

Texas Commission on Environmental Quality Waste Permits Division Correspondence Cover Sheet

Date: 05/03/2023 Facility Name: City of Waco Transfer Station Permit or Registration No.: 1039 Affix this cover sheet to the front of your submission to for type of correspondence. Contact WPD at (512) 239	• • • •
Table 1 - Municipal Solid	Waste Correspondence
Applications	Reports and Notifications
New Notice of Intent	Alternative Daily Cover Report
☐ Notice of Intent Revision	Closure Report
☐ New Permit (including Subchapter T)	Compost Report
New Registration (including Subchapter T)	Groundwater Alternate Source Demonstration
Major Amendment	Groundwater Corrective Action
☐ Minor Amendment	Groundwater Monitoring Report
Limited Scope Major Amendment	Groundwater Background Evaluation
☐ Notice Modification	Landfill Gas Corrective Action
☐ Non-Notice Modification	Landfill Gas Monitoring
☐ Transfer/Name Change Modification	Liner Evaluation Report
☐ Temporary Authorization	Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	Other:
Table 2 - Industrial & Hazardo	ous Waste Correspondence
Applications	Reports and Responses
New	☐ Annual/Biennial Site Activity Report
Renewal	☐ CPT Plan/Result
Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
CCR Registration Minor Amendment	☐ Interim Status Change
Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	Other:

335.6 Notification

Other:

SCS ENGINEERS

May 3, 2023 SCS Project No. 16222063.00

Ms. Megan Henson MSW Permits Section (MC-124) Waste Permits Division Texas Commission on Environmental Quality P.O. Box 13087 Austin, Texas 78711-3087

Subject: Subchapter T Development Permit Application for Enclosed Structure

Closed Landfill in Waco, TX MSW Permit No. 1039

New Building for MSW transfer station

McLennan County, Texas

Dear Ms. Henson:

On behalf of City of Waco, SCS Engineers is submitting the following documents in support of a request for the above referenced Development Permit application under 30 TAC §330.957 of Subchapter T, related to proposed construction of an enclosed structure over a closed Landfill. The documents include:

- Form 20785 Development Permit Form for Proposed Enclosed Structures Over Closed MSW Landfill;
- Application fee, check in the amount of \$2,500. A Check (No. 339740 & Date: 04/25/2023) has been mailed (via FedEx) to TCEQ Austin, MC-214 Financial Division, 1200 Park 35 Circle, Austin, Texas 78753 (copy enclosed);
- Landowners Map and Mailing list;
- Development Permit Application; and
- A non-notice permit modification will be filed at a later date to incorporate the Development Permit into the existing landfill permit.

Should you have any comments or questions after reviewing this request, please call Mr. Jeff Arrington, P.E. at (817) 358-6111.

Sincerely.

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS Ms. Megan Henson May 3, 2023 Page 2

Attachments

cc: TCEQ Regional Office 9, Waco Mr. Kody Petillo, City of Waco



Texas Commission on Environmental Quality

Application for Development Permit for Proposed Enclosed Structure Over Closed Municipal Solid Waste Landfill

Application Tracking Information

Applicant Name: City of Waco
Facility Name: City of Waco Transfer Station
Development Permit Number: TBA
Initial Submission Date: 05/03/2023
Revision Date:
Use this form to apply for a development permit for proposed enclosed structure over a closed municipal solid waste (MSW) landfill. Rules about use of land over a closed MSW landfill are in <u>Title 30</u> , <u>Texas Administrative Code</u> ¹ , Chapter 330, Subchapter T. Instructions for completing this form are provided in form <u>TCEQ 20785-instr</u> ² . Include a Core Data Form, available at <u>www.tceq.texas.gov/goto/coredata</u> with the application. If you have questions, contact the Municipal Solid Waste Permits Section by email to <u>mswper@tceq.texas.gov</u> , or by phone at 512-239-2335. If you have an existing enclosed structure, use form <u>TCEQ-20786</u> ³ , Registration for Existing Enclosed Structure Over Closed Municipal Solid Waste Landfill. If you are proposing a non-enclosed structure, use form <u>TCEQ-20787</u> ⁴ , Authorization to Disturb Final Cover Over Closed Municipal Solid Waste Landfill for Non-Enclosed Structure.
Application Data
1. Application Type
■ New Development Permit □ Revisions of Existing Permit
☐ Transfer of an Existing Permit
If existing Permit, indicate the Permit Number:
2 Submission Type
2. Submission Type

☐ Notice of Deficiency (NOD) Response

■ Initial Submission

¹ www.tceq.texas.gov/goto/view-30tac

² www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20785-instr.pdf

³ www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20786.pdf

⁴ www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20787.pdf

3. Application Fee
The application fee for a development permit is \$2,500.
■ Paid by Check
☐ Paid Online
If paid online, ePay Confirmation Number:
4. Enrollment in Other TCEQ Programs
Indicate if the site is enrolled in the Voluntary Cleanup Program or other Remediation Program.
☐ Yes ■ No
If Yes, indicate the program:
5. Development Type
Is the development a single-family or double-family home that is not part of a housing subdivision?
☐ Yes ■ No
If "Yes", the construction is exempt from the development permit requirement.
6. Enclosed Structure Description
Provide a brief description of the proposed enclosed structure for which the development
permit is requested.
The proposed facilities will include a new MSW transfer station, scale house building
and scales, a citizen's collection station, and a new paved access drive with parking for trucks and vehicles.
7. Soil Tests
7. Soil Tests Size of the property (acres): 44
Size of the property (acres): 44
Size of the property (acres): 44 Was the existence of the landfill determined through:
Size of the property (acres): 44 Was the existence of the landfill determined through: Test I Test II Test III
Size of the property (acres): 44 Was the existence of the landfill determined through: Test I Test II

8. Notification of MSW Landfill Determination
If soil tests were used to determine the presence of a closed MSW landfill, provide evidence that the engineer who performed the soil tests has notified the following persons of that determination in accordance with 30 TAC §330.953(d).
☐ Each owner and lessee
☐ Executive Director
☐ Local Government Officials
Regional Council of Governments
9. Landfill Permit Status
What is the permit status of the landfill?
☐ Active MSW Permit ■ Landfill in Post-Closure Care
☐ Revoked MSW Permit ☐ Non-Permitted Landfill
If the landfill is still in the post-closure care period subject to an active MSW Permit, this development permit application for proposed enclosed structures shall be accompanied by a Permit Modification application prepared in accordance with 30 TAC §305.70, and by a certification signed by an independent engineer in accordance with 30 TAC §330.957(b)(2). If the landfill has completed the post-closure care period, but the MSW permit has not been revoked (site affected by an active MSW Permit), a Voluntary Revocation request of the MSW Permit shall be submitted in accordance with 30 TAC §330.465 prior to the submittal of this development permit application for proposed enclosed structures over a closed MSW landfill.
10. Application URL
Enter the URL address of a publicly accessible internet web site where the application and all revisions to that application will be posted in the box below: https://www.waco-texas.com/Transfer-Station-Permitting
11. Public Place for Copy of Application
Name of the Public Place: Waco - McLennan County Library
Physical Address: 1717 Austin Ave
City: Waco County: McLennan State: TX Zip Code: 76701
Phone Number: (254) 750-5941
Normal Operating Hours: 10:00AM to 9:00PM (Monday to Wednesday), 10:00AM to 6PM (Thursday to Saturday) & 1:00PM to 5:00PM (Sunday)

12. Party Responsible for Publishing Notice
Indicate who will be responsible for publishing notice:
☐ Applicant ☐ Consultant
Contact Name: Jeff Arrington, P.E.
Title: Project Manager
Email Address: JArrington@scsengineers.com
13. Alternative Language Notice
Use the Alternative Language Checklist on Public Notice Verification Form TCEQ-20244-Waste-NAORPM available at www.tceq.texas.gov/permitting/waste-permits/msw-permits/msw-notice.html to determine if an alternative language notice is required.
Is an alternative language notice required for this application?
☐ Yes ■ No
Indicate the alternative language:
14. Confidential Documents
Does the application contain confidential documents?
☐ Yes ■ No
If "Yes", cross-reference the confidential documents throughout the application and submit as a separate attachment in a binder clearly marked "CONFIDENTIAL."

15. Permits and Construction Approvals

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

Permits and Construction Approvals

Permit or Approval	Received	Pending	Not Applicable
Zoning Approval			x
Preliminary Subdivision Plan			Х
Final Plat			Х
Fire Inspector's Approval			Х
Building Inspector's Approval on Plans			Х
Water Service Tap			Х
Wastewater Service Tap			Х
On-site Wastewater Disposal System Approval			Х

Other Environmental Permits

Other Environmental Permits (list)	Received	Pending

16. General Project In	formation	
Facility Name: City of Waco	Landfill	
SubT Development Permit N	lumber (if available):	
	Number (if issued): RN_106117	7625
Street or Physical Address:	S University Parks Drive	
City: Waco	County: McLennan	State: <u>TX</u> Zip Code: <u>76712</u>
Phone Number: <u>254-299-2</u>	623	
•	re Number has not been issued f and submit it with this application	• • •

17. Contact Information Applicant (Lessee/Project Owner) Name: Kody Petillo Customer Reference Number (if issued): ${ m CN}$ 600131940 Mailing Address: P.O. Box 2570 City: Waco County: McLennan State: TX Zip Code: 76702 Phone Number: 254-750-6627 Email Address: KodyP@wacotx.gov If Customer Reference Number has not been issued, complete a Core Data Form (TCEQ-10400) and submit it with this application. List the Applicant as the Customer. **Property Owner** Name: Same as Site Operator Mailing Address: ____ Phone Number: _____ Email Address: If the Property Owner is the same as Applicant, indicate "Same as "Applicant". Consultant (if applicable) Firm Name: SCS Engineers Texas Board of Professional Engineers and Land Surveyors Firm Number: F-3407Mailing Address: 1901 Central Dr. Suite 550 City: Bedford County: Tarrant State: TX Zip Code: 76021 Consultant Name: SCS Engineers Phone Number: _817-358-6111 Email Address: JArrington@scsengineers.com **Engineer Who Performed Soil Tests** Firm Name: Langerman Engineering Texas Board of Professional Engineers and Land Surveyors Firm Number: F-13144Mailing Address: 2000 South 15th Street City: Waco County: McLennan State: TX Zip Code: 76706 Engineer Name: Scott M. Langerman, P.E. Phone Number: 254-235-1048 Email Address: slangerman@lfectx.com

18. Other Governmental Entities Information: Fire Chief, Fire Marshal or Fire Inspector Information Fire Department Name: Waco Fire Department Person's Name: Mr. Gregory Summer Mailing Address: 1016 Columbus Ave City: Waco _____ County: McLennan State: TX Zip Code: 76702 Phone Number: 254-750-1740 Email Address: Local Floodplain Authority (if applicable) Authority Name: Floodplain Administrator Contact Person's Name: Mr. Zane Dunnam Street or P.O. Box: 215 N. 5th At. Suite 130 City: Waco County: McLennan State: TX Zip Code: 76701 Phone Number: 254-757-5028 Email Address: Engineer@co.mclennan.tx.us **City Mayor Information** City Mayor's Name: Mr. Dillion Meek Office Address: 300 Austin Ave. City: Waco County: McLennan State: TX Zip Code: 76702 Phone Number: 254-750-5600 Email Address: Dillion.Meek@wacotx.gov **City Health Authority Information** Contact Person's Name: Ms. LasShonda M. Marley-Horen Office Address: 225 W. Waco Drive City: McLennan County: McLennan State: TX Zip Code: 760701 Phone Number: 254-750-5492 Email Address: lasdondam@wacotx.gov

Director of Pul			
	me: City of Waco-Director of Public Works	<u> </u>	
	Name: Ms. Amy Burlarley-Hyland, P.E.		
	401 Franklin Ave		
	County: McLennan	State: IX	Zip Code:
Phone Number:	254-750-5440		
Email Address:			
Director of Uti			
-	City of Waco-Director of Utilities		
Contact Person's	s Name: Ms. Lisa Tyer		
Office Address:	200 Concord Avenue		
City: Waco	County: McLennan	State: TX	Zip Code: <u>76701</u>
Phone Number:	254-299-2489		
Email Address:			
Director of Pla	nning		
Agency Name:	City of Waco-Director of Planning		
Contact Person's	Name: Mr. Clint Peters		
Office Address:	401 Franklin Ave		
City: Waco	County: McLennan	State: TX	Zip Code: <u>76701</u>
	254-750-5624		
Email Address:			
Building Inspe	ector		
Agency Name:	City of Waco Inspection Services Department	nent	
Contact Person's	s Name: Mr. Chris Valtierra		
	401 Franklin Ave		
City: Waco	County: McLennan	State: TX	Zip Code:
Phone Number:	254-750-5612		
Email Address:			
County Judge	Information		
County Judge's	Name: Mr. Scott Felton		
Office Address:	501 Washington Avenue, Room 214		
	County: McLennan	State: TX	Zip Code:
Phone Number:			
Email Address:			Page 8 of 16

	er Information		
County Engineer	r's Name: Mr. Zane Dunnam		
County Engineer	r's P.E. Registration No.:		
Office Address:	215 N. 5th St. Suite 130		
City: Waco	County: McLennan	State: TX	Zip Code: <u>76701</u>
Phone Number:	254-757-5028		
Email Address:			
County Health	Authority		
Agency Name:	Waco-McLennan County Public Health D	istrict	
	s Name: Ms. LaShonda M. Marley-Horne		
Office Address:	225 W. Waco Drive		
City: Waco	County: McLennan	State: TX	Zip Code: <u>76701</u>
Phone Number:			
Email Address:	lashondam@wactox.gov		
State Represe	ntative Information		
District Number	: 56		
State Represent	ative's Name: Charles Anderson		
District Office Ad	ddress: 900 Austin Avenue, Suite 804		
City: Waco	County: McLennan	State: TX	Zip Code: <u>76701</u>
Phone Number:	512-463-0135		
Email Address:			
State Senator	Information		
District Number	: <u>22</u>		
State Senator's	Name: The Honorable Brian Birdwell		
District Office Ad	ddress: 900 Austin Avenue, Suite 500		
City: Waco		State: TX	Zip Code: <u>76701</u>
Phone Number:	254-772-6225		
Fmail Address			

Council of Government (COG)
COG Name: Heart of Texas Council of Governments
COG Representative's Name: Mr. Russell Devorsky
COG Representative's Title: Executive Director
Street Address or P.O. Box: 1514 S. New Road
City: Waco County: McLennan State: TX Zip Code: 76711
Phone Number: <u>254-292-1800</u>
Email Address: russell.devorsky@hot.cog.tx.us
Local Government Jurisdiction
Is the property located within the limits or in the ETJ of any City?
■ Yes □ No
If "Yes" city regulations may apply. Issuance of Development Permit for an Enclosed Structure does not exempt the applicant from complying with city codes and zoning.
Within City Limits of:
Within Extraterritorial Jurisdiction of City of: Waco
19. Deed Recordation
■ Verify that the property owner filed a written notice for record in the real property records in the county where the land is located in accordance with 30 TAC §330.962 stating: (a) the former use of the land; (b) the legal description of the tract of land that contains the closed MSW landfill; (c) notice that restrictions on the development or lease of the land exist in the Texas Health and Safety Code and in MSW rules; and (d) the name of the owner.
■ A certified copy of the Notice to Real Property Records is included in this application in accordance with 30 TAC §330.957(p).
20. Notice to Buyers, Lessees, and Occupants of the Structure
Did the property owner give written notice to all prospective buyers, lessees and/or occupants of the structure in accordance with 30 TAC §330.963 stating the land's former use as a landfill, and the structural controls in place to minimize potential future danger posed by the closed MSW landfill?
☐ Yes ■ New Structure Not Yet Constructed
If "Yes" certified copies of the notices shall be submitted to TCEQ in accordance with 30 TAC $\S 330.957(p)$.
If "New Structure Not Yet Constructed" a draft notice to all prospective buyers, lessees

21. Notice of Lease Restrictions on the Property
Is the property leased?
☐ Yes ■ No
If "Yes", verify that the property owner provided written notice to all prospective lessees of the property in accordance with 30 TAC §330.964 concerning:
\square (a) what is required to bring the property into compliance with 30 TAC Chapter 330, Subchapter T?
\square (b) the prohibitions or requirements for future disturbance of the final cover?
\square A certified copy of the notice is included in the application in accordance with 30 TAC §330.957(p).

Professional Engineer's Certification of No Potential Threat to Public Health or the Environment

"I,	_, Texas PE Number	, certify that
the proposed development is necessary to reduce notion of any component of the Closed Mubut not limited to, the final cover, containment certification includes all documentation of all states determinations."	uce a potential threat to public hed development will not damage inicipal Solid Waste Landfill Unit tystems, monitoring system, o	nealth or the the integrity , including, r liners. This
Engineer's seal, with signature and date:		
Engineering Firm Name:		_
Texas Board of Professional Engineers and Lan	d Surveyors Firm Number:	
Or:		
, Jeff Arrington	, Texas PE Number 61895	. certify that
the proposed development will not increase or the environment. Further, I certify that the pr integrity or function of any component of the C including, but not limited to, the final cover, co liners. This certification includes all documenta in making these determinations."	create a potential threat to pub oposed development will not da Closed Municipal Solid Waste Lan ontainment systems, monitoring	lic health or mage the adfill Unit, system, or which I relied
Engineer's seal, with signature and date:	JEFFREY ARRINGTON 8 61895	
Engineering Firm Name: SCS Engineers	Jelizu	M
Texas Board of Professional Engineers and Lan	d Suprement Firm Number F-3	3407

Signature Page

Name: Bradley Ford

Applicant Certification

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

Name: Bradley Ford	Title: City Manager
Signature:	Date: <u>5-3-23</u>
Email Address: bradleyf@wacotx.gov	
SUBSCRIBED AND SWORN to before me by the s	said Bradly Ford
On this <u>3</u> day of <u>11(40)</u> , <u>2023</u>	()
My commission expires on the 17 day of	comba 2026
	SHIP CHARLES AND STATES
Notary Public in and for	1 P 1 P 1
MC Kennam County, Texas	
Property Owner Authorization	Comba 2026 Comba
To be completed by the property owner if the pro	operty owner is not the applicant.
31	, the owner of the property identified by
Notary's Name: McLeub Back Notary Public in and for County, Texas Property Owner Authorization To be completed by the property owner if the property own	,hereby authorize the this application, and to apply for any project. I understand that, as property grity of the final cover over the closed MSW
Property Owner Name:	
Signature:	
Email Address:	
SUBSCRIBED AND SWORN to before me by the sa	aid
On this day of ,	
My commission expires on the day of	
Notary's Name:	
Notary Public in and for	
County, Texas	

Attachments for New Development Permit

Required Attachments

A. Narrative

Attachment	Attachment Number
Proposed Project Description	Section 1
Existing Conditions Summary	Section 3
Legal Authority	Section 4
Evidence of Competency	Section 5
Notice of Engineer Appointment	Section 6
Notices of Coordination with Governmental Agencies and Officials	Section 7
Geology and Soil Statement	Appendix A
Groundwater and Surface Water Statement	Section 12
Foundation Plans	Appendix B
Soil Tests	Appendix A
Closure Plan	Section 17
Structures Gas Monitoring Plan	Section 20
Site Operating Plan	Section 19
Safety and Evacuation Plan	Section 21

B. Maps and Plans

Attachment	Attachment Number
Adjacent Landowners Map	After cover letter
Adjacent Landowners List	After cover letter
Electronic List or Mailing Labels	After cover letter
General Location Map	Section 10
General Topographic Map	Section 10
Site Layout Plan with Limits of Waste Disposal Area	Section 9
Foundation Plans	Section 13
Structure Layout Plan	Section 20
Methane Monitoring Equipment Location Plans	Section 20
Construction Details and Engineering Drawings	Section 20

C. Copies of Legal Documents

Attachment	Attachment Number
Property Legal Description	Section 8
Notice of Landfill Determination	N/A
Notice to Real Property Records	Section 16
Notices to Buyers, Lessees, and Occupants	Section 16
Notices of Lease Restrictions (if applies)	N/A

Additional Attachments as Applicable

Attachment	Attachment Number
☐ TCEQ Core Data Form(s)	N/A
☐ Confidential Documents	N/A
☐ Soil Tests Boring Logs	Appendix A
Other maps, plans and engineering drawings	Appendix B
☐ Methane Monitoring Equipment Specifications	Appendix C
☐ Methane Monitoring Report	Section 20
☐ Waste Disposal Manifests	N/A
☐ Fee Payment Receipt	After cover letter
☐ Final Plat Record of Property	N/A

Attachments for Revisions to Existing Development Permit

Required Attachments

A. Revised Pages

Attachment	Attachment Number
Marked (Redline/Strikeout) Pages	
Unmarked Revised Pages	

B. Narrative

Attachment	Attachment Number
Description of Proposed Revisions	
Foundation Plans (if revised)	
Closure Plan (if revised)	
Site Operating Plan (if revised)	
Structures Gas Monitoring Plan (if revised)	
Safety and Evacuation Plan (if revised)	

C. Maps and Plans

Attachment	Attachment Number
General Location Map	
Site Layout Plan	
Structure Layout Plan	
Methane Monitoring Equipment Location Plans	

Additional Attachments as Applicable

Attachment	Attachment Number

SCS ENGINEERS

3900 Kilroy Airport Way, Suite 100 Long Beach, CA 90806-6816 1-800-767-4727 MUFG UNION BANK, N.A.

445 Figueroa Street Los Angeles, CA 90071

> 16-49 1220

339740

CHECK DATE

April 25, 2023

PAY

Two Thousand Five Hundred and 00/100 Dollars

TO TCEQ

MC 214 FINANCIAL ADMINISTRATION DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY PO BOX 13087 Austin, TX 78711-3087 **AMOUNT**

2,500.00

TWO SIGNATURES REQUIRED OVER FIVE THOUSAND DOLLARS VOID IF NOT CASHED IN 90 DAYS

Sen 80

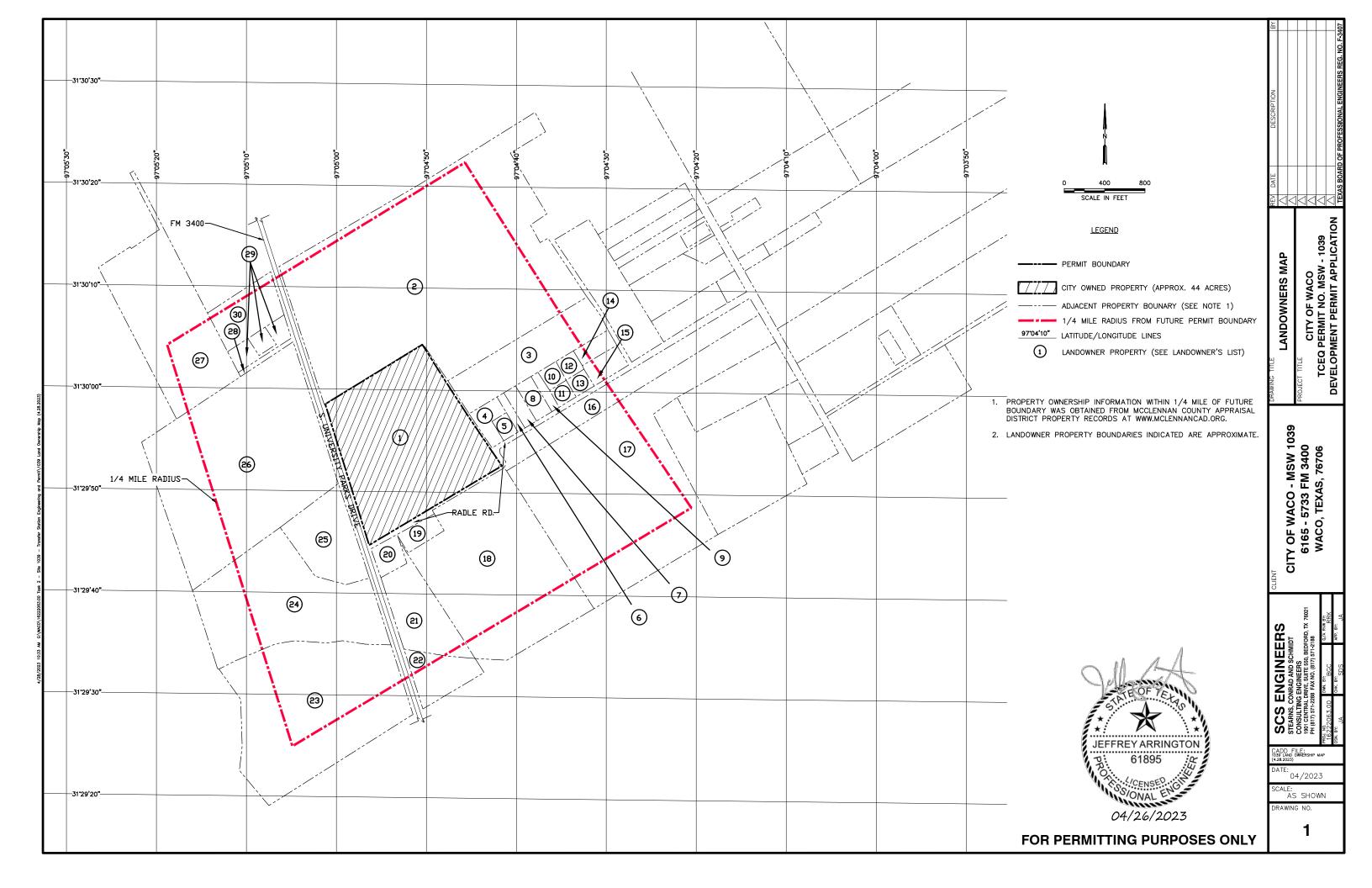
#339740# #122000496# 5320121487#

S C S ENGINEERS

339740

Check Date: 4/25/2023

Check Date. 4/25/2025						
Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
FORM 20725 04/25/23	4/25/2023	4335272	2,500.00			2,500.00
TCEQ		TOTAL	2,500.00			2,500.00
Union Bank-Accts Pavable	135	0337340				



City of Waco - MSW 1039 Landowners List

1.	City of Waco Attn: Property Management P.O. Box 2570 Waco, TX 76720	2.	DBA Loredo Trucking 1551 Old Bethany Road Bruceville, TX 76630	3.	Andrew James Et Al Heir 650 Jerico Road Waco, TX 76706
4.	Balderas, Julian 445 Radle Road Waco, TX 76706	5.	Balderas, Julian 445 Radle Road Waco, TX 76706	6.	Ware, Lisa M 499 Radle Road Waco, X 76706
7.	Ware, George D & Lisa 499 Radle Road Waco, X 76706	8.	Brandon Mary Louise 525 Radle Road Waco, TX 76706	9.	Brandon Barrett Lee 525 Radle Road Waco, TX 76706
10.	Wiley, Kenneth 3309 Robinson Drive Apt 504 Waco, TX 76706	11.	Wiley, Lula Margaret Etvir 577 Radle Road Waco, TX 76706	12.	Wiley, Freddie 577 Radle Road Waco, TX 76706
13.	Holmes Ida Mae 2728 Madison Drive Waco, TX 76706	14.	Anderson, Mike 123 M J R Road Waco, TX 76706	15.	Anderson, Michael Ray Etux 123 M J R Road Waco, TX 76706
16.	Transit Mix Concrete & Materials Co 2525 N Stemmons Fwy Dallas, TX 75207	17.	Transit Mix Concrete & Materials Co 2525 N Stemmons Fwy Dallas, TX 75207	18.	Radle, Bobby R 817 Val Verde Place Marlin, TX 76661
19.	Radle, Bobby R 817 Val Verde Place Marlin, TX 76661	20.	Radle, Bobby R 817 Val Verde Place Marlin, TX 76661	21.	Radle, Bobby R 817 Val Verde Place Marlin, TX 76661
22.	Radle, Bobby R 817 Val Verde Place Marlin, TX 76661	23.	Trinity Materials Inc P.O Box 373 Ferris, TX 75125	24.	Lushaj Dyzet & Cindy 7506 Ledbetter Road Arlington, TX 76001
25.	Dona & Wayland Howard Parks 7448 Yolanda Drive Ft Worth, TX 76112	26.	Naegeli Stephen B & Lori A 1315 Carnation Street Katy, TX 77493	27.	Luna Alfonso P.O. Box 205 Waco, TX 76703
28.	H W H Company P.O. Box 1086 Hewitt, TX 76643	29.	Holzman Walter Richard Jr Etal 2824 Washington Street Waco, TX 76710	30.	3C Mechanical Technologies Inc 538 Jancy Street Robinson, TX 76706

Subchapter T Development Permit Application (30 TAC § 330.957)

City of Waco Transfer Station Closed City of Waco Landfill, MSW Permit No. 1039

501 Schroeder Dr Waco, Texas 76710



Date: 05/01/2023

SCS ENGINEERS

16222063.00 | May 2023

1901 Central Dr., Suite 550 Bedford, TX 76021 817-571-2288

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- C Methane Monitoring Equipment Specifications
- D Landfill Safety Requirements
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Date: 05/01/2023

1 INTRODUCTION AND BACKGROUND

The City of Waco is planning to develop a new municipal solid waste (MSW) transfer station over a closed landfill site (MSW Permit No. 1039) located on S. University Parks Dr. in Waco, Texas. The transfer station will be designed to process up to 1,800 tons/day of waste. The proposed facilities include a new MSW transfer station, scale house building and scales, a citizen's collection station (CCS), and a new paved access drive with parking for trucks and vehicles. The proposed transfer station building will be constructed in the northeast corner of the site, approximately 130 feet from the east property line. The City of Waco will initially develop a 180' x 120' size transfer station building with the option of expanding it to 180' x 200' in future as needed. A new paved access road will be constructed to connect the facility to South University Parks Dr. located along the western boundary of the landfill. Additional paved areas will be constructed around the transfer station to provide for access to the building for collection and transfer trucks. A new CCS, approximately 150' x 300' in size, will be constructed adjacent to the transfer station consisting of additional pavement and retaining walls to enable unloading into open top containers. The proposed improvements will be constructed over the final cover of the landfill and will include two enclosed structures (transfer station and scale house buildings) as defined by Subchapter T rules and, as such, requires the submittal of a development permit application (application).

This application is submitted consistent with the provisions of 30 TAC §330.957 related to construction of an enclosed structure over a closed MSW landfill unit and includes the required technical information outlined under 30 TAC §330.957(a) through (u), including:

- Foundation Plan for Gas Collection and Methane Barrier in Section 13:
- Methane Monitoring Plan in Section 20;
- Operations Plan in Sections 19-21;
- Permit-Level Drawings in Appendix B.

The individual section headings also indicate the regulatory citations within 30 TAC §330.957 that are addressed within the contents of each section. Appendix A contains the geotechnical investigation to determine the nature and thickness of the landfill cover, the investigation for the presence of methane, and recommendations for foundation and pavement construction over the closed landfill. Appendix B also contains permit-level drawings for the proposed improvements, including civil, architectural, and structural drawings. Appendix C contains methane monitoring equipment specifications, and landfill safety requirements are contained in Appendix D. Notice of coordination letters for all local, state, and federal government official and agencies are included Appendix E, and a copy of the certified City Charter is included in Appendix F.

2 ENGINEER'S CERTIFICATION (30 TAC §330.957(b))

Certification of no Potential Threat to Public Health or the Environment:

I, Jeff Arrington, P.E. #61895 certify that the proposed development will not increase or create a potential threat to public health or the environment. Further, I certify that the proposed development will not damage the integrity or function of any component of the Closed Municipal Solid Waste Landfill Unit, including, but not limited to, the final cover, containment systems, monitoring system, or liners. This certification includes all documentation of all studies and data on which I relied in making these determinations.



3 EXISTING CONDITIONS SUMMARY (30 TAC §330.957(c))

3.1 Land Use

The current land use for the closed landfill is open grassed turf that is part of the final cover of the landfill. The landfill property is owned and maintained by the City of Waco. The existing land use around the closed landfill is a mix of residential and industrial uses. The property is located outside the City limits within the Extra-territorial Jurisdiction (ETJ) of Waco. The site is entirely outside of the 100-year floodplain.

3.2 Site Investigation

A site investigation was performed on this property in January 2023 by Klingerman Foster that included soil borings and laboratory testing. The purpose of the investigation was to obtain information on the subsurface conditions for use in the design of the proposed structure and new features. Additional information was obtained on the nature and thickness of final cover soils, methane levels in the waste, and the vertical and horizontal extent of the landfilled waste at the closed landfill site.

3.3 Condition of Final Cover (30 TAC §330.957(c)(1))

In general, the landfill cover consists of fat clay, lean clay, and clayey sand with some gravel. The landfill has established vegetative cover. The field investigation determined that the landfill cover thickness varied from 2 to 3 feet across most of the landfill with a few areas that had cover thickness in the range of 4 to 6 feet thick. The vegetative layer is typically several inches thick. Boring logs of the final cover in the area of the proposed construction are included in the geotechnical site investigation report included in Appendix A. Any areas of the cap that are disturbed during construction will be restored to the minimum of two feet of clay rich soil. Appropriate construction quality control will be implemented and documented to assure completion consistent with TCEQ rules. Existing cover soils are generally clayey sand and lean sandy clay soils that provide adequate protection for the closed landfill. The proposed construction will include maintaining the required cover thickness and enhancing the vegetative cover and drainage as part of the site improvements.

3.4 Waste Characterization (30 TAC §330.957(c)(2))

The closed landfill site was used for disposal of MSW and potentially construction/demolition debris from the City of Waco in the 1970s and early 1980s. The site stopped receiving waste in the early 1980's and was closed in accordance with TCEQ permit requirements at the time of closure. The permit was not revoked at the end of the post-closure maintenance period. Waste fill depths are in the range of 10 to 25 feet based on the geotechnical field investigation. The age of the waste is approximately 40 to 50 years old based on a review of historic photographs and available permit files. Waste materials may have included both putrescible and non-putrescible wastes, although detailed data on waste characterization is not available. The recent geotechnical investigation identified waste materials as fragments of glass, brick, wood and plastic.

The waste limits of the landfill were established during the geotechnical field investigation and are shown on the site plan drawing 9.1 provided in Section 9.

3.5 Gas Production Potential (30 TAC §330.957(c)(3))

Based on the age of the waste and readings of methane taken in the soil borings during the geotechnical field investigation, landfill gas production is expected to continue at low to moderate levels for near future. As such, methane mitigation measures will be an important component of the proposed structures and site improvements. Proposed improvements will add some impervious layers including concrete pavement and building foundations which are not expected to have an effect on methane gas production at this site.

3.6 Potential Environmental Impacts (30 TAC §330.957(c)(4))

The construction activities that will impact the final cover of the closed landfill consist of the construction of a new single story solid waste transfer station building with roll-up doors. A scale house building will also be constructed between the inbound and outbound scales near the site entrance. The new buildings will be constructed on a reinforced concrete slab foundation that will include installation of drilled piers to a stable bedding layer and a structural concrete slab for the floor. The subgrade will be prepared as outlined in the geotechnical report, provided in Appendix A, and the methane gas ventilation and impermeable barrier will be installed as outlined in Sections 13 and 20.

Grading will generally be limited to the building footprint and pavement areas only as required to achieve the proposed finished floor elevations. Final cover will be restored to its original condition in areas that are disturbed during construction. The building slabs and paved areas will be constructed with engineered fill placed above the final cover. The proposed building construction will add impervious surfaces over the closed landfill. The fill areas adjacent to the buildings will be graded to maintain the established grass cover and positive drainage that currently exists at the site. A minimum of 2 foot of clean clay soil cover will be re-established in all areas that will be impacted by grade changes and foundation construction. Clay shall be defined as low plasticity clay (CL) or high plasticity clay (CH) material.

Proposed utility improvements include the installation of water and sewer lines to serve the buildings. Any utilities that are installed below the landfill cover will maintain a minimum of 2 feet of clay soil separation from the waste to the methane protection system underneath. Utility trenches for all water and sanitary sewer lines will be installed with trench liners comprised of 40 mil LLDPE/HDPE geomembrane. Water and sanitary sewer connections to the plumbing for the buildings will also be part of this construction. The proposed construction will not adversely impact the landfill cover since any soil removed or disturbed will be replaced with soil that has similar characteristics.

The construction of the proposed improvements will not endanger the health, safety, or welfare of the public.

4 LEGAL AUTHORITY (30 TAC §330.957(d))

The applicant, the City of Waco, is an incorporated city in the State of Texas with an estimated population of over 135,000, based on current estimates. A copy of the certified City Charter is provided in Appendix F.

5 EVIDENCE OF COMPETENCY (30 TAC §330.957(e))

5.1 City of Waco

The applicant, the City of Waco, currently owns and operates a Type I MSW Landfill, TCEQ Permit No. MSW-948A (Site 948A). This site was initially permitted under MSW Permit No. 948 on July 22, 1977, and subsequently a permit amendment was approved on September 21, 1987. While Site 948A is the only landfill that the City has operated in the last 10 years, the City previously operated the following MSW landfills, which have been closed in accordance with TCEQ requirements:

- Closed City of Waco Landfill, Permit No. MSW-1419 issued on September 3 1981, located on FM 3400 southeast of Waco; stopped accepting waste on June 17, 1986.
- Closed City of Waco Landfill, Permit No. MSW-1039 issued on July 22, 1977, located on FM 3400 southeast of Waco; stopped receiving waste on June 24, 1983.

The competency of the City of Waco to manage the closed landfill (Permit No. MSW-1039) is evidenced by the City's operating history over 20 years of operating Site 948A and prior closed sites in previous periods. The City of Waco has no financial interest in any solid waste facilities in any other states, territories, or countries.

As with MSW Permit No. 948A, the closed landfill and the transfer station at MSW Permit No. 1039 will be managed within the City's Solid Waste Department. Key personnel include the Director of Solid Waste and Landfill Manager both of which have experience in operation and maintenance of MSW landfills and transfer stations and at least one of which maintain a TCEQ MSW Class "A" license.

6 NOTICE OF APPOINTMENTS (30 TAC §330.957(f))

The notice of appointment for the applicant's engineer is included on the following page.

NOTICE OF APPOINTMENT Engineers Appointment

Jon Niermann Chairman Texas Commission on Environmental Quality P.O. Box 13087 Austin, Texas 78711-3087

Dear Mr. Niermann:

This is to advise the TCEQ that the City of Waco has duly appointed SCS Engineers as consulting and design engineers for the purpose of submitting engineering reports and planning material for a Subchapter T Development Permit Application for City of Waco located on S. University Parks Drive at the site of the closed landfill MSW Permit No. 1039. SCS Engineers is an engineering firm employing professional engineers in good standing in accordance with State statutes, and the firm has experience in the design and construction of similar facilities. Mr. Jeff Arrington, P.E., Project Manager with SCS Engineers, is the engineer of record for this application.

The City of Waco hereby herewith authorizes TCEQ to review and comment on such reports, planning material, and data on this project as SCS Engineers may submit to you.

By:

City of Waco

Signature

By:

Bradley Ford, City Manager, City of Waco, Texas

7 NOTICE OF COORDINATION (30 TAC §330.957(g))

The following entities have been provided with an opportunity to review the plans for this facility. Documentation of coordination with these regulatory agencies is included in Appendix E.

- · County Judge;
- Notice to County Clerk;
- City/County Health Department;
- County Engineer/Local Floodplain Administrator;
- City Mayor;
- Fire Chief;
- Director of Public Works;
- Director of Utilities;
- Director of Planning;
- Building Inspector;
- District Engineer;
- Southwest Region (Ft. Worth, Texas) FAA;
- Executive Director Texas Parks and Wildlife Department;
- State Representative (District 56);
- State Senator (District 22);
- Executive Director Council of Governments;
- General Manager/CEO Brazos River Authority;
- US Fish and Wildlife Services (Austin Ecological Services Field Office): and
- Regulatory Branch (Ft. Worth, TX) USACOE.

8 LEGAL DESCRIPTION (30 TAC §330.59(h))

Consistent with 30 TAC §330.59(d), property owner affidavit and boundary survey and legal description are included on the following pages.

PROPERTY OWNER AFFIDAVIT

The City of Waco, the owner of record of the properties described in Attachment A hereto (approximately 44 acre Tract, Waco, Texas), acknowledges and is aware that SCS Engineers plans to file for a permit to construct an enclosed structure upon said property.

The City of Waco acknowledges that the State of Texas may hold the City of Waco either jointly or severally responsible for the operation, maintenance, and closure of the facility.

The City of Waco acknowledges the site 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.

WITNESS MY HAND on this day, Will 3, 2023.

City of Waco

Waco, TX 76798-7111

By: Bradley Ford, City Manager, City of Waco, Texas

Signature

SWORN TO AND SUBSCRIBED BEFORE ME by the said ______ this 3__ day of ______, 2023, to certify which witness my hand and seal of office.

Notary Public in and for _____ County, Texas

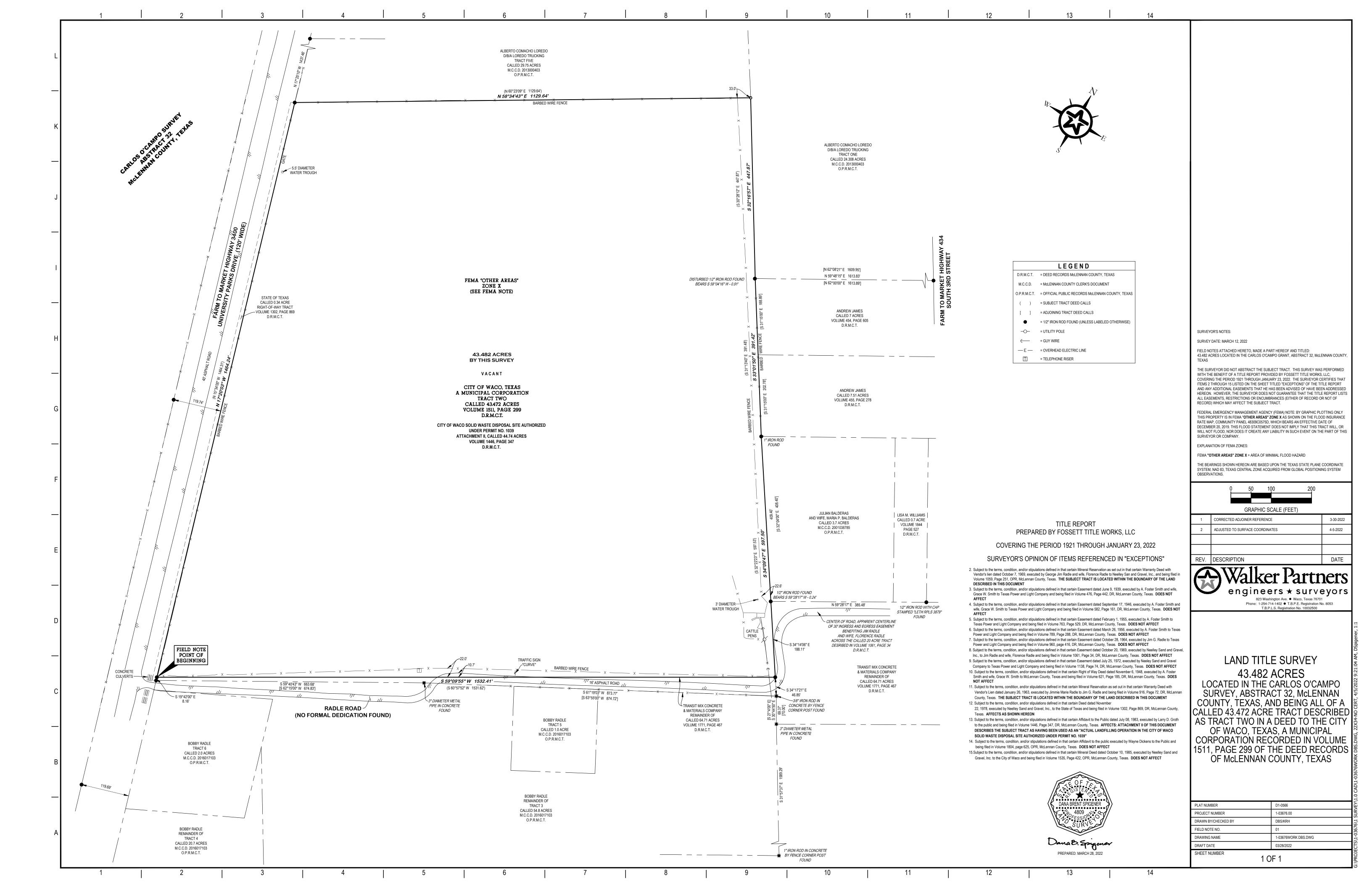
My commission expires on 12.17.2026

Printed Name Michele Bean
Wichele Blan



SECTION 8 ATTACHMENT A

BOUNDARY SURVEY AND LEGAL DESCRIPTION





823 Washington Ave., Suite 100 Waco, Texas 76701

43.482 ACRES LOCATED IN THE CARLOS O'CAMPO SURVEY, ABSTRACT 32, McLENNAN COUNTY, TEXAS

FIELD NOTES FOR A 43.482 ACRE TRACT OF LAND LOCATED IN THE CARLOS O'CAMPO SURVEY, ABSTRACT 32, McLENNNAN COUNTY, TEXAS, AND BEING ALL OF A CALLED 43.472 ACRE TRACT DESCRIBED AS TRACT TWO IN A DEED TO THE CITY OF WACO, A MUNICIPAL CORPORATION RECORDED IN VOLUME 1511, PAGE 299 OF THE DEED RECORDS OF McLENNAN COUNTY, TEXAS (D.R.M.C.T.). SAID 43.482 ACRE TRACT BEING MORE PARTICULARLY SHOWN ON THE ATTACHED LAND TITLE SURVEY DRAWING AND FURTHER DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD FOUND IN THE EAST RIGHT-OF-WAY LINE OF FARM TO MARKET HIGHWAY 3400, ALSO KNOWN AS UNIVERSITY PARKS DRIVE (120' WIDE), SAME BEING THE EAST LINE OF A CALLED 0.34 ACRE RIGHT-OF-WAY TRACT DESCRIBED IN A DEED TO THE STATE OF TEXAS RECORDED IN VOLUME 1302, PAGE 869 OF THE D.R.M.C.T., IN THE NORTH MARGIN OF RADLE ROAD (NO FORMAL DEDICATION FOUND) AT THE NORTHWEST CORNER OF THE REMAINDER OF A CALLED 64.71 ACRE TRACT DESCRIBED IN A DEED TO TRANSIT MIX CONCRETE & MATERIALS COMPANY RECORDED IN VOLUME 1771, PAGE 467 OF THE D.R.M.C.T. SAID 1/2" IRON ROD FOUND MARKING THE SOUTHWEST CORNER OF SAID 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT, FROM WHICH A 1/2" IRON ROD FOUND IN THE EAST RIGHT-OF-WAY LINE OF FARM TO MARKET HIGHWAY 3400 MARKING THE SOUTHEAST CORNER OF SAID 0.34 ACRE TRACT AND THE SOUTHWEST CORNER OF THE REMAINDER OF SAID 64.71 ACRE TRACT BEARS S 19°42'00" E – 8.16';

THENCE N 17°20'03" W – 1464.24' WITH THE EAST RIGHT-OF-WAY LINE OF SAID FARM TO MARKET HIGHWAY 3400 GENERALLY ALONG A BARBED WIRE FENCE TO A 1/2" IRON ROD FOUND MARKING THE SOUTHWEST CORNER OF A CALLED 29.75 ACRE TRACT DESCRIBED AS TRACT FIVE IN A DEED TO ALBERTO COMACHO LOREDO, D/B/A LOREDO TRUCKING RECORDED IN McLENNAN COUNTY CLERK'S DOCUMENT (M.C.C.D.) 2013000403 OF THE OFFICIAL PUBLIC RECORDS OF McLENNAN COUNTY, TEXAS (O.P.R.M.C.T.), SAME BEING THE NORTHWEST CORNER OF SAID 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT, FROM WHICH A 1/2" IRON ROD FOUND IN THE EAST RIGHT-OF-WAY LINE OF FARM TO MARKET HIGHWAY 3400 MARKING THE NORTHWEST CORNER OF SAID 29.75 ACRE TRACT BEARS N 17°25'10" W – 1437.46';

THENCE N 58°34'43" E – 1129.64' WITH THE COMMON LINE OF SAID 43.472 ACRE TRACT AND SAID 29.75 ACRE TRACT, GENERALLY ALONG A BARBED WIRE FENCE TO A 1/2" IRON ROD WITH A CAP STAMPED "WALKER PARTNERS" SET IN THE WEST LINE OF A CALLED 24.308 ACRE TRACT DESCRIBED AS TRACT ONE IN IN SAID DEED TO ALBERTO COMACHO LOREDO, D/B/A LOREDO TRUCKING FOR THE SOUTHEAST CORNER OF THE 29.75 ACRE TRACT, SAME BEING THE NORTHEAST CORNER OF THE 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

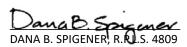
THENCE S 32°16′57″ E – 447.87′ WITH THE COMMON LINE OF SAID 43.472 ACRE TRACT AND SAID 24.308 ACRE TRACT TO A 1/2″ IRON ROD WITH A CAP STAMPED "WALKER PARTNERS" SET MARKING THE SOUTHWEST CORNER OF THE 24.308 ACRE TRACT, SAME BEING THE NORTHWEST CORNER OF A CALLED 7 ACRE TRACT DESCRIBED IN A DEED TO ANDREW JAMES RECORDED IN VOLUME 454, PAGE 605 OF THE D.R.M.C.T. FOR AN ANGLE POINT OF THE 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT, FROM WHICH A DISTURBED 1/2″ IRON ROD FOUND BEARS S 58°04′16″ W – 0.91′, AND A 1/2″ IRON ROD FOUND IN THE WEST RIGHT-OF-WAY LINE OF FARM TO MARKET HIGHWAY 434, ALSO KNOWN AS SOUTH 3RD STREET MARKING THE NORTHEAST CORNER OF THE 7 ACRE TRACT BEARS N 59°48′15″ E – 1613.83′;

THENCE S 33°01′50″ E – 391.42′ WITH THE EAST LINE OF SAID 43.472 ACRE TRACT, BEING COMMON WITH THE WEST LINE OF SAID 7 ACRE TRACT AND THE WEST LINE OF A CALLED 7.51 ACRE TRACT DESCRIBED IN A DEED TO ANDREW JAMES RECORDED IN VOLUME 455, PAGE 278 OF THE D.R.M.C.T., GENERALLY ALONG A BARBED WIRE FENCE TO A 1″ IRON ROD FOUND MARKING THE SOUTHWEST CORNER OF SAID 7.51 ACRE TRACT, SAME BEING THE NORTHWEST CORNER OF A CALLED 3.7 ACRE TRACT DESCRIBED IN A DEED TO JULIAN BALDERAS AND WIFE, MARIA P. BALDERAS RECORDED IN M.C.C.D. 2001038785 OF THE O.P.R.M.C.T. FOR AN ANGLE POINT OF THE 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

www.WalkerPartners.com

THENCE S 34°09'47" E – WITH THE COMMON LINE OF SAID 43.472 ACRE TRACT AND SAID 3.7 ACRE TRACT, AT 409.40' PASS THE SOUTHWEST CORNER OF THE 3.7 ACRE TRACT, SAME BEING AN OUTSIDE CORNER OF THE ABOVE MENTIONED REMAINDER OF THE CALLED 64.71 ACRE TRANSIT MIX CONCRETE & MATERIALS COMPANY TRACT, FROM WHICH A 1/2" IRON ROD FOUND FOR REFERENCE BEARS S 59°28'17" W – 0.24', CONTINUING WITH THE COMMON LINE OF THE 43.472 ACRE TRACT AND THE REMAINDER OF THE 64.71 ACRE TRACT A TOTAL DISTANCE OF 597.50' TO A 1/2" IRON ROD FOUND MARKING AN INSIDE CORNER OF THE REMAINDER OF THE 64.71 ACRE FOR THE SOUTHEAST CORNER OF THE 43.472 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT, FROM WHICH A 3/8" IRON ROD IN CONCRETE BY A FENCE CORNER POST FOUND MARKING AN INSIDE CORNER OF THE REMAINDER OF THE 64.71 ACRE TRACT AT THE NORTHEAST CORNER OF THE REMAINDER OF A CALLED 54.8 ACRE TRACT DESCRIBED AS TRACT 3 IN A DEED TO BOBBY RADLE RECORDED IN M.C.C.D. 2016017103 OF THE 0.P.R.M.C.T. BEARS S 34°17'21" E – 46.85', AND A 3" DIAMETER METAL PIPE IN CONCRETE FOUND IN THE EAST LINE OF THE REMAINDER OF SAID 54.8 ACRE TRACT MARKING AN OUTSIDE CORNER OF THE REMAINDER OF THE 64.71 ACRE TRACT BEARS S 34°17'21" E – 46.85' AND S 30°44'50" E – 69.37';

THENCE S 59°09'55" W – 1532.41' WITH THE COMMON LINE OF SAID 43.472 ACRE TRACT AND THE REMAINDER OF SAID 64.71 ACRE TRACT RETURNING TO THE **POINT OF BEGINNING** AND CONTAINING 43.482 ACRES OF LAND AS SURVEYED BY DANA B. SPIGENER, REGISTERED PROFESSIONAL LAND SURVEYOR, NO. 4809 ON MARCH 12, 2022. BEARINGS CITED WITHIN THIS DESCRIPTION ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, NAD 83, TEXAS CENTRAL ZONE ACQUIRED FROM GLOBAL POSITIONING SYSTEM OBSERVATIONS.



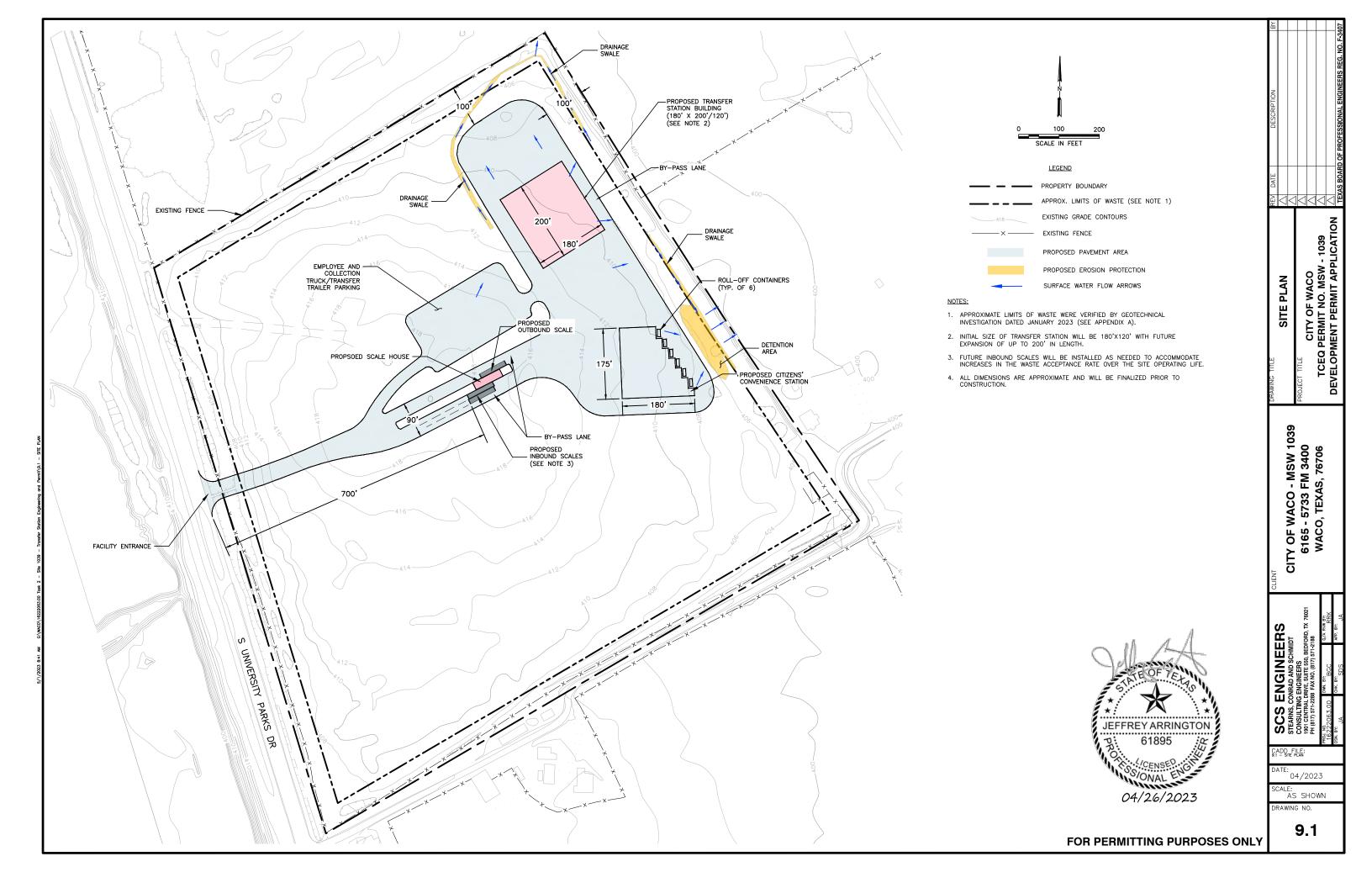
PREPARED: MARCH 28, 2022 REVISED: APRIL 5, 2022 PROJ NO. 1-03676.00 PLAT NO. D1-0566 FIELD NOTE NO. 01 43.482 AC

MAP CHECKED: APRIL 5, 2022



9 SITE DRAWING (30 TAC §330.957(i))

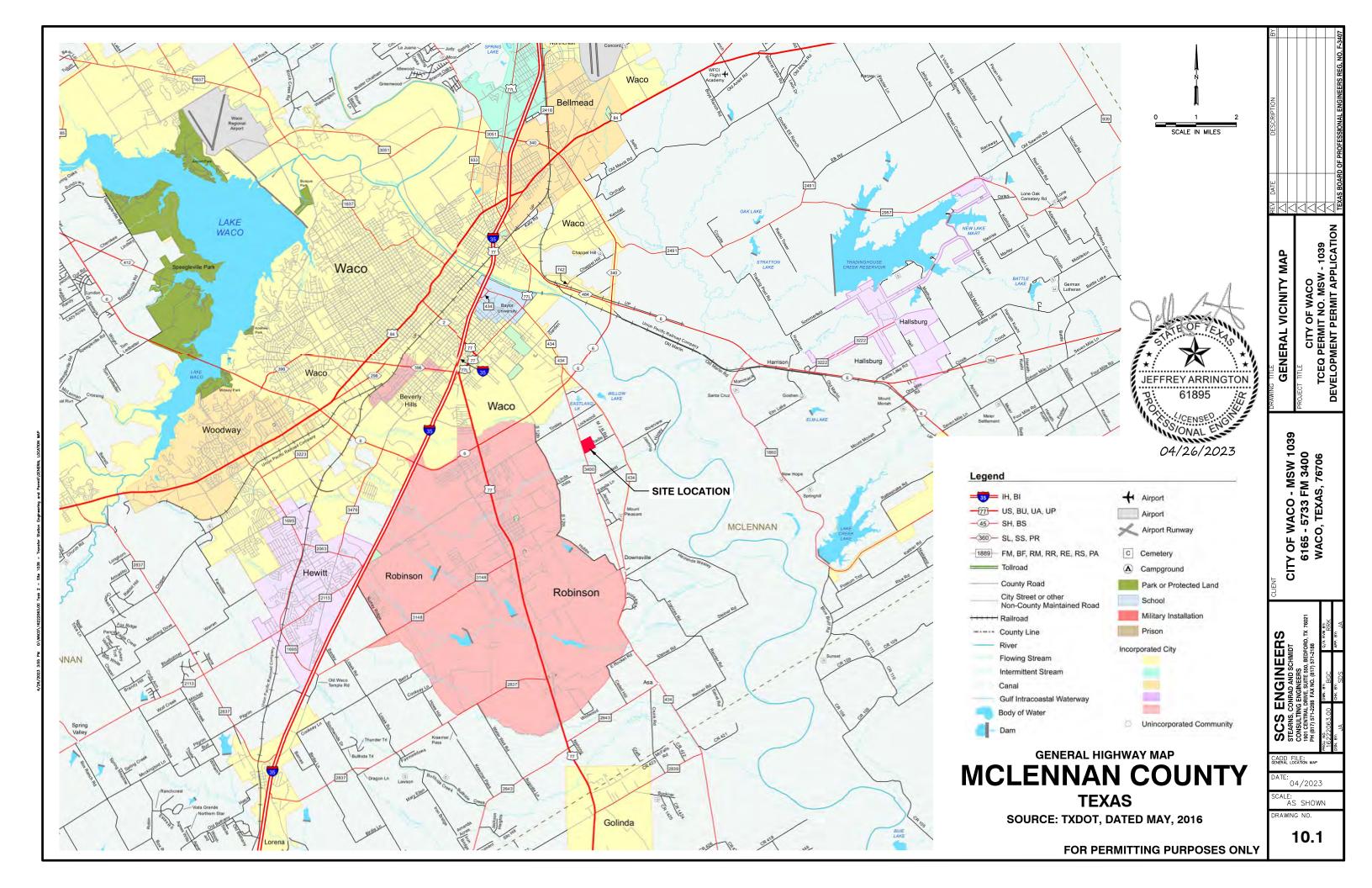
Drawing No. 9.1 - Site Drawing

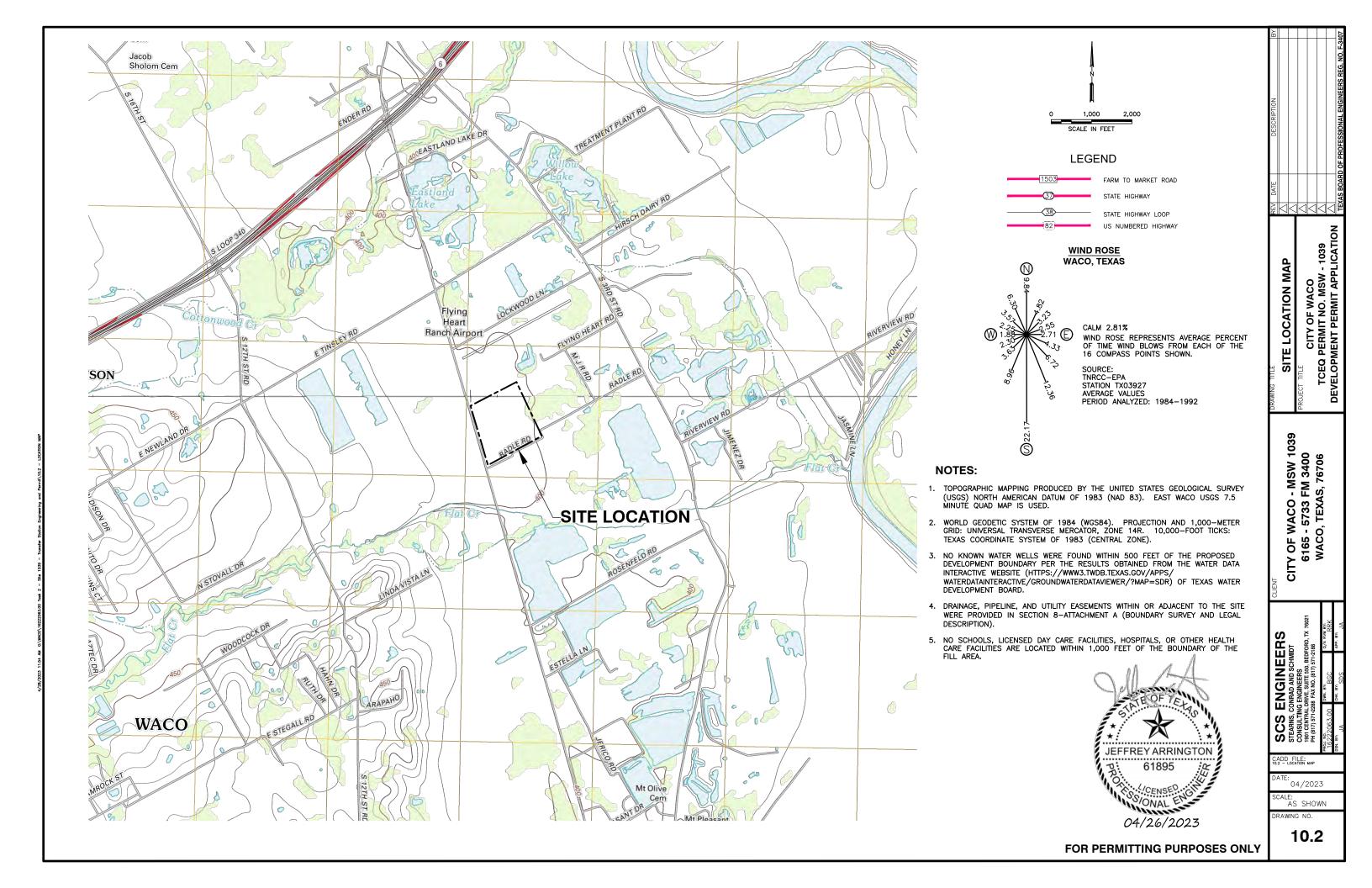


10 MAPS (30 TAC §330.957(j))

Drawing No. 10.1 - General Location Map (McLennan County Highway Map); and

Drawing No. 10.2 – Site Location Map (General Topographic Map).





11 GENERAL GEOLOGY AND SOILS STATEMENT (30 TAC §330.957(k))

Based on the available geologic map of the area and the contents of the borings completed during the geotechnical investigation (see Appendix A), the site is located within alluvial deposits overlying the shale of the Taylor formation below the existing fill material.

Alluvial deposits are derived from ancient meandering paths and flood events of the Brazos River. Due to the inconsistent means of deposition, the deposits vary both horizontally and vertically in content and engineering properties. From a geologic perspective, alluvial deposits are considered recent.

The underlying Taylor Formation consists of montmorillonite clays that were deposited in a shallow marine environment, and have a maximum thickness of 500 to 775 feet in thickness in the central Texas area. After deposition, the clays consolidated to form a weak rock-like clay shale material when sufficient amounts of calcium carbonate were present as a cementing agent. This soft rock-like clayshale material is dark gray in color.

The closed landfill contains potential migration pathways for leachate and landfill gas including, possible cracks in the landfill cover, less permeable soil layers, and the waste mass within the landfill. These features are typical of closed landfills of this age and do not represent conditions that are inconsistent with the closure plan or closure requirements.

12 GROUNDWATER AND SURFACE WATER STATEMENT (30 TAC §330.957(I))

12.1 Groundwater Statement

Based on soil borings performed during the Geotechnical Investigation in 2023 (See Appendix A), groundwater was encountered at depths ranging between 6 feet and 23 feet below ground surface.

Groundwater levels are expected to rise and fall on a seasonal basis, and are influenced by rainfall and the level of the Brazos River. Groundwater levels within the landfill may be different from groundwater levels outside the landfill. The water observations conducted for this investigation are short-term and should not be interpreted as a groundwater study. However, the presence of groundwater will affect construction and long-term performance of the proposed foundations and pavements. The proposed deep foundation will adequately address the presence of ground water and solid waste.

12.2 Surface Water Statement

Surface water will generally sheet flow away from the buildings and pavement into the existing swales along the highway and along the property lines. The existing drainage patterns will be maintained with the proposed improvements.

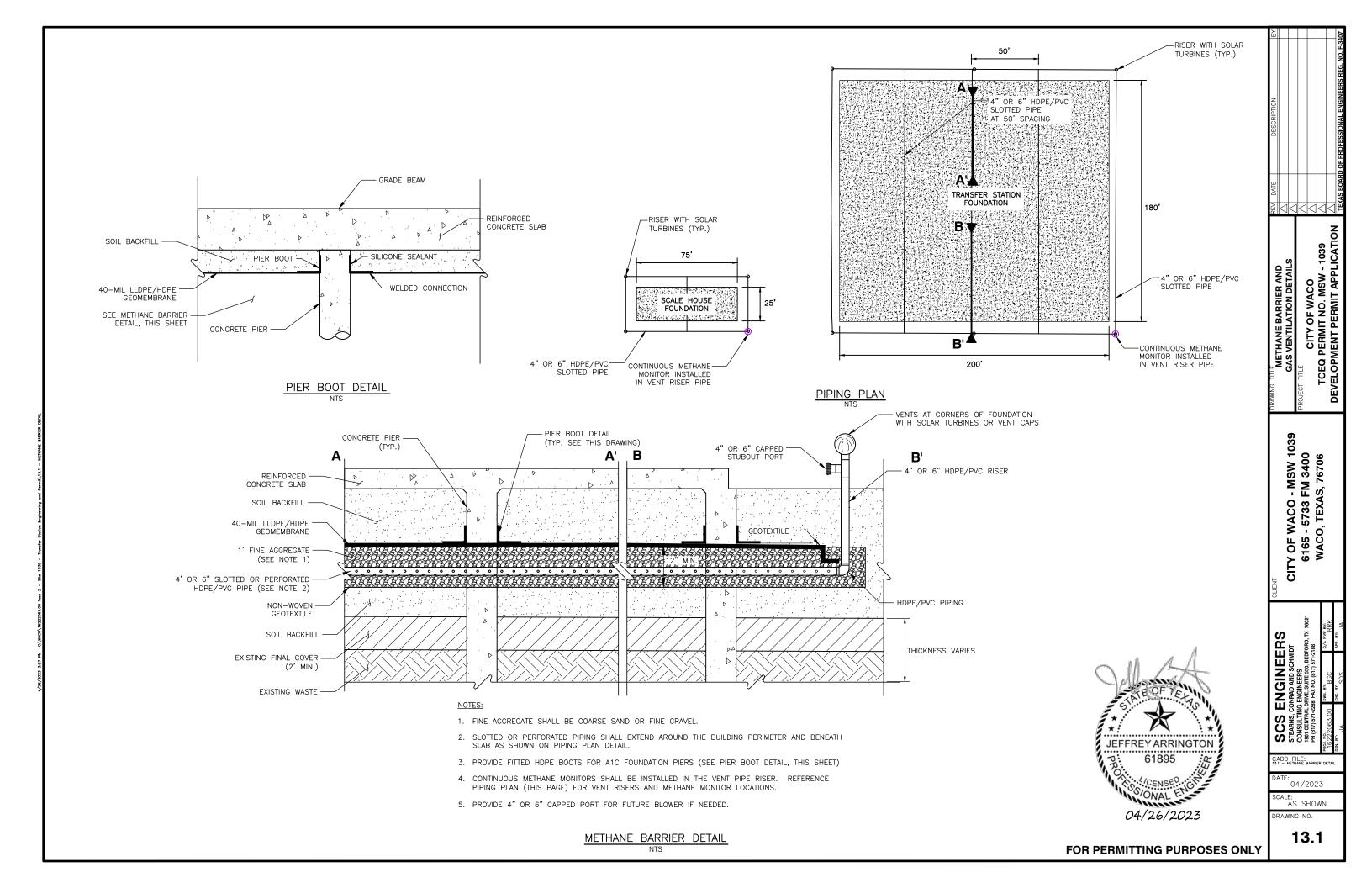
The site is located outside the 100-year flood plain for the Brazos River according to FEMA Flood Insurance Map of McLennan County, Texas Map Number 48309C0575D dated 12/20/2019.

13 FOUNDATIONS PLANS (30 TAC §330.957(m))

The foundation plans for the transfer station building are included in this section. The foundation will consist of a reinforced concrete slab supported by grade beams that will bear directly on concrete pier caps. The entire structure will be supported by drilled shaft piers that extend below the landfill waste layer into the underlying shale formation. Drawing S1.00 to S1.10 in Appendix B provides a foundation plan with sections and details.

Drawing 13.1 is a layout and typical section of the subsurface methane barrier and gas ventilation system (system) that will be installed beneath the structural slab and beams. To comply with the requirements of 30 TAC 330.957(m)(1)(A) and (B), the system includes a minimum 40-mil LLDPE/HDPE geomembrane liner underlain by a 12-inch thick layer of drainage aggregate and a non-woven geotextile to prevent intrusion of soil into the permeable layer. The geomembrane will be installed around the concrete peers using pipe boots or collars to seal the annular spacing between the drilled shafts and geomembrane. Perforated PVC or HDPE piping will be installed within the aggregate layer to extend beneath the structure and around the building. Riser vents will provide points to allow surface venting of gas collected by the piping to comply with the requirements of 30 TAC $\S 330.957(m)(1)(C),(D)$ and (E). The riser pipes will be equipped with ports that could be used to connect an induced-draft exhaust system, if needed, in the future.

Consistent with 30 TAC $\S 330.957(m)(1)(F)$, both proposed buildings will be equipped with multiple methane sensors that will produce both an audible and visual alarm if concentrations of methane exceed 1% by volume (BV) or 20% of the lower explosive limit (LEL). In the event of this alarm the procedures in Section 20 shall be implemented by designated safety coordinators.



14 OTHER PLANS (30 TAC §330.957(n))

14.1 Grading, Paving And Utility Plans (30 TAC §330.957(n)(1))

Civil, architectural, structural, and mechanical-electrical-plumbing (MEP) plans are included herein and in Appendix B. The architectural, structural and MEP plans provide construction information for the proposed buildings. The following list provides general content descriptions of the applicable plan sheets for this permit:

Waco Transfer Station Site Work and Building Plans

C1 - C5 Civil Plans

These drawings provide layout and details for the grading, paving, and utilities proposed for the project.

A2.1 Building Floor Plan

These drawings provide overall floor plans for the transfer station building.

A3.1 Building Elevation

Building elevations are provided for the transfer station and scale house buildings.

S1.01

This is the overall foundation plan for the transfer station building.

Landscaping

The only landscaping proposed for this project involves re-establishment of turf grass in disturbed areas outside of the paved areas and building foundations.

Excavated Waste Material Disposal and Contaminated Water Management

The contractor will manage any contaminated water or solid waste encountered during construction.

The construction activities associated with the proposed site work and utility construction may result in the generation of solid waste material from proposed site grading or trench excavation. Although some of the work associated with the project will take place outside the landfill limits of waste, most of the construction activity will take place within the limits of waste over the closed landfill.

If solid waste is encountered during these or any other construction activities, the waste will be separated from other clean excavated material and placed on plastic sheeting unless it is loaded directly into trucks, trailers, or containers and removed from the site for disposal. If the waste needs to be stored on-site for more than 24 hours, it will be covered with an impermeable synthetic material to prevent contact with rainfall. All solid waste will be disposed at an authorized landfill.

If excavation activities result in exposed waste, the exposed waste area will be covered with clean soil or other materials as soon as practical, but no later than the end of the day. If an area of exposed waste will remain exposed for more than 24 hours, the contractor will provide adequate temporary cover consisting of a minimum of 6 inches of soil or an impermeable membrane material to prevent

rainfall from contacting the waste. Diversion berms will be installed around the exposed waste area to prevent stormwater from contacting the waste.

Improvements proposed at the landfill include, but are not limited to:

- Trenching for electrical, water, wastewater, and drainage swales
- Site Grading:
- Paving Construction; and
- Construction of manholes, valve boxes and oil/water separator and grit traps.

If waste is exposed during construction of proposed improvements, then a minimum of a 2-foot thick clay (CL or CH) soil layer will be placed and compacted over the exposed area. In areas where grading reduces cap thickness to less than 2 feet, the cap will be restored to a minimum of 2 feet with CH or CL soil material.

Stormwater runoff control measures will be used to minimize contaminated water generation. Temporary diversion berms will be used upslope of all excavations where waste will be exposed to minimize the amount of surface water coming into contact with waste materials. In addition, temporary containment berms will be constructed around areas of exposed waste to collect surface water. The diversion berms and containment berms will be appropriately installed in areas where waste material will be exposed due to excavation or other construction activities. At no time will contaminated water be allowed to discharge to surface waters.

In view of the management procedures described above, especially the covering of waste and precautions implemented in advance of inclement weather, the generation of leachate or contaminated water is expected to be minimal. However, if leachate or contaminated water is generated, the water will be collected and disposed of in accordance with standards set forth herein and in accordance with City and State requirements for disposal of such water. The following are methods (or a combination) that will be used to handle any leachate or contaminated water encountered or generated during construction:

- On-site storage and disposal in the sanitary sewer will require analysis of the leachate or contaminated water to compare with the acceptable limits at the local wastewater treatment plant, as approved by the City of Waco, regarding discharge limits.
- On-site storage and disposal off-site via vacuum truck transport will require a vacuum truck to transport the leachate/contaminated water to an approved wastewater treatment facility. This option will likely only be utilized if discharging into the sewer system, proves not to be feasible.
- In areas where waste is excavated, all waste will be properly transported to an approved MSW landfill. No waste will be left exposed overnight.

The contractor will be required to comply with TCEQ's general stormwater permit for construction activities of the Texas Pollutant Discharge Elimination System (TPDES) prior to beginning work. As part of the coverage under TPDES, the contractor will file a Notice of Intent (NOI), prepare a Storm Water Pollution Prevention Plan (SWPPP), and install appropriate erosion control devices in accordance with the SWPPP, which must be in place prior to filing of the NOI.

The provisions of the SWPPP will include measures to control sediment discharge during construction including, but not be limited to the use of earthen berms, hay bales, and silt fencing down-gradient of slopes which may experience erosion (including material stockpiles). Erosion damage from rainfall events will be repaired by the contractor after such events. All erosion control measures will also be inspected and maintained throughout the redevelopment process.

As discussed above, drainage control measures will be put in place to minimize the amount of contaminated water generated during the project and to collect any leachate from the excavation process. Berms, when used for contaminated water generation control, will also be maintained as necessary to meet SWPPP requirements and to control erosion.

The contractor will pay special attention to erosion on soil cover over waste materials. Any cover damage to the existing landfill, or in areas where cover must be maintained over solid waste materials that are part of construction, will be repaired immediately and steps taken to prevent a recurrence of that type of damage.

Construction Safety Issues

The contractor and all subcontractors will be required to follow safety procedures outlined in this document and the specifications in Appendix D, and will be expected to be prepared to encounter waste and adhere to provisions of this plan. The contractor will be required to address, at a minimum, the following safety issues:

- Landfill gas safety issues Workers will follow the safety procedures that are contained in the Contractor's Site Safety Plan (SSP) required for construction and procedures contained in this document. Construction of this project will be performed in and near buried wastes. As these buried materials decompose, they will generate landfill gas, which normally consists of carbon dioxide, methane, and occasionally hydrogen sulfide, as well as other trace gases, depending on the composition of the buried materials. These gases usually vent to the atmosphere through the cover soil, but may also migrate laterally to adjacent areas depending on site and weather conditions. Landfill gases may cause an oxygen deficiency in underground trenches, vaults, conduits, and structures. The contractor and/or the City will conduct air monitoring in excavation areas and other locations of construction activity where landfill gas is likely to accumulate. Monitoring equipment shall be calibrated to detect small amounts of methane and be recalibrated periodically in accordance with manufacturers' recommendations and the SSP. Monitoring of air for methane gas (and other gases, as determined by the SSP) shall be performed during working hours whenever open trenches, excavations, or waste handling/disposal is taking place, when the contractor is working on or near exposed refuse, or when landfill gas is likely to be present.
- In addition, the SSP to be developed for the project by the selected contractor will address construction workers safety. Also, the selected contractor will be advised of the possibility of landfill gas and to take the necessary precautions associated with construction activities at this site. To monitor concentrations of methane, an on-site representative of the contractor will be required to continuously wear a personal gas monitor which will detect concentrations of methane and emit an audible alarm when methane concentration reaches 20% of the lower explosive limit. If this were to happen, the representative will immediately advise all personnel to vacate the area of concern and not return until methane concentrations have returned to acceptable levels. While such conditions that would allow methane to accumulate to levels of concern are not anticipated, the representative will, nonetheless, monitor the excavation process on a routine basis to provide suitable oversight of methane concentrations.

City of Waco will designate a Professional Engineer to provide guidance and oversight of the Contractor's methane monitoring program during construction. Consistent with the SSP, the responsible engineer will determine the appropriate levels of monitoring for the proposed construction activities.

- Potential fire control and management Fires and explosions may occur from the presence of methane gas. Methane is explosive in approximate concentrations of 5 to 15 percent by volume in air and will be present in landfill gas at the site. Soil shall be stockpiled adjacent to work space in areas of exposed refuse for firefighting purposes and water will be available at all times on-site for potential fire suppression. Fire extinguishers with a rating of at least A, B, or C will be available at all times on the site. Welding, smoking, and startup and shutdown of equipment will not be permitted in areas of exposed waste and smoking will not be allowed at any time within the construction area. The local fire department will be notified prior to the commencement of construction and its contact information will be kept available by all supervising project personnel, one of which will be on-site during all working hours.
- Procedures for working with MSW Landfill materials (solids and liquids) have the potential to contain pathogens, fungus, viruses, infectious materials, sharp, puncturing, and cutting objects, and other hazards. Dust control during waste excavation is important with respect to controlling dust-borne transmission of harmful elements. Preventing dermal contact with waste by workers, including unnecessary walking over, or in, exposed waste, will also reduce the risks of worker exposure. Dust control and worker exposure during excavation will be addressed in the contractor's SSP plan, as will be required by the bid documents for this project.

Variance Request for Water, Sanitary Sewer Piping Requirements

On behalf of the City of Waco, SCS Engineers is requesting that TCEQ grant a variance from the requirements of 30 TAC §330.961(g) that requires conduits carrying liquids over closed landfill waste cells to be double-contained. This subsection addresses the variance request for the water, and wastewater piping. As described in this section, the proposed development consists of site improvements including utilities that will serve the new transfer station and scale house buildings that will be constructed after obtaining approval from TCEQ. This variance request is intended to address the use of trench liners in lieu of double-contained piping.

In support of this variance request we are including the following:

- Plans for the water, waste water Appendix B
- Narrative description of the proposed system This Section

This variance request is being made to facilitate the design and operation of the utilities at this closed landfill in Waco. The reasons for this variance include:

- To provide a cost-effective alternative to the double-contained piping (pipe in pipe)
 requirement for conduits carrying fluids over closed landfills. The use of double-contained
 piping for utility lines adds cost and complicates the maintenance and repairs for the system
 that includes valve boxes, manholes, fire hydrants and other features that make the use of
 double-contained piping systems not feasible.
- To avoid implementation of a cost prohibitive design standard that may result in significant additional cost to the City of Waco and its citizens. Similar trench liner systems have been

approved at closed landfills for the Baylor Golf Practice facility, Football Operations Improvements and also at closed landfill sites in Dallas and Mesquite, Texas.

The proposed alternative to double-contained piping for water, and wastewater involves the use of 40-mil LLDPE/HDPE trench liners that will be installed in the pipe trenches for the utility lines. The water and wastewater lines will include leak detection manholes at the beginning and end of the proposed new lines. The trench liners will be connected to the leak detection manholes to complete the system of leak containment. No storm drainage piping is proposed with the site. Sensors will be installed in the leak detection manholes that provide an alarm for liquid levels to indicate potential leak in the lines. Details of the proposed trench liners and leak detection manhole are provided on drawing C5.

The project construction is scheduled to begin in the first quarter of 2024 and is expected to be completed by the end of 2024.

14.2 Irrigation System Plans (30 TAC §330.957(n)(2))

No irrigation system is proposed to be installed at the landfill with this development permit application.

15 SOIL TESTS (30 TAC §330.957(o))

Results of the geotechnical report is provided in Appendix A. The geotechnical investigation and report was conducted to collect data and information to design the proposed structures' foundations and site pavement. Additionally, limits of waste disposal was also identified during this geotechnical investigation.

A soil test as described under 30 TAC §330.953, was not performed to determine if a landfill exists as the property was previously established as an MSW landfill through records of the permit and past use of the property for disposal of MSW by the City.

16 CERTIFIED COPIES OF REQUIRED NOTICES (30 TAC §330.957(p))

Certified copies of notices filed by SCS Engineers and the City of Waco, in accordance with 30 TAC §330.953 of this title, 30 TAC §330.962 of this title (relating to Notice to Real Property Records), 30 TAC §330.963 of this title (relating to Notice to Buyers, Lessees, and Occupants), and 30 TAC §330.964 of this title (relating to Lease Restrictions), are provided in this section.

CBG- 5



CITY ENGINEER



JLG.

WACO, TEXAS 76703

July 8, 1983

Mr. L. B. Griffith, Jr., P. E., Director Surveillance and Enforcement Division Bureau of Solid Waste Management Texas Department of Health 1100 West 49th Street Austin, TX. 78756

> Re: Solid Waste Permit No. 1039 City of Waco

Dear Mr. Griffith:

I am enclosing the following items relating to closure of the referenced landfill site:

- 1.) A certified copy of the "Affidavit to the Public"
- 2.) Our request for voluntary cancellation of the permit
- 3.) A contour map showing results of the final grading survey

Please call if any additional information is needed.

Singerely yours,

City Engineer

LDG/1g attachments

xc: Layton Nehring, Solid Waste Administrator

DIV. OF SOLID WAS TE MAKA CENE

ATTACHMENT II

The following legal description is that portion of land that was used in actual landfilling operations in the City of Waco solid waste disposal site authorized under Permit No. 1039:

Being 44.74 acres of land out of the Carlos O'Campo Grant in McLennan County, Texas and being a portion of those certain tracts of land described as being First, Second, Third and Fourth Tracts by deeds to Jim Radle and recorded in Volume 855, Page '426 and Volume 916, Page 72 of the McLennan County Deed Records and being more particularly described as follows:

BEGINNING at an iron stake for corner, said stake being in the east right-of-way of FM 3400 and said stake also being the southwest corner of said Fourth Tract;

THENCE N 140 45' W 1473.33 feet along the east right-of-way of FM 3400 to an iron stake for corner, said stake being the northwest corner of said First Tract;

THENCE N 61° 15' E 1140.80 feet to an iron stake for corner, said stake being the northeast corner of said First Tract;

THENCE S 30° 28' E 1248.07 feet and S 32° 08' E 234.94 feet to an iron stake for corner;

THENCE S 63° 55' W 847.72 feet and S 62° 15' W 674.83 feet to the place of beginning.

Filed for Record on the 8 day of July	A.D. 1983 at 300 clock P. M.
Duly Recorded this the 11 day of July	A.D. 1983 at 920 o'clock A M.
	FRANK DENNY, County Clerk McLennan County, Texas
By leggy moon.	Deputy

THE STATE OF TEXAS
COUNTY OF McLENNAN

1, Frank Denny, Clerk of the County Court and Ex-Officio Recorder
of McLennan County, Texas, do hereby certify that the above and foregoing is a true and correct copy of a
certain Affidavit from The City of Waco

as the same appears of record in book 1446 page 347 one of the Deed Records of McLennan County.

In Testimony Whereof, and to certify which, I hereunto sign my name officially and affix the seal of said County Court, at my office in the City of Waco, this day of July 1983.

FRANK DENNY

Clerk County Court and Ex-Officio Recorder, McLennan County, Texas

By Keager moon

Deputy.

5M-2-80

15032

AFFIDAVIT TO THE PUBLIC

STATE OF TEXAS

COUNTY OF MCLENNAN

Before me, the undersigned authority, on this day personally appeared Larry D. Groth who, after being by me duly sworn, upon oath states that he is the agent for the site operator, the City of Waco, which has a license agreement to make use of a certain tract or parcel of land lying and being situated in McLennan County, Texas, and being more particularly described as follows:

SEE ATTACHMENT I

Said property being owned by Neeley Sand & Gravel, Inc. The undersigned further states that from the year 1978 to the year 1982 there was operated on the aforesaid tract of land a Solid Waste Disposal Site. Specifically, such operation was conducted on that portion of the aforesaid tract described as follows:

SEE ATTACHMENT II

WITNESS MY HAND on this the 8th day of July, 1983.

City of Waco

City Engineer

SWORN TO AND SUBSCRIBED before me on this the 8th day of July, 1983.

GERMANY Melandin County, Texas Communication Profess 9 30 34

Notary Public in and for the State of Texas

ATTACHMENT I

THE STATE OF TEXAS
COUNTY OF MCLENNAN

KNOW ALL MEN BY THESE PRESENTS:

THIS LICENSE AGREEMENT entered into by the CITY OF WACO, a municipal corporation, hereinafter called "Licensee," and NEELLEY SAND & GRAVEL, INC. hereinafter called "Licensor,"

WITNESSETH:

I.

The Licensor hereby licenses the Licensee to use the hereinafter described land for a sanitary landfill:

64.71 acres of land out of the Carlos O'Campo Grant in McLennan County, Texas and being a part of those certain tracts of land described as being First, Second, Third and Fourth Tracts by deeds to Jim Radle and recorded in Volume 855, Page 426 and Volume 916, Page 72 of the McLennan County, Texas deed Records, respectfully.

Beginning at an iron stake in the west line of Farm-to-Market Road #434, sometimes known and referred to as the South 3rd Street Road, at its point of intersection with the south line of the Second Tract for the southeast corner of this; said point of beginning also being the southwest corner of that certain 0.056 acre tract of land conveyed to the McLennan County, Texas by deed recorded in Volume 621, Page 185 of the said deed records:

Thence S 62° W 2950.67 ft (1062.24 vrs.) with the south line of the said Second Tract, an old fence line, to an iron stake at its southwest corner;

Thence N 27° 45' W 70 ft (25.2 vrs.), S 63° 55' W 874.72 ft (314.9 vrs.) and S 62° 15' W 674.83 ft (242.94 vrs.) to an iron stake in the east line of the S. A. & A. P. Railroad right-of-way and in the west line of the said Fourth Tract for the southwest corner of this:

Thence N 14° 45' W 1473.33 ft (530.4 vrs) with the east line of the said S.A. & A. P. Railroad right-of-way and the west lines of the said Fourth and First Tracts to an iron stake for the northeast corner of this; said stake being the northwest corner of the said First Tract;

Thence N 61° 15' E 1140.8 ft (410.69 vrs.) with the north line of the said First Tract, an old fence line, to an iron stake at its northeast corner;

Thence S 30° 28' E 1248.07 Ft (449.31 vrs.) with the east line of the said First Tract and along a mean-dering fence line to an iron stake at its southeast corner and at the northwest corner of the said Second Tract;

Thence along a fence line, the north line of the said Second Tract, N 62° 26' E 1581.90 ft (569.48 vrs.) and N 62° 21' E 1392.77 ft (501.4 vrs.) to an iron stake in the west line of the said F. M. Road #434 and at the northwest corner of the said McLennan County, Texas Tract;

Thence S 26° 22' E 284.3 ft (102.35 vrs.) with the west line of the said F. M. Road #434 and the west line of the said McLennan County, Texas Tract to the point of beginning.

II.

The consideration for said license is that the Licensee will use the land as a sanitary landfill and will level off said landfill with available topsoil after it has been completely filled.

III.

The said license shall extend for such time until the said premises can no longer be used as a sanitary landfill, but may be terminated by either party by giving one hundred eighty (180) days written notice.

IV.

The Licensor hereby agrees that the Licensee shall not be held liable for any damages or injuries occurring on or to the said premises as a result of such premises being used by Licensee for sanitary landfill and the Licensee hereby agrees that there shall be no liability on the part of the Licensor for any claim of any third party for damages or injuries on the premises during the period of this license agreement as a result of any negligent acts on the part of the Licensee, its agents or employees.

v.

Licensee agrees to fill one excavated area at a time prior to filling the next and the Licensee agrees to use only the portion of the above described land which is released by Licensor and agrees not to interfere with their removal of gravel in the ground or stockpiled.

VI.

Licensor reserves the right to except any part of land under this agreement from being used as landfill by giving written notice to the Director of Public Works stating the exact location to be excepted.

VII.

The Licensor also grants right of ingress and egress across the property made the subject of this lease and described herein.

VIII.

It is expressly agreed by the parties hereto that all terms and conditions of said lease are contained solely within the written terms of this instrument.

WITNESS OUR HANDS at Waco, Texas, this the 27th day of January , 1976.

CITY OF WACO, TEXAS

By Alanid O. Smith, Dr., Cit

ATTEST:

Raymond 713 Jun

APPROVED AS TO FORM & LEGALITY:

City Attorney

NEELLEY SAND & GRAVEL, INC.

LICENSOR

17 CLOSURE PLAN (30 TAC §330.957(q))

Site grading activities will be performed as described in Section 14. Any other future disturbances to the final cover that are not covered under this development permit application will require TCEQ approval prior to performing the activities. Final cover that is disturbed during proposed site grading activities will be restored to a minimum thickness of 2 feet with CL or CH soil material.

The proposed construction associated with this development permit application is not expected to result in significant removal of existing landfill cap material with the exception of a portion of the building foundation construction. Incidental final cover disturbance shall be repaired in accordance with this section and Section 14.

18 OPERATIONAL REQUIREMENTS PLAN (30 TAC §330.957(r)) AND (30 TAC §330.961)

18.1 Operational Requirements Plan General Information (30 TAC §330.961(a))

The site operating plan, structures gas monitoring plan (Section 20), closure plan (Section 17), and safety and evacuation plan (Section 21) will be considered part of the operating record for the development permit. A copy of this information will be maintained in an office at the scale house building throughout the life of the facility. City of Waco will notify the executive director and other entities that have requested notification in the event of any incident involving the facility related to the development permit for remediation of the incident. Any deviation from the development permit and incorporated plans or other related documents associated with the development permit will be approved by the executive director.

18.2 Landfill Gas Control (30 TAC §330.961(b))

The structures gas monitoring plan, in Section 20 of this application, provides detailed requirements and procedures for the monitoring systems to be installed and maintained in the transfer station scale house buildings. The plan details the type and number of monitoring equipment as well as the locations and frequency of monitoring for the buildings. The plan will be updated as needed to reflect modifications to the buildings that may warrant changes to the monitoring plan.

18.3 Landfill Gas Monitoring (30 TAC §330.961(b)(1))

City of Waco will perform landfill monthly gas monitoring of on-site structures, including, but not limited to, scale house and transfer station buildings, utilities, or any other areas where potential gas buildup would be of concern. Consistent with 30 TAC §330.957(m)(1)(F), both proposed buildings will be equipped with multiple methane sensors that will produce both an audible and visual alarm if concentrations of methane exceed 1% BV or 20% of the LEL. In the event of this alarm the procedures in Section 20 shall be implemented by designated safety coordinators. Areas of the on-site structures where gas may accumulate will be monitored and include, but are not limited to, areas in, under, beneath, and around basements, crawl spaces, floor seams or cracks, and subsurface utility connections. Lastly, the structures gas monitoring plan will be modified as needed to reflect any future modifications to the on-site structures.

18.4 Reporting (30 TAC §330.961(b)(2))

All monthly sampling results will be placed in the site operating record in accordance with 30 TAC §330.125(b)(3) and will be available for inspection by the executive director. If methane gas levels exceed the limits specified in the structures gas monitoring plan, City of Waco will notify the TCEQ in accordance with 30 TAC §330.371(c).

18.5 Air Criteria (30 TAC §330.961(c))

No open burning will be allowed at this facility and City of Waco will comply with all federal, state, and local regulations related to air pollution and the state implementation plan. Additionally, proposed enclosed on-site structures will be equipped with ventilation in accordance with all appropriate TCEQ rules. The transfer station building has roll-up doors and exhaust fans. The scale house building has a

HVAC system that provides fresh air into the buildings. Both structures will have under-slab ventilation for potential methane gas migration.

18.6 Ponded Water (30 TAC §330.961(d))

The proposed grading and drainage plans, provided in Appendix B, will promote positive drainage and will not result in any ponding of water over the closed MSW landfill.

18.7 Water Pollution Control (30 TAC §330.961(e))

As discussed above, the site will be graded to promote positive drainage of surface water generated on the landfill and routed to existing and proposed perimeter swales for off-site sheet flow to maintain pre-development drainage patterns. The onsite stormwater detention area is proposed to mitigate the effects of proposed impervious areas.

Additionally, all wastewater generated from facility operations will be collected and stored in on-site holding tanks for periodic removal to the Publicly Owned Treatment Works (POTW) operated by the Brazos River Authority.

18.8 Groundwater Monitoring (30 TAC §330.961(f))

The closed MSW landfill unit does not have a groundwater monitoring system and no groundwater monitoring is proposed with this application.

18.9 Conduits (30 TAC §330.961(g))

All water, waste water, or storm drainage piping serving the building located over waste will either be constructed with double-contained piping as required by 30 TAC §330.961(g) or, as discussed in Section 14, utilities proposed for the facility will be constructed with trench liners and leak detection manholes.

18.10 Recordkeeping Requirements (30 TAC §330.961(h))

City of Waco will record and retain the following information:

- All gas monitoring results and any remediation plans associated with landfill gases.
- All design documentation for the landfill gas monitoring and venting system.
- All operations and maintenance documents pertaining to systems as they relate to this development permit.
- All other documents required by the permit or the executive director.

The owner, operator, will provide written notification to the executive director, and any local pollution agency with jurisdiction that has requested to be notified, for each occurrence that documents listed in subsection (h) of this section are placed into or added to the operating record. All information contained in the operating record will be furnished upon request to the executive director and will be made available at all reasonable times for inspection by the executive director or his representative.

19 SITE OPERATING PLAN (30 TAC §330.957(s))

19.1 Site Operating Plan Overview (30 TAC §330.957(s)(1) and (2))

The proposed transfer station building will consist of a single story clear span steel structure with roll-up bay doors. The scale house building will be a single story wood or metal framed structure. Both buildings will be constructed over reinforced concrete structural slabs that are supported by drilled piers. Both buildings will be equipped with multiple methane sensors that will produce both an audible and visual alarm if concentrations of methane exceed 1% BV or 20% of the LEL. In the event of this alarm the procedures in this section shall be implemented by designated safety coordinators. This plan is intended to fulfill the requirements of 30 TAC §330.957(s).

The following equipment is expected to be used at the facility:

Description	Procedures and Function	Maintenance Schedule
General office	Power down on daily basis	Periodic updates and checks
Cleaning equipment	General housekeeping	As needed repairs and replacement.
HVAC	Maintain adequate interior	Semi-annually
Electric water heaters	Climate control hot water service	Annually
Lighting	Provide interior illumination	Periodic checks and repairs
Pressure washer	Used for wash downs of the floors And paved areas	As needed for site
IT/Network equipment	Used for data telephone, security cameras, etc.	As needed for proper function
Skid Steer, excavator and Loaders	Used for loading transfer trailers	As needed to maintain
Transfer Truck/Trailers	Used for waste transfer	As needed to maintain

The equipment list will be periodically reviewed and updated as needed if new equipment is added or changes are made.

20 STRUCTURES GAS MONITORING PLAN (30 TAC §330.957(t))

20.1 Structures Gas Monitoring Plan General Information (30 TAC §330.957(t)(1))

This structures gas monitoring plan fulfills the requirements of 30 TAC §330.957(t) and will be considered part of the operating record for the development permit. A copy of this information will be maintained on-site throughout the life of the facility. City of Waco will notify the executive director and other entities that have requested notification in the event of any incident involving the facility related to the development permit, related to gas remediation.

The structures gas monitoring plan includes two key components. The first is a gas ventilation system with an impermeable barrier installed below the building foundations with vent risers located adjacent to the building. This system will allow methane, that migrates though the landfill final cover and engineered fill, to be collected and vented outside of the structure, as described in Section 13. The second component is a monitoring system inside the buildings that includes controller units and remote sensors that are capable of detecting methane and other explosive gases at concentrations below 1% BV or 20% of LEL. This system will have audible and visual alarms that will trigger in the event that methane concentrations exceed 1%. The monitoring system is intended to confirm that the concentration of methane gas within the facility structure does not exceed 20% of the LEL.

20.2 Facility Characteristics And Potential Migration Pathways (330.957(t)(2)(A))

As discussed in Section 19, the transfer station building will be a single story clear span steel framed structure with roll-up bay doors. The scale house building will be a single story wood or metal stud framed structure. Both buildings will be constructed over a reinforced concrete slab that is supported by grade beams and drilled shaft piers. The piers will extend below the waste layer into the underlying shale formation. The existing final cover elevations at the proposed buildings range between approximately 410.0 to 414.0 for the transfer station and 417.0 to 418.0 for the scale house. The final cover in this area is approximately two feet deep. The proposed finished floor elevation of the transfer station building is 416.0 feet. Approximately 2 to 6 feet of engineered fill will be placed over the final cover in the vicinity of the building to establish the proposed elevations for the building slab and paving and to provide additional buffer between the building slab and top of final cover. The proposed finished floor for the scale house building will be 420.0, which is approximately 2 to 3 feet above the final cover grades. Proposed facility layout and grading plan are included in Appendix B.

The nature and age of the waste is discussed in detail in Section 3 of the permit. The age of the waste and the geotechnical field investigation provided in Appendix A indicate that the landfill is in the later stages of decomposition and gas production is limited but still ongoing. Due to the presence of landfill gas, various protective measures have been incorporated into the design of the structure. These are described in the following section.

The scale house building will be used by scale attendants and will also include office space, break room and meeting room. Restrooms will be included in the building for Waco employees only. The expected occupancy of the building will range between 10 to 20 people during training and meetings. The typical duration of occupation will be between 8-10 hours for most individuals.

The transfer station building will be used to receive and process solid waste for loading into transfer trailers for hauling and disposal at permitted MSW landfills. The building will be open inside with no offices or other facilities.

The potential routes of entry for methane gas include pipe penetrations through the slab as well as joints and cracks that may occur in the future. The foundation design and underlying methane barrier system will greatly reduce the potential for gas migration into the building. Potential ignition sources include water heaters, HVAC units, static or sparking associated with equipment. The facility will be a smoke free environment with smoking prohibited inside and outside the buildings.

20.3 Building Design Characteristics Related To Landfill Gas Accumulation Prevention (330.957(t)(2)(B))

The design of the transfer station building structure includes several features that will prevent or eliminate the accumulation of landfill gas within the building. As previously discussed, the addition of a engineered fill layer above the landfill final cover will provide additional separation and protection from potential landfill gas migration. As discussed in Section 13, the methane barrier and ventilation system consist of a minimum 40-mil LLDPE/HDPE geomembrane liner underlain by a 12-inch thick layer of drainage aggregate and a non-woven geotextile to prevent intrusion of soil into the permeable layer, as shown in drawing 13.1. The additional engineered fill, methane barrier, and ventilation system provide the primary systems to prevent LFG migration into the structure and eliminate gas accumulation through the subsurface ventilation system. The geomembrane liner will be installed around the concrete piers using preformed boots or collars that will be fuse welded to the liner. Flexible sealant will be utilized around the piers to seal the annular space between concrete and liner material.

All conduits into the building that penetrate the liner will be installed with pipe boots and sealant as described above. Any pipe penetrations through the slab will be installed as indicated on the mechanical drawings and shall include a pipe sleeve and compression seals that accommodate some movement and may be mechanically adjusted to maintain proper seals at pipe entries.

The methane monitoring system inside the buildings will provide continuous monitoring for methane in the building to provide early detection and warning in the event of gas accumulation inside the buildings. In addition to the monitoring equipment, periodic methane monitoring will be conducted in the gas ventilation system to monitor the concentration of methane within the subsurface ventilation system. The frequency of methane monitoring in the vent risers will be performed at least once every month. Gas sensor plan that shows proposed locations of the gas sensors as well as the controller units and notes is provided in drawing 20.3 at the end of this section.

20.4 Landfill Gas Collection And Ventilation System Description (330.957(t)(2)(C))

As previously described, the landfill gas collection and ventilation system will consist of an impermeable methane barrier layer, as shown in drawing 13.1 in Section 13. The barrier and ventilation layer will be installed below the level of the perimeter concrete grade beams to minimize foundation penetrations through the liner material. The geomembrane liner material will be installed around the piers to minimize the potential for gas migration at these locations.

20.5 Landfill Gas Monitoring Equipment (330.957(t)(2)(D))

As previously described, the methane gas monitoring system inside the transfer station building will include two controllers and six sensors. Additionally, one controller and four sensors will be installed inside the scale house building. Drawing 20.3 at the end of this section provides a plan for the location of the methane monitoring equipment. The operation and maintenance (O & M) manual for the monitoring equipment is included in Appendix C. Calibration will be performed at least twice annually or every six months.

20.6 Implementation Schedule For Monitoring Equipment (330.957(t)(2)(E))

Gas monitoring equipment will be installed and tested prior to completion of construction of proposed buildings at the facility. The monitoring equipment will be in continuous operation at least one week prior to buildings being occupied to verify that measurable methane concentrations are not present within the buildings. This will be a one-time sampling event to characterize the landfill gas.

20.7 Sampling And Analysis Plan (330.957(t)(2)(F))

Gas samples will be taken initially prior to occupancy from the landfill. The samples will be collected and analyzed in accordance with this section and the following section. This will be a one-time sampling event to characterize the landfill gas.

. Four samples will be collected from the landfill using four separate "Summa" canisters. The selected analytical laboratory will provide canisters and chain of custody forms for the sampling activities. It should be noted that only four of the five canisters will be analyzed (the fifth is a spare in the event any issues were encountered with the other three).

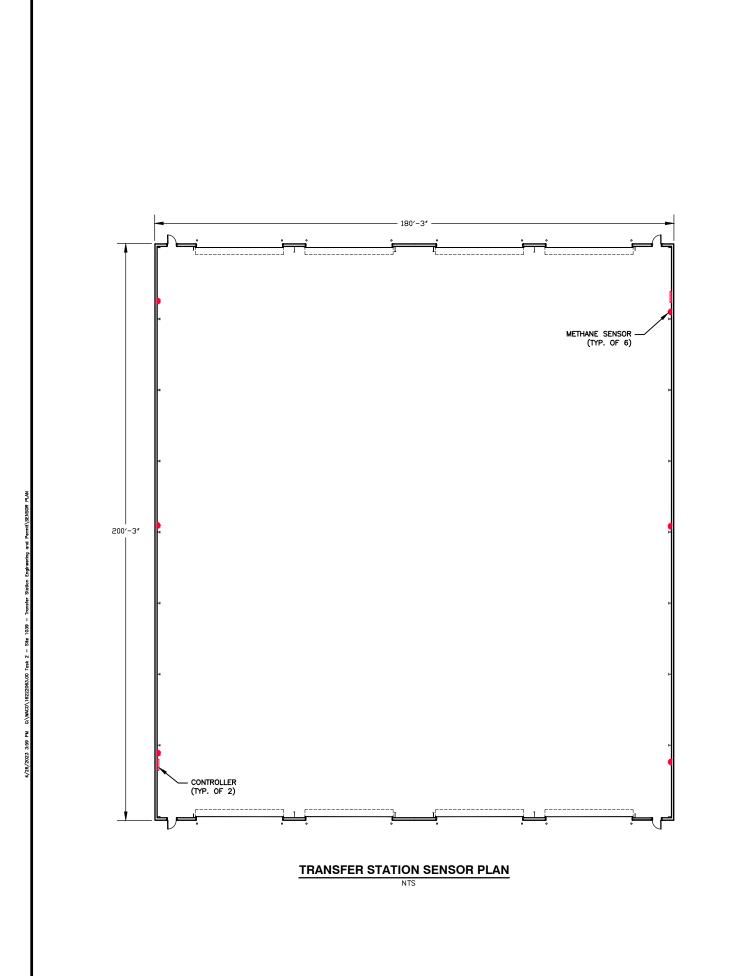
The following method shall be used to collect the samples from the landfill. The closed canister will then be connected to the line which will contain a pressure gauge and a flow controller. The flow controller will be set to a flow rate of approximately 500 ml/min. The line will then be purged and a field analyzer will be used to sample the gas and make sure that air intrusion into the line is not detected. The evacuated canister will then be opened and allowed to fill until its pressure reaches just above 0 mm Hg.

20.8 Analysis Of Landfill Gas (330.957(t)(2)(G))

The four gas samples collected from the landfill will be analyzed for the following constituents and compounds. The samples of gas will be shipped to an accredited laboratory offsite that will perform the approved EPA test methods:

- Methane and other light hydrocarbons, carbon dioxide, and water vapor;
- Hydrogen Sulfide, mercaptans, ammonia; and
- VOCs.

Laboratory QA/QC procedures will be provided by the laboratory chosen to perform the analysis and will be included with the test results.

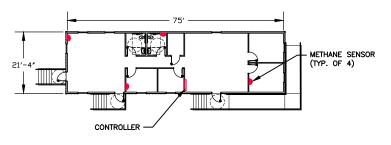




NOTES:

PROVIDE METHANE MONITORING EQUIPMENT INSIDE THE BUILDING CONSISTING OF:

- 1. WALL MOUNTED CONTROLLER BEACON 410A OR EQUIVALENT.
- DIRECT CONNECT SENSORS MOUNTED IN LOCATIONS OF THE BUILDING THAT ARE MOST LIKELY TO HAVE LIMITED VENTILATION INCLUDING RESTROOMS AND OTHER AREAS AS SHOWN ON THE PLANS.
- 3. SENSORS SHALL BE CAPABLE OF DETECTING METHANE CONCENTRATIONS AT OR BELOW 1% B.V. AND PRODUCE AN AUDIBLE ALARM AT 1% B.V.
- 4. SENSORS SHALL BE DIRECTLY CONNECTED TO THE CONTROLLER UNIT PER MANUFACTURER'S INSTRUCTIONS.
- 5. SENSORS ARE SPECIFIED IN APPENDIX C.



SCALE HOUSE SENSOR PLAN



FOR PERMITTING PURPOSES ONLY

04/26/2023

SCALE: AS SHOWN DRAWING NO.

04/2023

CITY OF WACO
TCEQ PERMIT NO. MSW - 1039
DEVELOPMENT PERMIT APPLICATION

CITY OF WACO - MSW 1039 6165 - 5733 FM 3400 WACO, TEXAS, 76706

GAS SENSOR LOCATION PLAN

20.3

CADD FILE:

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULT THAN ENCINEERS

21 SAFETY AND EVACUATION PLAN (330.957(U))

21.1 Plan Overview

The scale house building will consist of a single story building with offices, breakroom, and restrooms. The transfer station building will be a single story clear span structure that is entirely open with no interior partitions. As previously discussed, both buildings will be equipped with multiple methane sensors that will produce both an audible and visual alarm if concentrations of methane exceed 1% BV or 20% of the LEL. In the event of this alarm the procedures in this section shall be implemented by designated safety coordinators. This plan is intended to fulfill the requirements of 30 TAC §330.957(u).

21.2 Safety And Evacuation Procedures

The following procedures will be implemented in the event an audible or visual alarm is triggered by one of the methane sensors in the buildings:

- 1. Designated safety coordinators shall walk through the building and inform all occupants that they should immediately evacuate the building through the nearest exit door.
- 2. All occupants of the building at the time of evacuation shall proceed to the designated location for evacuation which will generally be the employee and collection truck/transfer trailer parking area. Safety coordinators shall determine if all occupants have exited the building.
- 3. After evacuation is complete the safety coordinator shall call 911 to notify the local fire department and inform him of the emergency. The coordinator will also notify Waco Environmental Health and Safety Manager to provide details of the evacuation.
- 4. The safety coordinators should wait for the emergency response personnel and inform them of the reasons for evacuation.
- 5. After emergency response personnel have determined it is safe to re-enter the building, the safety coordinators may allow people back into the transfer station or scale house building.

The locations of exits are marked on Drawing A3.1 and A5.0 of the building plans contained in Appendix B. Building occupants will be notified by posting notice in common areas and by email or other similar forms of communication that the building is located over a former MSW landfill, and that controls are in place to minimize the potential danger posed by a closed MSW landfill.

Appendix A Site Investigation

• Geotechnical Investigation – January 2023



January 26, 2023

SCS Engineers 1901 Central Drive, Suite 550 Bedford, Texas 76021

Attention:

Mr. Ryan Kuntz, P.E.

Vice President

Reference:

Geotechnical Report (Revised)

Solid Waste Transfer Station

Waco, Texas

LE Project No. W22-074R1

Dear Mr. Kuntz:

This letter transmits our geotechnical report, which has been electronically produced. We appreciate the opportunity to provide engineering services for you.

Once the project plans and specifications are completed, we would be pleased to review those portions that pertain to this report. We would also appreciate the opportunity to provide construction phase services such as materials testing as a part of the success of the project.

If you have any questions regarding our report, please call me at (254) 235-1048 or email SLangerman@LFEctx.com.

Best Regards,

LANGERMAN ENGINEERING

Texas Registered Engineering Firm No. F-13144

Scott M. Langerman, P.E.

Principal / Geotechnical Engineer

Distribution List:

- SCS Engineers- Mr. Ryan Kuntz, P.E. (RKuntz@SCSEngineers.com)
- SCS Engineers- Mr. Jeff Arrington, P.E. (JArrington@SCSEngineers.com)



GEOTECHNICAL REPORT Solid Waste Transfer Station

Waco, Texas

LE Project No. W22-074R1



Report Prepared For:

SCS Engineers Bedford, Texas

Report Prepared By:

Scott M. Langerman, P.E.

Principal / Geotechnical Engineer



January 26, 2023



2000 South 15th Street, Waco, Texas 76706 Ph: 254/235-1048 www.LFEctx.com



GEOTECHNICAL REPORT SOLID WASTE TRANSFER STATION WACO, TEXAS

1.0 INTRODUCTION

Purpose: The purpose of this geotechnical report is to provide geotechnical design

and construction criteria for a new Transfer Station. Geotechnical data and recommendations are provided in a brief, and hopefully user friendly

manner.

Authorization: Services were performed in general accordance with LE Proposal No.

GEO22-102, dated June 14, 2022. Authorization to proceed was provided via SCS Engineers Purchase Order No. 16-DA01968. It was signed by Mr.

Ryan Kuntz, P.E. on September 9, 2022.

2.0 SUBSURFACE EXPLORATION

Drilling Dates: October 5, 6, 7, 12, and 13, 2022. Three extra borings were subsequently

added to the project and drilled on November 3, 2022.

Boring Layout: The boring locations were staked in the field by Walker Partners using a

sketch provided by SCS Engineers. Survey data are provided in Table 2.1 for the deep borings (Borings DB-1 through DB-5). Elevations are shown on the individual boring logs, and were rounded to the nearest 0.1 feet.

Plates 1 and 2 show the approximate boring locations.

Borings indicated with "DB-x" are deep borings for the foundations, and boring indicated with "SB-x" are shallow borings used to approximate the thickness of the landfill cover. All borings were backfilled with bentonite.

	TABLE 2.1: BORING LOCATIONS AND ELEVATIONS									
Boring	ng Grid Northing Grid Easting Elevation Boring Grid Northing Grid Easting Elevation									
DB-1	10523293.01	3310148.98	417.7	DB-4			410.5			
DB-2	10523959.95	3310077.94	408.8	DB-5	10523601.03	3310295.00	415.0			
DB-3			407.8							

- Data were provided by Walker Partners. Elevations were rounded to the nearest 0.1 feet.
- Borings DB-3 and DB-4 were moved after Walker Partners staked the borings in the field. Therefore, the coordinates are unknown. Elevations were estimated from a topographic survey



Sampling Methods:

Push-tubes were generally used to sample the upper clay soils, and a split spoon was used in harder soils, landfill materials, and the underlying clayshale. The split spoon sampler was used in conjunction with standard penetration tests, and N-Values were recorded on the boring logs.

NX-size core drilling was performed in Boring DB-4 in clayshale (soft bedrock). Coring was generally unsuccessful due to binding of the hollow-stem augers in the landfill materials. In addition, water used in the core drilling process was entering the landfill through the augers, which was undesirable. Therefore, coring was eliminated in the remainder of the borings.

3.0 LABORATORY TESTS

Test Procedures:

The following tests were conducted in general conformance with the standards noted in Table 3.1.

TABLE 3.1: LABORATORY TESTS					
Test Name	Test Method				
Atterberg Limits	ASTM D 4318				
-#200 Mesh Sieve	ASTM D 1140				
Moisture Content	ASTM D 2216				
Soil Classification	ASTM D 2487				
	•				

Test Results:

Laboratory test results are shown on Plate 3 in the Appendix, and selected test results on the boring logs.



4.0 SITE OBSERVATIONS AND SUBSURFACE MATERIALS

Site Observations: Although we do not know the history of the subject property, we surmise

that it was originally mined to extract sand and gravel materials. At some point, the mining operations were halted, and the excavation was used as a landfill. A soil cover was later placed over the landfill. At present, the

property is used as a pasture for cattle grazing.

Stratigraphy: Major strata types for the deep foundation borings (Borings DB-1 through

DB-5) are listed in Table 4.1. Individual boring logs are contained in the Appendix. Material descriptions are general and range of depths approximate because boundaries between different strata are seldom

clear and abrupt in the field.

TABLE 4.1: MAJOR STRATA TYPES						
Strata	Depth to Top of Strata (ft)	Depth to Base of Strata (ft)	General Description			
_	0	5 to 10	FILL- FAT CLAY, SANDY FAT CLAY, SANDY LEAN CLAY, and CLAYEY SAND/GRAVEL; brown, light graybrown, red-brown, dark gray, gray, gray-brown, and dark gray-brown			
II	5 to 10	17 to 30	LANDFILL MATERIALS- mixed with clay and sand (Landfill Materials were logged in all deep borings except Boring DB-3)			
Ш	6 to 30	28.5 to 39	LEAN CLAY, SANDY LEAN CLAY, FAT CLAY, SAND, GRAVEL, and CLAYEY SAND; dark brown, red-tan, gray, tan, light gray, brown, red-brown, and dark gray			
IV	28.5 to 39	43 to 55	CLAYSHALE; dark gray			

Strata changes are approximate, and in-situ transitions are usually gradual.

Geology: Based on the available geologic map¹ of the area, and the contents of the

borings, the site is located within Alluvial Deposits overlying shale of the

Taylor Formation.

Mining of sand/gravel and subsequent landfilling has disturbed the native stratigraphy of the soils; however, native soils are present below the landfilled portion of the site.



Alluvial Deposits are derived from ancient meandering paths and flood events of the Brazos River. Due to the inconsistent means of deposition, the deposits vary both horizontally and vertically in content and engineering properties. From a geologic perspective, alluvial deposits are considered recent.

The underlying Taylor Formation consists of montmorillonitic clays that were deposited in a shallow marine environment, and have a maximum thickness of about 500 to 775 feet in the Central Texas area. After deposition, the clays consolidated to form a weak rock-like clay shale material when sufficient amounts of calcium carbonate were present as a cementing agent. This soft rock-like clayshale material is dark gray in color.

Groundwater:

Borings DB-1, DB-2, DB-3, and DB-5 were drilled to depths of 50 to 55 feet using dry drilling methods, meaning that water was not used in the drilling process. Boring DB-4 was drilled to 40 feet before injecting water in the core drilling process.

Groundwater was encountered in all of the borings at the time of drilling. Table 4.1 includes a summary of the water levels, and more detailed information is shown on the boring logs.

TABLE 4.2: GROUNDWATER LEVEL READINGS							
Boring	Initial Groundwater Reading (feet)	Secondary 10-Minute Groundwater Reading (feet)					
DB-1	9.3	9.7					
DB-2	17.6	17.0					
DB-3	17.2	17.2					
DB-4	6.5	6					
DB-5	23	23					

- All depths are measured relative to the existing ground surface. The initial reading is when groundwater was first encountered while drilling.
- After the initial reading, drilling operations were halted for a 10 minute observation period, and a secondary reading was made.



Groundwater levels are expected to rise and fall on a seasonal basis, and are influenced by rainfall and the level of the Brazos River. To complicate matters, the groundwater level inside of the landfill is probably different than the groundwater outside and/or underneath the landfill.

Situationally, there may also be perched groundwater within the landfill, which is probably the case in Boring DB-4 as evidenced by groundwater at a depth of 6 feet.

Groundwater was not encountered within the depths of the shallow borings.

The water observations conducted for this investigation are short-term and should not be interpreted as a groundwater study. However, the presence of groundwater will affect construction and long-term performance of the proposed foundations and pavements.



5.0 GEOTECHNICAL FOUNDATION RECOMMENDATIONS

Project Summary:

The project consists of a new Transfer Station that will be constructed over a closed landfill. Several key components of the overall project are listed below.

- Solid Waste Transfer Station Building. The building will have a foundation area of about 36,000 sq.ft., and may have a tunnel underneath the building. Finished Floor elevations are listed in Table 5.1. The foundation will be supported with drilled shafts that extend to clayshale.
- Administration and Maintenance Building. The building will have a foundation area of about 3,000 sq.ft. The foundation will be supported with drilled shafts that extend to clayshale.
- **Pavement.** There will be an entry drive and pavement that extends around the Transfer Station Building.
- Landfill Cover. A total of 53 shallow borings were drilled to verify the thickness of the existing landfill cover and provide soil classification of the cover materials.

TABLE 5.1: CUTS AND FILLS FOR 3 FOUNDATION OPTIONS SOLID WASTE TRANSFER BUILDING								
Boring No.	Ground Surface Elevation	Option 1: No Tunnel	Option 2: Partial Option 3: Fu Depth Tunnel Depth Tunne					
	Lievation	FFE= 414	FFE= 417	FTE= 407	FFE= 419	FTE= 403		
DB-1	417.7	Admir	nistration Bu	ilding, Appro	oximate FFE	= 419		
DB-2	408.8	F 5.2	F 8.2	C 1.8	F 10.2	C 5.8		
DB-3	407.8	F 6.2	F 9.2	C 0.8	F 11.2	C 4.8		
DB-4	410.5	F 3.5	F 6.5	C 3.5	F 8.5	C 7.5		
DB-5	415.0	Boring is I	Located Outs	side of the T	ransfer Build	ling Area		
il								

FFE- Finished Floor Elevation of Transfer Building (± 1 ft)

FTE- Finished Tunnel Elevation of Transfer Building (± 1 ft)

C- Cut and F- Fill



Expansive Soil:

Clay soils in the Central Texas area are subject to expansive soil movements, which include swelling under moist conditions and shrinking under dry conditions. Moisture fluctuations occur due to seasonal wet and dry cycles, but are also influenced after construction by site grading, drainage, landscaping, and groundwater.

TxDOT uses the Potential Vertical Rise (PVR) procedure to estimate soil movements. For purposes of this project, the results of the laboratory tests, engineering judgment, and experience have also been considered. The approximate PVR for a typical ground supported slab will be less than ½ inch, which is considered low for the Central Texas area.

Actual soil movements will depend on the subsurface moisture fluctuations over the life of the structure. Soil movements may be less than those calculated if moisture variations are minimized after construction. However, significantly larger soil movements than estimated could occur due to inadequate site grading, poor drainage, ponding of rainfall, and/or leaking utilities.

Existing Landfill:

Existing landfill materials were present to depths of about 17 to 30 feet in Borings DB-1, DB-2, DB-4, and DB-5. Landfill materials were not logged in Boring DB-3. The exact depth of the landfill is difficult to determine in small diameter borings.

Landfill materials are subject to random settlement, which will affect foundations, pavements, flatwork, and any other ground supported features. Actual predictions of the future settlement in these types of land fill materials are impossible.

Be aware that the borings drilled for this investigation were drilled exclusively for geotechnical purposes. Other environmental-related investigations are being performed by SCS Engineers.

We understand that the landfill materials will remain in place and that foundations will include an under-slab system to evacuate methane gases where required.



Foundation Types:

Based on the types of soils encountered in the borings, as well as our understanding of the project, the foundation will consist of Drilled Piers with a Structural Slab on Grade. For this approach, drilled piers must extend into clayshale bedrock.

The interior slab can be formed on grade for both the building and tunnel (if used), but must be designed to be fully supported by the drilled piers, i.e. it must be a structural slab. Future settlement of the landfill materials will occur, and the intent is to avoid settlement of the superstructure and slabs.

Depending on the choice of tunnel depth, site grading will result in cuts ranging from about 1 to 15 feet, and fills ranging from 1 to 11 feet. With this magnitude of grading, it will be desirable to perform the site work as far in advance of building construction as possible to reduce the effects of settlement.

As part of this project, we considered other alternatives such as deep dynamic compaction and placement of surcharge fill over a long period to reduce future settlements. Based on the type of structure, and the timing of the project, neither of these alternatives seemed attractive.



DRILLED STRAIGHT-SHAFT PIERS WITH A STRUCTURAL SLAB ON GRADE

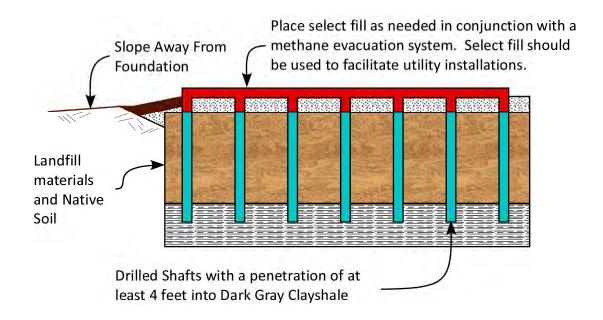


Figure 5.1: Sketch of Slab-on-Grade (not to scale)

Risk:

A properly designed and constructed foundation using drilled shafts with a structural slab on grade will offer a low risk of future foundation movements. Drilled piers must extend to clayshale bedrock.

The interior slab can be formed on grade, but must be designed to be fully supported by the drilled piers, i.e. a structural slab. We anticipate that future settlement of the landfill materials will occur, and therefore the slab must be fully supported by the drilled piers.

Bearing Stratum: Dark Gray CLAYSHALE

End Bearing: An allowable end-bearing of 20,000 psf may be used with a minimum

penetration of at least 4 feet into Dark Gray CLAYSHALE.

Side Friction: An allowable side friction value of 1,500 psf (either tensile or compressive)

may be used after an initial penetration of at least 2 feet into Dark Gray

CLAYSHALE.

Uplift: Uplift forces from clay soils on drilled piers are expected to be minor.

However, we recommend that at least ½ percent steel be used in the piers.



Pier Spacing:

The *side friction* for piers spaced horizontally less than 3 diameters (center to center) should be multiplied by a reduction factor of 50%. Piers with horizontal spacing of 3 diameters or more are not subject to a side friction capacity reduction factor. End-bearing is not affected by pier spacing provided that the bases are at roughly the same elevation.

Settlement:

Properly designed and constructed drilled shafts are expected to have a settlement of ½ inch or less.

Landfill:

Drilling through landfill materials will be difficult due the various components. Casing will be required in most, if not all, locations. We did not find large items in the landfill while drilling our test borings; however, it is possible that large items exist. Large items may require excavation or drilling of extra piers to avoid objects.

Casing:

Groundwater was encountered during our field exploration, and is expected at the time of construction. Temporary steel casing seated into clayshale will be necessary to seal out groundwater and prevent caving of the piers. We recommend that the contractor verify the drilling and groundwater conditions prior to commencing drilled shaft installation.

Interior Slab:

The interior floor slab must be supported in a uniform manner, and must be designed as a structural slab that will be fully supported by the drilled shafts. An underslab system must be used to evacuate methane gas, and must be designed by a professional engineer who has extensive experience with such systems.

Depending on the choice of tunnel depth, site grading will result in cuts ranging from about 1 to 8 feet, and fills ranging from 3 to 11 feet. With this magnitude of grading, it will be desirable to perform the site work as far in advance of building construction as possible to reduce the effects of settlement. In areas where landfill materials are removed for a cut, SCS Engineers will need to specify disposal requirements.

Flatwork:

Landfill materials will be subject to adverse settlements. The recommendations provided in this section primarily address the foundations. Be aware that concrete flatwork such as sidewalks, building approaches, and driveways, will be subject to random settlement. The City should be prepared to repair and even replace these items over time, depending on the magnitude of movement that actually occurs. As well, where the ground is intentionally sloped and graded to provide drainage, the ground may settle sufficiently over time to reverse the intended drainage, which must be remediated when necessary.



There are several key elements that will affect flatwork and pavement design and construction, especially in circumstances where new fill will be placed above the existing subgrade.

- Settlement will occur in the landfill below the fill, and within the fill itself. Both the superstructure and slabs for the buildings (including the tunnel) must be fully supported with drilled piers extending to bedrock. Settlement will occur for the elements not supported with deep foundations, in particular pavements and flatwork. However, there are methods to reduce the settlement.
- Landfill materials will be subject to random settlements, and there is not a reasonable method to estimate settlements due to the mixed components, degradation, and lack of compaction. Degradation will result in long-term settlement that cannot be avoided.
- The placed fill will also settle within itself. With proper compaction, it
 is generally assumed that most fills settle roughly 1 inch for every 10
 feet in thickness. We anticipate that the majority of settlement will
 occur over a period of 2 to 3 weeks for the fill itself (this time period
 does not apply to the underlying landfill material settlement).
- Settlement will need to be monitored by a surveyor during construction by placing settlement plates at the base and also at the top of the fill. Once construction of the fill is completed, the surveyor can obtain weekly elevations of the settlement plates. Construction on top of the fill can commence after the settlement levels out.
- It may be advantageous to construct door stoops as an integral part of the slab foundation. This approach eliminates the possibility of gradesupported flatwork interfering with exterior door operation. "Hinged" flatwork slabs have also been successfully used to accommodate differential movement between suspended foundations and gradesupported flatwork.



TUNNEL (BELOW GRADE WALLS)

Tunnel:

If used, a Tunnel will have below grade walls that will be subject to lateral earth pressures and also to special drainage requirements. We anticipate that the walls will be subject to at-rest earth pressures.

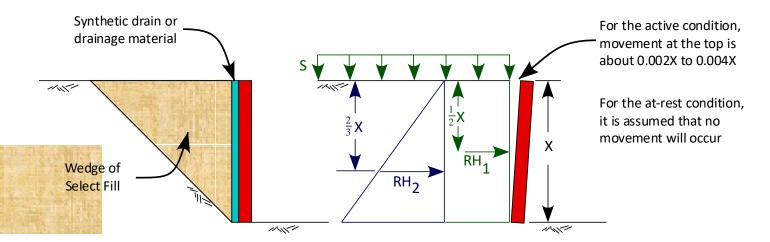


Figure 5.2: Sketch of Subsurface Wall Forces (not to scale, for illustrative purposes only)

TABLE 5.2: EARTH PRESSURE PARAMETERS								
Earth Pressure	Coefficient	Equivalent Fluid Pressure (pcf)	Surcharge Pressure, P ₁ (psf)	Earth Pressure, P₂ (psf)				
At-Rest (K ₀)	0.50	60	(0.50)S	60X				
Active (K _A)	0.33	40	(0.33)S	40X				
Passive (K _P)	3.0	360						

- Values assume a 1H:1V wedge of select fill behind the wall with a unit weight of 120 pcf.
- Values assume that the wall is drained. Hydrostatic pressures must be added for an undrained condition
- Earth pressure parameters do not include a factor of safety
- Drainage material: ASTM C-33, Size 67 gravel aggregate, uniformly compacted
- Base sliding resistance: 500 psf or an ultimate coefficient of friction of 0.3
- Resultant Horizontal Forces per linear foot:
 - \circ R_{H1}= (P₁)(X), where R_{H1} is acting at ½X from the top of the wall
 - o R_{H2} = (0.5)(P_2)(X), where R_{H2} is acting at $\frac{2}{3}$ X from the top of the wall



Drainage:

Below-grade tunnel walls must be designed to resist lateral loads, and must include drainage systems.

Provisions for waterproofing, water-stops, and drainage must be included for subsurface walls and slabs. A general sketch of a typical drainage system is shown in Figure 5.3. A perforated drainpipe should be located with the invert at least 12 inches below the floor slab elevation, and should be surrounded with free-draining granular material (ASTM C-33, Size 67 gravel aggregate). Filter fabric should be used to encapsulate the drainage material.

The tunnel walls should be designed using the geotechnical parameters and lateral earth pressures summarized in Table 1, and illustrated in Figures 5.2 and 5.3.

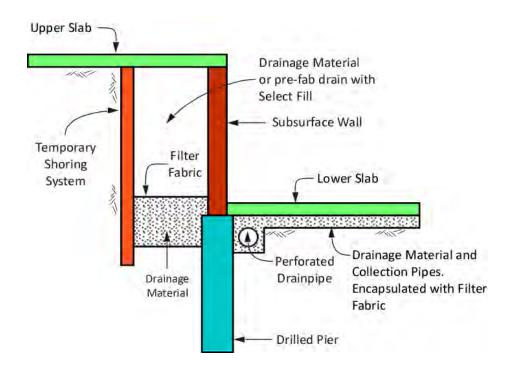


Figure 5.3: Step-Down in the Slab (not to scale)

A subfloor drainage system should be installed beneath the floor slab to prevent hydrostatic pressure and remove water from beneath the slab. The drainage system should consist of an 8-inch thick blanket layer of free-draining granular material (ASTM C-33, Size 67 gravel aggregate). Collector pipes should be at least 4 inches in diameter, and filter fabric should be used to encapsulate the pipe and drainage material to prevent intrusion of



fines. Spacing of the pipes will depend on the size of the ground floor, and should be decided during final design. The subgrade below the drainage system should be shaped and sloped to promote drainage.

All drain pipes should be sloped to provide positive gravity drainage to either a reliable, frost-free outlet or to a sump system. We recommend that the sump system have a back-up power source, and it is essential that regular maintenance be performed.

Excavations:

The following paragraphs contain general comments regarding below grade excavations. Excavation characteristics, design of temporary support systems, and dewatering methods are the sole responsibility of the contractor. Accordingly, the following statements should be regarded only as opinions.

The upper soils consisting of clay are soil-like materials that can be excavated with conventional earth moving equipment. Landfill materials must evaluated by SCS prior to disposal, and may contain large objects.

The design of temporary excavation support systems, trench safety systems, and slope stability for temporary open cut excavations were excluded from our scope of services. The contractor is solely responsible for designing and constructing stable, temporary excavations and must shore, slope or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. All excavations must comply with applicable local, state, and federal safety regulations including current OSHA Excavation and Trench Safety Standards. Construction site safety is generally the sole responsibility of the contractor, who shall also be responsible for the means, methods, and sequencing of construction operations. We are providing information in this report solely as a service to our client. Under no circumstances should the provided information be interpreted to mean that LE is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and must not be inferred.

In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. Specifically, the current OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926 must be followed. The contractor's "responsible person" as defined in 29 CFR Part 1926, must evaluate the materials exposed in the excavations as part of the contractor's safety procedures. If an excavation, including a trench, is extended to a depth of more than twenty (20) feet, it will be necessary to have the side slopes designed by a professional engineer licensed in the



State of Texas. The contractor's "responsible person" must establish a minimum lateral distance from the crest of the slope for vehicles, spoil piles, or other surcharge loads. Likewise, the contractor's "responsible person" shall establish protective measures for exposed slope faces.

The contractor must include the proximity to adjacent features when planning their method of excavation and support. These features include, but are not limited to, adjacent structures and utility lines. The contractor must also be prepared to manage varying amounts of subsurface water. Dewatering quantities will depend on drainage features, any groundwater, and rainfall prior to and during construction.

MISCELLANEOUS DESIGN ITEMS:

Seismic:

For structural designs based upon the 2018 IBC, the following criteria will apply. The Site Class is D. The Mapped Spectral Response Acceleration at short periods (SS) is about 0.08g, and the Mapped Spectral Response Acceleration at a 1 second period (S1) is about 0.04g. Site Coefficients are as follows: Fa= 1.6 and Fv= 2.4.

Hazards associated with slope stability, soil liquefaction, surface rupture, and lateral spreading are not considered an issue with this site due to the study area being in a seismically inactive area and the site being underlain at a shallow depth by bedrock.

Vapor Barriers:

The need for vapor barriers, and where to place them, must be determined by the architect or structural engineer based on the proposed floor treatment, building function, concrete properties, placement techniques, code requirements, and the construction schedule. When moisture barriers are used, precautions should be taken during the initial floor slab concrete curing period to reduce differential curing and possible curling of the slabs.

Impervious Seal:

We recommend that an impervious seal consisting of at least 12 inches of clay soil be constructed on top of the backfill material around the building perimeter. The intent of this impervious seal is to reduce surface runoff water from infiltrating the backfill. The seal must be sloped away from the foundation. In addition, a "plug" of clay soil must be placed at the exit points of the utilities from the foundation to reduce water intrusion into utility trenches.



Subgrade Improvement:

Some of the onsite soils will be subject to pumping of the subgrade, and we should be contacted if this situation occurs. Clean crushed stone may be placed at the base of the excavations to create a firm working surface where needed and/or specified. We expect that a layer of about 6 to 8 inches in thickness will be needed if soft and/or wet subgrade conditions are present, but field conditions may dictate an increased thickness. If more than about 10 inches is needed, then a filter fabric may be needed to avoid migration of fines.

The crushed stone must be clean, and should generally range in size from 3 to 6 inches. Compaction specifications do not apply; however, the stone should be placed in such a manner that will stabilize the bottom of the excavations. This type of clean stone is normally used to stabilize construction entrances, and should be readily available. Be aware that plumbing and other features that require trenching will be difficult to install if the trenches extend into the clean stone.

Utility Connections:

Depending on the foundation system selected, utilities resting on or within settlement-prone soils are subject to soil movements. Utility connections should account for such movement potential, such as by using flexible connections.

Based on our previous experience, clay soils are corrosive to buried metals. Corrosion protection should be provided for such metals. If granular backfill materials are used for the utility lines, then a clay plug must be placed at the exterior foundation penetrations to avoid water intrusion and collection within the utility trenches.

Review by MEP:

We recommend that this report be provided to the project Mechanical, Electrical, and Plumbing engineers (MEP's). Their designs should account for the estimated soil movement potential. We are available to help with questions they may have about soil movements.



6.0 GEOTECHNICAL CONSTRUCTION RECOMMENDATIONS

Site Preparation:

Surficial vegetation, root systems, utilities, and any underground structures must be removed below the building pads. Existing landfill materials should be removed to the extent decided upon by the design team. The stripping depth must be based on field observations with attention given to old drainage areas, uneven topography, and wet soils. Proof-rolling should be used to detect soft spots or pumping subgrade areas. Proof-rolling should be performed using a heavy pneumatic tired roller, loaded dump truck, or similar piece of equipment weighing at least 25 tons.

Grading:

Grading, landscaping, and drainage pose a significant risk factor for future performance of the foundation systems. Prevention of water ponding around the foundation is critical. We suggest the following general guidelines for perimeter drainage:

- 1. The building pad or the finished floor elevation must be elevated from the exterior finished grade to assist in draining the surface water away from the structure.
- 2. Where possible, extend paved surfaces up to the building line to serve as a barrier to soil moisture evaporation and infiltration. These surfaces must slope away from the building.
- 3. Outlets for gutter systems must rapidly discharge water away from the foundation.
- 4. Roots from trees and decorative vegetation remove moisture from soils, which causes soil shrinkage (settlement). Trees should have root blockers near the foundation or be located as far away from the foundation as practical.
- 5. Sprinkler systems must be properly maintained and over-watering of the soils should be avoided.

Subgrade:

The subgrade soils should be compacted to at least 95 percent of ASTM D698 (or TEX-113-E) maximum dry density at 0 to +3% of the optimum moisture content. Proof-rolling may be used in lieu of compaction testing of the subgrade, but will require approval by LE on a case-by-case basis. In most cases, compaction testing will be required.



Select Fill:

Fill should meet the requirements of 2014 TxDOT Item 247, Type A, Grade 3 or better. If another local source of select fill is desired, the following specification may be used as a guide:

Maximum Aggregate: 3 inches
Percent Retained on #4 Sieve: 25 - 50
Percent Retained on #40 Sieve: 50 - 75
Plasticity Index: 5 - 15

Non-Organic

Crusher fines are not acceptable. Please note that locally available "red fill" is generally acceptable for use as select fill below the buildings, provided that these materials are confined by grade beams. However, red fill is highly variable and will require evaluation by LE on a case-by-case basis.

The select fill material should be compacted to at least 95 percent of ASTM D698 (or TEX-113-E) maximum dry density at 0 to +3% of the optimum moisture content. A maximum compacted lift thickness of six inches must be specified, with each lift tested for compliance prior to the addition of subsequent lifts. The placement and compaction of fill material must be observed, monitored, and tested by LE on a full-time basis.

Foundation:

Foundation and drilled shaft construction recommendations are listed below.

- 1. A minimum pier shaft diameter of 24 inches is normally specified to allow for cleaning, minimum construction tolerances, and conventional concrete mix designs. Smaller diameters may be used at the discretion of the structural engineer.
- 2. The foundation construction must be observed by LE to determine that the proper bearing material has been reached in accordance with the recommendations given herein.
- 3. Prior to the placement of concrete, water must be removed from the foundation excavations. Prolonged exposure or inundation of the bearing surface with water may result in changes in bearing strength and compressibility characteristics. If delays occur, drilled shaft excavations should be deepened and cleaned, in order to provide a fresh bearing surface.



- 4. Concrete must be placed promptly after the excavations are completed, cleaned, and observed. Drilled piers must be concreted before the end of the work day.
- 5. The reinforcement steel cage placed in the shaft must be designed from the standpoint of meeting at least two requirements: (1) the structural requirements for the imposed loads; and (2) stability requirements during the placement of concrete.
- 6. Groundwater was encountered during our field exploration, and is expected at the time of construction. Temporary steel casing seated into clayshale will likely be required to seal out groundwater and/or prevent the pier holes from caving. Special concrete design and construction procedures as described in ACI 336.1 and ACI 336.3R should be specified in order to properly extract the casing during concrete placement. The pier concrete should be placed at a minimum slump of 6 inches when temporary steel casing is used. We advise that the bid schedule include installation of temporary casing as a separate unit-price bid item.



7.0 PAVEMENT RECOMMENDATIONS

Pavement: New Entry Drives, a Loop Road, and Parking Lots will be constructed. Most

of the pavement will be subject to heavy truck traffic.

Risk: Pavement design methods are intended to provide an adequate thickness

of structural materials over the subgrade to support the wheel loads. Design methods do not account for settlement of poorly compacted fill materials. *The pavement may be adequate from a structural standpoint,*

yet still experience cracking due to movement of the subgrade.

The pavement and adjacent areas must be well drained. Proper maintenance must be performed on cracks in the pavement surface to prevent water passing through to the base or subbase material. Extending the base material out about 2 feet from the edge of the pavement curb will also aid in reducing edge related cracking. Even with these precautions, some movements and related cracking may still occur. Routine maintenance is essential.

Using geogrids will help reduce damage from differential settlement of the landfill materials. In the long-term, it has been our experience that using geogrids reduces maintenance costs and extends the pavement life.

Pavement "islands" often provide a means of water infiltration into the base and subgrade materials below the pavement. If islands are used, then we recommend that a synthetic lining or clay soils be used to limit infiltration of water into the base and subgrade. Water entry into the base and subgrade will cause softening of the materials, and will cause potholes and/or ruts to form.

The presence of trees and vegetation adjacent to paved areas will exacerbate the formation of cracks in pavements due to moisture loss in the subgrade from transpiration to the root systems of the vegetation. Soil moisture loss from vegetation can extend a distance from the vegetation about equal to its height.

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Traffic Types:

The main traffic in and out of the facility will consist of trash trucks, semitrailer trucks, pick-up trucks with trailers, and occasional passenger vehicles. We have been provided with traffic weights and volumes from the existing City of Waco landfill operations.

Traffic Loads:

For pavement design purposes, traffic volumes are expressed as the number of Equivalent 18-kip single axle load applications (ESAL) over a 20 year theoretical pavement design life. For the primary in/out and loop roads, we have been provided with traffic weights and volumes from the existing City of Waco landfill operations. We have summarized values for two primary traffic conditions in Table 7.1.

TABLE 7.1: TRAFFIC ESTIMATES								
Traffic Area	Typical Traffic	ESAL's	Reference Table					
Light Parking Light Duty	Light cars and pickups, occasional medium delivery trucks, rare heavy vehicles, similar to a low volume residential street.	20,000	Table 7.2A					
Service Trucks Heavy Duty	Delivery Trucks and Trash Trucks	7,400,000	Table 7.2B					

TABLE 7.2A: ESTIMATED TRAFFIC CHARACTERISTICS (20,000 ESAL'S – LIGHT DUTY VEHICLE PARKING)						
Vehicle Type	Gross Vehicle Weight (lbs) Vehicles per Day (per lane)					
Cars / Pickups	4,000	2,000				
Medium Delivery Trucks	20,000	10				
Heavy Trucks	60,000 to 80,000	1 per week				



TABLE 7.2B: ESTIMATED TRAFFIC CHARACTERISTICS (7,400,000 ESAL'S – TRUCK AREAS)

Vehicle Type	Average Vehicle Weight (lbs)	Initial Vehicles per Year (per lane)
Incoming Trash Trucks	50,000	55,812
Outgoing Trash Trucks	40,000	55,812
Incoming Semi-Trailer Trucks	26,000	13,669
Outgoing Semi-Trailer Trucks	80,000	13,669
Incoming Self-Haulers and Brush Hauling Pickups/Trailer	12,500	82,335
Outgoing Self-Haulers and Brush Hauling Pickups/Trailer	10,000	82,335

This table contains a summary of data there were obtained by SCS from City operations at the existing landfill. Vehicle weights were averaged to simplify calculations. We assumed the traffic will increase at a rate of 2% per year for the 20-year design life of the pavement.

Subgrade:

Based on the subsurface materials observed at the boring locations, the primary subgrade at this site will be existing fill soils overlying landfill materials. A resilient modulus value of 3,200 psi has been assigned to the subgrade based correlations between soil index properties and resilient modulus values.

The assigned modulus value does not account for weak or otherwise unsuitable soils that must be proof-rolled and properly compacted during the construction process.

Design Method:

AASHTO and American Concrete Institute guidelines.

Thickness:

Pavement thickness designs are provided in Tables 7.3 on the next page. A reliability value of 80 percent was assigned to the pavement that corresponds to occasional interruption of traffic for pavement repairs. These designs reflect a theoretical "Design Life" of 20 years.

The "design life" of a pavement is defined as the expected life at the end of which reconstruction of the pavement will need to occur. Normal maintenance, including crack sealing, slurry sealing, and/or chip sealing, should be performed during the life of the pavement.



TABLE 7.3: PAVEMENT THICKNESS OPTIONS							
Design Condition	Option	Surface Course	Base Course				
Light Vehicle Parking	1- Asphalt	1.5" Type C or D	8" CLB and GRID				
20,000 ESAL	20,000 ESAL 2- Concrete	6" RCP	6" CLB and GRID				
Service Trucks Heavy Duty 7,400,000 ESAL	1- Concrete	10" RCP	6" CLB and GRID				

Type C or D... Hot Mix Asphalt Concrete, TxDOT Type C or D

CLB... Crushed Limestone Base or Crushed Concrete Base

GRID... Tensar TX5 Geogrid

RCP... Reinforced Concrete Pavement

All of the pavements are at risk of adverse settlement and cracking due to the underlying landfill materials. Using geogrid and compaction requirements as listed in this report will help reduce the cracking, but there is no practical method to eliminate cracking.

Existing Fill:

Existing Fill, including Landfill, is present throughout the site. Be aware that the borings drilled for this investigation were drilled exclusively for geotechnical purposes. Other environmental-related investigations have been conducted by SCS. For purposes of this report, we have assumed that the existing fill can be constructed upon or will be removed in accordance with TCEQ requirements. If environmental requirements demand that other special treatment is necessary, then we must be contacted to provide additional geotechnical recommendations.

The pavement sections provided in this report are based on the assumption that the existing fill materials will be left in place. Pavement will be subject to cracking as a result of random settlements within the fill. We have developed strategies to lessen the potential for random settlement; however, even with these strategies, there remains a high potential for adverse cracking. Listed below are strategies to lessen the potential for adverse cracking.

Use geogrid as shown in the pavement design table.



- Consider placing surcharge fill to expedite settlement in the vicinity of the pavement. Surcharge fill consists of temporarily placing an embankment of excess material, perhaps 5 to 10 feet above the height of the subgrade, and then monitoring settlement. Once settlement has leveled out, then the surcharge fill can be moved. Be aware that this strategy will only partially reduce settlement of the landfill materials because long-term degradation and consolidation will still occur.
- During the construction process, follow the "Site Preparation" recommendations shown below. In particular, proof-rolling must be performed, and all weak or obviously problematic soils must be removed or re-worked.

Site Preparation:

Surficial vegetation, trees, root systems, existing utilities, and all underground structures must be removed, to the extend practical, below the new pavement areas. The stripping depth must be based on field observations with attention given to old drainage areas, uneven topography, and wet soils. Where practical, proof-rolling should be used to detect soft spots or pumping subgrade areas. Proof-rolling should be performed using a heavy pneumatic tired roller, loaded dump truck, or similar piece of equipment weighing at least 25 tons.

Geogrid:

Geogrid (GRID) acts as reinforcement in asphalt pavement sections to help reduce pavement cracking in existing fill materials. Geogrid will not completely prevent cracking in the pavement, but it will help to reduce cracking, especially linear cracking.

Subgrade Improvement:

Some of the onsite soils will be subject to pumping of the subgrade, and we should be contacted if this situation occurs. Clean crushed stone may be placed at the base of the excavations to create a firm working surface where needed and/or specified. We expect that a layer of about 6 to 8 inches in thickness will be needed if soft and/or wet subgrade conditions are present, but field conditions may dictate an increased thickness. If more than about 10 inches is needed, then a filter fabric may be needed to avoid migration of fines.

The crushed stone must be clean, and should generally range in size from 3 to 6 inches. Compaction specifications do not apply; however, the stone should be placed in such a manner that will stabilize the bottom of the excavations. This type of clean stone is normally used to stabilize construction entrances, and should be readily available. Be aware that plumbing and other features that require trenching will be difficult to install if the trenches extend into the clean stone.



Specifications:

Pavement specifications. The TxDOT citations below reference the 2014 Edition unless stated otherwise.

- 1. Hot Mix Asphalt Concrete (HMAC): TxDOT Item 340, Type C or D.
- Crushed Concrete Base or Crushed Limestone Base (CLB): TxDOT Item 247, Type A or D, Grade 1-2 (or 2004 TxDOT Grade 2). Compact to at least 95% of ASTM D1557 (or 100% of TEX-113) at a moisture content range of 0 to +3% of optimum moisture content in 6-inch compacted lifts.
- 3. Reinforced Concrete Pavement (RCP): TxDOT Item 360, Concrete Pavement. The concrete class should be specified as Class P in accordance with TxDOT Item 421, Portland Cement Concrete. TxDOT requires a strength of 4,000 psi at 28 days, along with other requirements in the specification. When sawcut joints are used, the cuts must be made within a few hours of concrete placement. Sawcuts must not be delayed to the following day.
- 4. Geogrid: Tensar TX5 installed according to the manufacturer's recommendations.
- 5. Subgrade: Scarify and re-compact the existing subgrade to at least 95% of ASTM D698 (or TEX-113-E) maximum dry density at a moisture content range of 0% to +3% of optimum moisture content. This does not apply if lime stabilization is used.
- 6. Transitions from an asphalt pavement to a rigid pavement are often problematic in that over time a depression usually forms in the asphalt at the joint. This is caused when vehicle tires pass from the rigid concrete pavement to the flexible asphalt pavement. One method to reduce this effect is to continue a "lip" of concrete under the asphalt.
- 7. The pavement must have positive drainage, and water must not pond in areas directly adjoining paved sections. Excess watering with sprinkler systems near the pavement should be avoided.



8.0 DESIGN REVIEW AND LIMITATIONS

Design Review:

The recommendations contained in this report were based on preliminary site plans and design information provided by the Client. Our recommendations may not be applicable if changes have been made to the original information that formed the basis for this report, and we must be retained to make a determination if changes have been made. We also must be given the opportunity to review construction documents to affirm that our recommendations have been interpreted correctly. We cannot be responsible for misinterpretations if not given the opportunity to review aspects of the project that are based on the contents of this report. A review is considered an additional service.

Limitations:

This report has been prepared for the exclusive use of our client and their designated project design team. Preparation of the report has been performed using that degree of care and skill ordinarily exercised under similar conditions by reputable geotechnical engineers practicing in the same locality. No warranties, express or implied, are intended or made.

As stated in the attachment "Important Information about Your Geotechnical Engineering Report", the subsurface conditions are interpreted from samples taken only at the boring locations. During construction, variations will be encountered, and will require interpretation by LE to verify the adequacy of the geotechnical recommendations. Other concerns and limitations are discussed in the attachment.

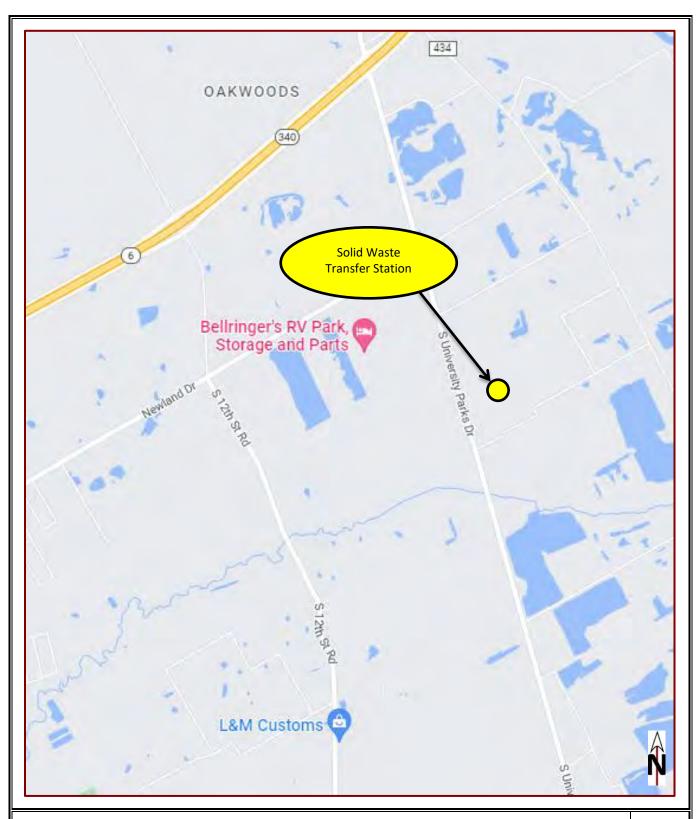
This investigation did not include environmental testing or evaluations, and does not address whether landfilling operations, as defined by the State of Texas, have occurred on the property. An environmental professional should be retained to address environmental issues.

9.0 REFERENCES:

1. Geologic Atlas of Texas, Waco Sheet, Bureau of Economic Geology, The University of Texas at Austin, Austin, Texas 1970.

APPENDIX

Site Location Map (Plate 1)
Boring Location Sketches (Plates 2A and 2B)
Laboratory Test Results (Plate 3)
Boring Logs
Important Information about Your Geotechnical Engineering Report

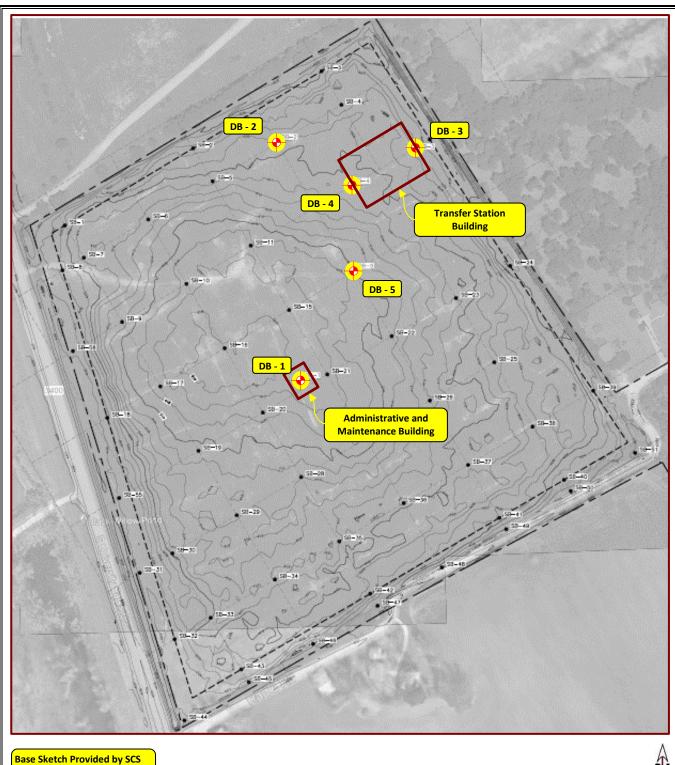




SITE LOCATION MAP

PLATE

SOLID WASTE TRANSFER STATION WACO, TEXAS LE PROJECT NO. W22-074 1



Engineers (Revised 10-5-2022)



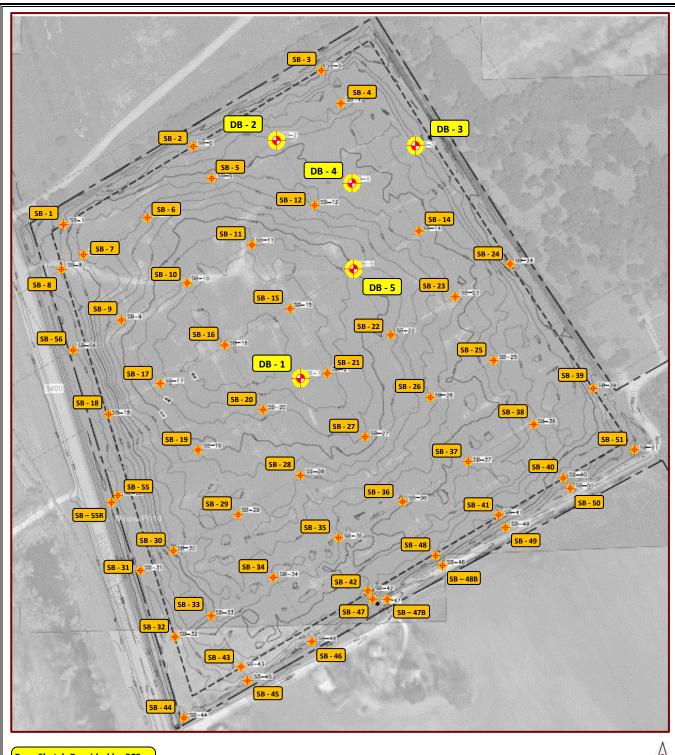


BORING LOCATION SKETCH

PLATE

SOLID WASTE TRANSFER STATION MCLENNAN COUNTY, TEXAS LE PROJECT NO. W22-074

2A



Base Sketch Provided by SCS Engineers (Revised 10-5-2022)





BORING LOCATION SKETCH

PLATE

SOLID WASTE TRANSFER STATION MCLENNAN COUNTY, TEXAS LE PROJECT NO. W22-074

2B

Boring No.	Sample Depth (ft.)	Liquid Limit	Plastic Limit	Plasticity Index	Percent Passing No. 200 Sieve	Moisture Content (%)	Unit Dry Weight (pcf)	Unconfined Compressive Strength (tsf)	Strain at Failure (%)
DB-1	0.0 - 2.0	57	19	38	76	14			
DB-1	2.0 - 4.0				25	2			
DB-1	4.0 - 5.5	28	14	14	32	5			
DB-1	10.0 - 11.5				40	28			
DB-1	23.5 - 25.0				77	29			
DB-1	33.5 - 35.0				57	20			
DB-2	0.0 - 2.0				53	5			
DB-2	2.0 - 3.5	52	18	34	66	12			
DB-2	4.0 - 5.5				38	7			
DB-2	6.0 - 7.5	45	17	28	69	25			
DB-2	18.5 - 20.0				45	17			
DB-2	23.5 - 25.0				8	12			
DB-2	27.0 - 28.3				1	17			
DB-3	0.0 - 2.0				29	4			
DB-3	2.0 - 4.0	42	16	26	40	7			
DB-3	6.0 - 7.5	51	18	33	84	28			
DB-3	8.0 - 9.5				81	24			
DB-3	10.0 - 11.5				86	24			
DB-3	13.5 - 15.0				73	18			
DB-3	23.0 - 24.5				12	12			
DB-4	0.0 - 2.0				69	6			
DB-4	2.0 - 4.0	33	16	17	30	11			
DB-4	23.5 - 25.0				76	27			
DB-5	0.0 - 0.5	53	20	33	74	10			
DB-5	2.0 - 3.5				24	3			
DB-5	4.0 - 5.5				17	5			
SB-1	0.5 - 2.0	23	15	8	63	4			
SB-1	2.0 - 3.5				53	4			
SB-2	0.0 - 2.0	35	15	20	52	6			
SB-3	0.5 - 2.0	34	16	18	55	7			
SB-4	0.5 - 2.0	42	17	25	60	8			
SB-5	2.5 - 4.0	39	16	23	71	8			
SB-6	0.5 - 2.0	39	16	23	44	5			
SB-6	2.0 - 3.5				14	3			
SB-6	3.5 - 5.0				39	5			
SB-6	5.0 - 6.5				19	3			
SB-6	6.5 - 8.0				25	4			
SB-7	0.5 - 2.0	21	15	6	50	5			
SB-8	0.5 - 2.0				23	3			
SB-8	3.5 - 5.0	39	16	23	56	24			
SB-9	0.0 - 1.0	40	17	23	47	5			
SB-10	0.5 - 2.0	44	16	28	41	5			



Summary of Laboratory Results

Project: Solid Waste Transfer Station

Project Number: W22-074

		i							
Boring No.	Sample Depth (ft.)	Liquid Limit	Plastic Limit	Plasticity Index	Percent Passing No. 200 Sieve	Moisture Content (%)	Unit Dry Weight (pcf)	Unconfined Compressive Strength (tsf)	Strain at Failure (%)
SB-10	2.0 - 3.5				32	4			
SB-11	2.0 - 3.5	29	14	15	60	6			
SB-11	3.5 - 5.0				36	4			
SB-12	0.0 - 1.5	27	13	14	28	4			
SB-13	0.0 - 1.5	27	14	13	47	6			
SB-14	0.0 - 2.0	35	17	18	48	6			
SB-14	2.0 - 3.5				32	10			
SB-15	0.0 - 2.0	49	19	30	69	11			
SB-15	2.0 - 3.5				33	11			
SB-16	0.0 - 2.0	37	17	20	68	9			
SB-16	2.0 - 3.5				16	3			
SB-17	0.0 - 2.0	68	23	45	87	15			
SB-17	2.0 - 3.5				59	27			
SB-18	0.0 - 2.0	55	20	35	52	8			
SB-19	0.0 - 2.0				72	7			
SB-19	2.0 - 3.5	44	19	25	68	10			
SB-20	0.0 - 2.0	35	17	18	41	6			
SB-20	2.0 - 3.5				38	6			
SB-21	0.0 - 2.0	51	22	29	58	6			
SB-21	2.0 - 3.5				37	5			
SB-22	0.0 - 2.0	37	18	19	63	5			
SB-22	2.0 - 3.5				24	8			
SB-23	0.0 - 2.0	33	15	18	60	4			
SB-23	2.5 - 4.0				29	5			
SB-24	0.0 - 2.0				57	12			
SB-24	2.0 - 4.0	39	16	23	55	13			
SB-25	0.0 - 2.0	35	16	19	69	8			
SB-26	0.0 - 2.0				69	7			
SB-26	2.0 - 3.5	30	15	15	46	9			
SB-27	2.0 - 3.5	45	19	26	39	6			
SB-27	4.0 - 5.5				60	8			
SB-28	0.0 - 2.0	55	22	33	63	8			
SB-29	0.0 - 2.0	39	17	22	18	1			
SB-30	0.0 - 2.0	23	13	10	23	2			
SB-31	0.0 - 2.0	54	20	34	73	10			
SB-31	2.0 - 3.5	54	20	34	62	11			
SB-32	0.0 - 2.0	28	14	14	54	4			
SB-32	2.0 - 3.5				36	4			
SB-33	0.0 - 2.0	39	16	23	63	7			
SB-33	2.0 - 3.5				32	7			
SB-34	0.0 - 2.0	24	15	9	24	2			
SB-35	0.0 - 2.0	35	17	18	73	7			



Summary of Laboratory Results

Project: Solid Waste Transfer Station

Project Number: W22-074

Boring No.	Sample Depth (ft.)	Liquid Limit	Plastic Limit	Plasticity Index	Percent Passing No. 200 Sieve	Moisture Content (%)	Unit Dry Weight (pcf)	Unconfined Compressive Strength (tsf)	Strain at Failure (%)
SB-35	2.0 - 3.5				41	9			
SB-36	0.0 - 2.0	30	16	14	27	4			
SB-37	0.0 - 2.0	NP	NP	NP	22	3			
SB-38	0.0 - 2.0	26	15	11	43	3			
SB-39	0.0 - 2.0				28	3			
SB-39	4.0 - 5.5	54	20	34	59	14			
SB-40	0.0 - 2.0	38	17	21	58	9			
SB-41	0.0 - 2.0	32	16	16	55	3			
SB-42	2.0 - 3.5	41	17	24	50	8			
SB-43	0.0 - 2.0	43	18	25	62	4			
SB-43	2.0 - 3.5				30	4			
SB-44	2.0 - 3.5	49	20	29	63	10			
SB-44	4.0 - 5.5				70	12			
SB-45	0.0 - 2.0	35	16	19	80	5			
SB-45	2.0 - 3.5				49	8			
SB-46	0.0 - 2.0				60	4			
SB-46	2.0 - 3.5	40	17	23	54	7			
SB-47	0.0 - 2.0	35	16	19	66	6			
SB-47B	2.5 - 4.0	39	16	23	72	12			
SB-48	2.0 - 3.5	39	17	22	60	7			
SB-48B	0.0 - 2.0				51	17			
SB-48B	2.5 - 4.0	53	20	33	76	15			
SB-49	2.0 - 3.5	56	20	36	66	8			
SB-49	4.0 - 5.5				82	15			
SB-50	2.0 - 3.5	30	14	16	58	7			
SB-51	2.0 - 3.5	39	17	22	67	11			
SB-55	0.0 - 2.0	61	20	41	59	9			
SB-55	2.0 - 3.5				66	12			
SB-55R	0.0 - 2.0	57	21	36	64	10			
SB-55R	2.0 - 3.5				46	9			
SB-56	2.0 - 3.5	55	20	35	71	12			



Summary of Laboratory Results

Project: Solid Waste Transfer Station

Project Number: W22-074

BORING NO. DB-1

PAGE 1 OF 1

Langerman Engineering Waco and Harker Heights (Killeen), Texas Ph: 254-235-1048 www.LFECTX.com

CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJECT NUMBER W22-074			PROJECT LOCATION Waco, TX											
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation 417.7 feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY SA INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0	XXXX	FILL - FAT CLAY; brown, with sand and grav	el or			0.5					4.4			
			415.7	4		3.5	57	19	38	76	14			
_	\bowtie	FILL - CLAYEY SAND and GRAVEL; light gray-brown	413.7 ST	-						25	2			
		FILL - CLAYEY SAND and GRAVEL; red-bro	wn, Ss		13-16-14		28	14	14	32	5			
		with wood chips	410.7 A	1	(30)	1								
		LANDFILL MATERIALS - mixed with clay and sand	"_ ДА		(9) 5-3-3	4								
10	₩		¥ Xss Xss	-	(6)	/				40	28	_		
	₩		A	1	3-2-2						20	-		
	\bowtie		Xss		5-6-4	1								
	\bowtie			1	(10)	1								
			/ A											
20	\bowtie		Xss		7-2-2	1								
	\bowtie				(4)	1								
			394.2 A											
		LEAN CLAY; dark brown, with sand	ss	5	3-3-4	1				77	29]		
			/ A		(7)	1								
			// ^											
30			∑ss		6-6-9 (15)									
			/ _A		(13)	1								
			384.2											
		SANDY LEAN CLAY; red-tan, trace gravel	Xss	5	15-15-25 (40)					57	20			
			/ A											
			378.7	-	13-40-	-								
40		CLAYSHALE; dark gray	376.7 SS	4	50/6"	/								
			/ A											
	H		⊠ss		40-50/6"	1								
			1/1	1		1								
_			// A											
50			367.7 SS	ij.	50/6"									
50			367.7 SS A	5	50/6"									
Date Comp	pletior Starte pleted ed by:	Depth: 50 ft. ed: 10/12/22 : 10/12/22	G	roundwa	s advance ater was o on period,	bserv	ed at	a der	oth of	9.3 fe	eet. A	fter a	10 minute	е

BORING NO. DB-2

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) STRAIN AT FAILURE (%) POCKET PEN. (tsf) **LIMITS** RECOVERY 9 (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation 408.8 feet FILL - SANDY LEAN CLAY; red-brown, with ST 4.5+ 53 5 gravel 9-7-7 SS FILL - SANDY FAT CLAY; red-brown and darko4.8 52 18 34 66 12 (14) 10-7-4 Α gray, with plastic pieces 38 7 FILL - CLAYEY SAND; red-brown, with glass402.8 (11)Α fragments 1-2-3 45 17 28 69 25 FILL - SANDY LEAN CLAY; gray to dark gray (5) 0.5 10 398.8 LANDFILL MATERIALS - mixed with clay and ST sand Α 14-5-3 SS (8) CLAYEY SAND; gray 2-5-10 SS 45 17 20 (15)385.3 SAND; tan, with silt and gravel SS 6-10-16 12 8 (26)381.8 SAND; light gray SS 13-34-1 17 50/3" 30 Α 375.8 37-50/6" CLAYSHALE; dark gray SS Α SS 33-50/6" 40 Α 32-47-SS 50/6" 39-50/6" 44-50/6"

Completion Depth: 55 ft. Date Started: 10/7/22 Completed: 10/7/22 Logged by: L. Fleischhauer

ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074. SOLID WASTE TRANSFER STATION PART 1.GP.

Boring was advanced to a depth of 55 feet using dry drilling techniques. Groundwater was observed at a depth of 17.6 feet. After a 10 minute Remarks:

observation period, groundwater was observed at a depth of 17 feet.

BORING NO. DB-3

PAGE 1 OF 1

Langerman Engineering Waco and Harker Heights (Killeen), Texas Ph: 254-235-1048 www.LFECTX.com

CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) SAMPLE TYPE MOISTURE CONTENT (%) DRY UNIT WT. (pcf) POCKET PEN. (tsf) STRAIN AT FAILURE (%) **LIMIT**Ş RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation 407.8 feet FILL - CLAYEY SAND; red-brown ST 4.5+ 29 4 405.8 FILL - CLAYEY SAND and GRAVEL; gray-brown, ST 42 26 40 7 16 with plastic and glass pieces 3-5-4 (9)FAT CLAY; dark gray, with sand 2-3-6 51 18 33 84 28 (9) 3-5-7 - root holes from 8 to 10 feet 81 24

L	10		_397.8	A A	1 1	(12)						ľ	
				MA	1 1	(12) 3-5-6			86	24			
ŀ			395.8	SS	1 1	(11)							
			LEAN CLAY; light gray, with sand	/ A									
\neg				X ss] [4-6-8			73	18			
G.				\rightarrow	1 1	(14)							
Ę	-		▼	/ A									
Ä	-		389.8		.								
žΙ	20		LEAN CLAY; brown, red-brown, and light gray,	ST			0.5						
탉	20		mottled		-								
ST/				/ A									
R	-		384.8]]						.		
Ŗ			SAND and GRAVEL; tan, with silt	X ss		8-11-12			12	12	.		
≴		50			1 1	(23)							
탊	-	00		/ A							.		
TS				\Box									
≱	00	200	378.8	⊣X∣ss		7-5-17					.		
身	30	_	CLAYSHALE; dark gray		1 1	(22)					.		
S				/ A							.		
4,				/// //							.		
22-(Ss	 	32-42-					.		
× ×				N 33		50/5"					.		
202				1/1							.		
				/ A							.		
틻	_			X ss	 	35-50/6"							
를	40			733	1 1	33-30/0					.		
8		_		/ _A									
(S)				/ ^									
띫	_			W _{CC}	 	37-48-					.		
8				Xss		50/4"					.		
라		===		1/1	l 1	00/1							
5				/ A					1				
T - 12/6/22 08:19 - Z:\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ	-			Hee		26 F0/6"			1				
9.	50			SS	 	36-50/6"			1				
8				/ _					1				
6/22				/ A					1				
12/				Han		45 50/0"			1				
ᆣ		1	352.8	SS	1 1	45-50/6"						į l	

Completion Depth: 55 ft. Date Started: 10/6/22 Completed: 10/6/22

Boring was advanced to a depth of 55 feet using dry drilling techniques. Groundwater was observed at a depth of 17.2 feet. After a 10 minute observation period, groundwater was observed at a depth of 17.2 feet. Remarks:

-ANGERMAN FOSTER - GINT STD US LAB.GDT

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

	PROJ	ECIN	UIVIDER _ VV 22-0/4			_ FRU	JECT LOC	AIIO	N _ VV &	100, 17	`					
	, DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation 410.5	l i foot	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC HEALINITE BEALINITE CIMIT		FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
ł	0	XXXX	FILL - SANDY LEAN CLAY; red-brow		СТ						ш				- 00	
-			gravel	408.5	ST			4.5+				69	6			
			FILL - CLAYEY SAND and GRAVEL; with plastic and glass pieces		ST		0 = 11		33	16	17	30	11			
	_		LANDFILL MATERIALS - mixed with	clay and ☑	SS	1	2-7-11 (18)									
			sand	¥	SS		2-1-1									
ı	 10			Ž	SS)	(2) 10-4-2									
ı				X	A SS A SS A SS	1	(6) 2-3-4									
l				7	A	}	(7)									
7		₩			ss	1	5-4-2 (6)									
<u>1</u> .		$\otimes \otimes$		/	A	}	(0)									
PAR				<u> </u>	Ш											
NO E	20	\bowtie		X	SS	\	4-3-3 (6)									
STA		\bowtie		/	/ A	Î										
ISFEF			FAT CLAY; dark gray, with sand	387.0 V 386.0 V	ss	-	9-10-16					76	27			
TRAN			FAT CLAY; dark gray and tan			1	(26)					70	21			
STE	_			382.0	A											
M CI	30		CLAYSHALE; dark gray	302.0	ss	j	25-38-									
SOL		_			∖A RC	10	50/5"									
2-074		_		_		(0)										
2\W2					RC	72										
D 202					IXC	(46)										
				 												
OMPI	40	_			RC											
TS/C				367.5												
ROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ																
Z:\GII																
3:19 -																
22 08																
12/6/																
띉																
LAB.(
D US																
GINT STD US LAB.GDT - 12/6/22 08:19 - Z:\GINT P				Remarks:	Bor	ing was	s advance	ed to a	a den	th of :	30 fee	et bef	ore us	sina w	ater in th	e
- 1	0-	ml = 4!	Donath, 40.5	Romants.	roc	k core	drillina pro	ocess	. Gro	undwa	ater w	≀as ob	oserve	ed at a	a depth o	f 6.5
STEF		pletior Starte	Depth: 43 ft.		at a	depth	a 10 minu of 6 feet.	Hole	termi	nated	by d	riller a	at 43	eet. T	he	iala
N FO		pleted			noll The	iow-ste e wire li	m auger b ne core b	ecan arrel v	ne sia was tl	ınted hen u	ın tne nable	nole to tra	aue t avel th	o iand irough	ıııı mater 1 the slan	iais. ited
LANGERMAN FOSTER	Logg	ed by:	L. Fleischhauer		aug									J		
ANG																
–∟																I

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PRO.	JECT N	UMBER _W22-074		_ PRO	JECT LOC	CATIO	N _Wa	co, T	<					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation 415 feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HERE	PLASTICITY SA INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECT S/COMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ		FILL - FAT CLAY; dark gray-brown, with sand and trace gravel FILL - CLAYEY SAND; red-brown, trace gravel 410.0 LANDFILL MATERIALS - mixed with clay and sand 385.0 FAT CLAY; dark gray and tan 381.9 CLAYSHALE; dark gray	SS A A		15-24-20 (44) 8-5-1 (6) 3-50/6" 7-5-4 (9) 39-7-6 (13) 50/2" 5-3-3 (6) 0-1-4 (5) 25-37- 50/6" 30-42- 50/6"		53	20	33	74 24 17	3 5			
Com Date Com	pletior Starte pleted ged by:	: 10/7/22	s: Bo Gr ob	oring wa oundwa servatio	s advance ater was o on period,	ed to a bserv grou	a dep ed at ndwa	th of the depth of	50 fee oth of as obs	et usir 23 fe serve	ng dry et. Af d at a	∕ drillir ter a ′ deptl	ng technic 10 minute n of 23 fe	ques. et.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJ	JECT N	UMBER <u>W22-074</u>			_ PRC	DIECT LOC	AHOI	N VVa	ico, T	\					
O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIF Approximate Surface Elevation		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC IN LIMIT	PLASTICITY N	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		FILL - SANDY LEAN CLAY; red		ST							_				
				ss		11-12-13 (25)		23	15	8	63	4			
STATION PART 1.GPJ	-	LANDFILL MATERIALS - mixed sand	with clay and	ss		12-10-6 (16)					53	4			
OLID WASTE TRANSFER	-			SS		6-5-3 (8)									
PROJECTS/COMPLETED 2022/W22-074, §															
-GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ 10 17 18 19 10 10 10 10 10 10 10 10 10			Remarks:	Bo	ring wa	s advance	ed to	a dep	th of	5 feet	using	g dry (drillinç	g techniqu	ues.
Com Date Com	pletior Starte pleted jed by:	: 10/5/22		Gr	oundwa	iter was n	ot obs	serve	d abo	ve tha	at dep	th.			

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

	_											_		
O DEPTH (#)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC WE SHAND IN THE PROPERTY OF THE PROPER	PLASTICITY N	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
2.5 2.5 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5		FILL - SANDY LEAN CLAY; red-tan and dark gray LANDFILL MATERIALS - mixed with clay and sand	ST		2-2-4 (6) 23-22-6 (28)	4.5+	35	15	20	52	6			

Completion Depth: 5 ft.
Date Started: 10/5/22
Completed: 10/5/22

Logged by: L. Fleischhauer

Remarks: Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

1		UMBER _W22-074				DECI LOC	AIIOI	<u> </u>	100, 17	`					
DEPTH		MATERIAL DESCRI		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HERE	PLASTICITY SA INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation FILL - SANDY LEAN CLAY; red		1						ш	ш			0 0,	
-	-	gray, with gravel LANDFILL MATERIALS - mixed		SS		4-6-5 (11)		34	16	18	55	7			
STATION PART 1.GPJ	-	sand	. mai say and	ss		6-3-8 (11)	-								
OLID WASTE TRANSFER 1 0	-			SS		7-2-2 (4)									
-GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ															
Dat Cor	npletior e Starte npleted iged by:	: 10/5/22	Remarks	: Bo Gr	ring wa oundwa	s advanc iter was n	ed to a	a dep serve	th of digital	5 feet ve tha	using at dep	g dry o	drilling	g techniqu	ues.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

- 1 -			UNIDER				_ '''	SECT LOC	<i>-</i> A1101		100, 17	`					
	(ft) (ft)	GRAPHIC LOG	MATERIA Approximate Surfac	L DESCRIPT		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIMIT	PLASTIC HIMIT LIMIT	PLASTICITY SHIP	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
			FILL - GRAVELLY L	EAN CLAY; re	ed-brown to	ST			4.5+								
.GPJ	- - - 2.5		yellow-gray, with san	d		SS		7-8-8 (16)	4.01	42	17	25	60	8			
STATION PART	-		dark red-brown b	elow 3.5 feet		A											
WASTE TRANSFER	- 5.0		LANDFILL MATERIA	ALS - mixed w	ith clay and	ss		18-9-5 (14)									
- GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ						Da	ring	o odvon-		o do:	th of	E foot	ucin		deillin -	a toologi-	
AN FOSTER	Date Comp	oletior Starte oleted ed by:	: 10/5/22		Remarks	: Bo Gr	ring wa oundwa	s advance ter was n	ed to ot obs	a dep serve	th of s	5 feet ve tha	usinç at dep	g dry o	drilling	g techniqu	ues.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJ	ECIN	UMBER <u>W22-074</u>			_ PRU	DECT LOC	AHO	V _ VV &	ico, 12	<u> </u>					
				, PE	% /	40 (ii)	z Z	ATT I	ERBE	3	ENT	щ (%)	۷T.	ED IIVE (tsf)	L(%
	GRAPHIC LOG		DESCRIPTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface E FILL - LEAN CLAY; red with gravel	tevation feet -tan, gray, and dark gray,							ш.	Ш			0 0,	
				ST			4.5+								
- 				ss		8-8-10 (18)									
2.5						,									
				SS		7-9-11 (20)		39	16	23	71	8			
5.0		FILL - CLAYEY SAND; LANDFILL MATERIALS sand		SS		15-11-6 (17)									
Comp Date Comp	oletion Starte oleted: ed by:	: 10/5/22	Remarks:	Bo tec	ring wa hnique	s advances. Ground	ed to a	a dep · was	th of the	5.5 fe	et usi ed ab	ng dr	y drilli hat de	ng epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJ	ECIN	UMBER <u>W22-074</u>		PRO	DIECT LOC	AHOI	N _VV2	ico, 12	(
			ᆔ	%		ż	ATT	ERBE	RG	L	(%	Т.	ED VE tsf)	
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	RECOVERY (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID		PLASTICITY INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0	XXXX	Approximate Surface Elevation feet FILL - CLAYEY SAND and GRAVEL; gray	1			_			础	正			-08	
			SS		11-11-13 (24)		39	16	23	44	5			
2.5		FILL - CLAYEY SAND and GRAVEL; tan, calcareous	ss		19-10-9 (19)					14	3			
 5.0		FILL - CLAYEY SAND and GRAVEL; red-brown and gray	ss		9-11-20 (31)					39	5			
		FILL - CLAYEY SAND; red-brown, trace gravel	SS		14-13-20 (33)					19	3			
 7.5		FILL - CLAYEY SAND and GRAVEL; light gray LANDFILL MATERIALS - mixed with clay and sand	ss		7-6-7 (13)					25	4			
		Remarks	: BC	oring wa	s advance	ed to	a dep	th of	3 feet	using	g dry (drilling	g techniqu	Jes.
Date	Starte oleted	: 10/5/22	Gr	oundwa	iler was n	ot obs	serve	u aboʻ	ve tha	ы аер	om.			

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	l	PLASTIC HIMIT LIMIT		FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
L.		FILL - SANDY SILTY CLAY; brown to red-tan, with gravel	ST											
		LANDFILL MATERIALS - mixed with clay and sand	SS		11-9-5 (14)		21	15	6	50	5			
2.5			SS		4-28-11 (39)									

Remarks:

Boring was advanced to a depth of 3.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 3.5 ft. Date Started: 10/5/22 Completed: 10/5/22 L. Fleischhauer Logged by:

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

Trico	LOIN	UWBER				JECT LOC	,A1101	<u> </u>	100, 17	`					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRII	PTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ATT	ERBE IMITS	RG } \X	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0	<u>ж</u>	Approximate Surface Elevation FILL - CLAYEY SAND and GRA		1	RECC (mo S	POCI	LIQUID	PLASTIC	PLASTICITY INDEX	FINES	OWO	DRY	COMF	STF
-		tan	, 3,	/ A			_								
-				ss		23-20-7 (27)					23	3			
2.5				ss		3-5-6 (11)									
2.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		FILL - SANDY LEAN CLAY; gra	y, with gravel	ss		5-3-5 (8)		39	16	23	56	24			
EIED 2022/W2Z-U/4, 30C		LANDFILL MATERIALS - mixed sand	with clay and	ss		3-2-1 (3)									
S.19 - C.(GINT PROJECT SICOMPI															
GINT 5 TD US LAB.GDT - 12/0/22 US: 19 - 2. GINT P															
Com Date Com	pletior Starte pleted led by:	: 10/5/22	Remarks:	Bo ted	ring wa hnique	s advance s. Ground	ed to a	a dep r was	th of (6.5 fe bserv	et usi ed ab	ing dr pove ti	y drilli hat de	ng epth.	

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC WINDE		FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - CLAYEY SAND; red-brown and dark gray, trace gravel	s	Г		4.5+	40	17	23	47	5			
 <u>2 2.5</u>		LANDFILL MATERIALS - mixed with clay and sand	S	8	5-24-17 (41)									
			S	6	5-7-11 (18)									

Remarks:

Boring was advanced to a depth of 4 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 4 ft.
Date Started: 10/5/22
Completed: 10/5/22
Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

									, , , , ,	-					
O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPI E TYPE		RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC WE LIMIT	PLASTICITY Z	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
2.5 2.5		FILL - CLAYEY SAND and GRAVEL; red-brown and gray FILL - CLAYEY SAND; red-brown, trace gravel LANDFILL MATERIALS - mixed with clay and sand		ss ss		14-17-12 (29) 13-32-25 (57)		44	16	28	32	5			

Completion Depth: 5 ft. Date Started: 10/5/22 Completed: 10/5/22 L. Fleischhauer Logged by:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth. Remarks:

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJE	CINU	JMBER <u>W22-074</u>			_ PRC	DECT LOC	AHO	N VV	aco, 12	Χ					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRII	PTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HIMIT	PLASTICITY DINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation FILL - SANDY LEAN CLAY: gra red-tan, trace asphalt fragments	y, dark gray, and	ØS A	 R		DA.		₫	PLA -	Z	28	<u>P</u>	STE	ου <u>Γ</u>
				SS		4-3-5 (8)									
TATION PART 1.GPJ				ss		5-6-6 (12)		29	14	15	60	6			
0.0 DWASTE TRANSFER S		FILL - CLAYEY SAND; light gratrace gravel LANDFILL MATERIALS - mixed		ss		10-11-5 (16)					36	4			
LETED 2022/W22-074, SC		sand	with day and	ss		6-4-3 (7)									
LANGERMAN FOSTER GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22.074, SOLID WASTE TRANSFER STATION PART 1.GPJ O TO COLUMN COLU															
DSTER - GINT STD US LAB.GDT - COMPOSITE STD US LAB.GDT - JOHE S		Depth: 6.5 ft. d: 10/5/22	Remarks	Bo tec	ring wa hnique	s advance s. Ground	ed to a	a dep	th of o	6.5 fe	et usi ed ab	ing dr	y drilli hat de	ng epth.	
Comple Logger	leted:														

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	T07F T 10M 0	SAIVIPLE 11PE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIMIT	PLASTIC HIMIT LIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - CLAYEY SAND; red-tan	\bigvee	SS		18-17-9 (26)		27	13	14	28	4			
2.5 2.5		LANDFILL MATERIALS - mixed with clay and sand	\bigvee	ss		5-3-4 (7)									
LID WASTE I RANSFER STATION PARK 1.679.				A SS		9-14-28 (42)									

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.00 WASTE TRANSFER STATION PART 1.GPJ	FILL - CLAYEY SAND; red-tan LANDFILL MATERIALS - mixed with clay and sand		SS SS A	8-11-16 (27) 7-50/1" 4-2-4 (6)		27	14	13	47	6			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC LIMIT	PLASTICITY NO	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
LID WASHER STATION PART 1.GPU	-	FILL - CLAYEY SAND and GRAVEL; dark brown LANDFILL MATERIALS - mixed with clay and sand	ST		4-5-8 (13)	4.5+	35	17	18	48	6 10			
ID WASTE TRANSFER			ss		6-3-5 (8)									

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

1		VV22-014				_ '''	JECT LOC	A1101		100, 17	`					
O DEPTH (ft)	GRAPHIC LOG	Approximate Surfac		eet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC WE LIMIT	PLASTICITY N	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - SANDY LEAN with gravel	I CLAY; browr	n to dark brown,	ST			4.5+	49	19	30	69	11			
2.5		FILL - CLAYEY SAN			ss		6-4-3 (7)					33	11			
2.5 2.5		LANDFILL MATERIA sand	ALS - mixed w	ith clay and	SS		5-6-50/4"									
MT LET ED ZOZZIVYZZ-074, S																
- Z. Join I TROJEC I SICOL																
- GINI 3 TO 05 EAB. GDT - 12/0/22 00.18 - 2. GUN TO																
Comp Date S Comp Logge	Starte leted:	10/12/2		Remarks:	Bo Gre	ring wa oundwa	s advance	ed to ot obs	a dep serve	th of the definition of the de	5 feet ve tha	usinç at dep	g dry o	drilling	j techniqu	Jes.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY NO NO INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
	-	FILL - SANDY LEAN CLAY; brown, with gravel LANDFILL MATERIALS - mixed with clay and	ST			4.5+	37	17	20	68	9			
2.5		sand	ss		12-14-14 (28)					16	3			
CLO WASHER STANDARD TO MAKE TO			ss		11-16-9 (25)									

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

		- WEE 014				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	·	100, 17	•					
O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIMIT LIMIT	PLASTIC HIMIT LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
LID WASHE TRANSFER STATION PART 1.GPJ		FILL - FAT CLAY; brown, trace sand LANDFILL MATERIALS - mixed with clay and sand	SS		4-4-3 (7) 3-3-4 (7)	4.5+	68	23	45	59	27			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

		····						,						
O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	L	PLASTIC WE TIMIT THE	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
2.5		FILL - SANDY FAT CLAY; brown, with gravel LANDFILL MATERIALS - mixed with clay and sand	ST		9-5-4 (9) 3-3-6 (9)	4.5+	55	20	35	52	8			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

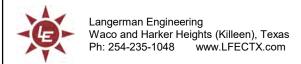
Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
LID WASHE RANNSHER SIA IION PART 1. GPJ		FILL - LEAN CLAY; red-brown, with glass LANDFILL MATERIALS - mixed with clay and sand	SS		7-13-6 (19) 7-32-2 (34)	4.5+	44	19	25	72 68	7			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

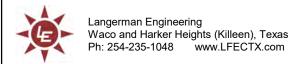
Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH		MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC WE LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0LID WASTE TRANSFER STATION PART 1.GPJ	-	FILL - CLAYEY SAND and GRAVEL; brown LANDFILL MATERIALS - mixed with clay and sand	ST		8-7-11 (18) 3-4-4 (8)	4.5+	35	17	18	38	6			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PRO	JECT N	UMBER _W22-074		PRO	DJECT LOC	CATIO	N Wa	ico, T	<					
O DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC LIMIT	PLASTICITY SHINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
1D Wash E IKANSPEK SI A IION PAKI I GPO		FILL - GRAVELLY FAT CLAY; tan and dark brown, with sand LANDFILL MATERIALS - mixed with clay and sand	ST		17-18-9 (27) 8-6-3 (9)	4.5+	51	22	29	58	6 5			
5I														

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft. Date Started: 10/12/22 Completed: 10/12/22 Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

1								,	-					
OEPTH	10	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC HIMIT LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
LID WASTE TRANSFER STATION PART 1.GPJ		FILL - SANDY LEAN CLAY; red-brown, with gravel FILL - CLAYEY SAND; red-tan, trace gravel LANDFILL MATERIALS - mixed with clay and sand	SS		8-7-4 (11) 4-2-3 (5)	4.5+	37	18	19	63	5			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

	CI NOMBER _	WZZ-074				DECT LOC	771101		100, 17	`					
O DEPTH O (ft)	Approxin	MATERIAL DESCRIF		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HIMIT LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		NDY LEAN CLAY; gra		ST			4.5+	33	15	18	60	4			
2.5		AYEY SAND; red-brov		SS		14-8-4 (12)					29	5			
5.0				SS		8-0-0 (0)	-								
Comple Date Si Comple Logged	etion Depth: tarted: eted:	6 ft. 10/13/22 10/13/22	Remarks:	Bo Gr	ring wa oundwa	s advanc lter was n	ed to a	a dep	th of (3 feet ve tha	usinç at dep	g dry o	drillinç	g techniqu	ues.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRI	PTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HIMIT LIMIT	PLASTICITY BUINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		Approximate Surface Elevation	foot	SAN	REC	ا کی	<u>Q</u>	= =	7	Z AS	빌	ŽŌ	DR	STR	.s ₹
0.0		FILL - SANDY LEAN CLAY; da								ъ	ш.				
		gravel		ST			4.5+				57	12			
<u>2.5</u> 		occasional glass below 2 fee	et	ST			4.5+	39	16	23	55	13			
		LANDFILL MATERIALS - mixed sand	d with clay and	ST											
Comp Date Comp	pletion Starte pleted ed by:	: 10/13/22	Remarks:	Bo Gr	oring wa	s advance ter was n	ed to ot obs	a dep serve	th of (d abo	6 feet ve tha	usinç at dep	g dry (oth.	drilling	g techniqı	ues.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

		•												
O DEPTH O (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC WE TIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
2.5		FILL - SANDY LEAN CLAY; dark brown to red-brown LANDFILL MATERIALS - mixed with clay and sand	SS		6-5-6 (11) 5-3-4 (7)	4.5+	35	16	19	69	8			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	10	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC WE ALIMIT LIMIT	PLASTICITY SHIP	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
-		FILL - SANDY LEAN CLAY; dark brown and tan FILL - CLAYEY SAND; red-brown, with gravel	ST			4.5+				69	7			
CO.5 CO.5 CO.5 CO.5 CO.5 CO.5 CO.5 CO.5	-	LANDFILL MATERIALS - mixed with clay and sand	ss		14-9-6 (15)		30	15	15	46	9			
ID WASTE TRANSF	-		SS		6-4-5 (9)									

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

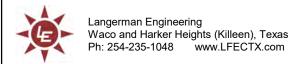
Completion Depth: 5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) SAMPLE TYPE MOISTURE CONTENT (%) DRY UNIT WT. (pcf) POCKET PEN. (tsf) STRAIN AT FAILURE (%) **LIMITŞ** RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - SANDY LEAN CLAY; dark brown ST 4.5+ FILL - CLAYEY SAND and GRAVEL; dark red-brown 2.5 22-25-13 SS 45 19 26 39 6 (38)Α FILL - SANDY LEAN CLAY; red-brown, trace gravel 12-21-21 SS 60 8 (42)5.0 Α LANDFILL MATERIALS - mixed with clay and sand 13-4-7 SS (11)

ft.

Remarks:

Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 7.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

PROJECT N	UMBER <u>W22-074</u>			_ PRC	DECT LO	AHOI	N _ VV &	aco, 12	(
DEPTH (ft) (ft) GRAPHIC LOG	MATERIAL DESCRI		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY SA INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
	Approximate Surface Elevation FILL - SANDY FAT CLAY; dark gravel		ST			4.5+		22	33	63	8			
2.5	LANDFILL MATERIALS - mixed sand	l with clay and	SS		7-3-2 (5)									
5.0			SS		2-3-3 (6)									
Completion Date Starte Completed Logged by:														
Completion Date Starte Completed Logged by:	ed: 10/13/22 : 10/13/22	Remarks:	Bo tec	ring wa	s advance s. Ground	ed to a	a dep	th of (5.5 fe oserv	et usi ed ab	ng dr	y drilli nat de	ng epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC HIMIT LIMIT	PLASTICITY B INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation feet	ဟ	12		"		_	굽	⊞			SC	
		FILL - CLAYEY SAND; red-brown LANDFILL MATERIALS - mixed with clay and	ST			3.0	39	17	22	18	1			
2.5		sand	SS		4-4-6 (10)									
L .			/ A											
5.0			SS		5-3-2 (5)									

Remarks:

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft. Date Started: 10/13/22 Completed: 10/13/22 Logged by: L. Fleischhauer

PAGE 1 OF 1



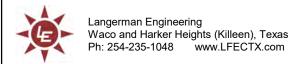
CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

1 1100	,	UIVIDER			_ '''	JECT LOC	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u> </u>	100, 17	•					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	L	SAMPLE IYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC WINT LIMIT	PLASTICITY S	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
 		Approximate Surface Elevation feet FILL - CLAYEY SAND; red-brown, with gra		ST			4.5+	23	13	10	23	2		3 6	
2.5		LANDFILL MATERIALS - mixed with clay a sand		SS		13-8-8 (16)									
2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5				SS	•	11-5-6 (11)									
N I PROJECTO/COMPLETED ZUZA/															
Contection 150 150 150 150 150 150 150 150 150 150															
Complete Com	pletior Starte pleted ed by	n Depth: 5.5 ft. ed: 10/13/22 : 10/13/22	marks:	Boi tec	ring wa hniques	s advance s. Ground	ed to a	a dep was	th of t	5.5 fe oserv	et usi ed ab	ng dr	y drilli nat de	ng epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

54

20

34

62

11

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FAT CLAY; brown, with sand ST 4.5+ 54 20 34 73 10

SS

SS

7-8-9

(17)

7-7-9

(16)

SANDY FAT CLAY; brown, trace gravel

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	l	PLASTIC WE LIMIT LIMIT	PLASTICITY N	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - SANDY LEAN CLAY; gray-brown to red-tan FILL - CLAYEY SAND; red-tan, with plastic	ST			4.5+	28	14	14	54	4			
2.5		LANDFILL MATERIALS - mixed with clay and sand	SS		4-30-11 (41)					36	4			
5.0 5.0			ss		3-30-9 (39)									

Remarks: Boring

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

DEPTH (ft)		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC HEALINIT LIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
2.5	Approximate Surface Elevation feet FILL - SANDY LEAN CLAY; dark gray-brown and red-brown, with gravel FILL - CLAYEY SAND; red-brown LANDFILL MATERIALS - mixed with clay and sand	ST SS A SS		4-4-4 (8) 4-3-3 (6)	4.5+	39	16	23	63	7			

Remarks: Borin

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

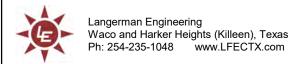
NOOLO	NOWIDER W22-074			SECT LOC	/A1101	<u> </u>	100, 17	`					
O DEPTH O (ft) GRAPHIC	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC HIMIT LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
	FILL - CLAYEY SAND; red-brown LANDFILL MATERIALS - mixed with clay and	ST			1.5	24	15	9	24	2			
2.5	sand	SS		3-2-2 (4)									
5.0		SS		4-2-5 (7)									

Remarks:

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft. Date Started: 10/13/22 Completed: 10/13/22 Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	GRAPHIC	MATERIAL DESCRII Approximate Surface Elevation FILL - LEAN CLAY; gray-brown	feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ATT	PLASTIC III	RG	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
 		with sand	,	ST			4.5+	35	17	18	73	7			
2.5		LANDFILL MATERIALS - mixed sand	l with clay and	SS		7-7-6 (13)					41	9			
5.0				ss		7-4-6 (10)									
	pletior Starte	n Depth: 5.5 ft. ed: 10/13/22	Remarks:	Bo tec	ring wa	s advance s. Ground	ed to a	a dep	th of s	5.5 fe	et usi ed ab	ng dr	y drilli hat de	ing epth.	
Com	pleted ed by:	: 10/13/22													

PAGE 1 OF 1

Langerman Engineering Waco and Harker Heights (Killeen), Texas Ph: 254-235-1048 www.LFECTX.com

CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX PROJECT NUMBER W22-074

			TYPE	۲۲ %)	/ IS JE)	PEN.	ATT	TERBE LIMITS	3	TENT	IRE T (%)	- WT.	NED SSIVE H (tsf)	AT : (%)
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE -	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation feet	S/S	꿉		M		۵	7	Ξ	_ o	D	SSE	°, E
-	-	FILL - CLAYEY SAND; dark brown to red-brown LANDFILL MATERIALS - mixed with clay and	ST			4.5+	30	16	14	27	4			
2.5	-	sand	ss		1-2-1 (3)									
7 7			/ A											
2.5 2.6			SS		3-4-7 (11)									

Remarks:

Completion Depth: 5.5 ft. Date Started: 10/13/22 Completed: 10/13/22 Logged by: L. Fleischhauer Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

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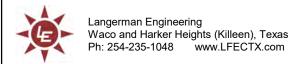
CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX
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O DEPTH (ft)	GRAPHIC LOG	Approxima	MATERIAL DESCRIF	feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY SA INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - SILT	Y SAND; red-brown	to tan	ST			4.5+	NP	NP	NP	22	3			
ERSIAIION PARTI GPU		LANDFILL sand	MATERIALS - mixed	with clay and	SS		3-3-4 (7)									
PROJECT SICOMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GFJ 0 7 7 7 7 7 7 7 7 7 7 7 7					SS		1-2-2 (4)									
OJECTS/COMPLETED 2022/W																
- GINT \$1D US LAB.GDT - 12/6/22 08:19 - 2:(GINT PRC																
Comp Date Comp	oletion Starte oleted ed by:	:	5.5 ft. 10/13/22 10/13/22 L. Fleischhauer	Remarks:	Bo tec	ring wa chnique	s advanc s. Ground	ed to lwater	a dep was	th of s	5.5 fe	et usi ed ab	ng dr ove ti	y drilli hat de	ng epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

0.0 (#)		MATERIAL DESCR Approximate Surface Elevatio		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY SURINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
- - -	-	FILL - CLAYEY SAND; red-bro		ST			1.5	26	15	11	43	3			
PROJECTS/COMPLETED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ				SS		7-7-5 (12)									
2-074, SOLID WASTE TRAN:	-			SS		6-9-7 (16)									
:CTS/COMPLETED 2022/W2:															
2/6/22 08:19 - Z:\GINT PROJE															
- GINT ŞTD US LAB.GDT - 12/6/22 08:19 - Z./GINT			Remarks:	Bo teo	ring wa	s advance s. Ground	ed to	a dep	th of s	5.5 fe	et usi ed ab	ng dr	y drilli hat de	ng	
Con Date	npletior e Starte npleted ged by:	: 10/13/22			,										

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Langerman Engineering Waco and Harker Heights (Killeen), Texas Ph: 254-235-1048 www.LFECTX.com

CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

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O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCR Approximate Surface Elevatio		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		CLAYEY SAND and GRAVEL		ST			4.5+				28	3			
		SANDY FAT CLAY; dark gray-	brown	SS		5-4-4 (8)									
				SS		4-5-7 (12)		54	20	34	59	14			

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

ı														
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIQUID	PLASTIC HEALINITE BEALINITE CIMIT	PLASTICITY B INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation feet		_					₫.	正	_		- 0 %	
		FILL - SANDY LEAN CLAY; dark gray and red-brown	ST			2.5	38	17	21	58	9			
2.5		LANDFILL MATERIALS - mixed with clay and sand	ss		2-3-5 (8)									
ō <u>:</u>			/ _A											
<u>-</u>	\bowtie		H			-								
5.0 5.0			SS		3-3-4 (7)									

Remarks: Borir

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft) GRAPHIC LOG	MATERIAL DESCRII Approximate Surface Elevation		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC HIMIT LIMIT	PLASTICITY SURVEY DINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
PROJECTSICOMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ 1	FILL - SANDY LEAN CLAY; bro	wn, with gravel	ST SS A SS		9-7-50/6" 10-14-15 (29)	3.5	32	16	16	55	3			
LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z:\GINT PROJECTS\COMPLETED 2022\W22-07 Complete Comp	ed: 10/13/22 : 10/13/22	Remarks:	Bo	ring wa hnique	s advance s. Ground	ed to water	a depr was	th of t	5.5 fe oserv	et usi ed ab	ing dr	y drilli hat de	ng epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - SANDY LEAN CLAY; gray-brown, with gravel ST 4.5+ 2.5 10-6-5 SS 41 17 24 50 8 (11)Α 4-4-3 SS (7) 5.0 LANDFILL MATERIALS - mixed with clay and sand Α 4-3-6 SS (9)

Completion Depth: 7.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GP.

Remarks: Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

		OMBER WZZ-074				0201 200	1		ERBE		—				
O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIF		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	l	PLASTIC WIN	PLASTICITY INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
 		FILL - SANDY LEAN CLAY; gragravel		ST				43	18	25	62	4			
2.5		FILL - CLAYEY SAND; gray-bro red-brown, with occasional plast wood	wn and ic, glass, and	SS		9-9-5 (14)					30	4			
 5.0				SS		3-1-2									
 7.5		LANDFILL MATERIALS - mixed sand	with clay and	ss		7-2-3 (5)									
Date Com	pletior Starte pleted ed by:	: 10/13/22	Remarks	Bo tec	ring wa	s advances. Ground	ed to lwate	a dep r was	th of not o	7.5 fe bserv	et usi ed ab	ng dr ove t	y drilli hat de	ing epth.	

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	<u> </u>	PLASTIC HISTORY	PLASTICITY B	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		FILL - SANDY LEAN CLAY; gray-brown, trace gravel	ST			4.5+								
2.5		red-tan below 3 feet	SS		9-14-14 (28)		49	20	29	63	10			
5.0		SANDY LEAN CLAY; dark gray to red-brown	SS		7-7-12 (19)					70	12			

Remarks:

Boring was advanced to a depth of 6 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 6 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - LEAN CLAY; red-tan, with sand ST 4.5+ 35 16 19 80 5 FILL - CLAYEY SAND and GRAVEL; red-tan and red-brown, with wood fragments 2.5 11-11-11 SS 49 8 (22)Α 2-1-1 SS (2) 5.0 5-8-12 SS (20)

Completion Depth: 7.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

Remarks: Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GP.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) SAMPLE TYPE MOISTURE CONTENT (%) DRY UNIT WT. (pcf) POCKET PEN. (tsf) STRAIN AT FAILURE (%) **LIMITŞ** RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - SANDY LEAN CLAY; tan, with occasional glass ST 4.5+ 60 4 FILL - SANDY LEAN CLAY; dark gray-brown, with gravel 2.5 12-13-11 7 SS 40 17 23 54 (24)Α --- wood fragments below 4 feet 5-4-3 SS (7) 5.0 Α SANDY LEAN CLAY; gray-brown SS

Completion Depth: 7.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

Remarks: Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GP.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) SAMPLE TYPE MOISTURE CONTENT (%) DRY UNIT WT. (pcf) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - SANDY LEAN CLAY; gray-brown ST 4.5 35 16 19 66 6 2.5 19-17-15 SS (32)FILL - CLAYEY SAND and GRAVEL; dark gray to gray-brown, mixed with plastic and rubber Α 4-2-5 SS (7) 5.0 Α SANDY LEAN CLAY; brown 3-4-6 SS (10)

Completion Depth: 7.5 ft. Date Started: 10/13/22 Completed: 10/13/22

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GP.

Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth. Remarks:

Logged by: L. Fleischhauer

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

		UMBER W22-074			JECT NAM					, Otati	011			
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY BAINDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
		LEAN CLAY; dark brown, with sand	ST			4.5+								
Z.5		dark gray below 2.5 feet	SS A		8-7-8 (15)	-	39	16	23	72	12			
- GINT STD US LAB.GDT - 12/6/22 08:19 - 2:/GINT PROJECT S/COMPLE TED 2022/W22-074, SOLID WASTE TRANSFER STATION PART 1:GFJ 2		CLAYEY SAND; red-tan	SS		5-6-7 (13)									
7.5			SS		11-10-12 (22)									
STD US LAB.GDI - 12/0/22 00:19-														
Composition Composition	pletior Starte pleted ed by:	: 11/3/22	s: Bo Gr	ring wa oundwa	s advance ter was n	ed to a	a dep serve	th of a	8 feet ve tha	usinç at dep	g dry (drilling	g techniqu	ues.

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) SAMPLE TYPE MOISTURE CONTENT (%) DRY UNIT WT. (pcf) POCKET PEN. (tsf) STRAIN AT FAILURE (%) **LIMITŞ** RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 FILL - SANDY LEAN CLAY; gray-brown, with glass fragments ST 4.5+ FILL - SANDY LEAN CLAY; gray-brown to dark gray, with gravel 2.5 13-13-12 7 SS 39 17 22 60 (25)Α --- red-brown, with ceramic tile and glass below 4 8-11-10 SS (21)5.0 Α LANDFILL MATERIALS - mixed with clay and sand 4-2-3 SS (5)

Completion Depth: 7.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z.\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GP.

Logged by: L. Fleischhauer

Remarks: Boring was advanced to a depth of 7.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX **ATTERBERG** UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) GRAPHIC LOG BLOW COUNTS (N VALUE) PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 SANDY LEAN CLAY; brown, with gravel ST 4.5+ 51 17 Α 2.5 -ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z∴GINT PROJECTS\COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ FAT CLAY; dark gray, with sand 4-5-4 SS 53 20 33 76 15 (9) ST 4.5+ SANDY LEAN CLAY; tan Α 4-6-9 SS (15)7.5

Completion Depth: 8 ft. Date Started: 11/3/22 Completed: 11/3/22 Logged by: L. Fleischhauer

Boring was advanced to a depth of 8 feet using dry drilling techniques. Remarks: Groundwater was not observed above that depth.

PAGE 1 OF 1



CLIENT SCS Engineers

0.0

PROJECT NUMBER W22-074

PROJECT NAME Solid Waste Transfer Station

PROJECT LOCATION Waco, TX

ATTERBERG UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) **LIMITŞ** RECOVERY % (RQD) BLOW COUNTS (N VALUE) GRAPHIC LOG PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION

ST

SS

Α

Approximate Surface Elevation feet SANDY FAT CLAY; gray-brown, trace gravel

56

20

36

66

82

8

15

13-12-11

(23)

4.5+

--- dark gray-brown, below 3 feet

FAT CLAY; dark gray-brown, with sand

9-10-10 SS (20)

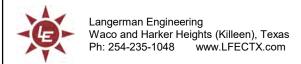
Remarks:

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft. Date Started: 10/13/22 Completed: 10/13/22 Logged by: L. Fleischhauer

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z∴GINT PROJECTS\COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

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CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

_	<u>o</u>		TYPE	% \.	, s <u>(i</u>	PEN.	ATT L	ERBE	}	TENT	RE - (%)	WT.	NED SIVE 1 (tsf)	AT (%)
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLET	RECOVERY 9 (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
0.0		Approximate Surface Elevation feet	SAI	R		PO		PL L	PLA 	FINE	≥O	DR	NOR	S 4
		SANDY LEAN CLAY; gray, trace gravel	ST			4.5+								
2.5 2.5		red-brown below 3 feet	SS		11-12-15 (27)		30	14	16	58	7			
		SANDY LEAN CLAY; dark gray	/ A											
5.0		CANADA ELAN OLAT, dank gray	ss		9-11-9 (20)									

Remarks: Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX ATTERBERG UNCONFINED COMPRESSIVE STRENGTH (tsf) FINES CONTENT (%) DRY UNIT WT. (pcf) SAMPLE TYPE MOISTURE CONTENT (%) POCKET PEN. (tsf) STRAIN AT FAILURE (%) <u>LIMIT</u>Ş RECOVERY % (RQD) GRAPHIC LOG BLOW COUNTS (N VALUE) PLASTICITY INDEX DEPTH (ft) PLASTIC LIMIT LIQUID MATERIAL DESCRIPTION Approximate Surface Elevation feet 0.0 SANDY LEAN CLAY; red-brown, trace gravel ST 2.5 11-9-9 SS 39 17 22 67 11 (18)SANDY LEAN CLAY; dark gray Α

7-6-7

(13)

SS

Remarks:

Boring was advanced to a depth of 5.5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5.5 ft.

Date Started: 10/13/22

Completed: 10/13/22

Logged by: L. Fleischhauer

-ANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z∴GINT PROJECTS\COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

PAGE 1 OF 1

Langerman Engineering
Waco and Harker Heights (Killeen), Texas
Ph: 254-235-1048 www.LFECTX.com

CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

1								,	-					
O DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID	PLASTIC HIMIT LIMIT	PLASTICITY B INDEX	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
1D WASTE TRANSFER STATION PART 1.GPJ		FILL - SANDY FAT CLAY; brown, with gravel LANDFILL MATERIALS - mixed with clay and sand	ST		9-8-9 (17) 9-10-11 (21)	4.5+	61	20	41	59	9			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/12/22

Completed: 10/12/22

Logged by: D. Mims - Drake

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

PAGE 1 OF 1



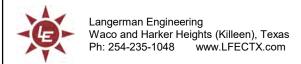
CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

	W22-074			_	SECT LOC									
o DEPTH O (ft) GRAPHIC LOG	MATERIAL DESCR Approximate Surface Elevation		SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	LIQUID LIMIT	PLASTIC WISH	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
	FILL - SANDY FAT CLAY; brov		ST			4.5+	57	21	36	64	10			
2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	FILL - CLAYEY SAND and GR brown	AVEL; red-tan and	SS		4-4-5 (9)					46	9			
- GINT \$TD US LAB.GDT - 12/6/22 08:19 - 2:\GINT PROJECTS\COMPLETED 2022\W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ			ss		6-8-7 (15)									
PLETED 2022/W22-074, SG														
Z:/GINT PROJECTS/COM														
-AB.GDT - 12/6/22 08:19 -														
Completion Date Start Completed	Remarks: Boring was advanced to a depth of 5 feet using dry drilling techniques. Completion Depth: 5 ft. Date Started: 10/12/22 Completed: 10/12/22 Logged by: D. Mims - Drake							ues.						

PAGE 1 OF 1



CLIENT SCS Engineers

PROJECT NAME Solid Waste Transfer Station

PROJECT NUMBER W22-074 PROJECT LOCATION Waco, TX

O DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION Approximate Surface Elevation feet	SAMPLE TYPE	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)		PLASTIC LIMIT	PLASTICITY 3	FINES CONTENT (%)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	STRAIN AT FAILURE (%)
OLD WASIE IRANSFER SIAIION PART 1.GPJ		FAT CLAY; gray and yellow-brown, with sand	SS		3-5-4 (9) 5-7-7 (14) 8-10-10 (20)		55	20	35	71	12			

Remarks:

Boring was advanced to a depth of 5 feet using dry drilling techniques. Groundwater was not observed above that depth.

Completion Depth: 5 ft.

Date Started: 10/5/22

Completed: 10/5/22

Logged by: L. Fleischhauer

LANGERMAN FOSTER - GINT STD US LAB.GDT - 12/6/22 08:19 - Z./GINT PROJECTS/COMPLETED 2022W22-074, SOLID WASTE TRANSFER STATION PART 1.GPJ

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative - interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will <u>not</u> likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do <u>not</u> rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it;
 e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do <u>not</u> rely on an executive summary. Do <u>not</u> read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- · the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- · the composition of the design team; or
- · project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are <u>not</u> final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnicalengineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- · confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you've included the material for information purposes only. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, only from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and be sure to allow enough time to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. Geotechnical engineers are not building-envelope or mold specialists.



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Appendix B Construction Plans

30'-0"

15'-4''

180'-3" 178'-7" FACE OF RIGID FRAME 13'-7 1/2"

30'-0"

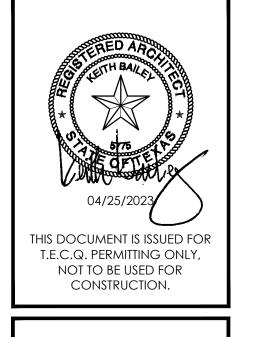
FLOOR PLAN

TRANSFER STATION SCALE: 1/16" = 1'-0"

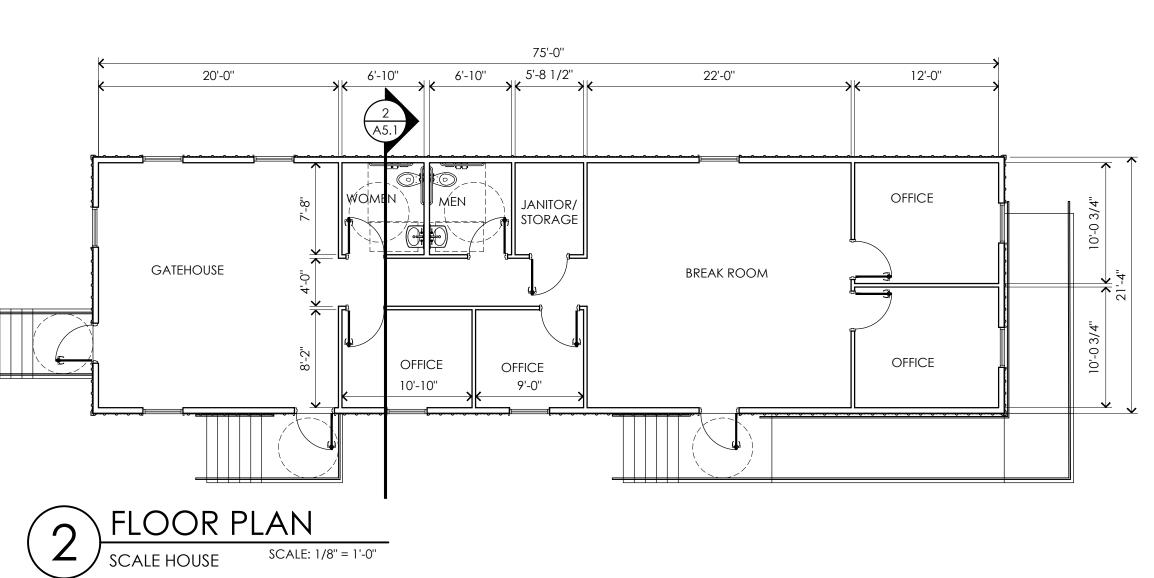
13'-7 1/2"

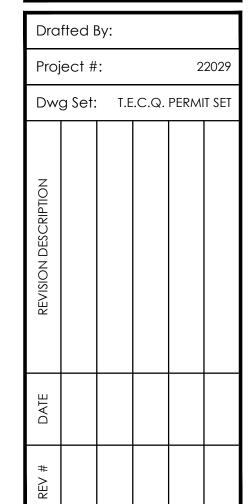
30'-0"

30'-0"



TRANSFER STATION





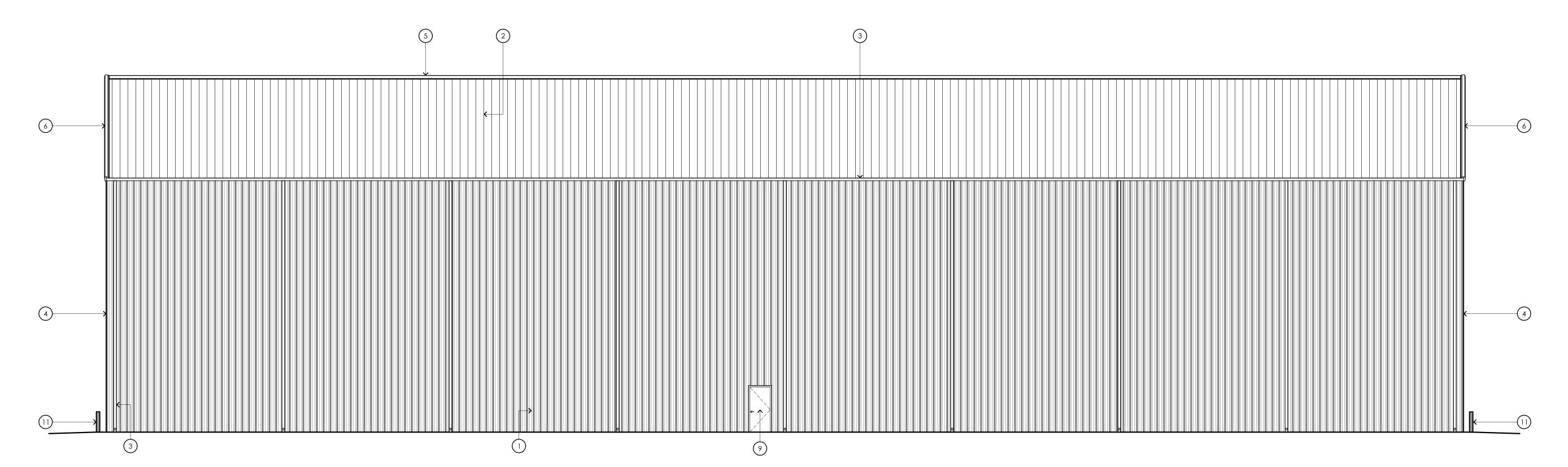
A2.1

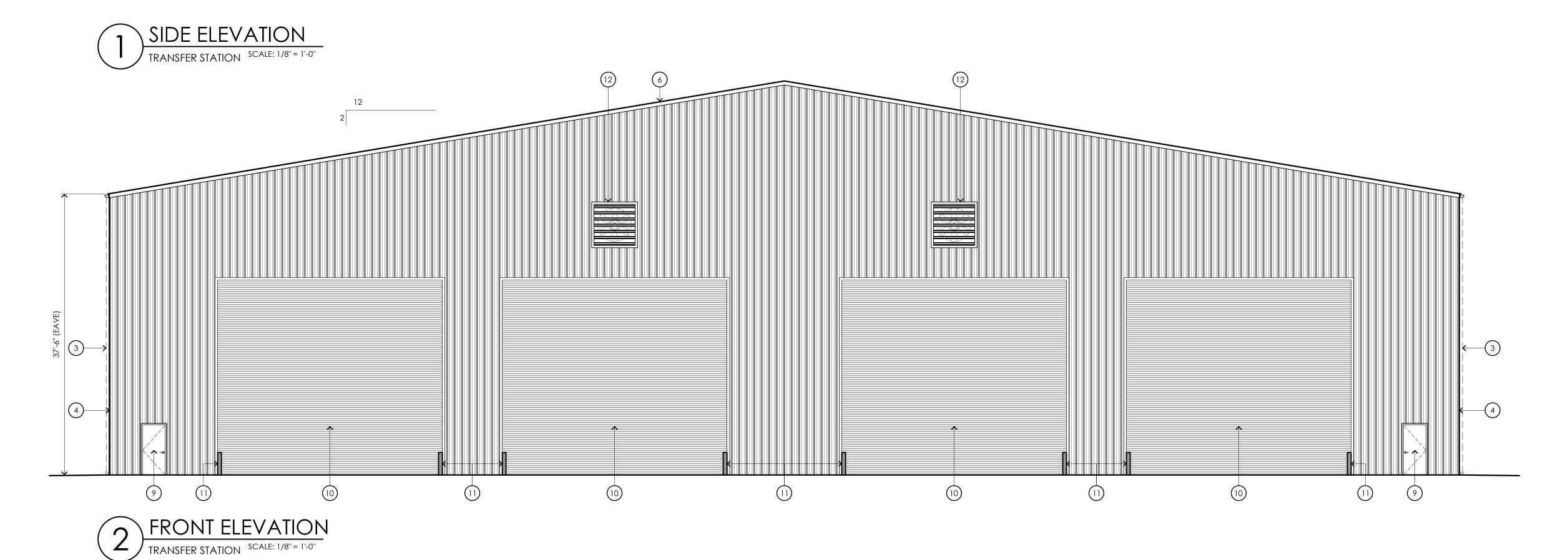
GENERAL NOTES

1. ALL EXPOSED CONCRETE FOUNDATION IS TO BE FILLED & A RUBBED SMOOTH FINISH APPLIED.

KEYED NOTES

- 1. PRE-FINISHED R-PANEL WALL PANELS, APPLIED VERTICALLY.
- 2. PRE-FINISHED STANDING SEAM METAL ROOF.
- 3. PREFINISHED METAL GUTTER AND DOWNSPOUTS
- PRE-FINISHED METAL CORNER TRIM.
 PRE-FINISHED CONTINUOUS METAL RIDGE TRIM.
- 6. PRE-FINISHED METAL RAKE TRIM.
- 7. ALUMINUM OPERABLE WINDOW
- 8. PAINTED METAL HANDRAIL
- 9. HOLLOW METAL FRAME DOOR
- 10. OVERHEAD COILING DOOR.
- 11. 6" Ø PIPE BOLLARDS.
- 12. 66"x66" DIRECT DRIVE EXHAUST FAN /W LOUVERS.



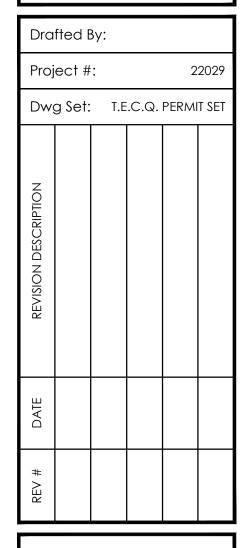


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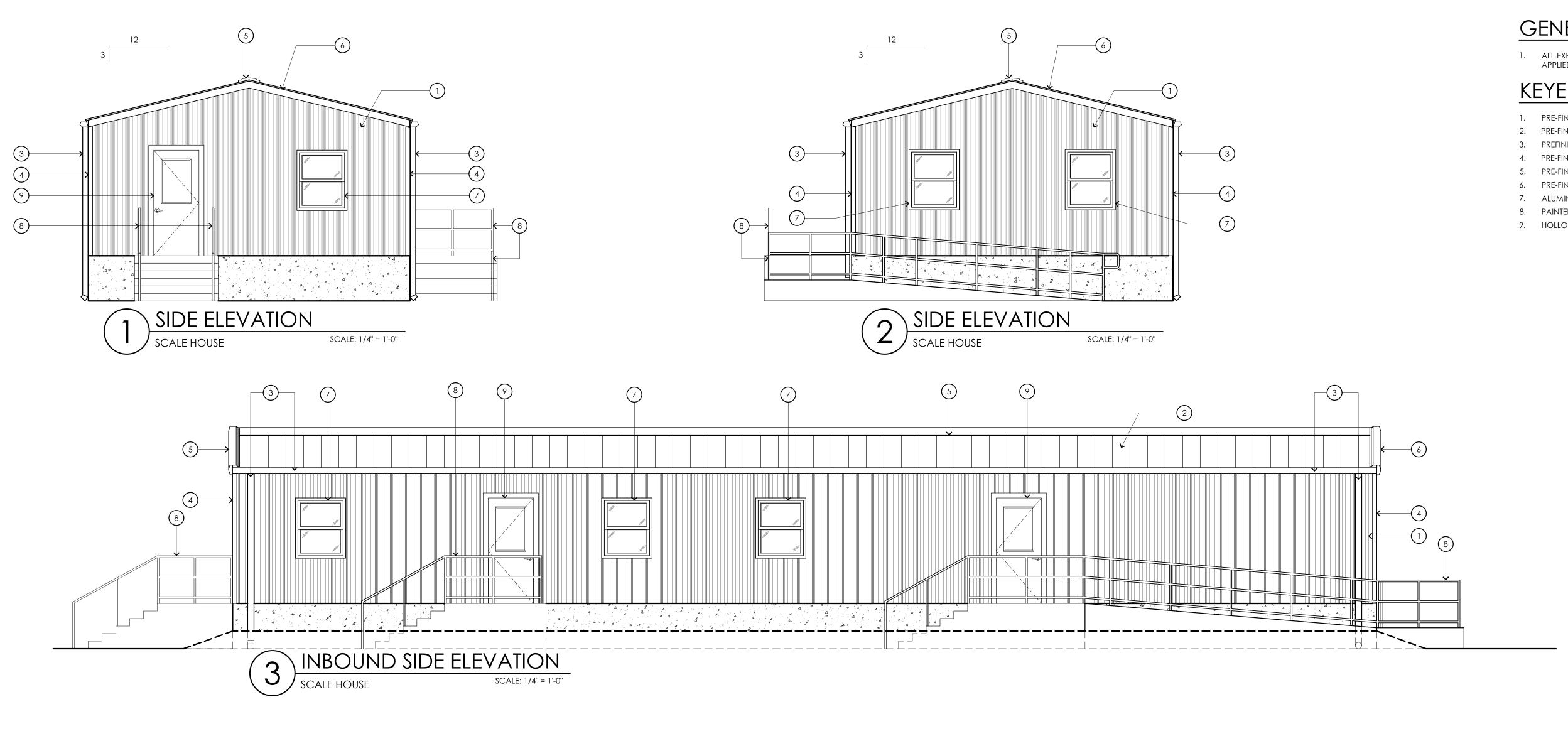
NSFER STATION

PLLC Architects

waco



A3.1



OUTBOUND SIDE ELEVATION

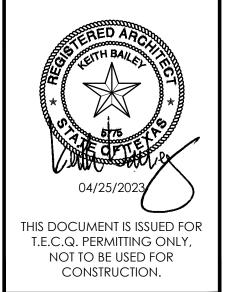
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. ALL EXPOSED CONCRETE FOUNDATION IS TO BE FILLED & A RUBBED SMOOTH FINISH APPLIED.

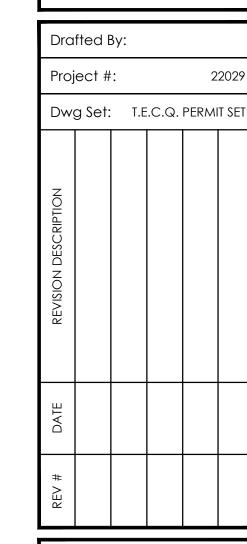
KEYED NOTES

- 1. PRE-FINISHED R-PANEL WALL PANELS, APPLIED VERTICALLY.
- 2. PRE-FINISHED STANDING SEAM METAL ROOF.
- 3. PREFINISHED METAL GUTTER AND DOWNSPOUTS
- 4. PRE-FINISHED METAL CORNER TRIM.
- 5. PRE-FINISHED CONTINUOUS METAL RIDGE TRIM.
- 6. PRE-FINISHED METAL RAKE TRIM.
- 7. ALUMINUM OPERABLE WINDOW.
- 8. PAINTED METAL HANDRAIL.9. HOLLOW METAL FRAME DOOR.



TRANSFER STATION





OVERHEAD COILING DOOR
 PEMB CLEAR-SPAN RIGID FRAME RAFTERS AND COLUMNS

3. PREFINISHED EXPOSED ROOF PANELS (MBCI PBR OR EQUAL) OVER 8" PURLINS

4. PREFINISHED METAL GUTTER AND DOWNSPOUTS

6. HIGH BAY LIGHTING

7. 6" Ø PIPE BOLLARDS

8. 12"x36" CONC. GRADE BEAM AT 12'-6" ± O.C. REINF. W/(3) #8 TOP AND BOTT. AND #3 STIRRUPS AT 12" O.C. (TYP. AT PERIM. AND AT 12'-4" O.C.)

5. PREFINISHED EXPOSED WALL PANELS (MBCI PBR OR EQUAL) OVER 8 1/2" SIDEWALL

10. 24" Ø CONC. PIER AT 22'-6" O.C. EXTEND <u>6' MIN.</u> INTO DARK GRAY CLAYSHALE BEDROCK AT 29' TO 39' BELOW EXISTING GRADE.

11. 10" CONC. SLAB, REINF. W/ #5 AT 12" O.C. TOP AND BOTT. AND #4 TEMP. STL. AT 10" O.C. TOP AND BOTT. (STAGG.)

12. 12"x24" CONC. GRADE BEAM AT 44'-10" O.C. REINF. W/(2) #5 TOP AND BOTT. AND #3 STIRRUPS AT 12" O.C.

13. ENDWALL COLUMN

9. PREPARED SUBGRADE

14. PRE-FINISHED STANDING SEAM METAL ROOF.

15. PRE-FINISHED RIDGE CAP.

16. WALL HUNG LAVATORY 17. 24"W x 36"H WELDED-FRAME MIRROR

18. FLOOR MOUNTED TOILET

19. GRAB BARS

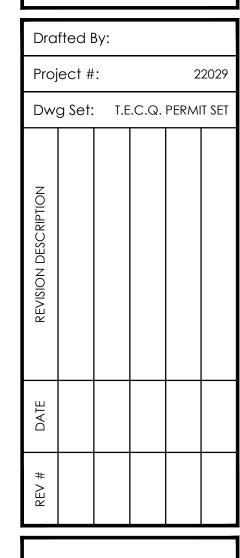
20. PRE-ENGINEERED WOOD TRUSS 21. ALUMINUM OPERABLE WINDOW

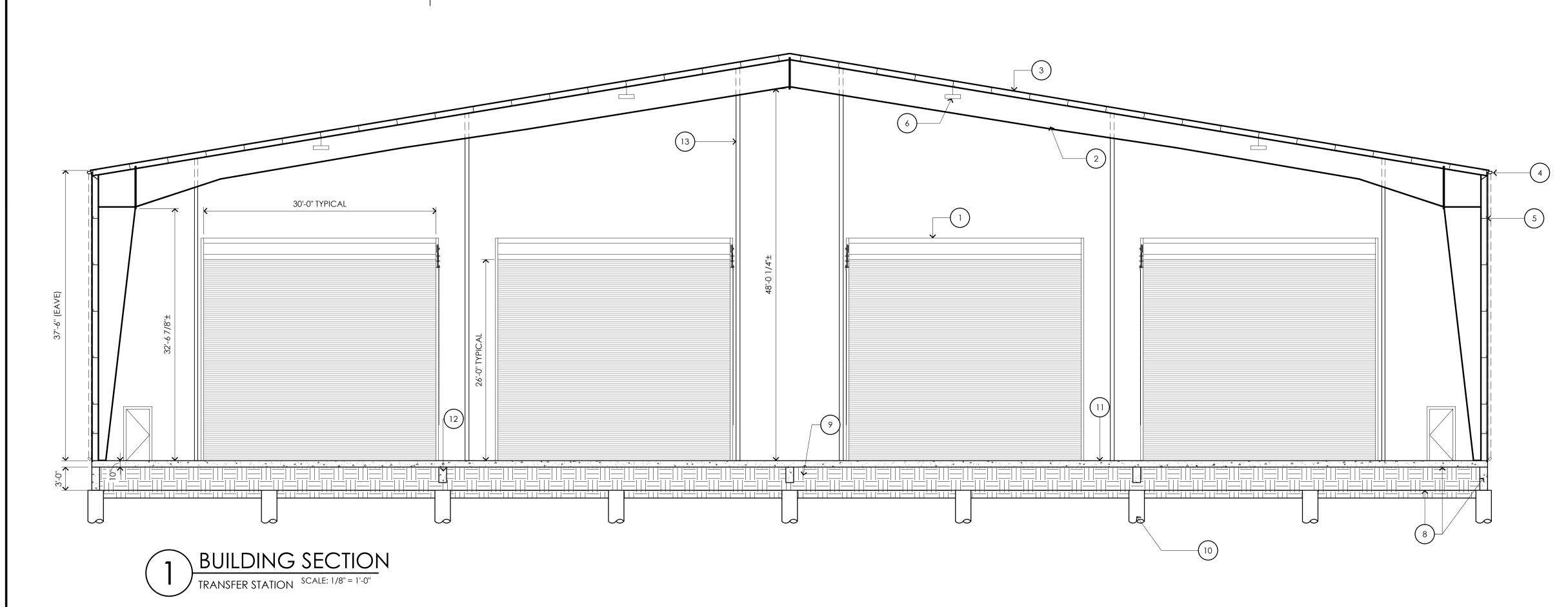
22. PRE-FINISHED R-PANEL WALL PANELS, APPLIED VERTICALLY.

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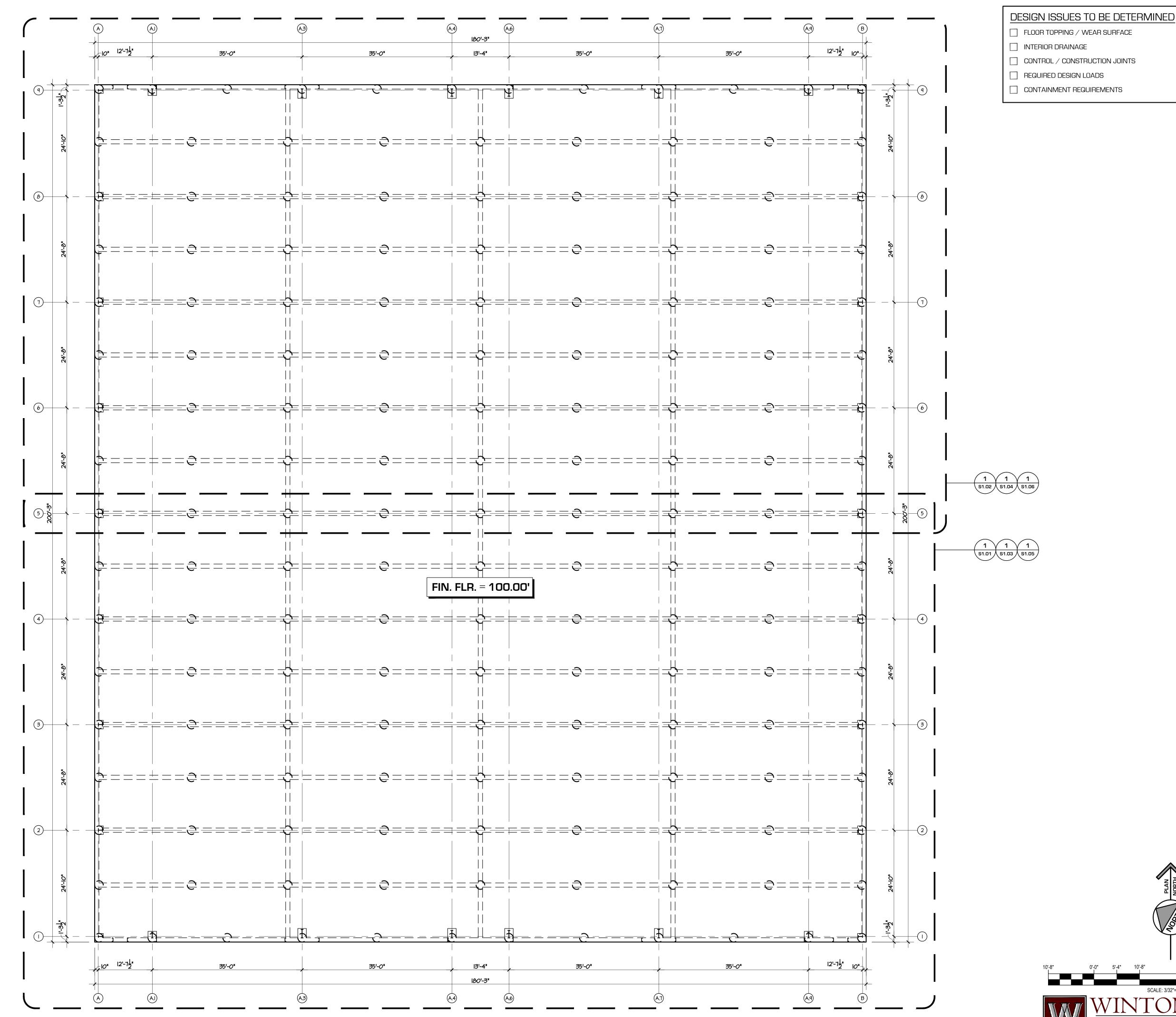






BUILDING SECTION

SCALE HOUSE SCALE: 1/4" = 1'-0"



JAMES R. WINTON

68190

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THE SEAL APPEARING ON THIS
DOCUMENT WAS AUTHORIZED BY
JAMES R. WINTON, P.E. #68190
APRIL 25, 2023

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WINTON ENGINEERING, INC.
TBPELS FIRM REGISTRATION #F-0282

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FER STATION

PLLC - Architects

Waco Texas

Drafted By:

Checked By:

Date Drawn:

Project #:

22029

\$1.00

(254) 776-7024

1. RE: 1/S1.10 FOR TYPICAL PIER DETAILS.

2. PROVIDE PIER BOLSTERS AND SLEDS - RE: SPECS.

3. ALL PIERS MUST TERMINATE ON A HARD LAYER.

4. NOTE THAT BID DEPTH TO BEARING STRATUM SHOWN ABOVE IS **ESTIMATED** BASED ON THE SOIL BORINGS IN THE GEOTECHNICAL REPORT AND MAY VARY. ACTUAL PIER DEPTH IS DEPTH TO BEARING STRATUM AS DETERMINED IN THE FIELD BY THE GEOTECHNICAL LAB REPRESENTATIVE, PLUS THE REQUIRED PENETRATION SHOWN. ACTUAL DEPTHS OF PIERS MAY BE MORE OR LESS THAN AS INDICATED IN THE PIER SCHEDULE.

ALL PIER STEEL SHALL BE SHIPPED IN STOCK LENGTHS AND FIELD CUT BASED ON ACTUAL PIER DEPTHS.

TYPICAL PIER PLAN NOTES

1. REFER TO SHEETS S0.01 - S0.0X FOR STRUCTURAL PLAN SPECIFICATIONS.

2. DATUM ELEVATION 100.00' = XXX.XX' (ACTUAL).

- 3. THESE PLANS ARE INTENDED TO DESCRIBE THE GENERAL REQUIREMENTS FOR THIS PROJECT. NOT ALL CONDITIONS ARE SPECIFICALLY DETAILED. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL ITEMS REQUIRED FOR A COMPLETE AND FINISHED PRODUCT.
- 4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND MEP PLANS PRIOR TO DRILLING PIERS. NOTIFY STRUCTURAL ENGINEER OF DISCREPANCIES.
- 5. NOTIFY ARCHITECT, STRUCTURAL ENGINEER, AND CONSTRUCTION MATERIALS TESTING
 COMPANY A MINIMUM OF (2) BUSINESS DAYS PRIOR TO DRILLING PIERS OR PLACING CONCRETE.
 INDICATE APPROXIMATION.

 ON THE PROPERTY OF T COMPLETED FOR OBSERVATION.
- 6. PLACE ALL REINFORCING STEEL WITH PROPER CLEARANCES, LAPS, AND TIE SPACINGS. REFER
- 7. FAILURE TO COMPLY WITH THESE NOTES, THE PLANS, AND SPECIFICATIONS MAY RESULT IN THE REMOVAL AND REPLACEMENT OF WORK AT CONTRACTOR'S EXPENSE.

JAMES R. WINTON

68190 COUNTY OF THE STATE OF TH

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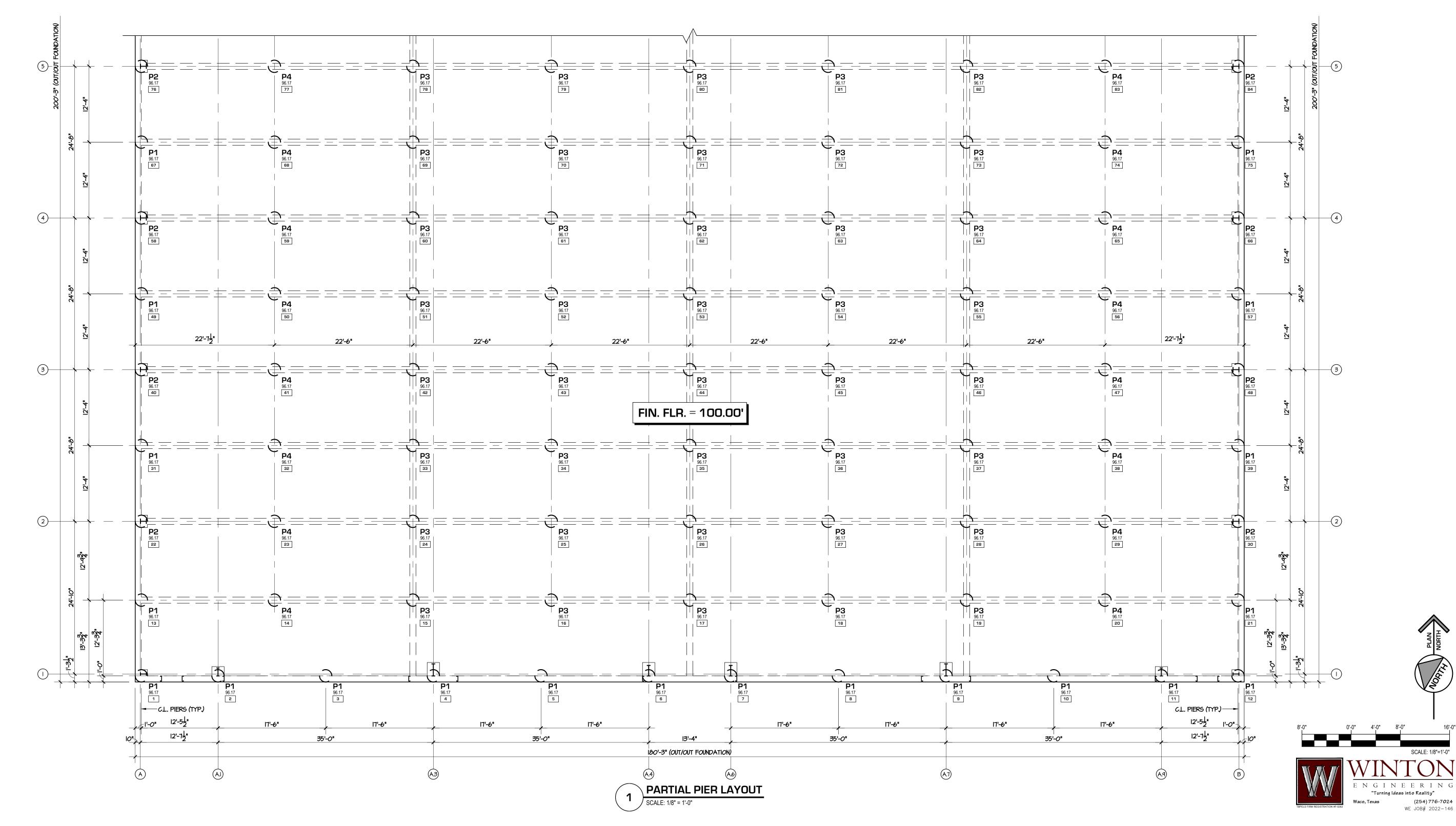
TYPICAL PIER PLAN LEGEND

DRILLED PIER PX PIER MARK TOP OF PIER IDENTIFICATION NUMBER

GRADE BEAM RE: BEAM LAYOUT DETAIL NUMBER SECTION MARK U.N.O. = UNLESS NOTED OTHERWISE F.O.C. = FACE OF CONCRETE

O.C. = ON CENTER

O.C.E.W. = ON CENTER EACH WAY



9'-0" MIN.

39'-0"

- 1. RE: 1/S1.10 FOR TYPICAL PIER DETAILS.
- 2. PROVIDE PIER BOLSTERS AND SLEDS RE: SPECS. 3. ALL PIERS MUST TERMINATE ON A HARD LAYER.

(6) #6

4. NOTE THAT BID DEPTH TO BEARING STRATUM SHOWN ABOVE IS <u>ESTIMATED</u> BASED ON THE SOIL BORINGS IN THE GEOTECHNICAL REPORT AND <u>MAY VARY</u>. <u>ACTUAL</u> PIER DEPTH TO BEARING STRATUM AS DETERMINED IN THE FIELD BY THE GEOTECHNICAL LAB REPRESENTATIVE, <u>PLUS</u> THE REQUIRED PENETRATION SHOWN. <u>ACTUAL DEPTHS OF PIERS MAY BE MORE OR LESS THAN AS INDICATED IN THE PIER SCHEDULE</u>.

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#3 AT 12" O.C.

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68190 CONSTRUCTION OF THE STATE OF THE STATE

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TYPICAL PIER PLAN LEGEND

DRILLED PIER PX PIER MARK TOP OF PIER IDENTIFICATION NUMBER

GRADE BEAM RE: BEAM LAYOUT

O.C. = ON CENTER

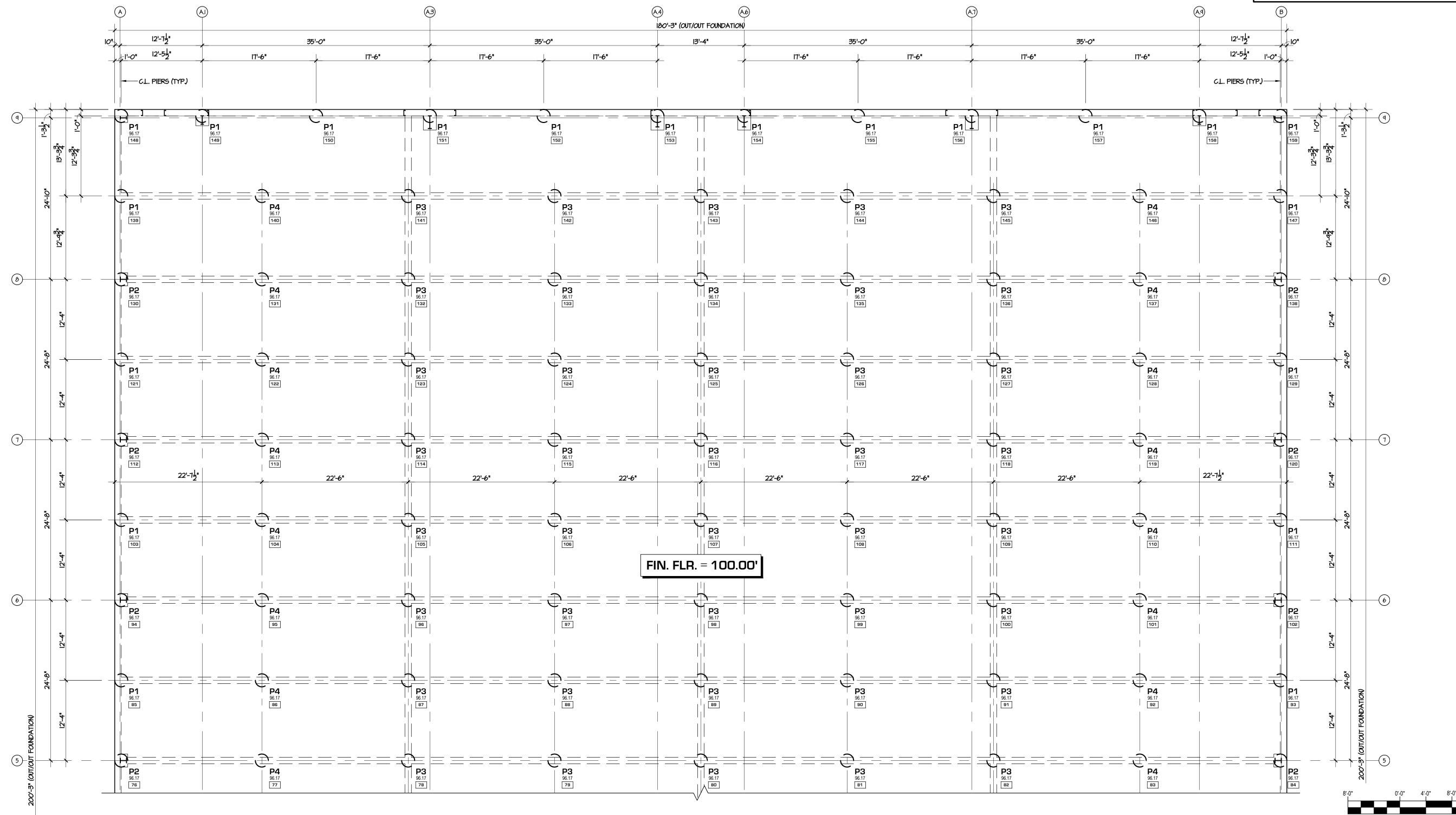
DETAIL NUMBER

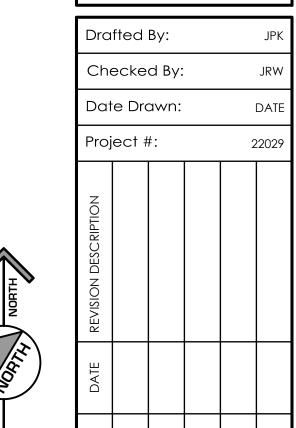
O.C.E.W. = ON CENTER EACH WAY

F.O.C. = FACE OF CONCRETE

U.N.O. = UNLESS NOTED OTHERWISE

SECTION MARK





(254) 776-7024

	GRADE BEAM REINF. SCHEDULE								
МК	SIZE (WxD)	TOP BARS	MIDDLE BARS	BOTTOM BARS	STIRRUPS	REMARKS			
B1	12x36	(3) #8	(2) #4 AT 10" O.C.	(3) #8	#3, 1 AT 2", BAL. AT 12" O.C.	RE: X/S1.20 FOR STIRRUP PLACEMENT			
B2	16x36	(4) #8	(2) #4 AT 10" O.C.	(3) #8	#3, 1 AT 2", 6 AT 6", BAL. AT 12" O.C.	RE: X/S1.20 FOR STIRRUP PLACEMENT			
В3	12x36	(3) #8	(2) #4 AT 10" O.C.	(2) #8	#3, 1 AT 2", 4 AT 6", BAL. AT 12" O.C.	RE: X/S1.20 FOR STIRRUP PLACEMENT			
B4	12x24	(2) #5		(2) #5	#3, 1 AT 2", BAL. AT 12" O.C.	RE: X/S1.20 FOR STIRRUP PLACEMENT			
NOTE: TOP BARS SHALL BE EXTENDED TO THE MID-SPAN OF ADJACENT BEAMS. WHERE ADJOINING BEAM STEEL DIFFERS, THE TOP BARS IN THE BEAM WITH THE LARGER SIZE / QUANTITY SHALL BE EXTENDED.									

TYPIC	AL CONCRETE PLAN LEGENI
$\widehat{}$	

	DRILLED PIER RE: PIER LAYOUT
	GRADE BEAM
	BEAM MARK - RE: SCHED.
	DETAIL NUMBER
- XX	SECTION MARK
	OUEET NUMBER

U.N.O. = UNLESS NOTED OTHERWISE CJ = CONTROL / CONSTRUCTION JOINT F.D. = FLOOR DRAIN (RE: PLUMBING) F.S. = FLOOR SINK (RE: PLUMBING)

T.O.C. = TOP OF CONCRETE

O.C. = ON CENTER O.C.E.W. = ON CENTER EACH WAY

TYPICAL CONCRETE PLAN NOTES

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4. VERIFY ALL DIMENSIONS, AND EXACT SIZE AND LOCATION OF ALL DOORS, BLOCK-OUTS, DEPRESSIONS, EMBEDS, FLOOR DRAINS, ELECTRICAL BOXES, AND SIMILAR ITEMS WITH ARCHITECTURAL AND MEP PLANS PRIOR TO FORMING CONCRETE. NOTIFY STRUCTURAL ENGINEER OF DISCREPANCIES.

5. NO CONDUIT MAY BE RUN PERPENDICULAR TO OR DIAGONAL TO SLAB SPAN (MAIN TOP/BOTT. SLAB STEEL DIRECTION). A MAXIMUM DIAMETER OF 2" CONDUIT MAY BE RUN, ONLY PARALLEL TO SLAB SPAN, AND MUST BE MAINTAINED AT CENTER OF SLAB THICKNESS. WHERE CONDUIT

RUNS PERPENDICULAR/ DIAGONAL TO SLAB SPAN, CONDUIT MUST RUN UNDER BEAMS. 6. NOTIFY ARCHITECT, STRUCTURAL ENGINEER, AND CONSTRUCTION MATERIALS TESTING COMPANY A MINIMUM OF (2) BUSINESS DAYS PRIOR TO PLACING CONCRETE. INDICATE APPROXIMATE TIME OF POUR, AS WELL AS WHEN STEEL REINFORCING WILL BE COMPLETED

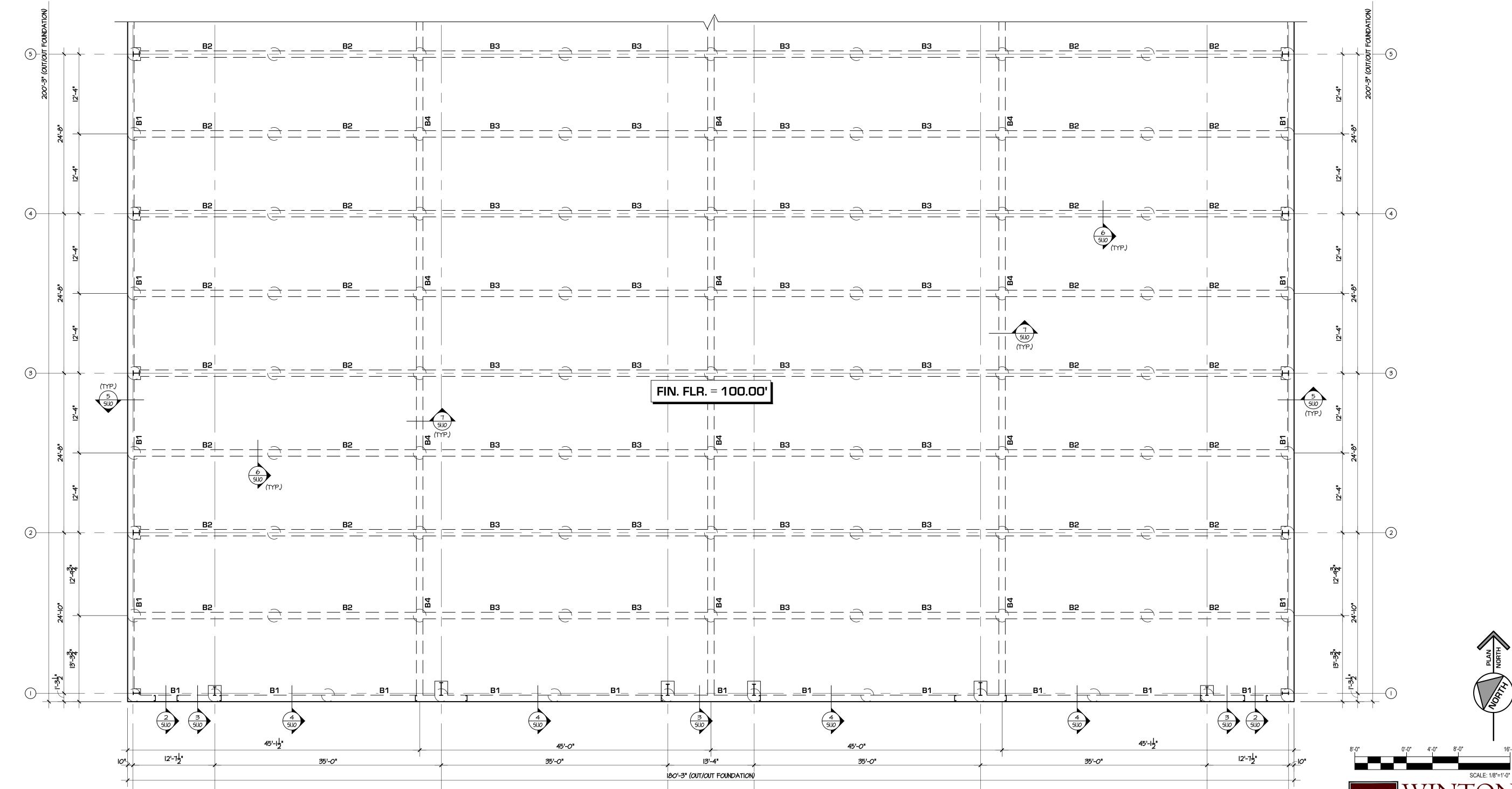
7. PLACE ALL REINFORCING STEEL WITH PROPER CLEARANCES, LAPS, AND STIRRUP SPACINGS. REFER TO DETAILS.

8. PROVIDE BAR CHAIRS, SUPPORTS, STANDEES AND SPACERS AT 4'-0" ON CENTER MAXIMUM FOR ALL LAYERS OF STEEL IN SLABS AND FOOTINGS, AND AS REQUIRED TO MAINTAIN CLEARANCES

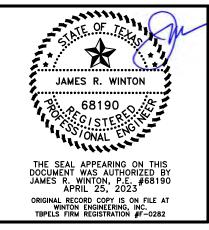
9. SIZE PILASTERS TO PROVIDE A MINIMUM OF 6" CLEARANCE AT ANCHOR BOLTS. 10. ALL HORIZONTAL BEAM PENETRATIONS SHALL BE MADE IN THE CENTER 1/3 OF BEAM DEPTH.

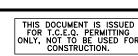
ENLARGE BEAM PER DETAIL X/S1.20 WHERE REQUIRED.

11. FAILURE TO COMPLY WITH THESE NOTES, THE PLANS, AND SPECIFICATIONS MAY RESULT IN THE REMOVAL AND REPLACEMENT OF WORK AT CONTRACTOR'S EXPENSE.



PARTIAL GRADE BEAM LAYOUT





	Dra		JPK				
	Che	JRW					
	Dat	e Dro	awn:			DATE	
	Proj	ect #	22029				
	revision description						
)	DATE						
-0"	REV #						

THE TOP BARS IN THE BEAM WITH THE LARGER SIZE / QUANTITY SHALL BE EXTENDED.

TYPIC	CAL CONCRETE PLAN LEGEN
	DDW 52 DISD

	DRILLED PIER RE: PIER LAYOUT
BX →	GRADE BEAM
	BEAM MARK - RE: SCHED.
A ./	DETAIL NUMBER
- XX	SECTION MARK
<u> </u>	SHEET NUMBER

U.N.O. = UNLESS NOTED OTHERWISE

CJ = CONTROL / CONSTRUCTION JOINT

F.D. = FLOOR DRAIN (RE: PLUMBING)

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68190 COUNTY OF THE STATE OF TH

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 PLACE ALL REINFORCING STEEL WITH PROPER CLEARANCES, LAPS, AND STIRRUP SPACINGS. REFER TO DETAILS.

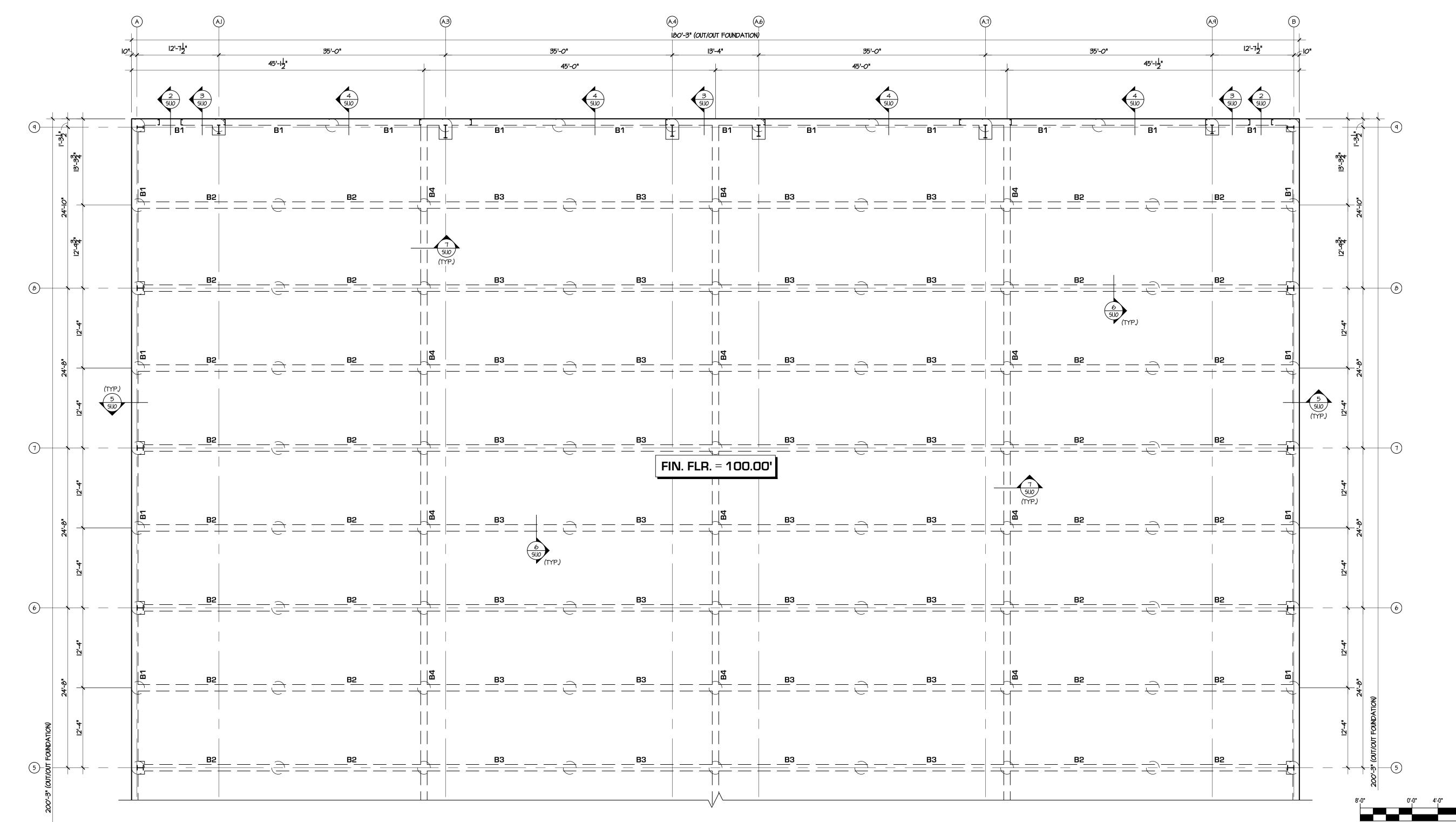
PROVIDE BAR CHAIRS, SUPPORTS, STANDEES AND SPACERS AT 4'-0" ON CENTER MAXIMUM FOR ALL LAYERS OF STEEL IN SLABS AND FOOTINGS, AND AS REQUIRED TO MAINTAIN CLEARANCES

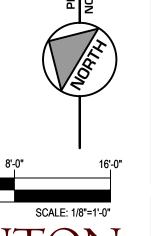
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ENLARGE BEAM PER DETAIL X/S1.20 WHERE REQUIRED.

11 FAILURE TO COMPLY WITH THESE NOTES. THE PLANS, AND SPECIFICATIONS MAY RESULT IN TH

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\$1.04

TEMP. STEEL: #4 AT 8" O.C. TOP AND BOTT., STAGGERED. EDGE OF SLAB -TOP STEEL W STD. HOOK EACH END, U.N.O.). TYP. TEMP STEEL , SPACING , RE: PLAN SPACING - RE: SCHED. - TOPPING / TOPPING SLAB TO BE DETERMINED.

SPACING - RE: SCHED.

TYPICAL SLAB STEEL:
TOP STEEL: #5 AT IO" O.C. W STD. HOOK

EACH END.

BOTT. STEEL: #5 AT IO" O.C.

TYP. SLAB STEEL CLEARANCES

JAMES R. WINTON 68190 68190 C

REFER TO DETAILS.

8. PROVIDE BAR CHAIRS, SUPPORTS, STANDEES AND SPACERS AT 4'-0" ON CENTER MAXIMUM FOR ALL LAYERS OF STEEL IN SLABS AND FOOTINGS, AND AS REQUIRED TO MAINTAIN CLEARANCES

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10" THK. CONCRETE SLAB OVER 10 MIL. POLY VAPOR BARRIER, 2" MIN. SAND CUSHION, AND FIN. FLR. = 100.00'

PARTIAL SLAB LAYOUT

(254) 776-7024

TOP STEEL W STD.

35'-0"

BOTT. STEEL (TYP.)

180'-3" (OUT/OUT FOUNDATION)

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10 MIL. POLY VAPOR BARRIER,

FIN. FLR. = 100.00'

*3*5'-0"

*3*5'-0"

, 8'-0**"**

, 4'-3¹" , 3'-4" , 6'-10"

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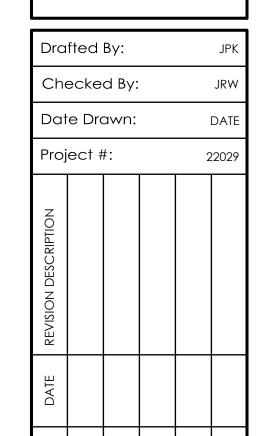
- 8. PROVIDE BAR CHAIRS, SUPPORTS, STANDEES AND SPACERS AT 4'-0" ON CENTER MAXIMUM FOR

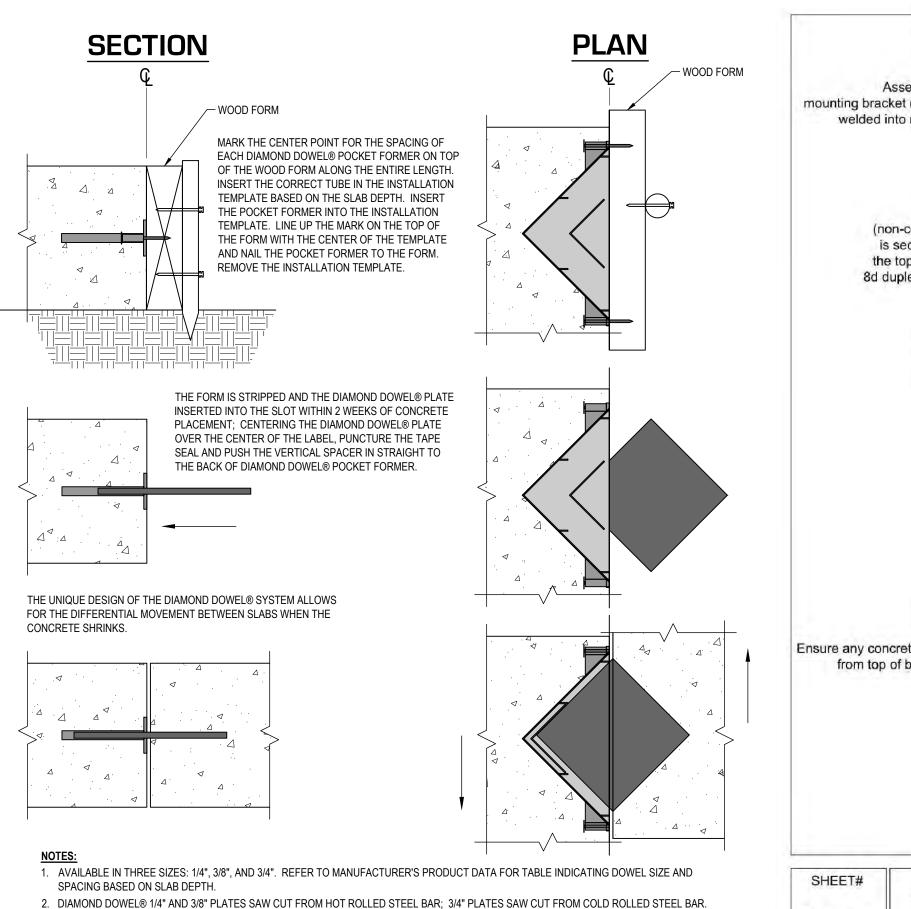
12'-75"

6'-10" 3'-4",

(254) 776-7024

PLL(





3. INSTALL THE DIAMOND DOWEL® SYSTEM PER PNA'S INSTALLATION GUIDE USING A FULL DEPTH FORM. PNA DOES **NOT** ENDORSE ANY

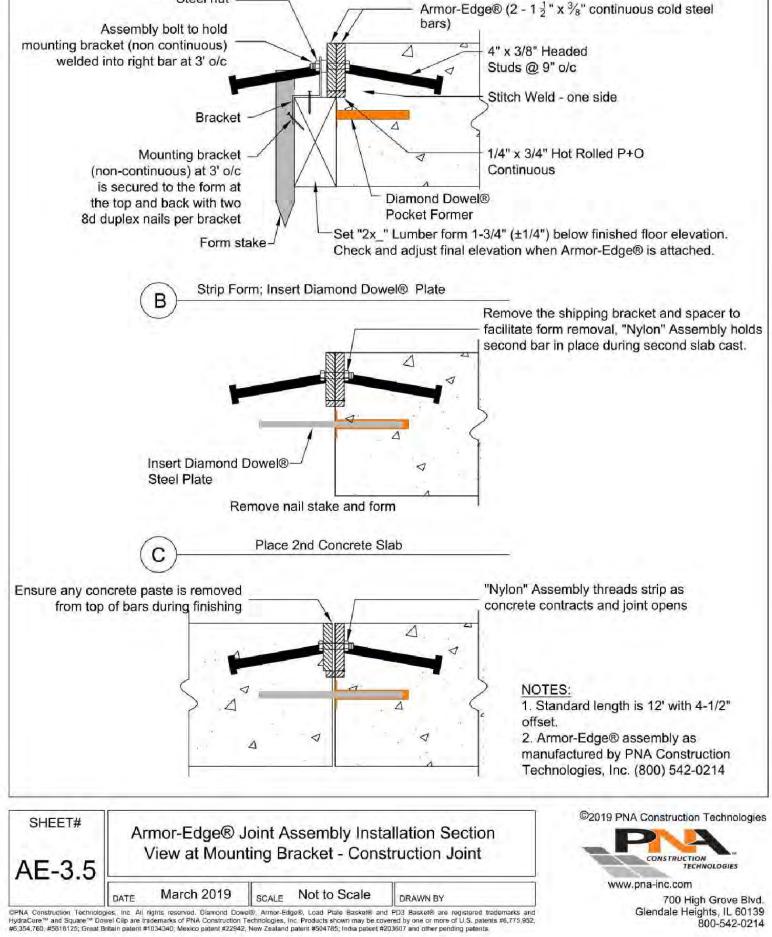
DIAMOND DOWEL® SYSTEM INSTALLATION

OTHER METHODS OF INSTALLATION FOR THE DIAMOND DOWEL® SYSTEM, INCLUDING USE OF PARTIAL DEPTH EPS FORMS.

4. INSTALLATION TEMPLATE PROVIDED FOR SPEED, EASE, AND ACCURACY OF INSTALLATION IN THE FIELD.

SCALE: NOT TO SCALE

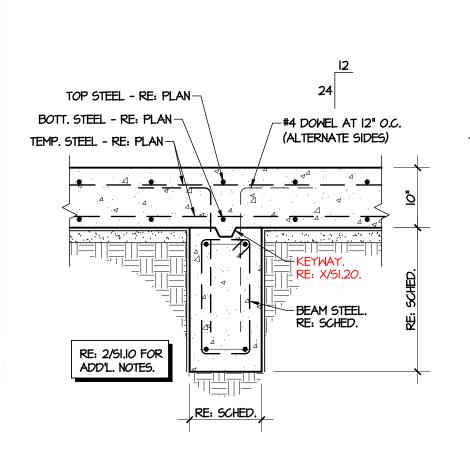
5. DIAMOND DOWEL® SYSTEM AS MANUFACTURED BY PNA CONSTRUCTION TECHNOLOGIES, INC. (800) 542-0214.

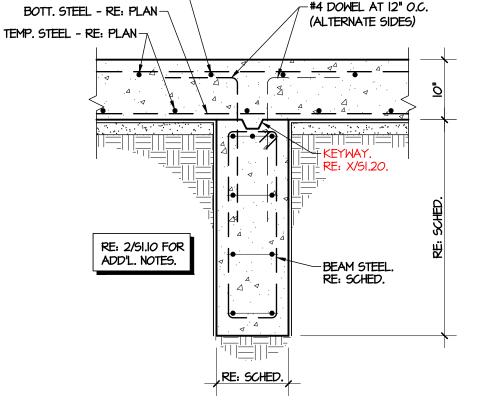


ARMOR-EDGE® SYSTEM INSTALLATION

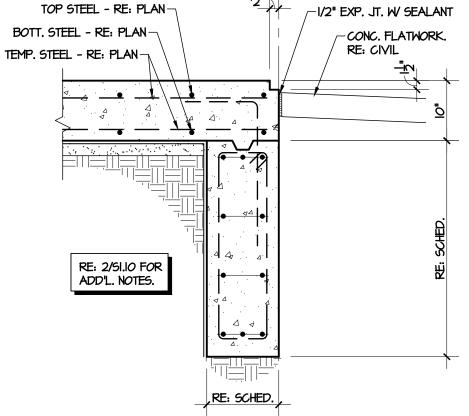
(USE AT ALL COLD/CONSTRUCTION JTS.)

Form and Place Concrete





TOP STEEL - RE: PLAN-

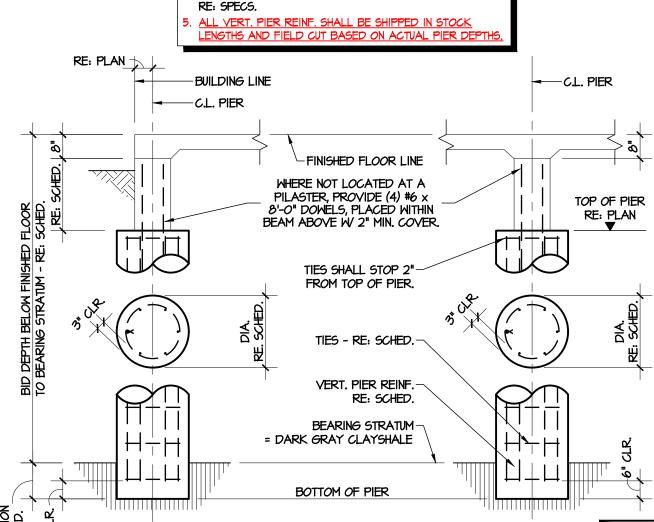


TYP. EXT. BEAM AT SHEET LEDGE

TYP. INTERIOR BEAM

TYP. INTERIOR BEAM SCALE: 3/4" = 1'-0"

I. RE: SCHED. FOR REINFORCING. 2. EXTEND VERT. PIER REINF. TO 2" BELOW TOP OF GRADE BEAM. CUT OFF BARS WHICH FALL OUTSIDE OF BEAM / PILASTER ABOVE AND PROVIDE DOWELS AS NOTED. 3. AT CIRCULAR TIES, STAGGER LAPS 180°. 4. PROVIDE PIER SLEDS AND BOLSTERS FOR ALL PIERS. RE: SPECS. BUILDING LINE

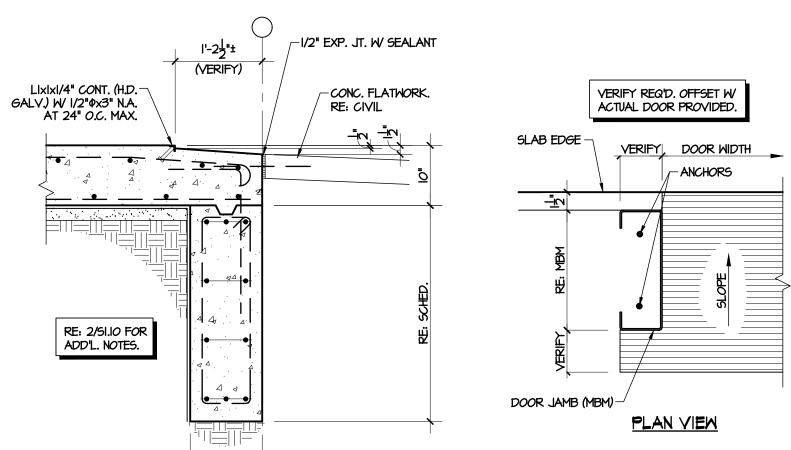


/--I/2" EXP. JT. W SEALANT -CONC. FLATWORK. RE: CIVIL RE: SCHED.

BEAM SHALL BEAR ON FIRM,-UNDISTURBED NATURAL SOILS.

SELECT FILL IF/AS

REQ'D. - RE: SPECS.

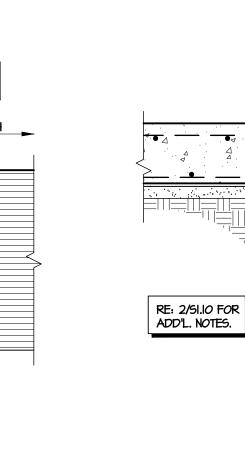


©PNA CONSTRUCTION TECHNOLOGIES, INC.

(USE AT ALL COLD/CONSTRUCTION JTS.)

RE: SCHED.

TYP. EXT. BEAM AT O.H. DOOR





RE: CIVIL



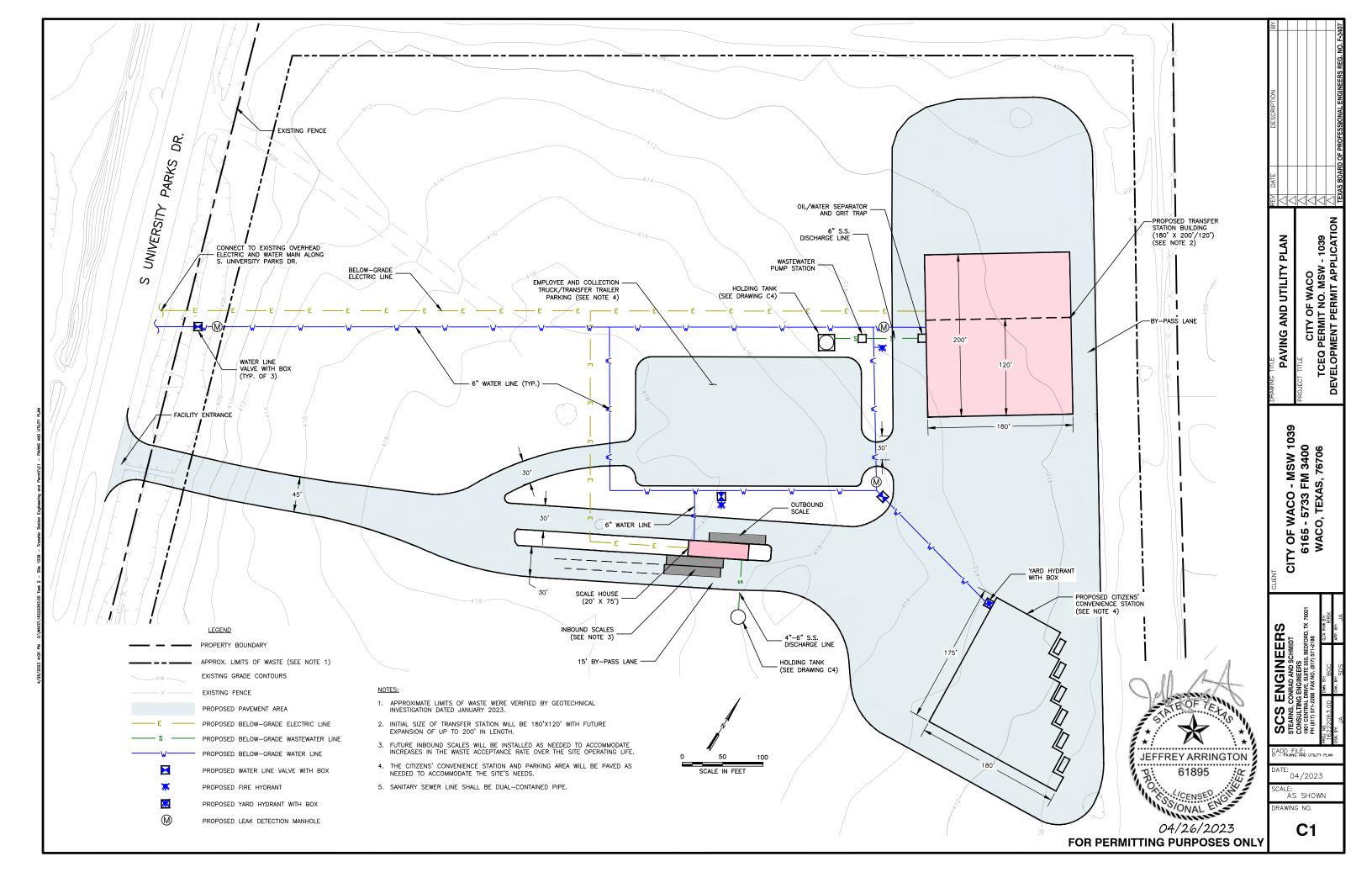
TYP. EXT. BEAM AT WALK DOOR SCALE: 3/4" = 1'-0"

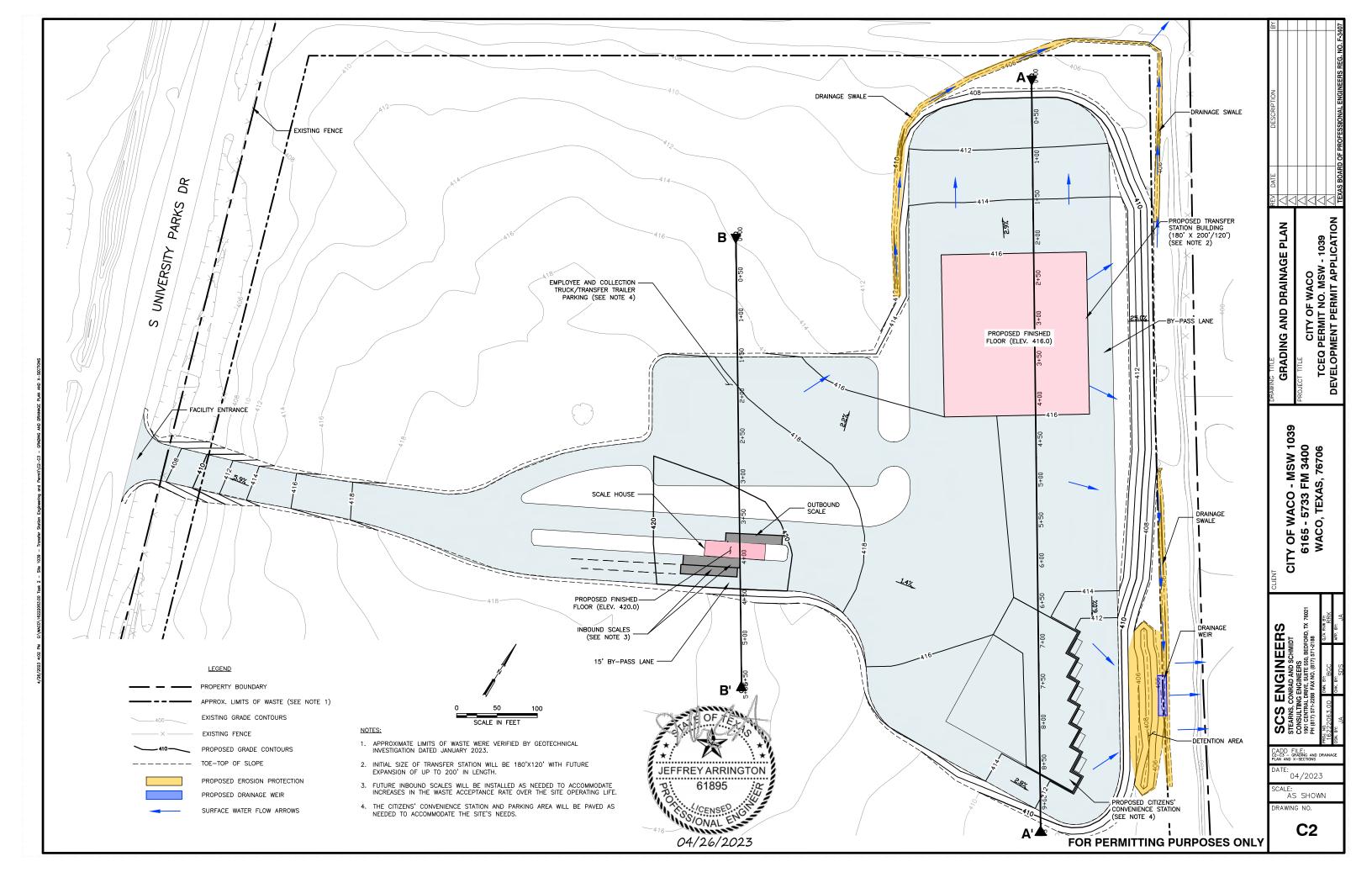
#4 DOWELS AT 12" O.C.-TOP STEEL - RE: PLAN--1/2" EXP. JT. W/ SEALANT -CONC. FLATWORK.

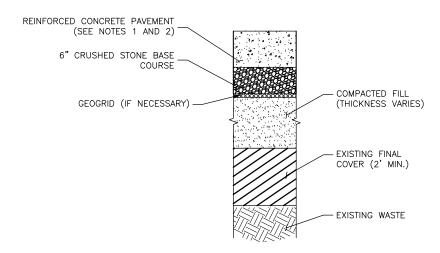
BOTT. STEEL - RE: PLAN-TEMP. STEEL - RE: PLAN-RE: X/SI.20. POLY - RE: PLAN-SAND CUSHION -COMPACTED -

EXTERIOR TYPICAL PIER DETAILS SCALE: NOT TO SCALE

"Turning Ideas into Reality" (254) 776-7024 WE JOB# 2022-146



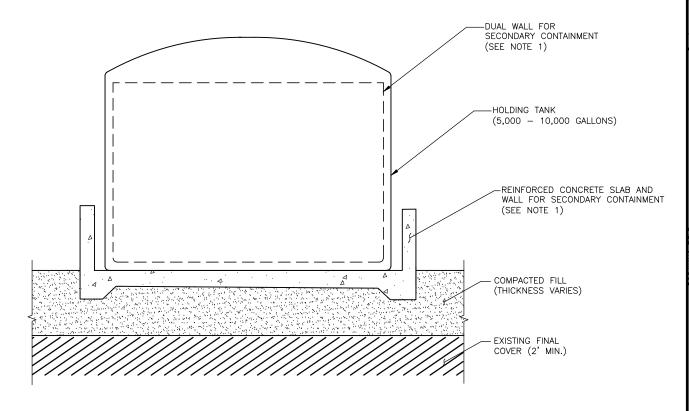




NOTES:

- 1. PAVEMENT THICKNESS: 10" FOR ACCESS ROADS AND BUILDING APPROACHES 6" FOR PARKING AND CITIZENS' COLLECTION STATION
- 2. GRAVEL ROAD BASE MAY BE USED IN-PLACE OF CONCRETE PAVEMENT FOR PARKING AND CITIZENS' COLLECTION STATION.

TYPICAL PAVING SECTION



NOTES:

- 1. TANK MAY HAVE REINFORCED CONCRETE SLAB AND WALL OR DUAL WALL IN PLACE OF SECONDARY CONTAINMENT.
- 2. TANK AND FOUNDATION WILL BE ANCHORED IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.

HOLDING TANK



FOR PERMITTING PURPOSES ONLY

DATE: 04/2023

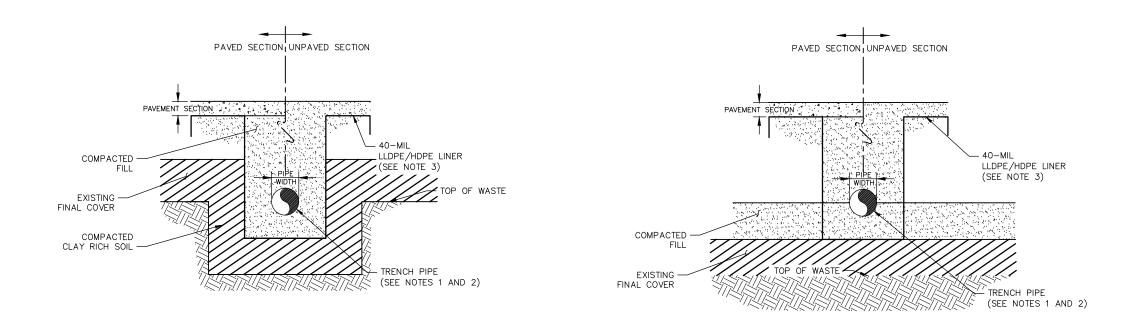
SCALE: AS SHOWN DRAWING NO.

C4

TCEQ PERMIT NO. MSW - 1039

DEVELOPMENT PERMIT APPLICATION

DETAILS

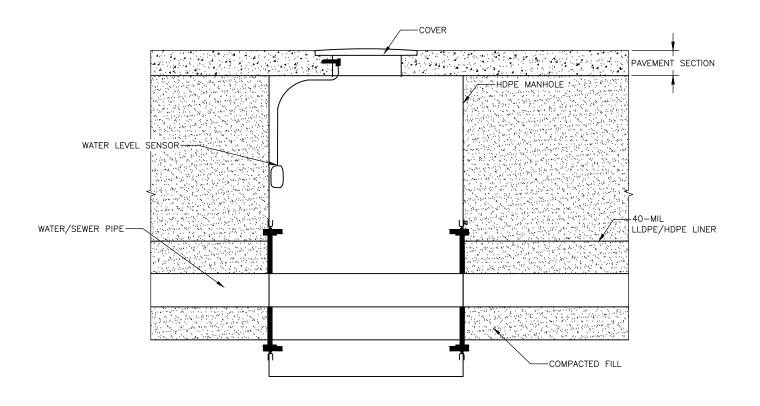


UTILITY TRENCH SECTION DETAIL (WASTE ENCOUNTERED)

UTILITY TRENCH SECTION DETAIL (NO WASTE ENCOUNTERED)

NOTES:

- 1. UTILITY TRENCH LINER DETAIL SHALL APPLY TO ALL UTILITY LINES INCLUDING WATER LINES AND SANITARY SEWER PIPING CONSTRUCTED OVER THE CLOSED LANDFILL.
- 2. WATER LINES AND SANITARY SEWER PIPING MAY BE EITHER DUAL-CONTAINED OR SINGLE CONTAINED WITH TRENCH LINERS.
- 3. ELECTRICAL CONDUIT TRENCHES WILL NOT REQUIRE LLDPE/HDPE TRENCH LINERS.



LEAK DETECTION MANHOLE DETAIL

JEFFREY ARRINGTON MAL 04/26/2023

TY OF WACO - MSW 1039 6165 - 5733 FM 3400 WACO, TEXAS, 76706 CITY

ROJECT TILE

CITY OF WACO

TCEQ PERMIT NO. MSW - 1039

DEVELOPMENT PERMIT APPLICATION

DETAILS

ENGINEERS SCS | STEARNS, C

CADD FILE:

04/2023 SCALE: AS SHOWN

DRAWING NO.

C5

FOR PERMITTING PURPOSES ONLY

Appendix C Methane Monitoring Equipment Specifications



FOUR CHANNEL WALL MOUNT CONTROLLER

Gas Detection For Life

Beacon™ 410A Model



Features

- · Simultaneously control up to 4 gas monitoring channels
- · OLED display of all 4 channels
- LEL / O2 / CO2 / toxic direct connect sensors
- · Accepts any 4-20 mA transmitter, 2 or 3 wire
- · Up to 3 programmable alarm levels per channel
- · Up to 3 configurable alarm relays per channel
- · 4-20 mA analog & Modbus digital output standard
- 115 / 220 VAC or 24 VDC operation
- · Audible alarm with silence feature
- · RFI / EMI Resistant
- · Alarm reset switch
- · Built in trouble alarm with relay
- · Weather and corrosion resistant NEMA 4X enclosure

Applications

- · Petrochemical plants
- · Refineries
- · Water & wastewater treatment plants
- · Pulp & paper mills
- · Gas, telephone, & electric utilities
- · Parking garages
- · Manufacturing facilities
- Steel

The Beacon 410A is a highly configurable, microprocessor-based, flexible and easy to use 4 channel gas monitoring controller. It simultaneously displays the gas type, readings, and status for four channels of gas detection. It can monitor any combination of direct connect sensors (LEL, O2, CO2, and toxic gas sensors), as well as any 4-20mA transmitter.

Each channel has up to three fully configurable alarm points. A built-in silenceable audible alarm alerts you to alarm conditions. Each channel also has two dedicated fully configurable relays and there is a bank of common relays as well. The common relays can optionally be configured as additional relays allowing up to 3 alarm relays per channel. Each channel provides a 4-20mA output signal. A digital Modbus interface for remote logging of data via a Modbus network is standard. A Min-Max feature retains high & low peak readings for review at any time.

Optional Strobe Light

A fully configurable, high visibility strobe is available as an option. The unit can be powered from 115/220 VAC, or an external 24 VDC source. A trickle charging battery backup feature with battery assembly is also available as an option.

All features and functions of the Beacon 410A are controlled by easy to use menus on the OLED display. All features including form-C relay contacts of the Beacon 410A are built into the unit so you never need to purchase or maintain any "add-on" cards or components.

© © © © © BEACON 410A

Beacon™ 410A Model

Physical		
Dimensions	Height: 12.5" (31.8 cm) x Width: 11" (27.9 cm) x Depth: 6.4" (13.6 cm)	
Enclosure	NEMA 4X Fiberglass / polyester with lexan window for indoor and outdoor locations	
Conduit Connection	3/4" NPT conduit hubs, 4 provided, for sensor, power, & relay wiring	
Wiring Termination	Screw Type terminal block, 14 gauge max	
Power	115 VAC, 220 VAC, or 24 VDC nominal. Battery backup option available	
Optional Accessories	Strobe light, and Battery Backup Assembly	
Controls	Display PCB Control Switches: • UP/YES push button switch • ESCAPE push button switch • External reset switch • DOWN/NO push button switch • ENTER push button switch • On/Off toggle switch	

Environmental	
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Enclosure Rating	NEMA-4X enclosure, chemical and weather resistant. Suitable for indoor and outdoor installations

Inputs	
Direct Wired Sensors	LEL, Oxygen, Carbon Dioxide, and toxic gas sensors. Remote amp not required for less than 500 feet
4-20 mA	Accepts any 4-20 mA transmitter (24 VDC, 2 or 3 wire). A wide variety of RKI/Riken sensors are available with 4-20 mA signals. Wiring distances up to 8,000 feet
Sampling Methods	Diffusion and sample draw heads available

Outputs		
Relays	Two flexible, programmable Form-C (C, NO, NC) relays per channel, plus five common relays (Fail, Alarm-1, Alarm-2, Alarm-3, Alarm-Any). Common relays may optionally be assigned to function as additional channel alarm relays, providing for up to three alarm relays per channel. 10A contact rating, 250V.	
4-20 mA	Signal output, 4-20 mA (maximum load impedance 500 ohms), per channel	
RS-485	Modbus format RS-485 serial output of all channel data, including gas reading and alarm status.	
Display	Four line OLED display	
Audible	Built-in audible alarm, 94 dB, mounted on enclosure Coded output: pulsing = gas alarm, steady = fail	
Visual	 Alarm LED's (on Display PCB) Alarm 1 = yellow Alarm 2 = orange Alarm 3 = red Fail = yellow Green Pilot LED to indicate AC power connected (on Display PCB) An optional 24 VDC NEMA 4X strobe mounted to top of case. 	

Approvals	CSA Certified to CSA C22.2 No. 61010-1-12 and UL61010-1
Warranty	One year materials and workmanship





Authorized Distributor:

- Toll Free: (800) 754-5165 Phone: (510) 441-5656
- Fax: (510) 441-5650 www.rkiinstruments.com

Appendix D Landfill Safety Requirements

LANDFILL HEALTH AND SAFETY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This section describes the landfill site conditions, potential for hazards, and general requirements for health and safety of personnel involved in the execution of the Work.
- B. This section describes the general requirements for trench safety systems, and requires the Contractor to include trench safety within the Health and Safety Plan required by the Contractor.
- C. General requirements for furnishing services of a Safety Monitor.
- D. This section requires that the Contractor submit a Health and Safety Plan prior to the commencement of Work.

1.2 RELATED SECTIONS

- A. General Information, Conditions, and Requirements
- B. Technical Specifications

1.3 SUBMITTALS

A. Contractor shall prepare a Health and Safety Plan (Plan) addressing worker safety during construction including grading, excavation, trenching, and backfill; and relocation of waste (if required). Contractor shall submit a copy of the Plan to the Owner and Engineer. However, the Owner or Engineer will not be responsible for the adequacy of the Plan in providing worker protection, or execution of the measures set forth in the Plan. This Plan will also include trench safety, as specified herein.

1.4 DESCRIPTION OF WORK

- A. This section supplements the requirements specified in the General Information, Conditions, and Requirements. If the requirements of this Section and General Information, Conditions, and Requirements conflict, the Contractor shall adhere to the more stringent requirement as determined by the Owner and Engineer.
- B. The provisions of this Section are supplementary to other provisions specified elsewhere in the Contract Documents.
- C. The Contractor should be familiar with the Safety Guidelines as prepared by the Solid Waste Association of North America (SWANA) National Landfill Gas Committee. Copies may be obtained by writing to SWANA, 8750 Georgia Avenue, Suite 140, Silver Spring, Maryland 20910, telephone number (800) 467-9262. Neither Owner nor Engineer make representation regarding the adequacy or completeness of these guidelines in addressing the issues associated with working in or near waste or landfills.
- D. Nothing in this Section shall preclude the Contractor from complying with the more stringent requirements of the applicable Federal, State, County, or Owner rules and regulations.

1.5 HAZARDOUS SITE CONDITIONS

- A. The Contractor is advised that the construction of this project is being performed in and near buried wastes and refuse. As these buried materials decompose anaerobically, they will generate landfill gas (LFG), which normally consists of carbon dioxide (CO₂), methane (CH₄), and occasionally hydrogen sulfide (H₂S) and other gases, depending on the composition of the buried materials. These gases usually vent to the atmosphere through the cover soil, but may migrate laterally to adjacent areas depending on site and weather conditions.
- B. The landfill is a municipal solid waste landfill. Care shall be taken in protecting workers from exposure to hazards, and executing the work using procedures that provide worker protection.

1.6 POTENTIAL FOR HAZARDS

- A. The following landfill and LFG related information is included to assist the Contractor in developing his Health and Safety Plan and is not intended to encompass all steps that may be necessary to protect the workers or to comply with applicable regulations.
 - Landfill gases usually vent to the atmosphere through the cover soils, but may migrate laterally to adjacent areas depending on site and weather conditions.
 - Landfill gases have the potential to create hazardous conditions if not controlled or recognized. Some of the hazards are:
 - a. Fires may start spontaneously from exposed and/or decomposing refuse.
 - b. Fires and explosions may occur from the presence of methane gas. Methane is explosive in approximate concentrations of 5 to 15 percent by volume in air.
 - Landfill gases may cause an oxygen deficiency in underground trenches, vaults, conduits, and structures.
 - d. Hydrogen sulfide, a highly toxic and flammable gas, or other toxic gas may be present.
 - e. Possible caving of trenches and excavations when working over or in refuse fills.
 - 3. Landfill materials (solids and liquids) have the potential to contain pathogens, fungus, viruses, infectious materials; sharp, puncturing, and cutting objects; and other hazards. Dust control during waste excavation is important to controlling dust-borne transmission of harmful elements. Preventing dermal contact with waste by workers, including preventing walking over or in exposed waste, also will reduce the risks of worker exposure. Dust control and worker exposure during excavation shall be addressed in the Health and Safety Plan.

1.7 SAFETY PROGRAM AND PRECAUTIONS

A. Supplemental to the Contractor's regular safety program, the Contractor shall develop and institute procedures to inform all workers and site visitors of the potential for the presence of methane and other landfill gases emanating from the natural decomposition of refuse buried at or near the job site and the importance of safety precautions to ensure the safety of workers and the public. The Contractor shall also instruct all workers and maintain strict control of construction activities to protect and maintain the integrity of the Work features as they are installed.

- B. In addition to conforming to the safety rules and regulations of governmental authorities having jurisdiction, the Contractor shall take the following precautionary measures:
 - Periodically during construction, the workspace should be monitored for concentrations of methane
 and hydrogen sulfide. Workers shall not be permitted to enter a workspace where there is an oxygen
 deficiency or a combustible mixture of gases without appropriate protection. Positive fan-forced
 ventilation to dilute gas mixtures and avoid oxygen deficiency should be provided when work is
 necessary in any confined workspace.
 - 2. Smoking shall be prohibited at all times on the landfill property.
 - 3. In the event toxic gases are present at concentrations hazardous to the workers and the general public, the Contractor shall immediately evacuate all persons from the area until the area is determined safe by the Safety Monitor.
 - 4. Soil shall be stockpiled adjacent to workspace in areas of exposed refuse for firefighting purposes.
 - 5. The use of explosives or firearms shall not be permitted on the site.
 - 6. If refuse is exposed during construction activities, it shall be covered as soon as possible after exposure with at least a 6-inch layer of soil. In no event shall the refuse remain exposed overnight, unless otherwise approved by the Owner/Engineer.
 - 7. If refuse is excavated during construction activities, it shall be disposed of at the working face of the active landfill, as directed by the Owner. Refuse shall be disposed each day.
 - 8. Care shall be taken not to track waste outside of the Work area on construction equipment.
 - No welding shall be permitted in trenches, enclosed areas, or over refuse unless performed in areas of the site tested and approved by the Safety Monitor.
 - 10. Combustion engine-powered construction equipment shall be equipped with vertical exhaust and spark arrestors.
 - 11. Electric motors and controls utilized in excavation areas and in below ground workspaces shall be explosion-proof.
 - 12. Workers shall not be allowed to work alone at any time in an excavation. Work parties of at least three workers shall be mandatory with one worker outside of the hazard area and another worker within hailing distance to assist in an emergency.
 - 13. Inhalation of landfill gases shall be avoided. Such gases or oxygen-deficient air may cause nausea and dizziness, which could lead to accidents. Work upwind of the excavation where possible, unless the excavation is constantly monitored and declared safe by the Safety Monitor.
 - 14. Workers shall avoid contact with exposed refuse, condensate, or leachate.
 - 15. Fire extinguishers with a rating of at least A, B, and C shall be available at all times on the site.
 - 16. Startup and shutdown of equipment shall be avoided in areas of exposed refuse.
 - 17. Personnel, when in an open excavation or in the presence of landfill gas, shall be fully clothed with non-sparking cloth, wear shoes with non-metallic soles, and wear a hard hat and safety goggles or

glasses. The excavation shall be monitored continuously in a manner satisfactory to the Safety Monitor for the presence of methane, hydrogen sulfide, and oxygen for the duration that personnel are in an excavation. Workers should immediately vacate an excavation if methane, hydrogen sulfide, or oxygen deficiency is detected therein, and shall not be permitted to re-enter the excavation unless satisfactory precautionary measures for a safe work environmental are implemented.

18. Assembly of construction work shall be performed outside of trenches or excavations. Prefabricated items shall be lowered into excavations. Only final connections may be made within trenches with the necessary precautions stated.

1.8 SAFETY MONITOR

- A. The Contractor shall designate a person who will be designated as the Safety Monitor. The Safety Monitor shall be thoroughly trained in rescue procedures, trench safety (if trenching greater in depth than 3 feet is included in Work), and in the use of safety equipment and gas detectors, as deemed appropriate for the Work. The Safety Monitor shall be present at all times during working hours whenever open trenches or excavations are greater than 3 feet in depth, when the Contractor is working on or near exposed refuse, or when LFG is likely to be present.
- B. The Safety Monitor shall have appropriate instruments (detector[s]) to test for oxygen deficiency and for the presence of methane gas and hydrogen sulfide gas, as deemed necessary within the Health and Safety Plan. A personal gas monitor (such as Lumidor Safety Products PGM13, GasTech GX-82, GasTech Model 1641, or similar unit[s]) should be available for this purpose. The Safety Monitor should periodically calibrate his instruments and regularly test the excavation areas and other workspace for safe working conditions and ensure that appropriate safety equipment is available at the site.
- C. The Safety Monitor shall have the delegated authority to order workers on the project site to comply with the safety requirements. Failure to observe his order shall be cause for removal of the worker from the project.

END OF SECTION

Appendix E Notice of Coordination Letters

April 28, 2023 File No. 16222063.00

Mr. Scott Felton, J.D. McLennan County Judge 501 Washington Avenue Room 214 Waco, Texas 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over

Closed Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Felton:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

Included for your reference, you will find a location map (General Vicinity Map) describing the location and limits of the closed landfill and the proposed location of the enclosed structure. The closed landfill is located on South University Parks Drive on a parcel of land owned by the City of Waco.

Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

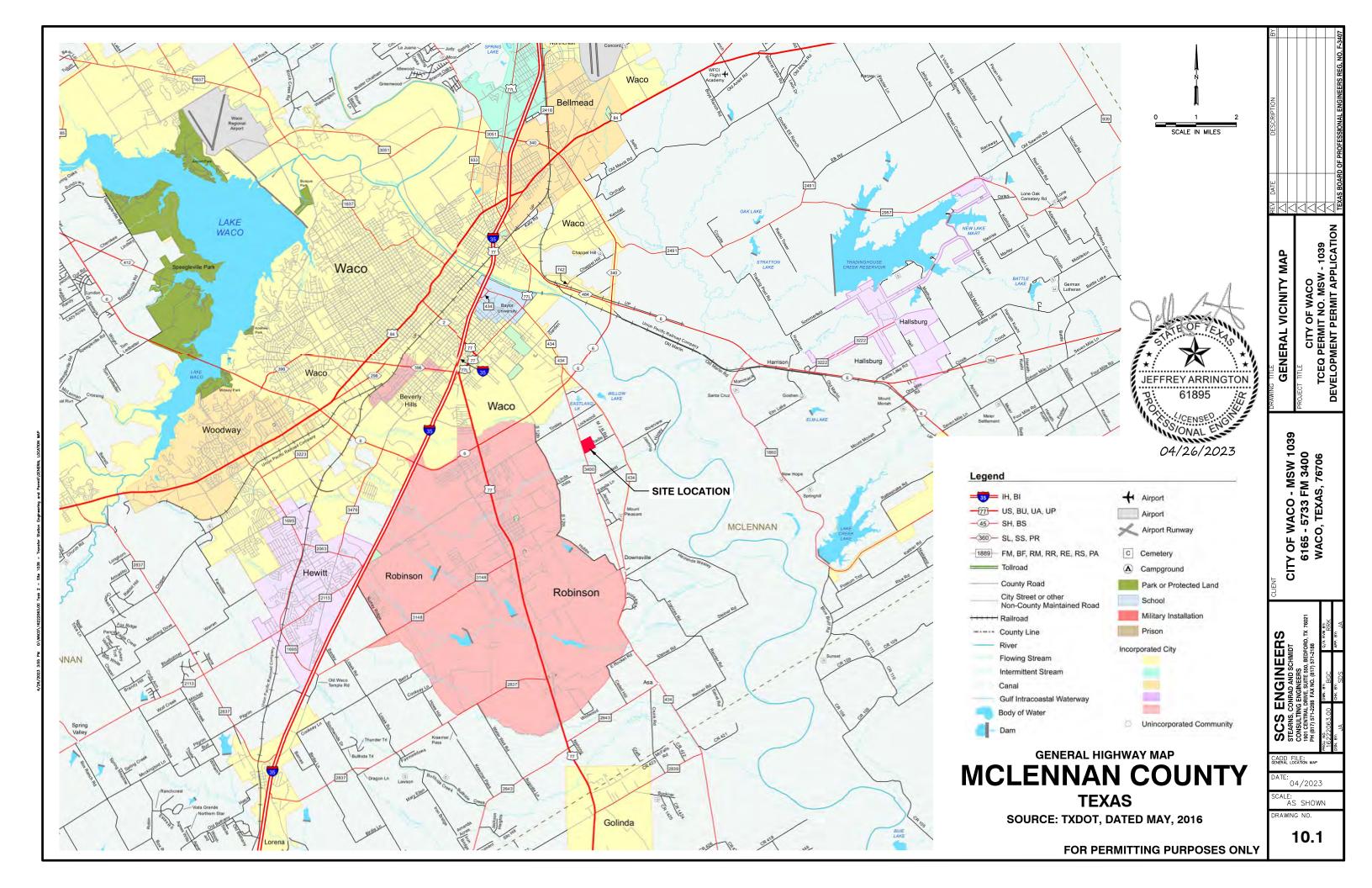
Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments



April 28, 2023 File No. 16222063.00

McLennan County Clerk's Office PO Box 1727 Waco, Texas 76703

Subject: Notice to the Real Property Records for McLennan County for the Proposed Construction of an Enclosed Structure over Closed Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

On behalf of the City of Waco, SCS Engineers is currently preparing a registration application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for the construction of an enclosed structure on a closed municipal solid waste landfill. The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.963(a) states that, "An owner of land that overlies a closed municipal solid waste landfill shall prepare a written notice stating the former use of the facility, the legal description of the property, notice of the restrictions on the development or lease of the land imposed by this Subchapter and Texas Health and Safety Code, Chapter 361, Subchapter R." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed municipal solid waste landfill (landfill). This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

Included for your reference, you will find a location map (General Vicinity Map) describing the location and limits of the closed landfill and the proposed location of the enclosed structure. The closed landfill is located on South University Parks Drive on a parcel of land owned by the City of Waco.

Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter. Please call me at (817) 358-6111 if you have any questions.

Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00.00

Ms. LaShonda M. Malrey-Horne Director Waco-McLennan County Health District 225 W. Waco Drive Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Ms. Malrey-Horne:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

Included for your reference, you will find a location map (General Vicinity Map) describing the location and limits of the closed landfill and the proposed location of the enclosed structure. The closed landfill is located on South University Parks Drive on a parcel of land owned by the City of Waco.

Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00.00

Mr. Zane Dunnam, P.E., RPLS McLennan County Engineer and Floodplain Administrator 215 N. 5th St. Suite 130 Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Dunnam:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

Included for your reference, you will find a location map (General Vicinity Map) describing the location and limits of the closed landfill and the proposed location of the enclosed structure. The closed landfill is located on South University Parks Drive on a parcel of land owned by the City of Waco.

Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager

SCS ENGINEERS

April 28, 2023 File No. 16222063.00.00

Mr. Dillon Meek, City of Waco Mayor 300 Austin Ave. Waco, TX 76702

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Mayor Meek:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00.00

Mr. Gregory Summer City of Waco Fire Chief 1016 Columbus Ave. Waco, TX 76702

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Summer:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00.00

Ms. Amy Burlarley-Hyland, P.E. City of Waco, Director of Public Works 401 Franklin Ave. Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Ms. Burlarley-Hyland:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File N3. 16222063.00.00

Ms. Lisa Tyer City of Waco, Director of Utilities 200 Colcord Ave. Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Ms. Tyer:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. **Project Manager** SCS ENGINEERS

TBPE Registration No. F-3407

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

Attachments

April 28, 2023 File No. 16222063.00.00

Mr. Clint Peters City of Waco, Director of Planning 401 Franklin Ave Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Peters:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00.00

Mr. Chris Valtierra City of Waco, Chief Building Official 401 Franklin Ave Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Valtierra:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00.00

Mr. Stanley Swiatek, P.E. District Engineer City of Waco 100 S. Loop Drive Waco, TX 76704

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Swiatek:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

Included for your reference, you will find a location map (General Vicinity Map) describing the location and limits of the closed landfill and the proposed location of the enclosed structure. The closed landfill is located on South University Parks Drive on a parcel of land owned by the City of Waco.

Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00

Mr. Rob Lowe Southwest Region Regional Administrator Federal Aviation Administration 10101 Hillwood Parkway Fort Worth, Texas 76177

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Lowe:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00

Carter Smith
Executive Director
Texas Parks and Wildlife
4200 Smith School Road
Austin, TX 78744

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Smith:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

1901 Central Drive, Ste. 550, Bedford, TX 76021 | 817-571-2288 | eFax 817-571-2188

April 28, 2023 File No. 16222063.00.00

Mr. Charles Anderson U.S. State Representative (District 56) 900 Austin Ave., Suite 804 Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Anderson:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00.00

The Honorable Brian Birdwell U.S. State Senator (District 22) 900 Austin Ave., Suite 500 Waco, TX 76701

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Birdwell:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00.00

Mr. Russell Devorsky
Executive Director
Heart of Texas Council of Governments
1514 S. New Road
Waco, TX 76711

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Devorsky:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00.00

Mr. David Collinsworth General Manager/Chief Executive Officer Brazos River Authority 4600 Cobbs Drive Waco, TX 76710

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Collinsworth:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Sincerely,

Jeff Arrington, P.E. Project Manager

SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Sandeep Saraf, P.E. Senior Project Manager SCS ENGINEERS

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April 28, 2023 File No. 16222063.00

Mr. Adam Zerrenner Field Supervisor U.S. Fish & Wildlife Service (Austin Ecological Services Field Office) 10711 Burnet Road, Suite 200 Austin, TX 78758

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed

Landfill, Waco, McLennan County, Texas City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Zerrenner:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Should you find that the proposed development requires coordination with your office for any other authorizations, please do not hesitate in providing a response to this letter.

Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

April 28, 2023 File No. 16222063.00

Mr. Eric W. Verwers Deputy District Engineer US Army Corps of Engineers 819 Taylor Street Room 3A37, P.O. Box 17300 Fort Worth, Texas 76102

Subject: Development Permit for the Proposed Construction of an Enclosed Structure over Closed Landfill, Waco, McLennan County, Texas

City of Waco Landfill, Permit No. MSW-1039

Dear Mr. Verwers:

On behalf of the City of Waco, SCS Engineers is currently preparing a development permit application to be submitted to the Texas Commissions on Environmental Quality (TCEQ) for the construction of a Type V municipal solid waste (MSW) transfer station on a closed municipal solid waste landfill (TCEQ Permit No. MSW-1039). The Texas Administrative Code, Title 30, Part 1, Chapter 330, Subchapter T, Rule 330.957(g) states that, "the applicant shall provide notice of coordination with all local, state, and federal government officials and agencies." This letter serves as a notice that the City of Waco, located in Waco, McLennan County, Texas, proposes construction of an enclosed structure over a closed MSW landfill. This construction is contingent upon the issuance of a development permit as required by Subchapter T of the Texas Administrative Code.

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Sincerely,

Jeff Arrington, P.E.
Project Manager
SCS ENGINEERS

TBPE Registration No. F-3407

Attachments

Appendix F Certified Copy of the City Charter

THE STATE OF TEXAS § **COUNTY OF McLENNAN §**

I. Esmeralda Hudson, TRMC, City Secretary of the City of Waco, Texas, hereby certify that the attached is a true and correct copy of the Charter of Waco Texas as adopted at an election held on the 1st day of November, 1958, was declared adopted by the Waco City Council on the 18th day of November, and subsequently amended in accordance with the Charter Election held on the 7th day of May, 2006, and adopted by the Waco City Council by Ordinance 2006-308 on second reading on the 16th day of May, 2006.

(City Seal)



Esmeralda Hudson, TRMC

City Secretary

City of Waco, Texas

THE STATE OF TEXAS § COUNTY OF McLENNAN §

BEFORE ME, the undersigned authority, on this day Esmeralda Hudson, City Secretary of the City of Waco, Texas, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledge to me that she executed the same for the purpose and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the ______, A.D. 2018 ______.

State of Texas

(Notary Seal)

PART I

CHARTER*

Article I. Incorporation, Form of Government and Powers

Sec.	1.	Incorporation.
Sec.	2.	General powers.
Sec.	3.	Form of government.
Sec.	4.	Streets and public property.
Sec.	5.	Street development and improvement.
Sec.	6.	Change of boundaries and annexation of territory.
Sec.	7.	Urban development, redevelopment and renewal.

Article II. The Council

Sec. 1.	City divided into districts.
Sec. 2.	Number, selection and term of office.
Sec. 3.	Qualifications.
Sec. 4.	Vacancies.
Sec. 5.	Powers of the council.
Sec. 6.	Investigative body.
Sec. 7.	Interference in personnel matters.
Sec. 8.	Mayor and Mayor Pro Tem.
Sec. 9.	City secretary.
Sec. 10.	Meetings of council.
Sec. 11.	Rules of procedure.
Sec. 12.	Procedure to enact legislation.
Sec. 13.	Publication of ordinance.
Sec. 14.	Code of ordinances.
Sec. 15.	Emergency powers of mayor.

Article III. Elections

Sec. 1.	General election.
Sec. 2.	Regulation of elections.
Sec. 3.	Filing of candidates.
Sec. 4.	Canvassing election and declaring results.

*Editor's note—Printed herein is the city's Home Rule Charter adopted by the voters of the city at a special election held on November 1, 1958. The original arrangement, including section numbers and catchlines and article headings, has been retained. Amendments to the Charter have been added at the proper places and are indicated by history notes following the amended sections. All material contained within brackets [] has been added by the editors, either to clarify or correct the meaning of the text, to correct errors or to facilitate indexing or ease of reference. Obvious misspellings and punctuation errors have been corrected without notation. A uniform system of citation to state statutes has been used to conform to the Code of Ordinances.

State law references—Adoption, amendment, etc., of Home Rule Charter, V.T.C.A., Local Government Code § 9.001 et seq.; charters, Vernon's Ann. Tex. Const. art. 11, § 5.

WACO CODE

Sec. Sec.		Notification and qualification of city officers. Special elections.
		Article IV. Initiative, Referendum and Recall
Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec.	 2. 3. 4. 6. 7. 8. 9. 	Power of initiative. Power of referendum. Form of petitions. Filing, examination and certification of petitions. Council consideration and submission to voters. Results of elections. Power of recall. Recall election. Results of recall election. Limitation on recall.
		Article V. Administrative Organization
Sec. Sec. Sec. Sec. Sec.	2. 3. 4. 5.	The city manager. Powers and duties of the city manager. Administrative departments. Directors of departments. Departmental organization. City attorney.
		Article VI. Municipal Court
Sec. Sec. Sec. Sec.	2. 3.	Municipal court. Judge of the municipal court. Clerk of the municipal court. Costs, process and procedure in the municipal court.
		Article VII. Finance
Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec.	2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Department of finance. Director of finance—Powers and duties. Fiscal year. Budget preparation and adoption. Appropriations. Emergency appropriations. Borrowing to meet emergency appropriations. Borrowing in anticipation of property taxes. Depository. General obligation bonds. Revenue bonds. Sale of bonds. Purchase procedure.
Sec.	14.	Independent audit.

CHARTER

Article VIII. Taxation

Sec. 1.	Department of taxation.
Sec. 2.	Powers of taxation.
Secs. 3—5.	Reserved.
Sec. 6.	Tax liens and liability.
Sec. 7.	Reserved.
Sec. 8.	Arrears of taxes offset to debt against city.
Sec. 9.	Other rules and regulations.

Article IX. Planning

Sec. 1.	The city plan commission.
Sec. 2.	The city plan commission—Powers and duties.
Sec. 3.	City plan department.
Sec. 4.	The city plan.
Sec. 5.	Legal effect of city plan.

Article X. Franchises and Public Utilities

Sec.	1.	Inalienability of control of public property.
Sec.	2.	Power to grant franchise.
Sec.	3.	Ordinance granting franchise.
Sec.	4.	Transfer of franchise.
Sec.	5.	Regulation of franchise.
Sec.	6.	Regulation of rates.

Article XI. General Provisions

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Sec.	1.	Reserved.
Sec.	2.	Continuation of government.
Sec.	3.	Effect of charter on existing law.
Sec.	4.	Official oath.
Sec.	5.	Public records.
Sec.	6.	Official newspaper.
Sec.	7.	Notice of claim.
Sec.	8.	Assignment, execution, and garnishment.
Sec.	9.	Security or bond not required.
Sec.	10.	Remission of fines and penalties.
Sec.	11.	Personal interest in city contracts.
Sec.	12 .	Nepotism.
Sec.	13.	Residence requirements.
Sec.	14.	Health, life and accident insurance for city employees.
Sec.	15.	Pensions for retiring policemen and firemen.
Sec.	16.	Non-substantive revisions and conformance with state and federal laws
Sec.	17.	Judicial notice.
Sec.	18.	Construction of charter.
Sec.	19.	Separability clause.
		- •

August 2018

CHARTER Art. I, § 3

ARTICLE I. INCORPORATION, FORM OF GOVERNMENT AND POWERS

Section 1. Incorporation.

The inhabitants of the City of Waco, McLennan County, Texas, residing within its corporate limits as heretofore or hereafter established, are hereby constituted and shall continue to be a municipal body politic and corporate in perpetuity under the name of the "City of Waco," hereinafter referred to as the "City" with such powers, privileges, rights, duties and immunities as are herein provided.

Section 2. General powers.

The City shall have all the power granted to cities by the Constitution and Laws of the State of Texas together with all of the implied powers necessary to carry into execution such granted powers. The City may use a corporate seal; may sue and be sued; may contract and be contracted with; may cooperate with the government of the State of Texas or any agency or any political subdivision thereof, or with the federal government or any agency thereof, to accomplish any lawful purpose for the advancement of the interest, welfare, health, morals, comfort, safety, and convenience of the City and its inhabitants; may acquire property within or without its corporate limits for any municipal purpose in fee simple, or in any lesser interest or estate, by purchase, gift, devise, lease or condemnation, and, subject to the provisions of this Charter; may sell, lease, mortgage, hold, manage, improve, and control such property as may now or hereafter be owned by it; may pass ordinances and enact such regulations as may be expedient for the maintenance of the good government, order, and peace of the City and the welfare, health, morals, comfort, safety, and convenience of its inhabitants. The powers hereby conferred upon the City shall include, but are not restricted to, the powers conferred expressly and permissively by Chapter 147, Page 307, of the Acts of the 33rd Legislature, Regular Session, enacted in 1913 pursuant to the Home Rule Amendment of the Constitution of Texas, known as the Enabling Act and including Vernon's Ann. Civ. St. art. 1175, V.T.C.A., Local Government Code §§ 26.021, 26.041, 43.021, 43.142, 51.072-51.078, 54.004, 101.021-101.023, 141.004, 211.003, 211.005, 211.013, 214.001, 214.005, 214.013, 214.901, 215.072-215.075, 217.042, 251.001, 341.003, 341.903, 342.011, 342.012, 372.041, 401.002, 402.002, 402.017, as now or hereafter amended, all of which are hereby adopted. In addition to the powers enumerated herein, and subject only to the limitations imposed by the State Constitution, the State laws, and this Charter, the City shall have, without the necessity of express enumeration in this Charter, each and every power which, by virtue of Article XI, Section V, of the Constitution of Texas, the people of the City are empowered by election to grant to or confer upon the City by expressly and specifically granting and enumerating the same herein. All such powers, whether expressed or implied, shall be exercised and enforced in the manner prescribed in this Charter; or when not prescribed herein, in such manner as shall be provided by ordinance of the Council.

Section 3. Form of government.

The municipal government provided by this Charter shall be known as "Council-Manager Government." Pursuant to the provisions of and subject only to the limitations imposed by the

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State Constitution, the State Laws, and this Charter, all powers of the City shall be vested in and exercised by an elective Council, hereinafter referred to as "the Council," which shall enact legislation, adopt budget, determine policies, and appoint the City Manager who shall execute the laws and administer the government of the City.

Section 4. Streets and public property.

The City shall have exclusive dominion, control and jurisdiction in, upon, over and under the public streets, sidewalks, alleys, highways, public squares and public ways within the corporate limits of the City, and in, upon, over and under all public property of the City. With respect to each and every public street, sidewalk, alley, highway, public square, public park or other public way within the corporate limits of the City, the City shall have the power to establish, maintain, improve, alter, abandon, or vacate the same; to regulate, establish, or change the grade thereof; to control and regulate the use thereof; and to abate and remove in a summary manner any encroachment thereon.

Section 5. Street development and improvement.

The City shall have the power to develop and improve, or cause to be developed and improved, any and all public streets, sidewalks, alleys, highways, and other public ways within the corporate limits of the City by laying out, opening, narrowing, widening, straightening, extending, lighting, and establishing building lines along the same; by purchasing, condemning, and taking property therefor; by filling, grading, raising, lowering, paving, repaving, and repairing, in a permanent manner, the same; and by constructing, reconstructing, altering, repairing, and realigning curbs, gutters, drains, sidewalks, culverts, and other appurtenances and incidentals in connection with such development and improvement authorized hereinabove, or any combination or parts thereof. The cost of such development and improvement may be paid partly or entirely by assessments levied as a lien against the property abutting thereon and against the owners thereof, and such assessments may be levied in any amounts and under any procedure not prohibited by State Law; provided, that no assessment shall be made against such land or owners in excess of the enhancement in value of such property occasioned by such improvement.

If improvements be ordered constructed in any part of any such area used or occupied by the tracks or facilities of any railway or public utility, then the City Council shall have power to assess the whole cost of improvements in such area and the added costs of improvements in areas adjacent thereto made necessary by such use or occupancy against such railway or utility, and shall have power, by ordinance, to provide for the enforcement of such assessment.

As an alternate and cumulative method of developing, improving, and paving any and all public streets, sidewalks, alleys, highways, and other public ways within its corporate limits, the City shall have the power and authority to proceed in accordance with Chapter 106, Page 489, Acts 1927, Fortieth Legislature, First Called Session, as now or hereafter amended, and same being Vernon's Ann. Civ. St. art. 1105b.

State law reference—Street improvement and assessments, Vernon's Ann. Civ. St. art. 1105b.

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CHARTER Art. II, § 1

Section 6. Change of boundaries and annexation of territory.

The City Council shall have power by ordinance to fix the boundary limits of the City of Waco; and to provide for the alteration and extension of said boundary limits, the detachment of territory, and the annexation of additional territory lying adjacent to the City, with or without the consent of the territory and inhabitants annexed or detached. Upon the introduction of any ordinance annexing additional territory, such ordinance shall be published in the form in which it may be finally passed, in the official newspaper of said City at least one time, and said ordinance shall not thereafter be finally acted upon until at least thirty (30) days have elapsed after the first publication thereof; and upon the final passage of any such ordinance, the corporate limits of the City shall thereafter include the territory so annexed; and when any additional territory has been so annexed, same shall be a part of the City of Waco, and the property situated therein shall bear its pro rata part of the taxes levied by the City, and the inhabitants thereof shall be entitled to all the rights and privileges of all citizens and shall be bound by the acts and ordinances, resolutions and regulations of the City. Upon the final adoption of any ordinance detaching territory from the City, the corporate limits of the City shall be reduced by the territory so detached.

State law reference—Annexations, V.T.C.A., Local Government Code § 43.001 et seq.

Section 7. Urban development, redevelopment and renewal.

The City shall have the power to carry out slum clearance, public housing and urban redevelopment and renewal projects. For these purposes, it may acquire land by eminent domain, may contract or cooperate with the State or Federal Governments of any agency thereof, may invest its funds and borrow or accept money.

ARTICLE II. THE COUNCIL

Section 1. City divided into districts.

The City shall be divided into five districts. The territory included in such districts shall be as heretofore established by ordinances of the City of Waco, and may be changed from time to time by ordinance as the interests of the City may demand, having regard to the number of qualified electors as shown by the last preceding tax roll and fixing district boundaries so that each ward shall contain, as nearly as possible, the same number of qualified electors. In the event the limits of the City are extended, annexed territory shall become a part of the district to which it adjoins until changed by the Council; and in the event any annexed tract adjoins two or more districts, the district line or lines intersecting the original City Limits shall be considered extended so that such annexed territories shall become parts of such adjoining districts until changed by the Council.

(Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, changed the title of section 1 from "City divided into wards" to "City divided into districts."

Editor's note—The six (6) ward at large system was declared unconstitutional in 1976 in Derrick, et al. v. Mathias, et al. (Civil Action No. W-74-CA-2 in the U.S. District Court for the Western District of Texas, Waco Division). The court ordered the adoption of a five (5) single member district and one (1) at large council member system.

Supp. No. 49

Revision 0 I/IIF-9 August 2018

Section 2. Number, selection and term of office.

The Council shall be composed of the Mayor and five (5) Council members. Each Council member, unless sooner removed under the provisions of this Charter, shall serve for two (2) year terms, from the first meeting of the Council following the Council member's election until the first meeting of the Council following the election two (2) years later, or until the Council member's successor has been elected and duly qualified. The Mayor and Council members from Districts I and III shall be elected in even numbered years. The Council members from Districts II, IV, and V shall be elected in odd numbered years.

Editor's note—The six (6) ward at large system was declared unconstitutional in 1976 in Derrick, et al. v. Mathias, et al. (Civil Action No. W-74-CA-2 in the U.S. District Court of the Western District of Texas, Waco Division). The court ordered the adoption of a five (5) single member district and one (1) at large council member system. Districts I and III and at large member are elected in even years and districts II, IV and V are elected in odd years per the 1976 court order. In 1987, the Charter was amended to provide that the at large member was the mayor and that position is elected in even numbered years. (Ord. No. 2006-308, § 1, 5-16-06)

Section 3. Qualifications.

At the time of election to office, each member of the Council shall be at least twenty-one (21) years of age, shall be a citizen and qualified voter of the State of Texas and the City of Waco for the twelve (12) months immediately preceding the date of election, and, if elected from a District, a resident of the District from which elected for the six (6) months immediately preceding the day of election. No member of the Council shall hold any other office or employment under the City Government while a member of said Council, nor shall hold any paid employment under the City Government within two (2) years thereafter. A member of the Council from a district who ceases to reside within that district or a Mayor who ceases to reside in the city shall immediately forfeit his or her office.

(Res. No. 1987-134, Amend. No. 2, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

State law references—Qualified voter, V.T.C.A., Election Code § 11.002; eligibility for public office, V.T.C.A., Election Code § 141.003.

Section 4. Vacancies.

Vacancies in the Council except for the position of mayor arising from any cause shall be filled by a majority vote of the remaining members for the unexpired term or until the next City general election and provided the successor shall possess all qualifications required for the office. Provided also, that in all cases the said vacancy shall be filled by election at the next succeeding City general election for the remaining year of the unexpired term or for the next full term, as the case may be.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 5. Powers of the council.

All powers and authority which are expressly or impliedly conferred on or possessed by the City shall be vested in and exercised by the Council; provided, that the Council shall have no power to exercise those powers which are expressly conferred upon other City officers by this Charter.

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Section 6. Investigative body.

The Council shall have the power to inquire into the official conduct of any department, agency, office, officer or employee of the City, and for that purpose shall have the power to administer oaths, subpoena witnesses, compel the production of books, papers, and other evidence material to the inquiry. The Council shall provide by ordinance penalties for contempt in failing or refusing to obey any such subpoena or to produce any such books, papers or other evidence, and shall have the power to punish any such contempt in the manner provided by such ordinance.

State law reference—Public meetings, V.T.C.A., Government Code § 551.001 et seq.

Section 7. Interference in personnel matters.

Neither the Council nor any of its members shall instruct or request the City Manager or any of the Manager's subordinates to appoint to or remove from office or employment any person except with respect to those offices which are to be filled by appointment by the Council under the provisions of this Charter. Except for the purpose of inquiry and investigation, the Council and its members shall deal with the administrative service of the City solely through the City Manager and shall not give orders to any of the Manager's subordinates either publicly or privately.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 8. Mayor and Mayor Pro Tem.

The Council member elected at large shall serve as the Mayor. The Mayor shall serve no more than three (3) two (2) year terms. As used in this section the word "term" shall mean the period of time from the first meeting of the Council following the Mayor's election until the first meeting of the Council following the election of the Mayor two (2) years later or any portion thereof. Vacancies created in the Mayor's position, arising from any cause, shall be filled by election at the next authorized election date for the remaining of the unexpired term or for the next full term as the cause may be. As used in this charter, except where otherwise provided, the term council or council member shall include the Mayor. At its first meeting following each regular election of Council members, the Council shall by election designate one (1) of its number as Mayor Pro Tem who shall serve in such capacity during the pleasure of the Council. The Mayor shall preside at all meetings of the Council and shall be recognized as head of the City government for all ceremonial purposes, for the purpose of receiving service of civil process, for emergency purposes and for military purposes, but shall have no regular administrative duties. The Mayor, as a member of the Council, shall be entitled to vote upon all affairs considered by the Council but shall have no veto power. The Mayor Pro Tem shall act as Mayor during the absence or disability of the Mayor and shall have power to perform every act the Mayor could perform if present.

(Res. No. 1987-134, Amend. No. 1, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

Section 9. City secretary.

The Council shall appoint the City Secretary for a term of four (4) years and continuing thereafter until reappointment and/or appointment of successor. The City Secretary shall keep

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the records of the council and shall have such other duties and responsibilities as may be assigned by this Charter and the Council. The City Secretary shall appoint such assistants as may be authorized by the Council. The Council may enter into such written agreement as deemed appropriate. The City Secretary can be removed for cause, after hearing, by a majority vote of the council members qualified and serving.

(Res. No. 1987-134, Amend. No. 7, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

Section 10. Meetings of council.

There shall be regular meetings of the City Council which shall be held at such times and places as shall be prescribed by ordinance or resolution. Special meetings may be called at any time by the City Secretary upon the request of the Mayor, the City Manager, or three Council members. Notice of special meetings shall be given to all members of the Council who are not absent from the City; provided, however, that any member of the Council who did not receive notice of a special meeting may, either before or after such special meeting is held, waive such notice. It shall not be necessary to give notice to a Council member of a special meeting held at a time when such Council member is absent from the City, and it shall not be necessary for such absent Council member to waive such notice.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Open meetings act, V.T.C.A., Government Code § 551.001 et seq.

Section 11. Rules of procedure.

The Council shall by ordinance determine its own rules and order of business. A majority of the Council qualified and serving shall constitute a quorum for all meetings for the transaction of all business; but no action of the Council shall be of any force or effect unless it is adopted by the favorable votes of a majority of the Councilmembers qualified and serving unless otherwise provided by this Charter. The Council may adopt such rules, and prescribe such penalties as it may see fit to enforce the attendance of its members at all regular and called meetings of the Council or its committees. Minutes of all meetings of the Council shall be taken and recorded, and such minutes shall constitute a public record.

(Ord. No. 2006-308, § 1, 5-16-06)

State law references—Public meetings, V.T.C.A., Government Code § 551.001 et seq.; public records, V.T.C.A., Government Code § 552.001 et seq.

Section 12. Procedure to enact legislation.

The Council shall legislate by ordinance, and the enacting clause of every ordinance shall be, "Be it Ordained by the City Council of the City of Waco." The City Attorney shall approve all ordinances adopted by the Council as to the legality thereof or shall file with the City Secretary written legal objections thereto. Evidence of approval of an ordinance by the City Attorney may be by notation on the ordinance itself or by separate paper or instrument. Every ordinance enacted by the Council shall be signed by the Mayor, Mayor Pro Tem or by two (2) Councilmembers and shall be filed with and recorded by the City Secretary. All ordinances shall be read by descriptive caption in open meeting of the Council on two (2) different days.

All ordinances, unless otherwise provided by law or by the terms of such ordinances, shall take effect immediately upon final passage thereof. The requirements for reading ordinances on two (2) different days may be dispensed with where an ordinance relating to the immediate preservation of the public peace, health, safety or welfare is adopted by the favorable vote of three-fourths (¾) of all Council members, qualified and serving, and contains a statement of the nature of the emergency.

(Res. No. 1987-134, Amend. No. 4, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

Cross reference—Procedure for ordinance granting franchise, art. X, § 3.

Section 13. Publication of ordinance.

Except as otherwise provided by law or this Charter, the City Secretary shall give notice of the enactment of every ordinance imposing any penalty, fine or forfeiture for any violation of any of its provisions, and of every other ordinance required by law or this Charter to be published, by causing the said ordinance, or its caption and penalty, to be published at least one (1) time within ten (10) days after final passage thereof in the official newspaper of the City. The affidavit of such publication by the publisher of such newspaper taken before any officer authorized to administer oaths and filed with the City Secretary shall be conclusive proof of the legal publication and promulgation of such ordinance in all courts. Such ordinance shall take effect ten (10) days after the date of such publication, provided that any penal ordinance passed as an emergency measure under Section 12 of this Article shall take effect immediately on its publication.

State law reference—Ordinance adoption procedure for home rule cities, V.T.C.A., Local Government Code \S 52.013.

Section 14. Code of ordinances.

The Council shall have the power to cause all general ordinances of the City to be compiled and printed in code form. Every general ordinance enacted subsequent to such codification shall be enacted as an amendment to the code. The Council shall cause all general ordinances to be codified, recodified and reprinted whenever in its discretion such is deemed desirable, or when such codification or recodification is required by law. When adopted by the Council, the printed codes of general ordinances contemplated by this section shall be in full force and effect without the necessity of such code or any part thereof being published in any newspaper. The caption, descriptive clause and other formal parts of the ordinances of the City may be omitted without affecting the validity of such ordinances when they are published as a code.

Section 15. Emergency powers of mayor.

In addition to the powers granted pursuant to Chapter 418 of the Texas Government Code, as amended from time to time, whenever the Mayor shall deem it necessary in order to enforce the laws of the City, or to advert danger, or to protect life or property in case of riot, outbreak, calamity or public disturbance, or when the Mayor has reason to fear any serious violation of law or order, outbreak or any other danger to the City of Waco or the inhabitants thereof, the Mayor shall summon into service as a special police force, all or as many of the citizens as in

the Mayor's judgment and discretion may be necessary and proper; and such summons may be made by proclamation or orders addressed to the citizens generally, or those of any district of the City or subdivision thereof, or such summons may be by personal notification. Such summons shall be made pursuant to a proclamation by the Mayor that an emergency exists in the City of Waco. During such emergency, the police department of the City of Waco, and such special police as have been summoned by the Mayor, shall be subject to the orders of the Mayor, and shall perform such duties as the Mayor may require, and shall have the same power while on duty as the regular police of the City of Waco. The Mayor shall have authority during the continuance of such emergency to make and enforce such rules, regulations, and orders as are necessary to preserve the public health, safety, and welfare from the threatened danger. During such emergency, such rules, regulations and orders shall have the force and effect of law.

The Mayor shall have authority in case of riot or other unlawful assemblage, to order and enforce the closing of any theater, picture show, or other place of public amusement or entertainment, ballroom, barroom, or other place of resort, or public room or building, and may order the arrest of any person violating in his presence any of the penal laws of the State, or any ordinance of the City; and shall perform such other duties and possess and exercise such other power and authority as may be prescribed by law or by ordinance.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Emergency management, V.T.C.A., Government Code § 418.001 et seq.

ARTICLE III. ELECTIONS*

Section 1. General election.

The regular election of Council members to the places on the Council occupied by Council members whose terms are expiring shall be held on the second Saturday in May of each year. In every election each qualified voter shall vote for not more than one candidate for each Council place to be filled. Said election shall be ordered by the Council, and in case of its failure to order the same, the Mayor of the City shall make such order. In the case of the inability of the Council and the Mayor to act, the election may be called by the City Secretary, and in case of the City Secretary's inability to act, by the County Judge of McLennan County, Texas, and in case of the County Judge's inability to act, by the Governor of the State of Texas. The City Secretary shall give notice of such election by causing said notice to be published at least thirty (30) days previous to the day of such election in the official newspaper of the City. (Res. No. 1987-162, 12-22-87; Ord. No. 2006-308, § 1, 5-16-06)

State law references—Election dates, V.T.C.A., Election Code § 41.001; filing period, V.T.C.A., Election Code § 143.007.

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^{*}State law reference—Elections, V.T.C.A., Election Code § 1.001 et seq.

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Section 2. Regulation of elections.

All elections shall be held in accordance with the Laws of the State of Texas regulating the holding of municipal elections and in accordance with the ordinances adopted by the Council for the conduct of elections. The Council shall appoint the Election Judges and other election officials and shall provide for the compensation of all election officials in the City elections, and for all other expenses of holding such election.

Section 3. Filing of candidates.

Any qualified person who desires to become a candidate for election to a place on the Council shall file with the City Secretary an application for their name to appear on the ballot. Such application shall clearly designate by district, the place on the Council to which the candidate seeks election and shall contain a sworn statement by the candidate that they are fully qualified under the Laws of Texas and the provisions of this Charter to hold the office they seeks.

(Ord. No. 2006-308, § 1, 5-16-06)

State law references—Candidate filing dates, V.T.C.A., Election Code § 143.007; candidate filing requirements, V.T.C.A., Election Code § 143.001 et seq.

Section 4. Canvassing election and declaring results.

The returns of every municipal election shall be delivered forthwith by the Election Judges to the City Secretary. The Council shall canvass the returns, investigate the qualifications of the candidates, and declare the official results of the election as prescribed by state law. The qualified person receiving the highest number of votes cast for any office shall thereupon be declared by said Council elected.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 5. Notification and qualification of city officers.

It shall be the duty of the City Secretary to notify all persons elected or appointed to office of their election or appointment and all the newly elected or appointed officers may enter upon their duties. Any officer elected or appointed must qualify by taking and subscribing the oath of office within thirty (30) days; otherwise the office may be deemed vacant. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Oath, Vernon's Ann. Tex. Const. art. 16.

Section 6. Special elections.

The Council may by ordinance or resolution call such special elections as are authorized by the State law and this Charter.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Special elections, V.T.C.A., Election Code § 41.003.

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ARTICLE IV. INITIATIVE, REFERENDUM AND RECALL*

Section 1. Power of initiative.

The people of the City reserve the power of direct legislation by initiative, and in the exercise of such power may propose any ordinance, except ordinances appropriating money or levying taxes, or ordinances repealing ordinances appropriating money or levying taxes, not in conflict with this Charter, the State Constitution, or the State Laws. Any initiated ordinance may be submitted to the Council by a petition signed by qualified voters of the City equal in number to at least fifteen per cent of the qualified voters of the City.

State law reference—Qualified voter, V.T.C.A., Election Code § 11.002.

Section 2. Power of referendum.

The people reserve the power to approve or reject at the polls any legislation enacted by the Council which is subject to the initiative process under this Charter, except that ordinances authorizing the issuance of bonds (either tax bonds or revenue bonds), whether original or refunding bonds, shall only be subject to such referendum where expressly authorized by state law. Prior to or within thirty (30) days after the effective date of any ordinance which is subject to referendum a petition signed by qualified voters of the City equal in number to at least fifteen per cent of the qualified voters of the City may be filed with the City Secretary requesting that any such ordinance be either repealed or submitted to the vote of the people. When such a petition has been certified as sufficient by the City Secretary, the ordinance specified in the petition shall not go into effect, or further action thereunder shall be suspended if it shall have gone into effect, until and unless it is approved by the voters as herein provided. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Qualified voter, V.T.C.A., Election Code § 11.002.

Section 3. Form of petitions.

Initiative petition papers shall contain the full text of the proposed legislation in the form of an ordinance, including a descriptive caption. Referendum petition papers shall contain a sufficient description of the ordinance sought to be referred to identify it, or if the ordinance has been passed by the Council, the full text of the ordinance sought to be referred shall be included in such papers. The signatures to the initiative or referendum petitions need not be all appended to one paper. In addition to the signatures, the petition must contain the information required by state law. No signature shall be counted where there is reason to believe it is not the actual signature of the purported signer or that it is a duplication either of name or of handwriting used in any other signature on the petition, or does not contain the information required by state law. Before the signatures on any petition paper may be counted, one of the signers of such petition paper, a qualified voter, shall make oath before the City Secretary, or any other officer competent to administer oaths, that the statements made

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^{*}State law reference—Charter amendments, V.T.C.A., Local Government Code § 9.004.

therein are true, that each signature to the paper appended is the genuine signature of the person whose name purports to be signed thereto, and that such signatures were placed thereon in the affiant's presence.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Qualified voter, V.T.C.A., Election Code § 11.002.

Section 4. Filing, examination and certification of petitions.

Within thirty (30) days after an initiative or referendum petition is filed, the City Secretary shall determine whether the same is properly signed by the requisite number of qualified voters. The City Secretary shall declare void any petition paper which does not have an affidavit attached thereto as required in Section 3 of this Article. In examining the petition, the Secretary shall write the letters "D. V." in red ink opposite the names of signers found not qualified. After completing examination of the petition the Secretary shall certify the result thereof to the Council at its next regular meeting. If the certificate of the City Secretary shall show an initiative or referendum petition to be insufficient, the Secretary shall notify the person filing the petition, and it may be amended within ten (10) days from the date of such notice by filing a supplementary petition upon additional papers signed and filed as provided for in the original petition. Within thirty (30) days after such amendment is filed, the Secretary shall examine the amended petition and certify as to its sufficiency. If the amended petition is then found to be insufficient no further proceedings shall be had with regard to it.

State law reference—Qualified voter, V.T.C.A., Election Code § 11.002.

Section 5. Council consideration and submission to voters.

When the Council receives an authorized initiative petition certified by the City Secretary to be sufficient, the Council shall either:

- (a) Pass the initiated ordinance without amendment within thirty (30) days after the date of the certification to the Council; or
- (b) Submit said initiated ordinance without amendments to a vote of the qualified voters of the City at the next available election date; or
- (c) At such election submit to a vote of the qualified voters of the City said initiated ordinance without amendment, and an alternative ordinance on the same subject proposed by the Council.

When the Council receives an authorized referendum petition certified by the City Secretary to be sufficient, the Council shall reconsider the referred ordinance, and if upon such reconsideration such ordinance is not repealed within thirty (30) days, it shall be submitted to the qualified voters of the City at the next available election date. Special elections on initiated or referred ordinances shall not be held more frequently than once each six months, and no ordinance on the same subject as an initiated ordinance which has been defeated or on the same subject as a referred ordinance which has been approved at any election may be initiated by the voters within two (2) years from the date of such election. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Qualified voter, V.T.C.A., Election Code § 11.002.

Section 6. Results of elections.

Any number of ordinances may be voted on at the same election in accordance with the provisions of this Article. If a majority of the legal votes cast is in favor of an initiated ordinance, it shall thereupon be effective as an ordinance of the City. An ordinance so adopted may be repealed or amended at any time after the expiration of two (2) years by a vote of three-fourths of the Council members qualified and serving. A referred ordinance which is rejected by a majority of the legal votes cast in a referendum election shall be deemed thereupon repealed.

Section 7. Power of recall.

The people of the City reserve the power to recall any elected officer of the City of Waco and may exercise such power by filing with the City Secretary a petition, signed by qualified voters of the City equal in number to at least thirty (30) per cent of the qualified voters of the City or district as applicable, demanding the removal of such elected officer. The petition shall be signed and verified in the manner required for an initiative petition. (Ord. No. 2006-308, § 1, 5-16-06)

Section 8. Recall election.

The provisions regulating examination, certification and amendment of initiative petitions shall apply to recall petitions. If the petition is certified by the City Secretary to be sufficient, the Council shall order and hold an election forthwith to determine whether such officer shall be recalled.

State law reference—Recall elections, V.T.C.A., Election Code § 41.001(b)(6).

Section 9. Results of recall election.

If the majority of the legal votes cast at a recall election be for the recall of the officer named on the ballot, the Council shall immediately declare the office vacant and a special election for the filling of such vacancy shall be called and held forthwith, in accordance with the provisions of this Charter on elections. An officer thus removed shall not be eligible to hold office again in the City of Waco within a period of four (4) years from date of their recall. (Ord. No. 2006-308, § 1, 5-16-06)

Section 10. Limitation on recall.

No recall petition shall be filed against an officer within six (6) months after the person takes office, and no officer shall be subjected to more than one (1) recall election during a term of office.

(Ord. No. 2006-308, § 1, 5-16-06)

ARTICLE V. ADMINISTRATIVE ORGANIZATION

Section 1. The city manager.

The Council shall appoint a City Manager who shall be the chief administrative and executive officer of the City. The City Manager shall be chosen by the Council solely on the

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basis of executive and administrative training, experience and ability and need not, when appointed, be a resident of the City of Waco; however, during the City Manager's tenure of office, the City Manager shall reside within the City.

The Council may appoint an Acting City Manager to serve at the pleasure of the Council during the temporary absence of the City Manager or upon the vacancy of that position.

The City Council shall have the authority in its sole discretion to enter into a contract of employment for a City Manager, either at the time of hiring or any time during the City Manager's tenure; but in no event may a contract of employment exceed four (4) years. The City Council shall always have authority to remove a City Manager for cause with due process considerations, subject to the provisions provided herein. The removal of the City Manager, subject to the provisions herein, shall be by majority vote.

No member of the Council shall, during the time for which the Council member is elected or for two (2) years thereafter, be appointed as City Manager. (Res. No. 1987-134, Amend. No. 6, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

Section 2. Powers and duties of the city manager.

The City Manager shall be responsible to the Council for the proper administration of all the affairs of the City. The powers herein conferred upon the City Manager shall include, but shall not be limited by, the following:

- (a) To appoint and remove any officer or employee of the City, except those officers and employees whose appointment or election is otherwise provided for by law or this Charter;
- (b) To perform such other duties as may be prescribed by this Charter or required by the Council, not inconsistent with the provisions of this Charter.
 (Ord. No. 2006-308, § 1, 5-16-06)

Section 3. Administrative departments.

There shall be such administrative departments as are established by this Charter and as may be established by ordinance, all of which shall be under the control and direction of the City Manager. The Council may abolish or combine one (1) or more departments created by it, and may assign or transfer duties of any departments of the City from one (1) department to another by ordinance.

Section 4. Directors of departments.

At the head of each department there shall be a Director who shall be appointed and who may be removed by the City Manager. Such directors shall have supervision and control over their respective departments, and may serve as chief of divisions within their respective departments. Two (2) or more departments may be headed by the same individual, and the City Manager may head one (1) or more departments.

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Section 5. Departmental organization.

The work of each department shall be distributed among such divisions as may be established by ordinance. Pending passage of ordinances establishing department divisions, the City Manager may establish temporary divisions in any department.

Section 6. City attorney.

There shall be a Department of Law, the head of which shall be the City Attorney. The City Attorney shall be a competent attorney who shall have practiced law in the State of Texas for at least five (5) years immediately preceding appointment. The City Attorney shall be the legal advisor of and attorney for all of the offices and departments of the City, and shall represent the City in all litigation and legal proceedings. The City Attorney shall draft, approve or file written legal objections to every ordinance adopted by the Council; and shall pass upon all documents, contracts and legal instruments in which the City may have an interest.

There shall be such assistant City Attorneys as may be authorized by the Council and appointed by the City Attorney, and such Assistant City Attorneys shall be authorized to act for [or] on behalf of the City Attorney.

The City Attorney shall be hired by and responsible to the City Council for a four-year term of office and continuing thereafter until reappointment or appointment of successor. The City Attorney, so appointed by the Council, may be removed for cause, after hearing, by a majority vote of the Council Members qualified and serving. A Council may enter into such written agreement as deemed appropriate.

(Res. No. 1987-134, Amend. No. 8, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

ARTICLE VI. MUNICIPAL COURT*

Section 1. Municipal court.

There shall be a court known as the Municipal Court of the City of Waco, which court shall be deemed always open for the trial of causes, with such jurisdiction, powers, and duties as are given and prescribed by the Laws of the State of Texas.

(Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, changed the title of section 1 from "Corporation court" to "Municipal court."

Section 2. Judge of the municipal court.

The Municipal Court shall be presided over by a magistrate who shall be known as the Judge of the Municipal Court. The Judge shall be appointed by the Council for a term of two (2) years, from June first in even years until May thirty-first two (2) years later, or for the portion of such term unexpired at the time of the appointment. The Judge shall be a competent

*State law references—Municipal court, V.T.C.A., Government Code § 29.001 et seq.; rules of municipal court, Vernon's C.C.P. art. 45.01 et seq.

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attorney who at the time of appointment has practiced law for at least two (2) years and who is a resident of the City of Waco. The Judge of the Municipal Court may be removed for cause, after hearing by vote of three-fourths (3/4) of the Council qualified and serving.

In the event the Judge of the Municipal Court is temporary unable to act for any reason, the Court shall appoint a qualified attorney to act in the Judge's place. The Judge, or anyone acting in the Judge's place, shall receive such compensation as may be set by the Council.

The Council shall have the power to create and establish additional Municipal Courts, and to appoint more than one (1) Judge of each Municipal Court, whether one (1) or more, each of whom shall be a magistrate.

(Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, changed the title of section 2 from "Judge of the corporation court" to "Judge of the municipal court."

Section 3. Clerk of the municipal court.

There shall be a Clerk of the Municipal Court who shall be appointed by and who shall serve at the pleasure of the Judge of the Municipal Court. The Clerk shall have the power to administer oaths and affidavits, make certificates, affix the seal of the Court thereto, and otherwise perform any and all acts necessary in issuing process of such Court and conducting the business thereof.

There shall be such deputy clerks of the Municipal Court as may be authorized by the Council and appointed by the judge of the Municipal Court, which deputy clerks shall have authority to act for and on the behalf of the Clerk of the Municipal Court. (Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, changed the title of section 3 from "Clerk of the corporation court" to "Clerk of the municipal court."

State law reference—Clerk, V.T.C.A., Government Code § 29.010.

Section 4. Costs, process and procedure in the municipal court.

The Council shall determine what costs, if any, shall be charged for proceedings in and for all processes issued by said Court.

The style of all writs issued out of the Municipal Court shall be in the name of the City of Waco.

All jurors shall be residents of said City and otherwise possess the same qualifications as jurors in the State courts, and they shall be summoned in the same manner as provided for in Justice Courts.

(Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, changed the title of section 4 from "Costs, process and procedure in the corporation court" to "Costs, process and procedure in the municipal court."

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ARTICLE VII. FINANCE*

Section 1. Department of finance.

There shall be a Department of Finance, the head of which shall be the Director of Finance. The Director of Finance shall have knowledge of municipal accounting and shall have had at least three years experience in budgeting, accounting, and financial control. Said Director shall provide a bond with such surety and in such amount as the Council may require. The premiums on such bond shall be paid by the City.

Section 2. Director of finance—Powers and duties.

The Director of Finance shall administer and supervise all financial affairs of the City and shall have such other powers and duties as the Council shall by ordinance or resolution prescribe.

Section 3. Fiscal year.

The fiscal year of the City shall begin on the first day of each October and end on the last day of September of the succeeding year. All funds collected by the City during any fiscal year, including both current and delinquent revenues, shall belong to such fiscal year and, except for funds derived to pay interest and create a sinking fund on the bonded indebtedness of the City, may be applied to the payment of expenses incurred during such fiscal year, except as provided in this Charter. Any revenues uncollected at the end of any fiscal year, and any unencumbered funds actually on hand, shall become resources of the next succeeding fiscal year.

Section 4. Budget preparation and adoption.

At least thirty (30) days prior to the end of each fiscal year the City Manager shall submit to the Council a proposed budget presenting a complete financial plan for the ensuing fiscal year. The budget shall be finally adopted not later than the twenty-seventh day of the last month of the fiscal year. Should the Council take no final action on or prior to such day, the budget, as submitted, shall be deemed to have been finally adopted by the Council. No budget shall be adopted or appropriations made unless the total of estimated revenues, income and funds available shall be equal to or in excess of such budget or appropriations, except as otherwise provided in this Article.

Section 5. Appropriations.

From the effective date of the budget, the several amounts stated therein as proposed expenditures shall be and become appropriated to the several objects and purposes named therein. Except as provided in this Article no funds of the City shall be expended nor shall any obligation for the expenditure of money be incurred, except pursuant to the annual appropriation ordinance provided by this Article. At the close of each fiscal year any unencumbered balance of an appropriation shall revert to the fund from which appropriated and become

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^{*}State law reference—Finances, V.T.C.A., Local Government Code § 101.021 et seq.

available for reappropriation for the next fiscal year. The Council may transfer any unencumbered appropriation balance or portion thereof from one office, department, or agency to another, at any time. The City Manager shall have authority, without Council approval, to transfer appropriation balances from one expenditure account to another within a single office, department, or agency of the City.

Section 6. Emergency appropriations.

At any time in any fiscal year, the Council may, pursuant to this section, make emergency appropriations to meet a pressing need for public expenditure, for other than regular or recurring requirements, to protect the public health, safety or welfare. Such appropriation shall be by ordinance adopted by the favorable votes of three-fourths of the Council members qualified and serving, and shall be made only upon recommendation of the City Manager. The total amount of all emergency appropriations made in any fiscal year shall not exceed two and one-half per centum of the tax levy for that fiscal year. Should the unappropriated and unencumbered revenues, income and available funds of the City for such fiscal year be not sufficient to meet the expenditures under the appropriation authorized by this section, thereby creating a deficit, it shall be the duty of the Council to include the amount of such deficit in its budget for the following fiscal year, and said deficit shall be paid off and discharged during the said following fiscal year.

State law references—Emergency expenditures, V.T.C.A., Local Government Code § 102.009; charter provisions prevail under certain circumstances, V.T.C.A., Local Government Code § 102.011; notice provisions, V.T.C.A., Government Code § 551.043; municipal budgets, V.T.C.A., Local Government Code § 102.001 et seq.

Section 7. Borrowing to meet emergency appropriations.

In the absence of unappropriated available revenues or other funds to meet emergency appropriations under the provisions of the next preceding Section, the Council may by resolution authorize the borrowing of money to meet such deficit by the issuance of notes, each of which shall be designated "Emergency Note" and may be renewed from time to time, but all such notes of any such fiscal year and any renewals thereof shall mature and be payable not later than the last day of the fiscal year next succeeding the fiscal year in which the emergency appropriation was made, as provided in the last preceding Section.

State law reference—Charter provisions prevail under certain circumstances, V.T.C.A., Local Government Code § 102.011.

Section 8. Borrowing in anticipation of property taxes.

In any fiscal year, in anticipation of the collection of the ad valorem property tax for such year, whether levied or to be levied in such year, the Council may by resolution authorize the borrowing of money, not to exceed in any fiscal year an amount equal to ten per cent of the budget for that fiscal year. Such borrowing shall be by the issuance of negotiable notes of the City, each of which shall be designated "tax anticipation note for the year 20_____" (stating the

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tax year). Such notes shall mature and be payable not later than the end of the fiscal year in which issued, and may be secured by the pledge of the ad valorem property taxes for such year. (Ord. No. 2006-308, § 1, 5-16-06)

Section 9. Depository.

All moneys received by any person, department, or agency of the City for or in connection with affairs of the City shall be deposited promptly in the City depository or depositories, which shall be designated by the Council in accordance with such regulations and subject to such requirements as to security for deposits and interest thereon as may be established by ordinance. All checks, vouchers, or warrants for the withdrawal of money from the City depositories shall be signed by the Director of Finance or a deputy and countersigned by the City Manager. Provided, that the Council, under such regulations and limitations as it may prescribe, may by ordinance authorize the use of machine-imprinted facsimile signatures of said Director of Finance and City Manager on such checks, vouchers or warrants. (Ord. No. 2006-308, § 1, 5-16-06)

Section 10. General obligation bonds.

The City shall have the power to borrow money on the credit of the City and to issue general obligation bonds for permanent public improvements or for any other public purpose not prohibited by the Constitution and laws of the State of Texas, and to issue refunding bonds to refund outstanding bonds of the City previously issued. All such bonds shall be issued in conformity with the laws of the State of Texas.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 11. Revenue bonds.

The City shall have power to borrow money for the purpose of constructing, purchasing, improving, extending or repairing of public utilities, recreational facilities or any other self-liquidating municipal function not prohibited by the Constitution and laws of the State of Texas, and to issue revenue bonds to evidence the obligation created thereby. Such bonds shall be a charge upon and payable solely from the properties, or interest therein, pledged, or the income therefrom, or both, and shall never be a debt of the City. All such bonds shall be issued in conformity with the laws of the State of Texas.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Bonds, Vernon's Ann. Civ. St., art. 701 et seq.

Section 12. Sale of bonds.

No bond (other than refunding bonds issued to refund and in exchange for previously issued outstanding bonds) issued by the City shall be sold for less than par value and accrued interest.

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All bonds of the City having been issued and sold in accordance with the terms of this section, and having been delivered to the purchasers thereof, shall thereafter be incontestable, and all bonds issued to refund and in exchange for outstanding bonds previously issued shall, after said exchange, be incontestable.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 13. Purchase procedure.

All purchases made and contracts executed by the City shall be pursuant to a requisition from the head of the office, department or agency whose appropriation will be charged; and no contract or order shall be binding upon the City, unless and until the Director of Finance certifies that there is to the credit of such office, department or agency a sufficient unencumbered appropriation and allotment balance to pay for the supplies, materials, equipment or contractual services for which the contract or order is to be issued. Before the City makes any purchase or contract for supplies, materials, equipment or contractual services, opportunity shall be given for competition. The Council may, by ordinance, confer upon the city manager general authority to contract for expenditures for budgeted items and also emergency expenditures without further approval of the Council. The Council may also determine by ordinance the dollar amount above which contracts or purchases shall be let to the lowest and best responsible bidder, after there has been opportunity for competitive bidding as provided for by law or ordinance; provided, however, that said amount shall not be greater than the maximum amount allowed by state law, and also provided that the council, or the city manager, if authorized to contract for the City, shall have the right to reject any and all bids. Contracts for personal or professional services may be competitively bid if permitted by state law.

(Res. No. 1987-134, Amend. No. 3, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Purchasing and contracting, V.T.C.A., Local Government Code § 252.001 et seq.

Section 14. Independent audit.

At the close of each fiscal year, and at such other times as it may be deemed necessary, the Council shall cause an independent audit to be made of all accounts of the City by a certified public accountant. The certified public accountant so selected shall have no personal interest, directly or indirectly, in the financial affairs of the City or any of its officers. Upon completion of the audit, the results thereof shall be published immediately in the official newspaper of the City of Waco and copies placed on file in the City Secretary's office as a public record.

State law reference—Audits, V.T.C.A., Local Government Code § 103.001 et seq.

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ARTICLE VIII. TAXATION*

Section 1. Department of taxation.

There shall be a Department of Taxation, the head of which shall be the City Tax Assessor and Collector. The Department Head shall be responsible for the assessment and collection of all taxes levied by the City of Waco.

(Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Tax assessor/collector, V.T.C.A., Tax Code § 6.22 et seq.

Section 2. Powers of taxation.

The City shall have the power to levy, assess, and collect taxes of every character and type not prohibited by the Constitution and Laws of the State of Texas, and for any municipal purpose. Provided that the City ad valorem property tax rate for any one year shall never exceed one dollar and eighty-five cents (\$1.85) per one hundred dollars' assessed value of taxable property.

State law reference—Taxation authority, Vernon's Ann. Tex. Const. art. 11, § 5, art. 8, V.T.C.A., Tax Code § 1.01 et seq.

Sections 3-5. Reserved.

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, repealed sections 3—5 in their entirety, which pertained to assessment of property for tax purposes, board of equalization, and tax payments, respectively, and derived from original codification.

Section 6. Tax liens and liability.

All property, real, personal and mixed, situated in the City of Waco on the first day of January of each year shall stand charged with a special lien in favor of the City from said date for the taxes due thereon. The liens provided herein shall be superior to all other liens except liens except as provided by law, regardless of when such other liens were created. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Tax liens, V.T.C.A., Tax Code §§ 32.01 et seq., 113.001 et seq.

Section 7. Reserved.

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, repealed section 7 in its entirety, which pertained to joint interest in property and derived from original codification.

Section 8. Arrears of taxes offset to debt against city.

The City shall be entitled to counterclaim and offset against any debt, claim, demand or account owed by the City to any person, firm or corporation who is in arrears to the City of

^{*}Editor's note—Many provisions of this article have been superseded by the state law referenced after each provision pursuant to Vernon's Ann. Tex. Const. art. 8.

State law references—Taxation authority, Vernon's Ann. Tex. Const. art. 11, § 5, V.T.C.A., Tax Code § 1.01 et seq.; tax equalization and single appraisal districts and board of equalization, Vernon's Ann. Tex. Const. art. 8, § 11.

Waco for taxes, in the amount of taxes so in arrears, and no assignment or transfer of such debt, claim, demand or account after the said taxes are due, shall affect the right of the City to so offset the said taxes against the same.

Section 9. Other rules and regulations.

Except as otherwise provided by law or this Charter, the Council shall have the power to provide by ordinance for the assessment and collection of all taxes, and to make such rules, regulations and mode of procedure to enforce the collection by and payment to the City Tax Assessor and Collector as it may deem expedient, and may provide such penalties for the failure to pay such taxes as it may deem expedient.

ARTICLE IX. PLANNING*

Section 1. The city plan commission.

There shall be a City Plan Commission which shall consist of not less than nine nor more than fifteen citizens of the City of Waco, and such other ex officio members as are provided herein. The members of said Commission, except the ex officio members, shall be appointed by the Council for a term of three years. Vacancies will be filled for the unexpired term by the Council. The ex officio members shall include the City Manager, the Chair of the Board of Adjustment, the Director of Public Works, and such other ex officio members as the Council shall by ordinance or resolution provide. Ex officio members shall participate in the work of the Commission, but shall not have a vote in its official actions.

The Commission shall elect a chair from among its appointed members. A majority of the appointed members shall constitute a quorum.

The Council may provide by ordinance for the appointment of subcommittees from the membership of the Commission who shall have the power to hold hearings, make recommendations to the Commission, and otherwise carry on the work of the Commission. In the absence of such provision the Commission may authorize and empower such subcommittees. The final action taken by the Commission with regard to any matter before it, however, shall be by the Commission as a whole.

The Commission shall keep minutes of its proceedings, which shall be a public record. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Planning commission, V.T.C.A., Local Government Code § 371.001 et seq.

*State law reference—Planning and development, V.T.C.A., Local Government Code § 371.001 et seq.

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Section 2. The city plan commission—Powers and duties.

The City Plan Commission shall:

- (1) Recommend a City Plan for the physical development of the City and amendments thereto;
- (2) Recommend to the Council approval or disapproval of proposed changes in the zoning ordinance;
- (3) Exercise control over platting or subdividing land within the corporate limits of the City and outside said corporate limits to the extent authorized by law.

The Commission shall be responsible to and act as an advisory body to the Council and shall have and perform such additional duties as may be prescribed by ordinance. (Ord. No. 2006-308, § 1, 5-16-06)

Section 3. City plan department.

There shall be a City Plan Department, to be headed by the Director of Planning. The Director of Planning shall serve as the regular technical adviser of the City Plan Commission, and shall have such other duties and responsibilities as the Council may establish.

Section 4. The city plan.

The City Plan for the physical development of the City of Waco shall contain the Commission's recommendations for the growth, development and beautification of the City. Before recommending to the Council a City Plan, or any part thereof, or any amendment thereto, the Commission shall hold a public hearing thereon, after having given notice of such hearing by causing such notice to be published one time at least fifteen days before such hearing in the official newspaper of the City. A copy of the City Plan, or any part thereof, shall be forwarded to the city manager who shall thereupon submit such plan, or part thereof, to the Council with the city manager's recommendations thereon. The Council may adopt the plan or partial plan so submitted as a whole or in parts. If such plan or part thereof should be rejected by the Council, the City Plan Commission may modify such plan, or part thereof, and again forward it to the city manager for submission to the Council. All amendments to the City Plan shall be recommended by the Plan Commission and submitted in the same manner as that outlined above to the Council for approval, and the Council may adopt or reject the same in the same manner as above specified. All recommendations to the City Council from any City Department affecting the City Plan must be accompanied by a recommendation from the Commission.

(Ord. No. 2006-308, § 1, 5-16-06)

Section 5. Legal effect of city plan.

Upon adoption of the City Plan by the Council, no subdivision, street, park nor any public way, ground or space, public building or structure and no public utility, whether publicly or privately owned, which is in conflict with the City Plan, shall be authorized, purchased or

constructed by the City until and unless the location, extent and character thereof shall have been submitted to and approved or disapproved by the Commission. In case of disapproval, the Commission shall communicate its reasons to the Council in writing. The Council shall have the power to overrule such disapproval and upon such overruling the Council or the appropriate office, department or agency shall have the power to proceed. The failure of the Commission to act within thirty days after the date of official submission to the Commission shall be deemed approval, unless a longer period be granted by the Council or the submitting official. The widening, narrowing, relocating, vacating or change in the use of any street, river or watercourse, or other public way or ground or the sale of any public building or real property shall be subject to similar submission and approval, and failure to approve may be similarly overruled by the Council. Provided, that a certificate by the city manager executed under the seal of the City that a public project or improvement is not in conflict with the City Plan, or that the location, character and extent of such project or improvement have been approved by the City Plan Commission, or if such project or improvement has been disapproved by the City Plan Commission that the Council has overruled such disapproval, shall be conclusive as to such facts. Provided, that the sale of any land or building owned or held by the City, not for public use and not included in the City Plan as City land for public use, shall not be subject to the provisions of this Section; and provided further, that a certificate by the city manager as to such facts, shall be conclusive as to any purchaser of such land or building from the City. (Ord. No. 2006-308, § 1, 5-16-06)

ARTICLE X. FRANCHISES AND PUBLIC UTILITIES*

Section 1. Inalienability of control of public property.

The right of control and use of the public streets, highways, sidewalks, alleys, parks, public squares, and public places of the City is hereby declared to be inalienable by the City, except by ordinances not in conflict with the provisions of this Charter. No act or omission by the Council or any officer or agent of the City shall be construed to grant, renew, extend, or amend, expressly or by estoppel or implication any right, franchise or easement affecting said public streets, highways, sidewalks, alleys, parks, public squares, public places and other real property, except as provided in this Charter.

Section 2. Power to grant franchise.

The Council shall have the power by ordinance to grant, renew, and extend all franchises of all public utilities of every character operating within the City, and, with consent of the franchise holder, to amend the same. Provided, however, that no franchise shall be granted for an indeterminate term, and that no franchise shall be granted for a term of more than 25 years.

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^{*}State law reference—Franchises, V.T.C.A., Local Government Code § 402.002.

Section 3. Ordinance granting franchise.

Every ordinance granting, renewing, extending, or amending a public utility franchise shall be read at three regular meetings of the Council, and shall not be finally acted upon until 30 days after the first reading thereof. Within five days following each of the three readings of the ordinance, the full text thereof shall be published one time in the official newspaper of the City, and the expense of such publication shall be borne by the prospective franchise holder.

Section 4. Transfer of franchise.

No public utility franchise shall be transferred by the holder thereof except with the approval of the Council expressed by ordinance.

Section 5. Regulation of franchise.

Every grant, renewal, extension, or amendment of a public utility franchise, whether so provided in the ordinance or not, shall be subject to the right of the Council:

- (1) To forfeit any such franchise by ordinance at any time for failure of the holder thereof to comply with the terms of the franchise. Such power shall be exercised only after written notice to the franchise holder stating wherein the franchise holder has failed to comply with the terms of the franchise and setting a reasonable time for the correction of such failure, and shall be exercised only after hearing and after such reasonable time has expired.
- (2) To impose reasonable regulations to insure safe, efficient and continuous service to the public.
- (3) To require such expansion, extension, enlargement and improvements of plans and facilities as are necessary to provide adequate service to the public.
- (4) To require every franchise holder to furnish to the City, without cost to the City, full information regarding the location, character, size, length and terminals of all facilities of such franchise holder in, over and under the streets, alleys, and other public property of the City; and to regulate and control the location, relocation, and removal of such facilities.
- (5) To collect from every public utility operating in the City such proportion of the expense of excavating, grading, paving, repaving, constructing, reconstructing, draining, repairing, maintaining, lighting, sweeping, and sprinkling the streets, alleys, bridges, culverts, viaducts, and other public places of the City as represents the increased cost of such operations resulting from the occupancy of such public places by such public utility, and such proportion of the costs of such operations as results from the damage to or disturbance of such public places caused by such public utility; or to compel such public utility to perform, at its own expense, such operations as above listed which are made necessary by the occupancy of such public places by such utility or by damage to or disturbance of such public places caused by such public utility.

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- (6) To require every franchise holder to allow other public utilities to use its poles and other facilities, including bridges and viaducts, whenever in the judgment of the Council such use shall be in the public interest, provided that in such event a reasonable rental shall be paid such owner of facilities for such use. Provided further, that inability of such public utilities to agree upon rentals for such facilities shall not be an excuse for failure to comply with such requirements by the Council.
- (7) (a) To require the keeping of accounts in such form as will accurately reflect the value of the property of each franchise holder which is used and useful in rendering its service to the public and the expenses, receipts and profits of all kinds of such franchise holder.
 - (b) To examine and audit at any time during business hours the accounts and other records of any franchise holder.
 - (c) To require reports on the operations of the utility, which shall be in such form and contain such information as the Council shall prescribe.

Section 6. Regulation of rates.

The Council shall have full power after notice and hearing to regulate by ordinance the rates, charges and fares of every public utility franchise holder operating in the City, provided that no such ordinance shall be passed as an emergency measure. Every franchise holder who shall request an increase in rates, charges, or fares, shall have, at the hearing of the Council called to consider such request, the burden of establishing by clear, competent and convincing evidence, the value of its investment properly allocable to service in the City, and the amount and character of its expenses and revenues connected with the rendering of such service. If, upon such hearing, the Council is not satisfied with the sufficiency of the evidence so furnished, it shall be entitled to call upon such public utility for the furnishing of additional evidence at a subsequent date, to which said hearing may be adjourned. If at the conclusion of said adjourned hearing, the Council is still not satisfied with the sufficiency of the evidence furnished by said utility, the Council shall have the right to select and employ, then and later, rate consultants, auditors and attorneys to conduct investigations, present evidence, advise the Council, and conduct litigation on such requested increase in rates, charges or fares; and said utility shall reimburse the City for its reasonable and necessary expense so incurred. Such rate consultants, auditors and attorneys shall be qualified, competent, and of good standing in their professions. No public utility franchise holder shall institute any legal action to contest any rate, charge or fare fixed by the Council until such franchise holder has filed a motion for rehearing with the Council specifically setting out each ground of its complaint against the rate, charge or fare fixed by the Council, and until the Council shall have acted upon such motion. Such motion shall be deemed overruled unless acted upon by the Council within a reasonable time, not to exceed ninety days from the filing of such motion for rehearing; provided, that the Council may by resolution extend such time limit for acting on said motion for rehearing from ninety days to one hundred eighty days.

State law reference—Authority to regulate certain utilities, Vernon's Ann. Civ. St. art. 1446c, § 17.

ARTICLE XI. GENERAL PROVISIONS

Section 1. Reserved.

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, repealed section 1 in its entirety, which pertained to interim government, and derived from original codification.

Section 2. Continuation of government.

Any ordinance in effect at the time this Charter is adopted, and not otherwise in conflict with this Charter, which refers to some office or employment of the City of Waco which ceases to exist under this Charter, shall continue in force and the powers and duties therein prescribed shall be the powers and duties of the office or employment which, under this Charter, succeeds to the same general powers and duties of such office or employment under the previous charter. When the term "Board of Commissioners" appears in any such ordinance it shall be construed as "The Council" after the effective date of this Charter.

Section 3. Effect of charter on existing law.

All ordinances, resolutions, rules and regulations in force in the City of Waco on the effective date of this Charter, and not in conflict with this Charter, shall remain in force until altered, amended or repealed by the Council. All taxes, assessments, liens, incumbrances and demands, of or against the City, fixed or established before such date, or for the fixing or establishing of which proceedings have begun at such date, shall be valid when properly fixed or established either under the law in force at the time of the beginning of such proceedings or under the law after the adoption of this Charter.

Section 4. Official oath.

All officers of the City of Waco shall, before entering upon the duties of their respective offices, take and subscribe the official oath prescribed in the Constitution of the State of Texas. State law reference—Oath, Vernon's Ann. Tex. Const. art. 16, § 1.

Section 5. Public records.

All public records of every office, department, or agency of the City shall be open to inspection by any citizen at all reasonable times, provided that police records and vital statistics records, and any other records closed to the public by law, shall not be considered public records for the purpose of this Section.

State law references—Public records, V.T.C.A., Government Code § 552.001 et seq.; local government records, V.T.C.A., Local Government Code § 201.001 et seq.

Section 6. Official newspaper.

The Council shall have power to contract annually with, and by ordinance or resolution designate, a public newspaper of general circulation in the City as the official organ thereof

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and to continue as such until another is designated, and shall cause to be published therein, all ordinances, notices and other matter required by this Charter, by the ordinances of the City, of [or] by the Constitution or laws of the State of Texas to be published. (Ord. No. 2006-308, § 1, 5-16-06)

Section 7. Notice of claim.

The City of Waco shall not be held responsible on account of any claim for damages to any person or property unless the person making such complaint or claiming such damages shall, within thirty days after the time at which it is claimed such damages were inflicted upon such person or property, file with the City Secretary, a true statement under oath, as to the nature and character of such damages or injuries, the extent of the same, and the place where same happened, the circumstances under which happened, the conditions causing same, with a detailed statement of each item of damages and the amount thereof, and if it be for personal injuries, giving a list of the witnesses, if any known to affiants, who witnessed such accident.

State law reference—Notice of claim, V.T.C.A., Civil Practice and Remedies Code § 101.101.

Section 8. Assignment, execution, and garnishment.

The property, real and personal, belonging to the City shall not be liable for sale or appropriation under any writ of execution. The funds belonging to the City, in the hands of any person, firm, or corporation, shall not be liable to garnishment, attachment, or sequestration; nor shall the City be liable to garnishment on account of any debt it may owe or funds or property it may have on hand or owing to any person. Neither the City nor any of its officers or agents shall be required to answer any such writ of garnishment on any account whatever. The City shall not be obligated to recognize any assignment of wages or funds by its employees, agents or contractors.

State law reference—Garnishment, V.T.C.A., Local Government Code § 101.023.

Section 9. Security or bond not required.

It shall not be necessary in any action, suit or proceedings in which the City shall be a party, for any bond, undertaking or security to be executed in behalf of the City; but all actions, suits and proceedings, shall be conducted in the same manner as if such bond, undertaking or security had been given. The City shall have all remedies of appeal provided by law to all courts in this State without bond or security of any kind. For all the purposes of such actions, suits, proceedings, and appeals, the City shall be liable in the same manner, and to the same extent, as if the bond, undertaking or security in ordinary cases had been given and executed.

Section 10. Remission of fines and penalties.

The City Council shall have power to remit in whole or in part, on such conditions as it may deem proper, by a vote of three-fourths of the Council members qualified and serving, any fine or penalty belonging to the City which may be imposed or incurred under any penal ordinance of the City.

Section 11. Personal interest in city contracts.

No member of the City Council, or other officer or employee of the City of Waco shall be directly or indirectly interested in any work, business or contract, the expense, price or consideration of which is paid from the City Treasury, or by an assessment levied by an ordinance or resolution of the City Council, nor be the surety on the official bond of any officer of the City, or for any person having a contract, work or business with said City for the performance of which security may be required, except on behalf of the City as an officer or employee. Any wilfull violation of this section shall constitute malfeasance in office, and any officer or employee guilty thereof shall be subject to removal from his office or position. Any violation of this section, with the knowledge, express or implied, of the person or corporation contracting with the City shall render the contract involved voidable by the Council. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Conflicts of interest of officers and employees, V.T.C.A., Local Government Code § 171.001 et seq.

Section 12. Nepotism.

No person related within the fourth degree by affinity or consanguinity to the Mayor, any member of the City Council, or the city manager shall be appointed to any paid office, position, clerkship, or other service of the City. This prohibition shall not apply, however, to any person who shall have been employed by the City prior to and at the time of the election of the Mayor or Councilmember, or appointment of the city manager, so related thereto. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Nepotism, V.T.C.A., Government Code § 573.041 et seq.

Section 13. Residence requirements.

Any officer or City Council appointed department head appointed after the effective date of this Charter to any office or employment under the City Government shall before entering upon employment or term of office be or become a resident of the City of Waco, and shall remain a resident of the City of Waco so long as they shall hold such office or employment. This Section shall not apply to independent contractors with the City. (Ord. No. 2006-308, § 1, 5-16-06)

State law reference—Residency requirement, V.T.C.A., Local Government Code § 150.021.

Section 14. Health, life and accident insurance for city employees.

The City Council shall have the power, exercisable in its discretion, and subject to such limitations and regulations as it shall deem proper to create, operate, amend, and contract for an insurance plan covering health, life and accident insurance, or any of them, for any or all City employees, and to pay the premiums therefor.

Section 15. Pensions for retiring policemen and firemen.

Any policeman, fireman or fire alarm operator who was employed by the City prior to September 12, 1950, and the hereinafter named dependents of such policeman, fireman or fire

alarm operator, shall be entitled to the benefits of this Section. Any such policeman, fireman or fire alarm operator who has been continuously on the payroll of the City for twenty-five (25) years or more, who shall retire or be dropped therefrom, shall be retired by the Council on pension pay equal to one-half (42) of the salary drawn by him per month at the time of his retirement. The Council shall provide by ordinance for the payment of a sum monthly to firemen, policemen and fire alarm operators who may be disabled while in their performance of their duties an amount equal to one-half (1/2) of their salary. The Council shall also provide by ordinance for the payment to the surviving widows of such firemen, policemen and fire alarm operators who may receive injuries while in the performance of their duty, resulting in death within six (6) months of such injury, of an amount payable monthly equal to one-half (42)of the payment per month received by such party injured, provided that payment shall be made to the surviving widow all her life, or until she shall marry again, or to the minor children until they shall become of age, as said Council may deem advisable. No fireman, policeman or fire alarm operator who was employed by the City after September 12, 1950, or any dependent of such policeman, fireman or fire alarm operator, shall be entitled to the benefits of this Section. The City Council may, by ordinance provide increases in pension benefits for police officers, firefighters and fire alarm operators and their respective dependents but, in no event, greater than other City employees' benefits.

(Res. No. 1987-134, Amend. No. 5, 11-9-87; Ord. No. 2006-308, § 1, 5-16-06)

Section 16. Non-substantive revisions and Conformance with State and Federal laws.

The City Council may, without approval of the voters, adopt ordinances that renumber; revise titles; reorder; rearrange; correct errors in spelling; grammar; cross-references; punctuations; revise language to reflect modern usage and style and similar non-substantive revisions.

The City Council may, without approval of the voters, adopt ordinances that conform the language of the Charter to current State and Federal laws. (Ord. No. 2006-308, § 1, 5-16-06)

Editor's note—Ord. No. 2006-308, § 1, adopted May 16, 2006, amended section 16 in its entirety to read as herein set out. Formerly, section 16 pertained to rearrangement and renumbering, and derived from original codification.

Section 17. Judicial notice.

This Charter shall be deemed a public act, and shall have the force and effect of a general law, may be read in evidence without pleading or proof, and judicial notice shall be taken thereof in all courts and places without further proof.

Section 18. Construction of charter.

This Charter shall not be construed as a mere grant of enumerated powers, but shall be construed as a general grant of power and as a limitation of power on the government of the City of Waco in the same manner as the Constitution of Texas is construed as a limitation on

the powers of the Legislature. Except where expressly prohibited by this Charter, each and every power under Article XI, Section 5, of the Constitution of Texas, which it would be competent for the people of the City of Waco to grant expressly to the City, shall be construed to be granted to the City by this Charter.

Section 19. Separability clause.

If any Section or part of a Section of this Charter is held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity shall not invalidate or impair the validity, force, or effect of any other Section or part of a Section of this Charter.

I, Patricia W. Ervin, City Secretary of the City of Waco, hereby certify that the foregoing is a true and correct copy of the Charter of the City of Waco as adopted at an election held on the 1st day of November, 1958, and said Charter was declared adopted by the governing body of the City of Waco on the 18th day of November, 1958.

Witness my hand and seal of said City this the 1st day of October, A. D., 2002.

/s/	Patricia W. Ervin	
	City Secretary of	
	Waco. Texas	