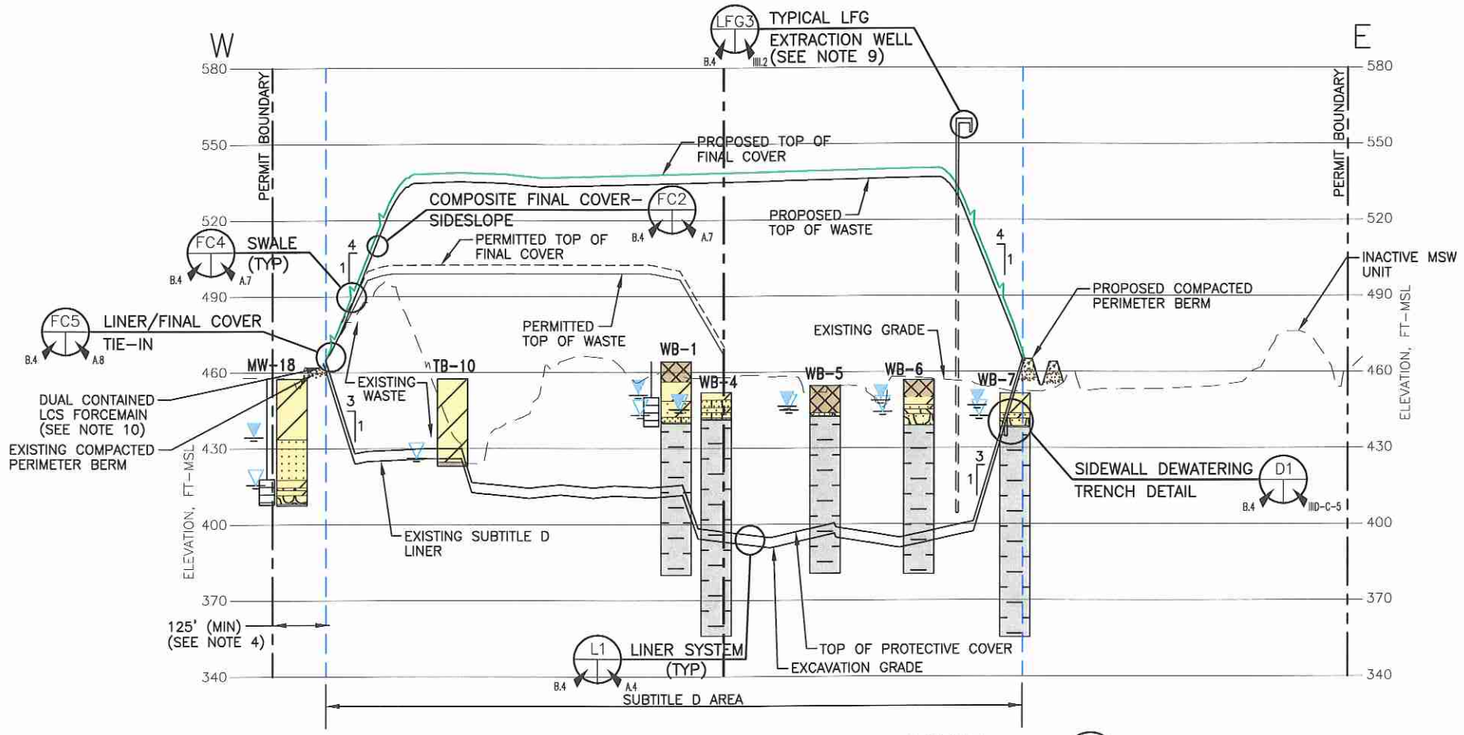
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN · SOUTH BEND, IN · SPRINGFIELD, IL · ST. LOUIS, MO

DRAWING B.3

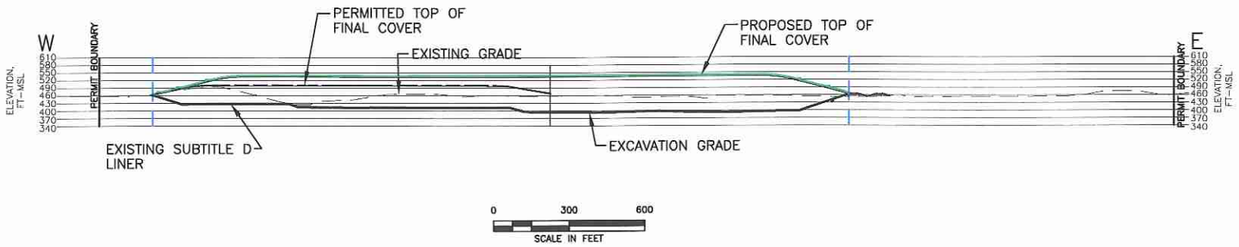
SHEET IIIA-B.3



0 300 600 SCALE IN FEET HORIZONTAL

0 30 60 SCALE IN FEET VERTICAL

SECTION (EXAGGERATED VERTICAL SCALE) A B.1,B.2,B.3 B.4



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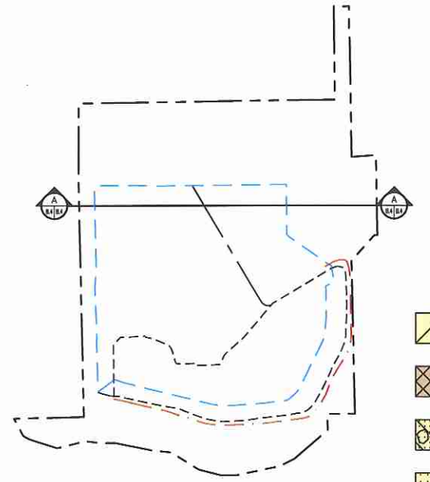

KEY MAP (NTS)

LEGEND

- PERMIT BOUNDARY
- EXISTING PERMITTED PRE–SUBTITLE D LIMIT OF WASTE
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- EXISTING GRADE
- TOP OF WASTE
- TOP OF FINAL COVER
- EXISTING PERMITTED FINAL COVER

- CLAY AND SILTY CLAY
- EARTHEN FILL
- GRAVELLY SANDY CLAY
- SAND
- SANDY CLAY
- CLAYEY GRAVEL
- GRAVEL
- GRAVELLY SAND
- GRAVELLY SANDY CLAY
- UNWEATHERED SHALE
- SANDY GRAVEL
- WEATHERED SHALE
- SILTY SAND
- GROUNDWATER AT THE TIME OF DRILLING (ATD)
- STATIC GROUNDWATER LEVEL AS DESCRIBED ON BORING LOG

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-23-12

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PREPARED BY METROPOLITAN AERIAL SURVEYS FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010.
2. REFER TO APPENDIX IIIA–A FOR LINER, OVERLINER, LEACHATE COLLECTION, AND FINAL COVER SYSTEM DETAILS.
3. SEE APPENDIX IIIG FOR BORING DATA. BORINGS PROJECTED INTO THE LINE OF SECTION. SEE DRAWING B.1 FOR LOCATION.
4. AS SHOWN IN APPENDIX I/IIC, THE BUFFER ZONES VARY AROUND THE PERIMETER OF THE SITE, BUT IN NO CASE ARE THEY LESS THAN 50–FEET FOR EXISTING WASTE. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND THE LATERAL EXPANSION IS AT LEAST 125–FEET. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND NEWLY PERMITTED (PERMIT NO. 1312B) WASTE DISPOSAL AIRSPACE IS AT LEAST 125–FEET.
5. REFER TO APPENDIX IIII, FOR DETAILS OF THE LANDFILL GAS MANAGEMENT PLAN.
6. DRAINAGE DESIGN INFORMATION IS PROVIDED IN APPENDIX IIIF–SURFACE WATER DRAINAGE PLAN.
7. MINIMUM EXCAVATION ELEVATION AT LCS SUMPS IS 387 FT–MSL. MAXIMUM TOP OF FINAL COVER ELEVATION IS 725 FT–MSL.
8. STATIC GROUNDWATER ELEVATIONS AND GROUNDWATER AT TIME OF DRILLING NOT REPORTED IN ALL BOREHOLES.
9. LOCATIONS OF TYPICAL LFG EXTRACTION WELLS CAN BE FOUND IN APPENDIX IIII.
10. REFER TO APPENDIX IIIC FOR LEACHATE COLLECTION SYSTEM (LCS) FORCEMAIN INFORMATION.

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DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TYPICAL SECTION A

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727

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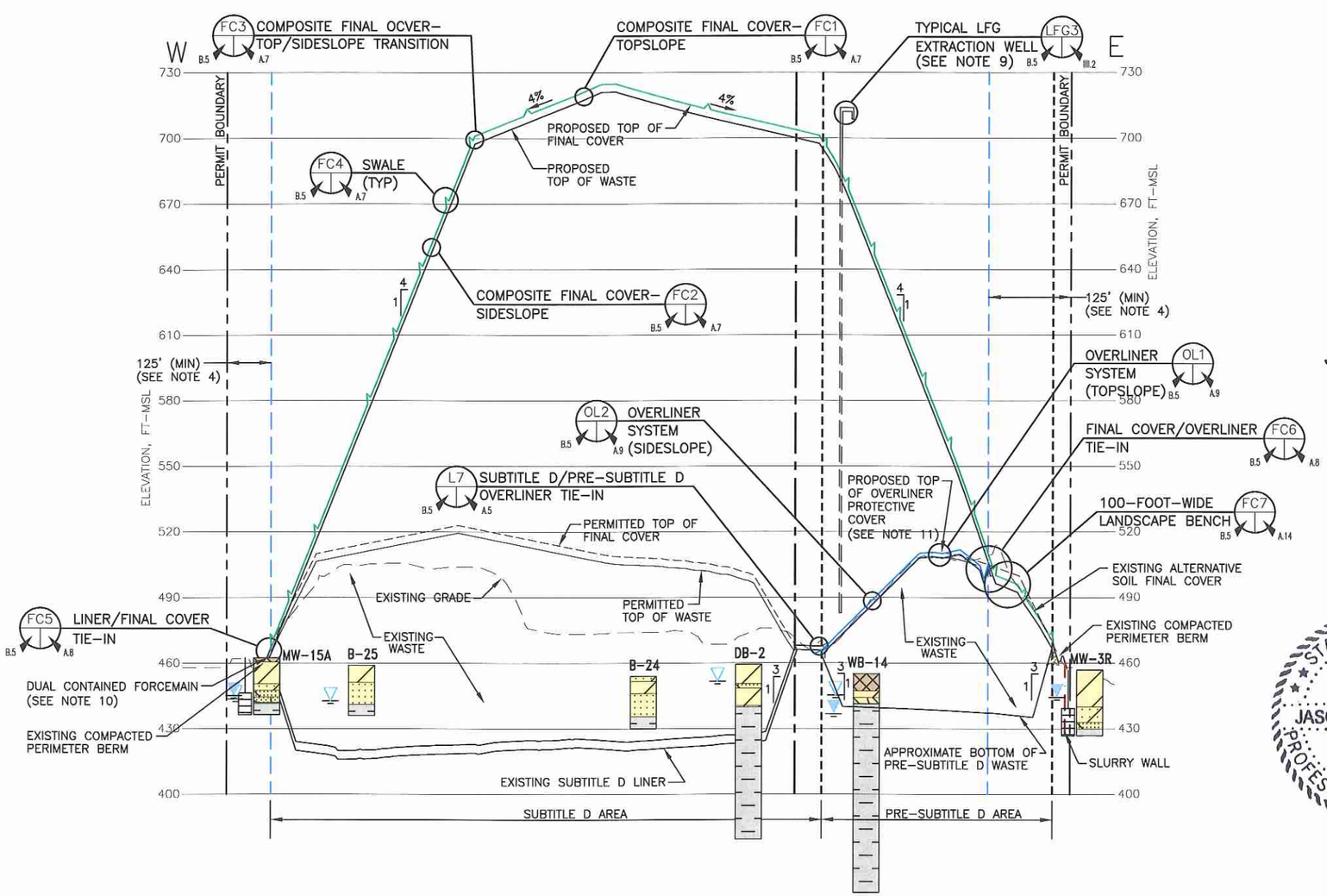
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.4

SHEET IIIA–B.4

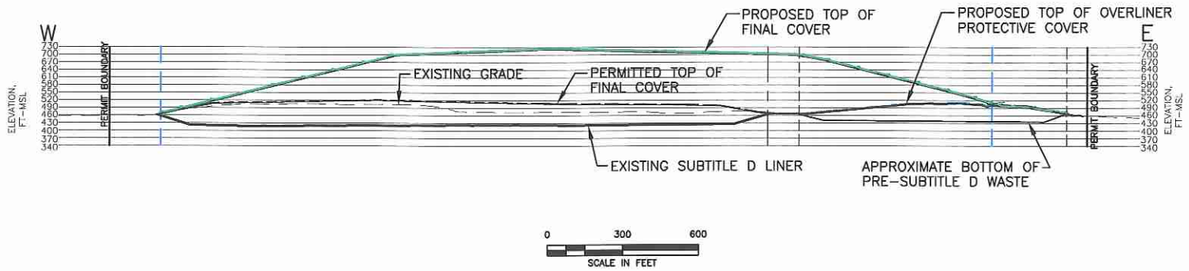


0 300 600 SCALE IN FEET HORIZONTAL

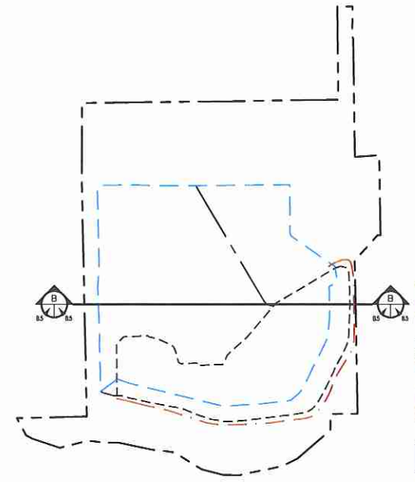
0 30 60 SCALE IN FEET VERTICAL

SECTION B (EXAGGERATED VERTICAL SCALE)

B.1,B.2,B.3 B.5



0 300 600 SCALE IN FEET



KEY MAP (NTS)

LEGEND

- PERMIT BOUNDARY
- EXISTING PERMITTED PRE–SUBTITLE D LIMIT OF WASTE
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- EXISTING GRADE
- TOP OF WASTE
- TOP OF FINAL COVER
- EXISTING PERMITTED FINAL COVER
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

- CLAY AND SILTY CLAY
- EARTHEN FILL
- GRAVELLY SANDY CLAY
- SAND
- SANDY CLAY
- CLAYEY GRAVEL
- GRAVEL
- GRAVELLY SAND
- GRAVELLY SANDY CLAY
- UNWEATHERED SHALE
- SANDY GRAVEL
- WEATHERED SHALE
- SILTY SAND
- GROUNDWATER AT THE TIME OF DRILLING (ATD)
- STATIC GROUNDWATER LEVEL AS DESCRIBED ON BORING LOG

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PREPARED BY METROPOLITAN AERIAL SURVEYS FROM AERIAL PHOTOGRAPHY FLOWN 8–28–2010.
2. REFER TO APPENDIX IIIA–A FOR LINER, OVERLINER, LEACHATE COLLECTION, AND FINAL COVER SYSTEM DETAILS.
3. SEE APPENDIX IIIG FOR BORING DATA. BORINGS PROJECTED INTO THE LINE OF SECTION. SEE DRAWING B.1 FOR LOCATION.
4. AS SHOWN IN APPENDIX I/IIC, THE BUFFER ZONES VARY AROUND THE PERIMETER OF THE SITE, BUT IN NO CASE ARE THEY LESS THAN 50–FEET FOR EXISTING WASTE. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND THE LATERAL EXPANSION IS AT LEAST 125–FEET. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND NEWLY PERMITTED (PERMIT NO. 1312B) WASTE DISPOSAL AIRSPACE IS AT LEAST 125–FEET.
5. REFER TO APPENDIX IIII, FOR DETAILS OF THE LANDFILL GAS MANAGEMENT PLAN.
6. DRAINAGE DESIGN INFORMATION IS PROVIDED IN APPENDIX IIIF–SURFACE WATER DRAINAGE PLAN.
7. MINIMUM EXCAVATION ELEVATION AT LCS SUMPS IS 387 FT–MSL. MAXIMUM TOP OF FINAL COVER ELEVATION IS 725 FT–MSL.
8. STATIC GROUNDWATER ELEVATIONS AND GROUNDWATER AT TIME OF DRILLING NOT REPORTED IN ALL BOREHOLES.
9. LOCATIONS OF TYPICAL LFG EXTRACTION WELLS CAN BE FOUND IN APPENDIX IIII.
10. REFER TO APPENDIX IIIC FOR LEACHATE COLLECTION SYSTEM (LCS) FORCEMAIN INFORMATION.
11. REFER TO APPENDIX IIIA–A FOR THE OVERLINER DESIGN THAT WILL BE INSTALLED OVER THE PRE–SUBTITLE D AREA.

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED
PROFESSIONAL ENGINEER
3-23-12

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- [x] FOR PERMITTING PURPOSES ONLY
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DATE: 03/2012
FILE: 1339–351–11
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DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

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PREPARED FOR

CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TYPICAL SECTION B

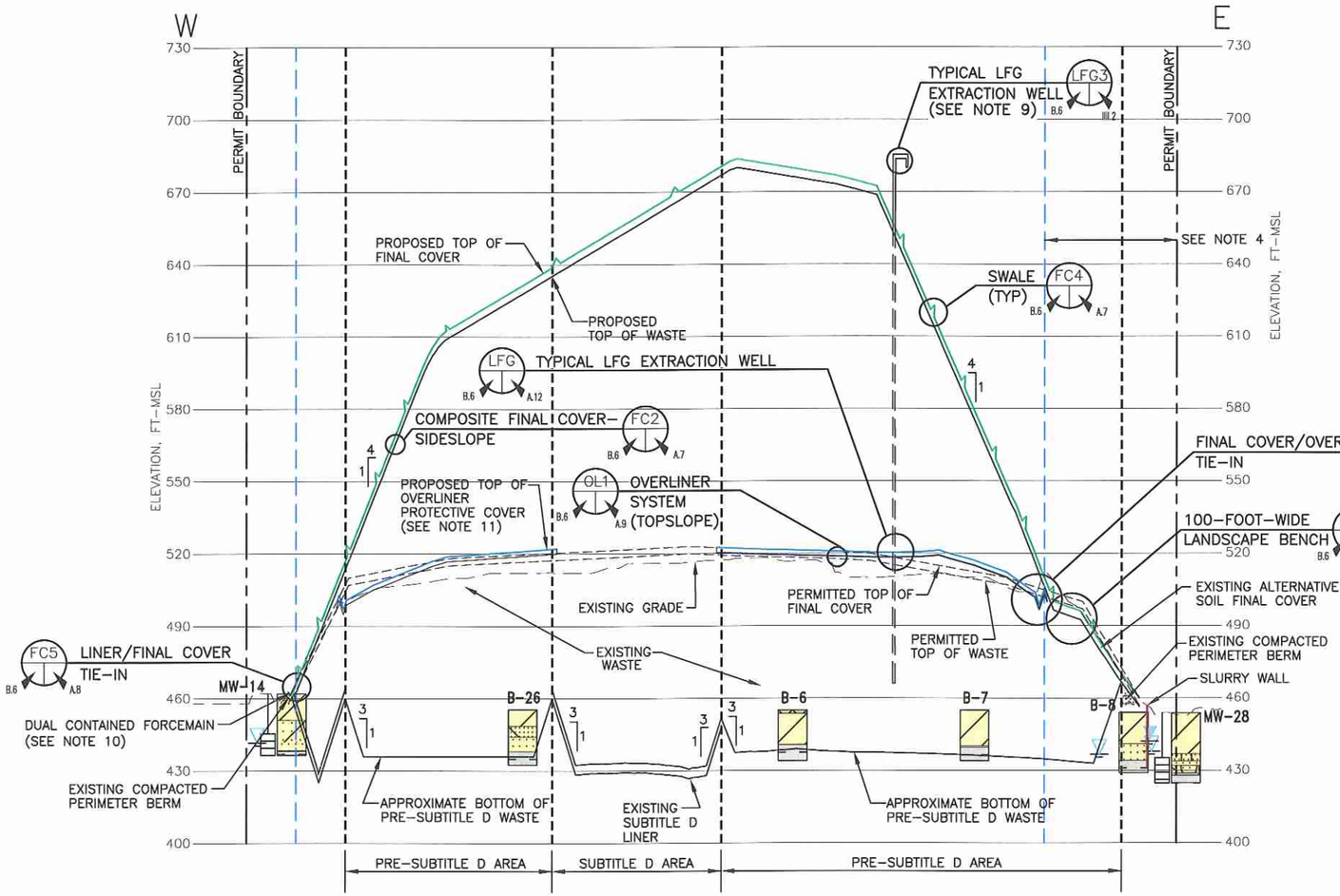
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727

CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.5

SHEET IIIA–B.5

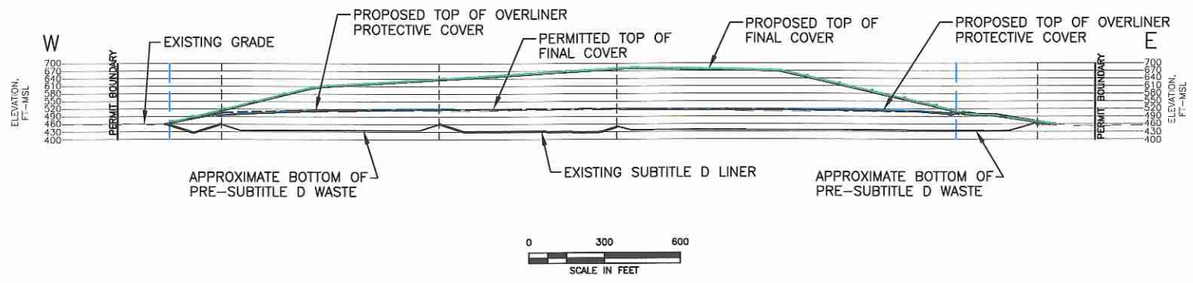


0 300 600 SCALE IN FEET HORIZONTAL

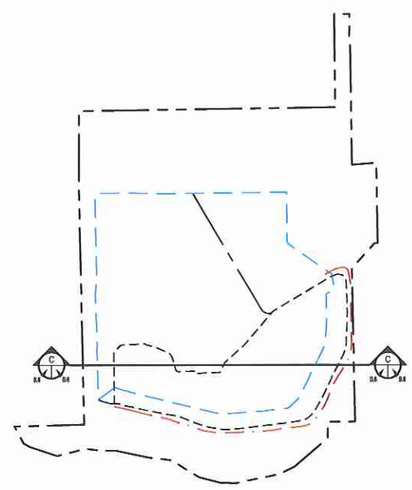
0 30 60 SCALE IN FEET VERTICAL

SECTION C (EXAGGERATED VERTICAL SCALE)

B.1,B.2,B.3 B.6



0 300 600 SCALE IN FEET



KEY MAP (NTS)

LEGEND

- PERMIT BOUNDARY
- EXISTING PERMITTED PRE-SUBTITLE D LIMIT OF WASTE
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- EXISTING GRADE
- TOP OF WASTE
- TOP OF FINAL COVER
- EXISTING PERMITTED FINAL COVER
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

- CLAY AND SILTY CLAY
- EARTHEN FILL
- GRAVELLY SANDY CLAY
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- WEATHERED SHALE
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- GROUNDWATER AT THE TIME OF DRILLING (ATD)
- STATIC GROUNDWATER LEVEL AS DESCRIBED ON BORING LOG

STATE OF TEXAS
JASON A. EDWARDS
99336
LICENSED PROFESSIONAL ENGINEER
3-2312

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3. SEE APPENDIX IIIG FOR BORING DATA. BORINGS PROJECTED INTO THE LINE OF SECTION. SEE DRAWING B.1 FOR LOCATION.
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DESIGN BY: MDM
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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

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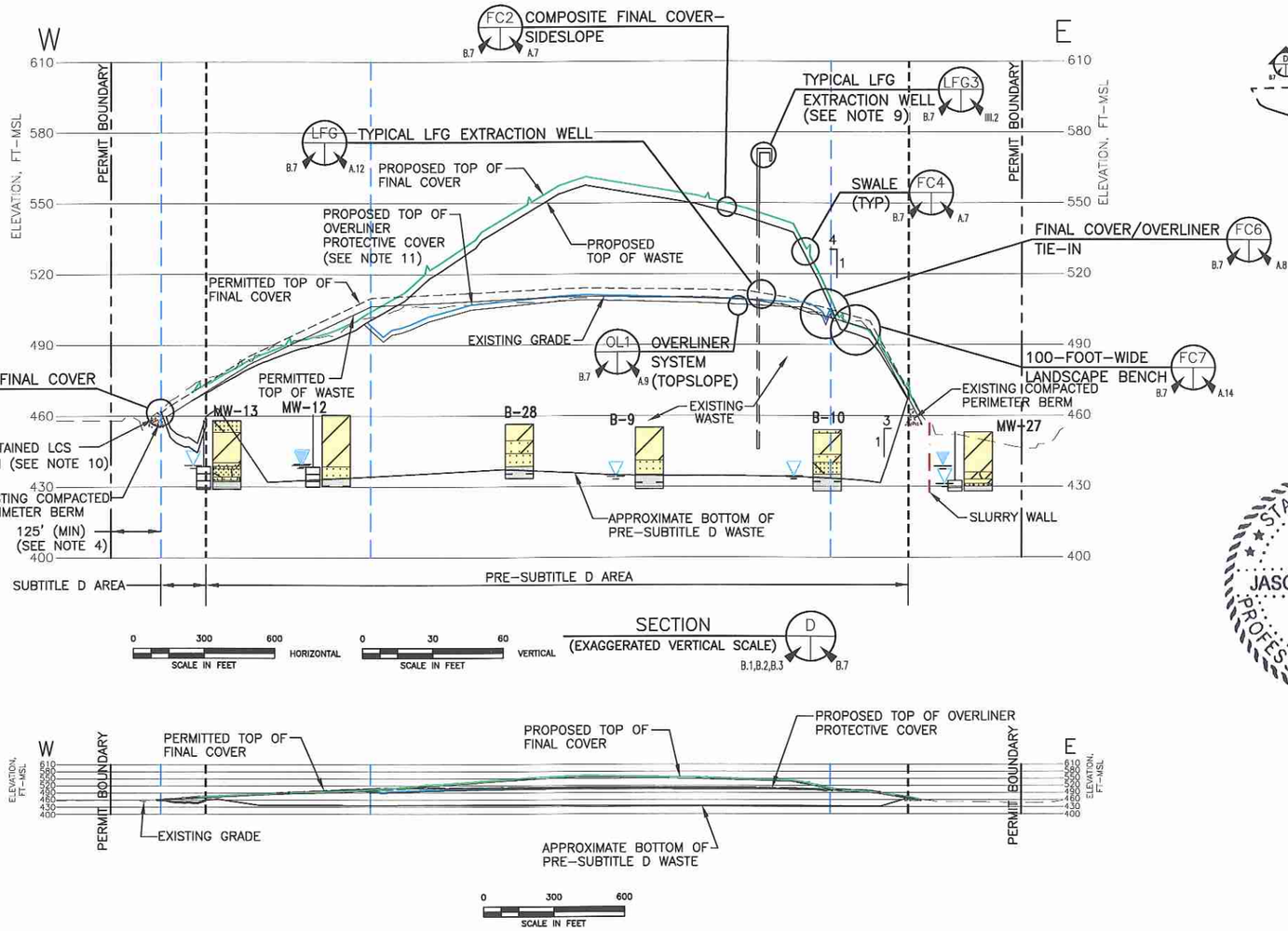
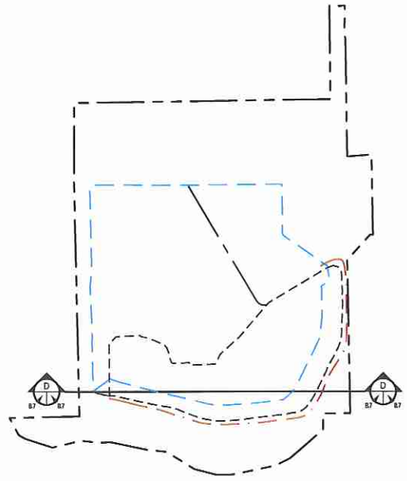
MAJOR PERMIT AMENDMENT
TYPICAL SECTION C
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.6

SHEET IIIA-B.6





KEY MAP
(NTS)

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CITY OF FARMERS BRANCH

REVISIONS		
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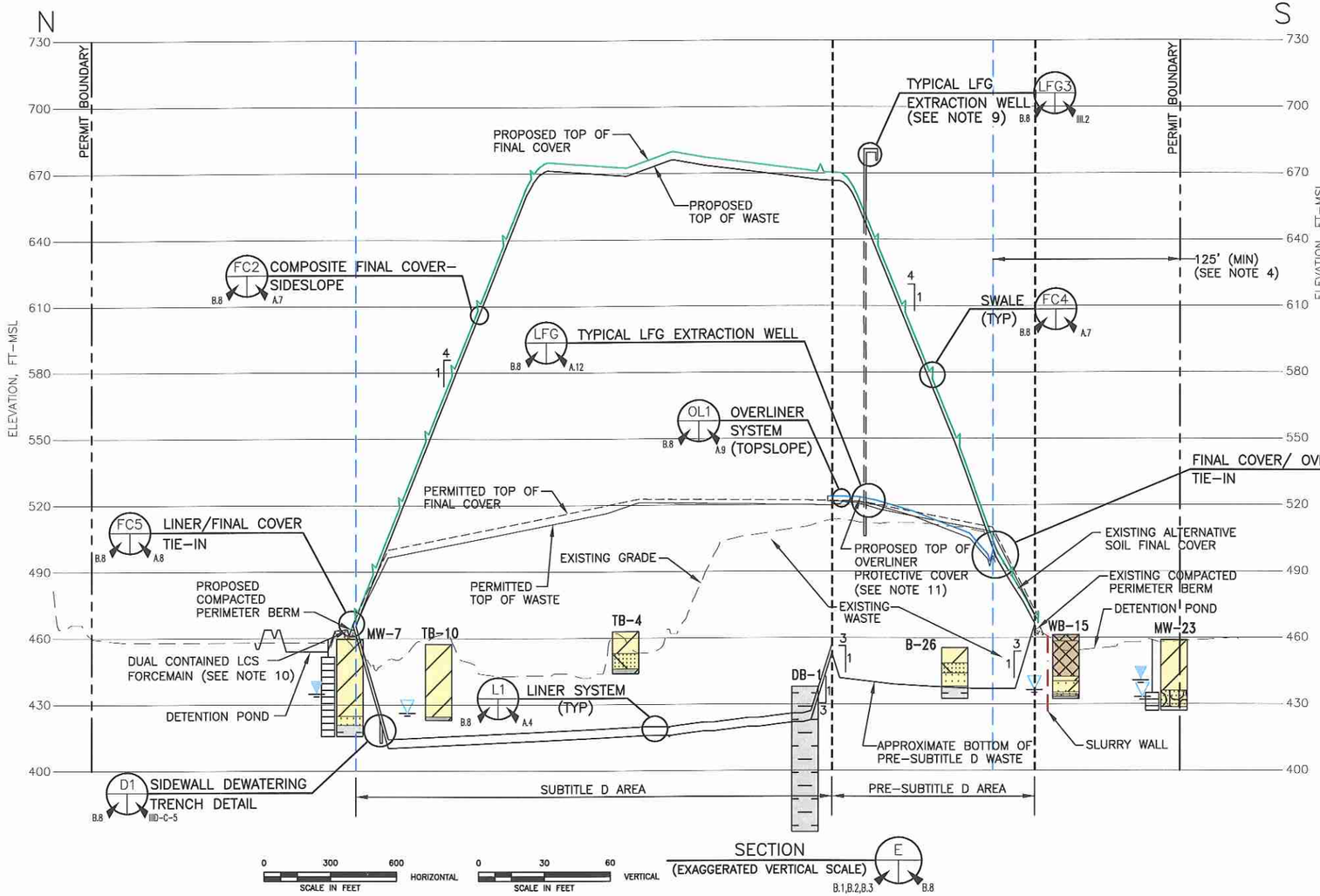
MAJOR PERMIT AMENDMENT
TYPICAL SECTION D

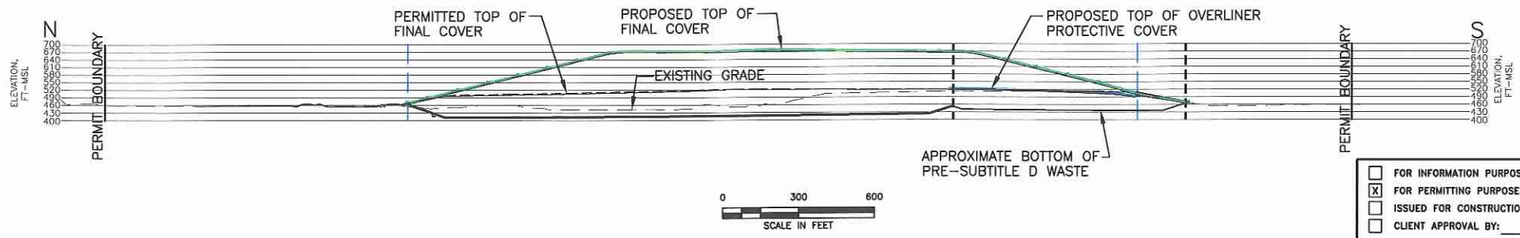
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

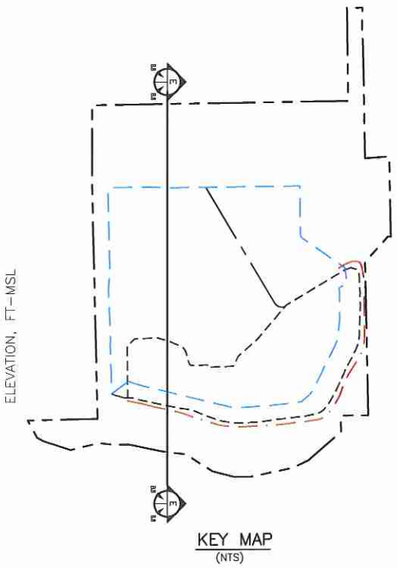
Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.7

SHEET IIIA–B.7







LEGEND

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STATE OF TEXAS
JASON A. EDWARDS
99336
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PROFESSIONAL ENGINEER
3-23-12

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CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TYPICAL SECTION E

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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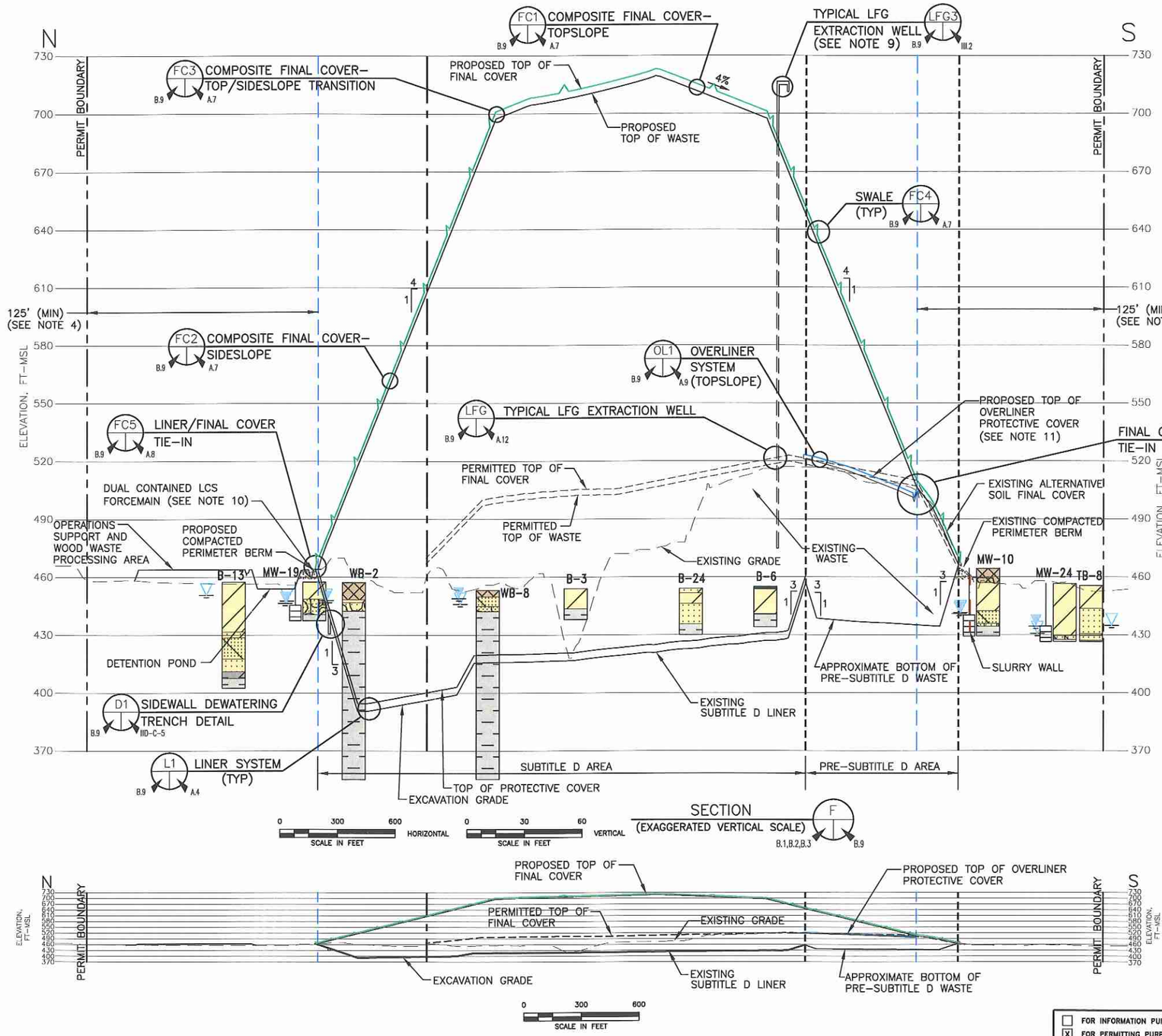
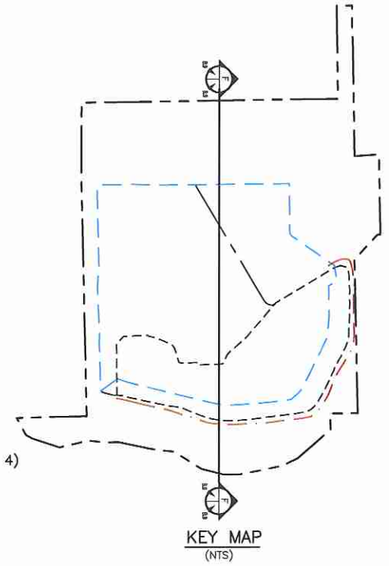
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.8

SHEET IIIA-B.8





LEGEND

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STATE OF TEXAS
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PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

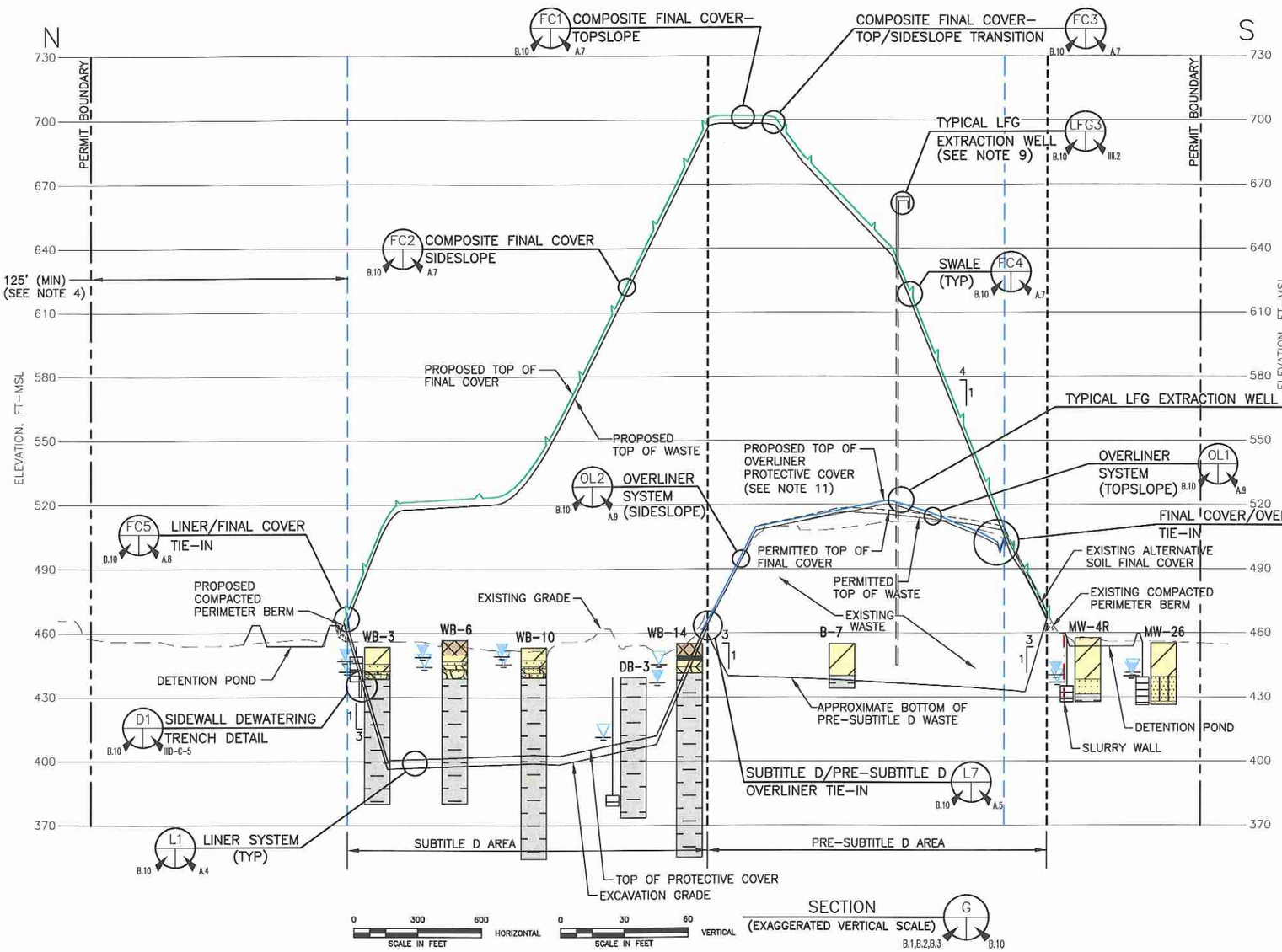
MAJOR PERMIT AMENDMENT
TYPICAL SECTION F

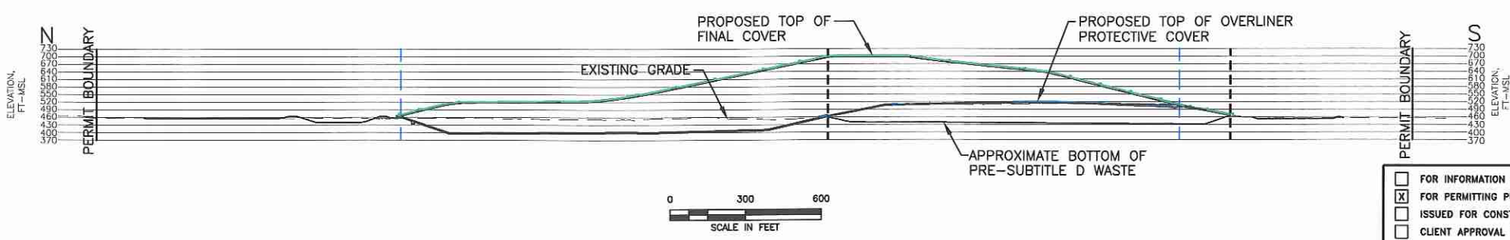
CAMELOT LANDFILL
DENTON COUNTY, TEXAS

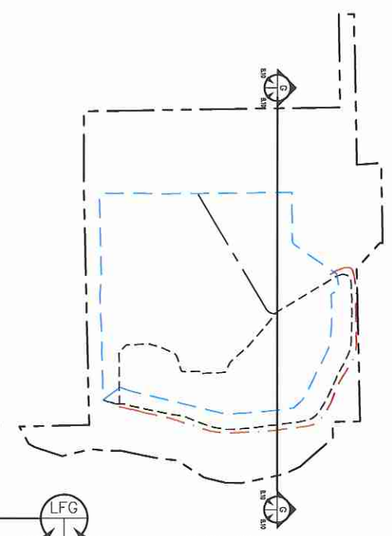
Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX (817) 735–9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.9

SHEET IIIA–B.9







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REVISIONS

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MAJOR PERMIT AMENDMENT
TYPICAL SECTION G

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

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NAPERVILLE, IL
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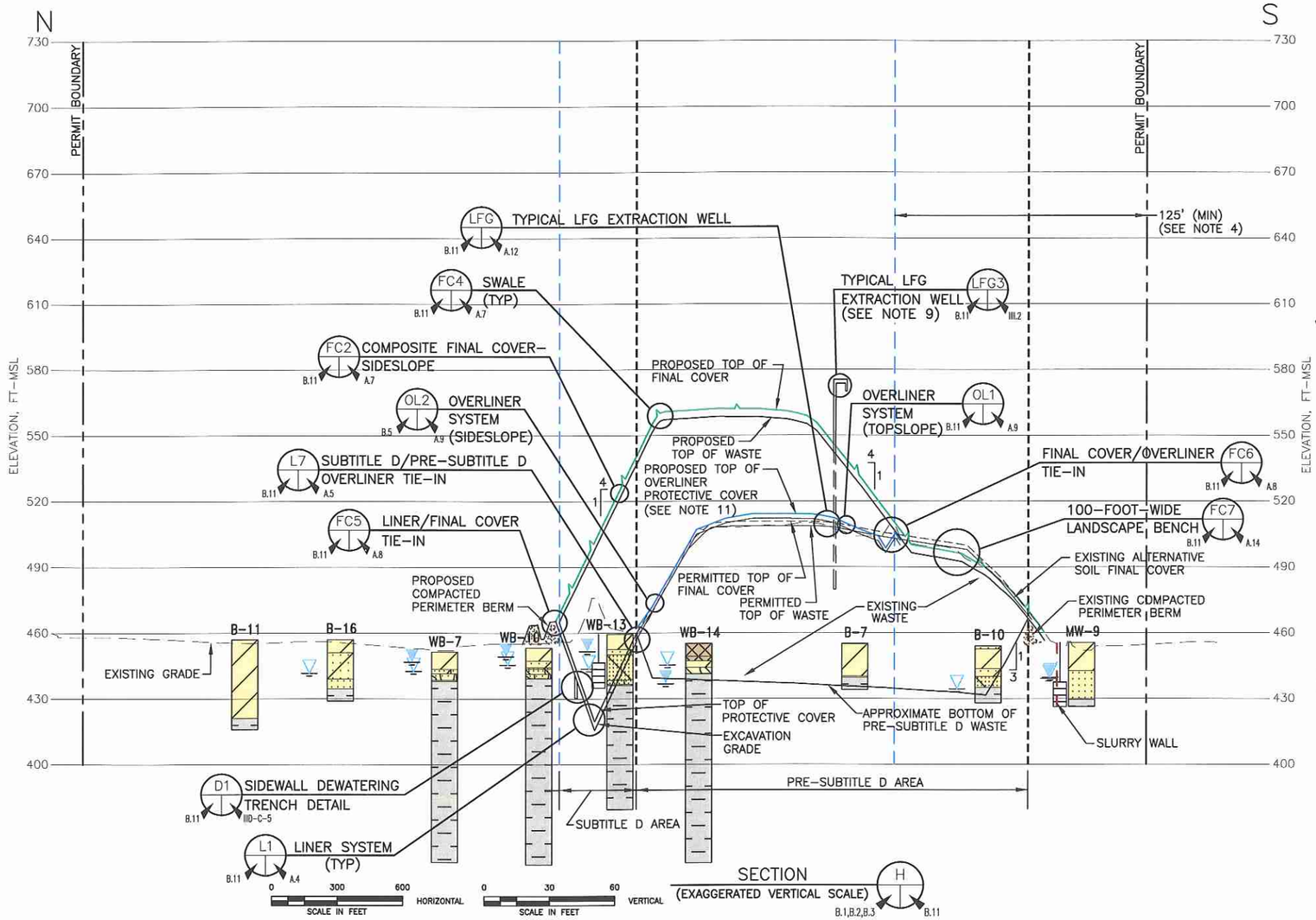
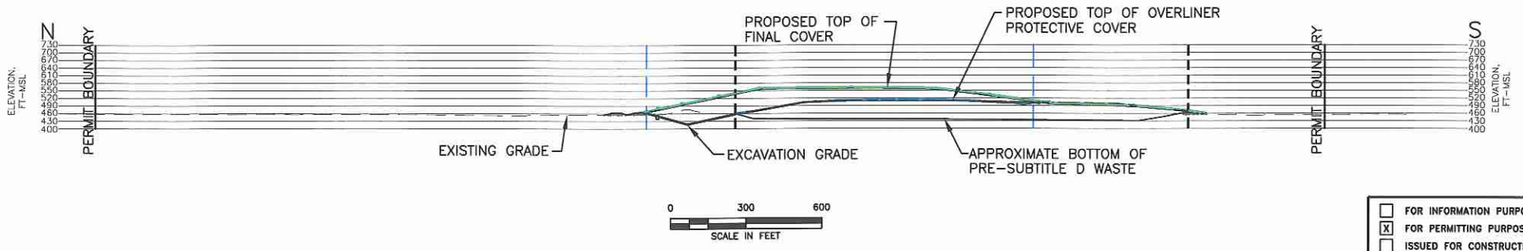
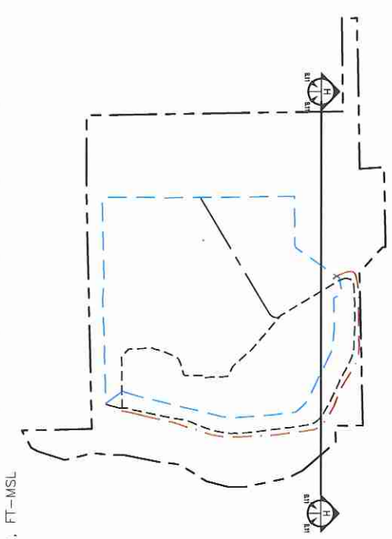
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.10

SHEET IIIA-B.10







LEGEND

- PERMIT BOUNDARY
- EXISTING PERMITTED PRE-SUBTITLE D LIMIT OF WASTE
- EXISTING PERMITTED SUBTITLE D LIMIT OF WASTE
- NEWLY PERMITTED AIRSPACE LIMIT OF WASTE
- EXISTING GRADE
- TOP OF WASTE
- TOP OF FINAL COVER
- EXISTING PERMITTED FINAL COVER
- APPROXIMATE LOCATION OF PROPOSED SLURRY WALL

- CLAY AND SILTY CLAY
- EARTHEN FILL
- GRAVELLY SANDY CLAY
- SAND
- SANDY CLAY
- CLAYEY GRAVEL
- GRAVEL
- GRAVELLY SAND
- GRAVELLY SANDY CLAY
- UNWEATHERED SHALE
- SANDY GRAVEL
- WEATHERED SHALE
- SILTY SAND
- GROUNDWATER AT THE TIME OF DRILLING (ATD)
- STATIC GROUNDWATER LEVEL AS DESCRIBED ON BORING LOG

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PREPARED BY METROPOLITAN AERIAL SURVEYS FROM AERIAL PHOTOGRAPHY FLOWN 8-28-2010.
2. REFER TO APPENDIX IIIA-A FOR LINER, OVERLINER, LEACHATE COLLECTION, AND FINAL COVER SYSTEM DETAILS.
3. SEE APPENDIX IIIG FOR BORING DATA. BORINGS PROJECTED INTO THE LINE OF SECTION. SEE DRAWING B.1 FOR LOCATION.
4. AS SHOWN IN APPENDIX I/IIC, THE BUFFER ZONES VARY AROUND THE PERIMETER OF THE SITE, BUT IN NO CASE ARE THEY LESS THAN 50-FEET FOR EXISTING WASTE. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND THE LATERAL EXPANSION IS AT LEAST 125-FEET. THE BUFFER ZONE BETWEEN THE PERMIT BOUNDARY AND NEWLY PERMITTED (PERMIT NO. 1312B) WASTE DISPOSAL AIRSPACE IS AT LEAST 125-FEET.
5. REFER TO APPENDIX IIII, FOR DETAILS OF THE LANDFILL GAS MANAGEMENT PLAN.
6. DRAINAGE DESIGN INFORMATION IS PROVIDED IN APPENDIX IIIF-SURFACE WATER DRAINAGE PLAN.
7. MINIMUM EXCAVATION ELEVATION AT LCS SUMPS IS 387 FT-MSL. MAXIMUM TOP OF FINAL COVER ELEVATION IS 725 FT-MSL.
8. STATIC GROUNDWATER ELEVATIONS AND GROUNDWATER AT TIME OF DRILLING NOT REPORTED IN ALL BOREHOLES.
9. LOCATIONS OF TYPICAL LFG EXTRACTION WELLS CAN BE FOUND IN APPENDIX IIII.
10. REFER TO APPENDIX IIIC FOR LEACHATE COLLECTION SYSTEM (LCS) FORCEMAIN INFORMATION.
11. REFER TO APPENDIX IIIA-A FOR THE OVERLINER DESIGN THAT WILL BE INSTALLED OVER THE PRE-SUBTITLE D AREA.

- [ ] FOR INFORMATION PURPOSES ONLY
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 03/2012
FILE: 1339-351-11
CAD: B.4-B-11-SECTIONS.DWG

DRAWN BY: JDW
DESIGN BY: MDM
REVIEWED BY: JPY

PREPARED FOR
CITY OF FARMERS BRANCH

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
TYPICAL SECTION H

CAMELOT LANDFILL
DENTON COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
DENVER, CO
FORT WORTH, TX
(817) 735-9770
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

DRAWING B.11

SHEET IIIA-B.11

CAMELOT LANDFILL
CITY OF LEWISVILLE, DENTON COUNTY
TCEQ PERMIT NO. MSW-1312B

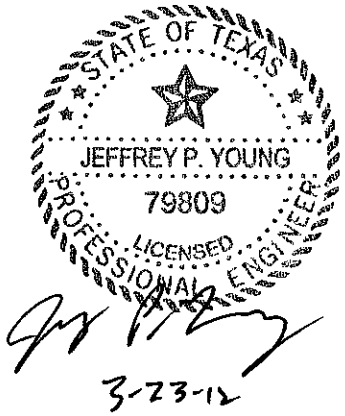
MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
APPENDIX IIIA-C
CONSTRUCTION QUALITY ASSURANCE PLAN FOR THE SLURRY TRENCH CUT OFF WALL

Prepared for

City of Farmers Branch

March 2012



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 1339-351-11-02-6B.1

This document is intended for permitting purposes only.

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- 1.2 Definitions IIIA-C-1
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2.0 QUALITY ASSURANCE ACTIVITIES **IIIA-C-4**
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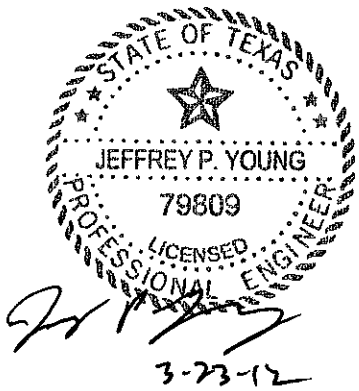
- 2.2 Construction Photographs IIIA-C-4
- 2.3 Daily Reports IIIA-C-5
- 2.4 Final Report IIIA-C-5



Tables

Table 1 CQA Observation and Testing Requirements IIIA-C-7

1 INTRODUCTION

1.1 Purpose

The purpose of this Construction Quality Assurance Plan (CQA Plan) is to establish the methodology for the observation and testing to document that the project is completed using the specified construction techniques and materials. Observation and testing identified in this CQA Plan are intended to identify problems that may occur during construction and to document that these problems are corrected before construction is complete.

This plan is intended for the use of the on-site quality assurance representative for the construction of the slurry trench cutoff wall at the Camelot Landfill located in Denton County, Texas. The slurry trench cutoff wall alignment is planned as part of the waste containment system design and will act as a barrier between the pre-Subtitle D area and groundwater.

Quality Assurance (QA) refers to the means and actions employed by the CQA Representative to assure the construction conforms with the project requirements and specifications. This service is provided by a third party, independent from both owner and contractor.

Quality Control (QC) refers to the actions taken by the supplier and contractor to ensure that the materials and workmanship of the above project meet the intent of the plans and specifications. Quality control is provided by the supplier and contractor.

1.2 Definitions

All definitions are as described in the Technical Specifications unless otherwise noted.

a. **Owner:** City of Farmers Branch, 13000 William Dodson Parkway, Farmers Branch, Texas 75234.

b. **Project Manager (PM):** Duly authorized and qualified representative of the COMPANY or retained by the COMPANY to assist with coordination and observe the activities of the CONTRACTOR(s), DESIGNER, and CQA REPRESENTATIVE.

c. **Design Engineer:** Shall be the Engineer who is responsible for the design of the slurry trench cutoff wall. All changes in construction shall be approved by the Design Engineer.

d. **CQA Representative:** Shall be the on-site representative of the owner responsible for implementing the Project CQA Plan including observing, evaluating, and documenting geotechnical conditions during the construction progress. The CQA Representative shall have sufficient practical and technical experience to successfully perform the CQA activities discussed in this plan.

e. **Contractor (CONTRACTOR):** The organization which is furnishing the material, equipment, design, and construction of the slurry trench cutoff wall.

f. **Cutoff Wall Superintendent:** CONTRACTOR's employee or representative who will act as on-site representative of the CONTRACTOR during the duration of the project. This person shall be knowledgeable in all aspects of this type of construction, and shall also have the ability to bind the contractor to any construction decision.

1.3 Applicable Standards

Tests performed on the specified materials shall generally conform to American Petroleum Institute (API) and American Society for Testing and Materials (ASTM) standards referenced hereinafter; reference is to latest specification approved by the organization at the time of this CQA Plan unless otherwise noted.

A. API Specifications:

1. Specifications 13A, "Specification for Drilling-Fluid Materials."
2. RP 13B-1, "Recommended Practice Standard Procedure for Field Testing Water-Based Drilling Fluids."

B. ASTM Specifications:

1. ASTM D1140, "Standard Test Method for Amount of Material in Soils Finer than No. 200 Sieve."
2. ASTM C143/C143M-08, "Standard Test Method for Slump of Hydraulic Cement Concrete."
3. ASTM D4318-05, "Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils."
4. ASTM D698-07e1, "Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort."
5. ASTM D2216-05, "Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass."

6. ASTM D2487-06e1, "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)."
7. ASTM D2488-06, "Standard Practice for Description and Identification of Soil (Visual-Manual Procedure)."
8. ASTM D1293-99, "Standard Test Methods for pH of Water."
9. ASTM D5084-03, "Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter."
10. ASTM D6938-08a, "Standard Test Method for In-Place Density and Water Content of Soil and Soil Aggregates in Place by Nuclear Methods (Shallow Depth)."

C. EPA Test Methods:

1. EPA Method 160.1, "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020.

2 QUALITY ASSURANCE ACTIVITIES

2.1 General

The CQA observation and testing will consist of full-time procedural observation and testing of the various components of construction. In general, CQA observations and testing of construction will consist of the following:

a. Review of the contractors' materials and methods submittals for compliance with the plans and specifications;

b. Observation of the excavation of the slurry trench, and recording of the as-built depth measurements made by the contractor;

c. Laboratory testing of the bentonite for compliance with the specifications;

d. Observation and testing of the slurry prior to its introduction to the trench;

e. Testing of the slurry in the trench;

f. Laboratory testing of the soil proposed for use in the backfill;

g. Field and laboratory testing of the backfill prior to its introduction to the trench;

h. Observation of the backfilling of the trench, and recording of the depth measurements to the backfill surface (performed by the contractor);

i. Laboratory testing of the permeability of the backfill in the trench;

j. Laboratory testing of the soil materials proposed for use in the cap for the barrier wall, and observation of the placement of approved cap materials; and

k. Review of all contractors' quality control testing results.

CQA inspection and testing shall be performed in compliance with the frequencies and methods indicated in Table 1.

2.2 Construction Photographs

The CQA Representative shall take photographs of all phases of construction. Each photo shall be properly labeled and shall include the following information on each photograph:

a. Project Name

b. Photo Date

c. Subject Identification

d. Photo Number

e. Direction of View

f. Orientation

2.3 Daily Reports

The CQA Representative shall complete a daily inspection report which outlines all the activities for that particular day. A copy of this report shall be provided to the Owner's on-site representative each day. The observations recorded on the daily reports shall include the following information:

a. Name and date;

b. Contractors on site;

c. Contractors' activities performed;

d. CQA activities performed;

e. Construction issues and resolutions, including design changes;

f. Estimates of quantities of materials placed; and

g. Significant discussions with the OWNER, CONTRACTOR, DESIGNER, and other individuals not covered above.

The CQA Representative shall prepare a weekly summary report that summarizes the progress of the preceding week's activities. As a minimum, the report shall include the following information:

a. A summary of the construction work activities accomplished during the preceding week;

b. A summary of the CQA observation, monitoring, and testing activities performed during the preceding week;

c. A summary of the preceding week's CQA test results; and

d. A summary of the preceding week's construction issues and resolutions.

The weekly summary report shall be distributed to the OWNER. PROJECT MANAGER, DESIGNER, CONTRACTOR, and the CQA project file.

2.4 Final Report

Upon completion of the project, a final CQA report will be prepared and submitted to TCEQ for review and acceptance. The final report will describe the construction

activities and include, as a minimum, the field and laboratory CQA test results, design changes, and record construction drawings of the constructed slurry wall cutoff trench. The report shall be sealed by a professional engineer, licensed in the State of Texas, who will confirm that the project was constructed in substantial compliance with the project specifications and the information included in the Site Development Plan.

Table 1
CQA Observation and Testing Requirements

Trenching				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance**
Bottom Sounding	N/A	Weighted Tape (as required by design engineer).	Every 10 to 25 linear feet	Trench Design Depth (min 3 feet key into shale)
Trench Width	N/A	The backhoe bucket (which in this case will be used as a minimum 3-foot-wide mechanical caliper) will be used to verify the trench width by extending the bucket to the bottom of the completed trench prior to the placement of backfill material.	Every 10 to 25 linear feet	3 foot minimum trench width
Overlap	N/A	Tape	At start of new excavation compare plans, depth of trench, and exterior reaction to trench foundation.	Overlap previous trench backfill by 20 feet or more and tie into previous backfill full depth
Trench Foundation	Visual	Compare plans, depth of trench, and exterior reaction to trench foundation.	As needed	Stable foundation for excavation
Backhoe Boom		Weighted Tape	Each new set	Within 3% of vertical
Sample Material From Bottom Key	ASTM D2487 ASTM D2488 ASTM D4318 ASTM D1140	Visual Check, with Atterberg Limits and Grain Size	Visual Every Bucket, Atterberg and Grain Size 5% of buckets	Testing results verify that the soil characteristics of the bottom key are consistent with the stratum that is defined as the aquitard.
Slurry				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance Criteria**
Bentonite	API Std. 13A	Manufacturer's Certificate	Every Truckload	Premium grade Wyoming bentonite (sodium montmorillonite)
Water	ASTM D1293 EPA 160.1	pH and Total Dissolved Solids (TDS)	Each Source	pH 7 ±1 / TDS ≤500 ppm unless otherwise approved by the Design Engineer
Marsh Funnel (Hydration Pond)	API Std. 13B	Viscosity	4 times trench depth or 200 linear feet, whichever is less, minimum of every 4 hours, more often if viscosity is below 40 seconds	40 seconds +, after hydration
Mix Ratio			Each batch	5% – 7% by weight

Table 1 (Continued)
CQA Observation and Testing Requirements

Slurry (Continued)				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance Criteria**
Additives			All batches	None Allowed
Hydration		Timer	Each Batch	Hydrate 8 to 24 hours following mixing, or use a high energy shear mixer approved by the design Engineer.
Slurry Level		Weighted Tape	Continuous visual observation; measure 3 times per day and at 100-foot stations	Slurry surface within 1 foot of the adjacent ground surface.
Unit Weight (Trench)	API Std. 13B	Mud Balance	Two each (one at ¾ of trench depth and one 5 feet from surface) at a rate equal to 4 times trench depth or 200 linear feet, whichever is less. Test interval should not exceed 4 hours.	64.5 to 69 pcf in mix pond; 75 to 85 pcf in trench.
Backfill				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance Criteria**
Slope of Backfill		Weighted Tape	Once per day	6 H to 10 H:1 V (horizontal:vertical)
Distance of Backfill Toe to Face of Excavation		Weighted Tape	Once per day	30 feet ≤ Distance ≤100 feet
Backfill, Grab	ASTM C143	Slump cone	Daily, or each at a distance equal to 2 times the depth, but no greater than 10-foot intervals	4 to 6 inches
Backfill, Grab	ASTM D1140	Gradation (-200) Wet Sieve	Daily, or each at a distance equal to 2 times the trench depth, but not greater than 100 linear feet of backfill placed	20-30% dry weight -200
Backfill, Grab (<40 sieve)	ASTM D4318	Atterberg Limits	1 per 100 linear feet of backfilled trench	PI ≥ 25
Backfill, Grab	ASTM D2216	Moisture Content	1 per 100 linear feet of backfilled trench	25-35 unless otherwise approved by the Design Engineer
Bentonite in Backfill		Calculated	2 per day or 1 each batch	>1% bentonite by weight as needed to produce the required hydraulic conductivity.

Table 1 (Continued)
CQA Observation and Testing Requirements

Backfill (Continued)				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance Criteria**
Mix Ratio		Calculated	2 per day or 1 each batch	Select soils, borrow, slurry and bentonite needed to achieve an acceptable hydraulic conductivity
Placement				Place from end, not from side of trench
Density	API Std. 13B		1 per batch or 1 per 100 linear feet of trench backfill	≥ 15 pcf greater than the density of the slurry
Coefficient of Permeability	ASTM D5084	Flexible Wall	Daily, or one for each 1,000 cubic yards, whichever is more frequent.	≤ 1 x 10^{-7} cm/s. (assumes 3 feet wide trench) (1)
Capping				
Sample	**Standard**	**Test**	**Frequency**	**Acceptance Criteria**
Borrow	ASTM D1140	Sieve Analysis	1 prior to construction plus 1 per 5,000 cubic yards or visual change	-200 ≥ 30
Borrow	ASTM D4318	Atterberg Limits	1 prior to construction plus 1 per 5,000 cubic yards or visual change	PI ≥ 15, LL ≥ 30
Borrow	ASTM D698	Standard Proctor	1 prior to construction plus 1 per 5,000 cubic yards or visual change	As reported.
Compacted Backfill (Upper 12" Layer)	ASTM D6938	Density, Moisture Content	1 per 250 cubic yards placed, and visual	≥ 90% maximum density, 0% to 4% wet of the optimum moisture content
Compacted Backfill		Level	1 per 50 linear feet	≥ 2 feet thick
Finish Slope		Visual	Entire trench after grading	Crowned over trench to drain

(1) Unless otherwise approved by the Design Engineer as a combination of trench width and backfill hydraulic conductivity equivalent to a 3-foot-wide trench with a backfill hydraulic conductivity of 1.0 x 10^{-7} cm/s.