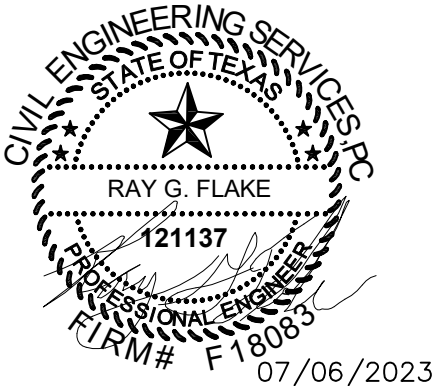
CIVIL ENGINEERING SERVICES

P.O. Box 1302, Fairview, TN 37062
Office: (615) 533-0401

Water Pollution Abatement Plan

for

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130



July 6, 2023

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Application Cover Page

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Panda Express D25605						**2. Regulated Entity No.:**			
3. Customer Name: Panda Express, Inc.						**4. Customer No.:** CN603049529			
5. Project Type: **(Please circle/check one)**	New ☑		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP ☑	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential ☑			**8. Site (acres):**		1.262	
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**			Contech Jellyfish (water quality unit)			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Comal		**14. Watershed:**			Dry Comal Creek – Comal River			

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	_1_	___	___	___
Region (1 req.)	___	_1_	___	___	___
County(ies)	___	_1_	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	_1_Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge _1_New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Mark Guess, Civil Engineering Services, PC
Print Name of Customer/Authorized Agent ☑
Signature of Customer/Authorized Agent ☑ Date 07/06/2023

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Administratively Complete:		
Received From:		Correct Number of Copies:		
Received By:		Distribution Date:		
EAPP File Number:		Complex:		
Admin. Review(s) (No.):		No. AR Rounds:		
Delinquent Fees (Y/N):		Review Time Spent:		
Lat./Long. Verified:		SOS Customer Verification:		
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):			Signed (Y/N):	
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):	

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

General Information

- Attachment A - Road Map
- Attachment B - USGS / Edwards Recharge Zone Map
- Attachment C - Project Description

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Mark Guess, Civil Engineering Services, PC

Date: 07/06/2023

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Panda Express D25605
2. County: Comal
3. Stream Basin: Dry Comal Creek – Comal River
4. Groundwater Conservation District (If applicable): Comal Trinity GCD
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

   Contact Person: Dennis Stone
   Entity: Panda Express, Inc.
   Mailing Address: 1683 Walnut Grove Ave
   City, State: Rosemead, CA Zip: 91770
   Telephone: (626) 799-9898 FAX: _____
   Email Address: dennis.stone@pandarg.com

8. Agent/Representative (If any):

   Contact Person: Mark Guess
   Entity: Civil Engineering Services, PC
   Mailing Address: P.O. Box 1302
   City, State: Fairview, TN Zip: 37062
   Telephone: 573-979-6473 FAX: _____
   Email Address: mark@civilengineeringservices.net

9. Project Location:

   ☒ The project site is located inside the city limits of New Braunfels.
   ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
   ☐ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

    2696 Loop 337, New Braunfels, TX 78130

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

    ☒ Project site boundaries.
    ☒ USGS Quadrangle Name(s).
    ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
    ☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

    ☐ Survey staking will be completed by this date: _____

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- ☒ Area of the site
- ☒ Offsite areas
- ☒ Impervious cover
- ☒ Permanent BMP(s)
- ☒ Proposed site use
- ☒ Site history
- ☒ Previous development
- ☒ Area(s) to be demolished

15. Existing project site conditions are noted below:

- ☐ Existing commercial site
- ☐ Existing industrial site
- ☐ Existing residential site
- ☐ Existing paved and/or unpaved roads
- ☒ Undeveloped (Cleared)
- ☐ Undeveloped (Undisturbed/Uncleared)
- ☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

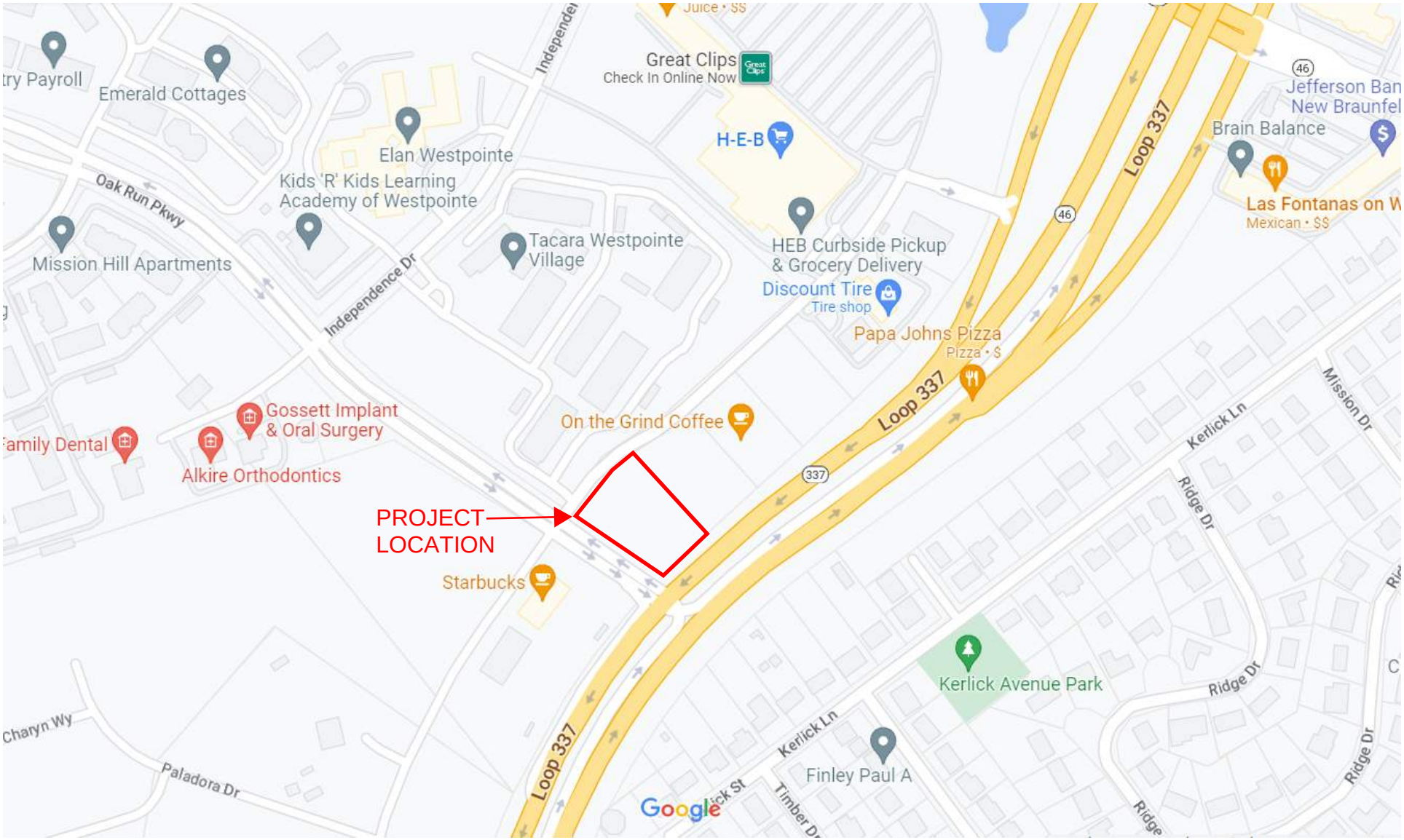
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

PANDA EXPRESS D25605
2696 LOOP 337
NEW BRAUNFELS, TX 78130



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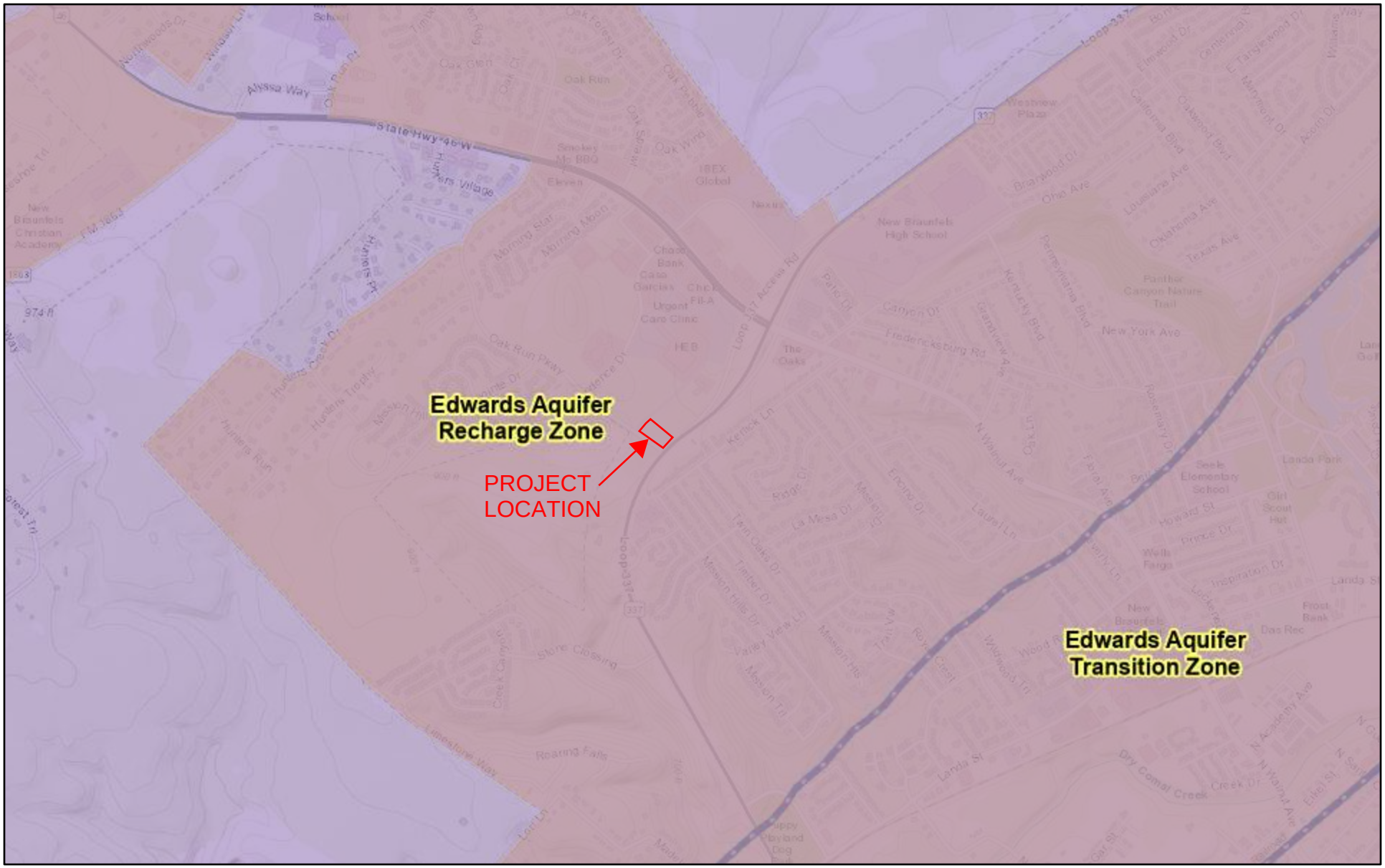

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Project Summary

Panda Express D25605

This 1.262-acre site is an undeveloped tract of land (Tax Map 113E, Group B, Parcel 005.00) located at 2696 Loop 337 in New Braunfels, Comal County, Texas. The parcel is part of WestPointe Village, being Lot 2, Block 1 of WestPointe Subdivision Unit 2. This property lies on the northwest side of Loop 337, and northeast of Oak Run Parkway. The property generally drains from northwest to southeast. This site lies within Zone X, areas outside the 0.2% annual chance floodplain as shown on FEMA Firm Map Panel Number 48091C 0435F with an effective date of September 2, 2009.

The proposed project is to clear and grade the site, and to construct a Panda Express restaurant with a new storm sewer system, parking spaces, drive aisles, and landscaped areas, and to bring all utilities to the building envelope. The only demolition that will be necessary for this project is to remove a portion of the existing curb & gutter to allow for a new driveway connection near the northeast corner of the property.

Proposed site drainage patterns have been designed to generally match the existing drainage patterns. An increase in impervious area is planned for this project, which results in an increase of peak stormwater discharge from the site. The total impervious area after development will be 0.87 acres. Storm water runoff will be collected by a new storm sewer system on the site, and conveyed to a high-flow, membrane filtration treatment unit (Contech Jellyfish® or similar). Discharge from the treatment unit is then conveyed to the off-site stormwater detention pond. Stormwater detention for this site is provided by the development, located northeasterly from the site approximately 1,500 feet.

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Geologic Assessment

- Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
- Attachment B - Stratigraphic Column
- Attachment C - Site Geology
- Attachment D - Site Geologic Map(s)

GEOLOGIC ASSESSMENT

Water Pollution Abatement Plan for Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, Texas

May 26, 2023 | Terracon Project No. 90237140

5/26/2023

STATE OF TEXAS
JUSTIN TURKNETT
GEOLOGY
15439
LICENSED PROFESSIONAL GEOSCIENTIST

Prepared For:
Panda Restaurant Group, Inc.
1683 Walnut Grove Avenue
Rosemead, California 91770

Prepared by:
Terracon Consultants, Inc.
6911 Blanco Road
San Antonio, Texas

6911 Blanco Road
San Antonio, Texas 78216
P 210.641.2112
F 210.641.2124
Professional Geoscientist Firm License No. 50058
Terracon.com

May 26, 2023

Mr. Dalmar Duran
Panda Restaurant Group Inc.
1683 Walnut Grove Avenue
Rosemead, California 91770

Phone: (626) 372-8548
Email: dalmar.duran@pandarg.com

RE: Geologic Assessment
Water Pollution Abatement Plan for Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, Texas
Terracon Project No. 90237140

Dear Mr. Duran:

Enclosed is the Geologic Assessment conducted at the above-referenced site at the request of Panda Restaurant Group Inc. This study was performed by Mr. Justin Turknett, a Professional Geoscientist (P.G.) and Mr. Kevin K. Bryant, P.G. The attached report has been prepared in accordance with Title 30 of the Texas Administration Code Chapter 213: *Permanent Rules for the Edwards Aquifer*. We appreciate the opportunity to provide these services to you. Please contact the undersigned if you have questions regarding technical aspects of this report.

Sincerely,
Terracon Consultants, Inc.

Justin Turknett, P.G.
Senior Staff Geologist

Kevin Bryant, P.G.
Senior Project Manager

Attachments:
Geologic Assessment Form
Geologic Assessment Table (Attachment A of the Geological Assessment Form)
Stratigraphic Column (Attachment B of the Geological Assessment Form)
Geologic Assessment Narrative Text (Attachment C of the Geological Assessment Form)
Site Photographs
Soils Map - Exhibit 1 (Attachment D of the Geological Assessment Form)
Site Geologic Map - Exhibit 2 (Attachment D of the Geological Assessment Form)

Copies Submitted: Panda Restaurant Group Inc. (1 digital)

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Justin Turknett Telephone: 210-641-2112

Date: May 26, 2023 Fax: 210-641-2124

Representing: Terracon Consultants, Inc. (TBPG No. 50058) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: Water Pollution Abatement Plan for Panda Express D25605

Project Information

5/26/2023

1. Date(s) Geologic Assessment was performed: May 16, 2023
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table.** Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
RUD	D	~2-6
KrB	C	~2-6

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 50'
   Site Geologic Map Scale: 1" = 50'
   Site Soils Map Scale (if more than 1 soil type): 1" = 50'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 7 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☒ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Water Pollution Abatement Plan for Panda Express D25605 (Terracon Project No. 90237140)

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	MOD 1D	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		1D						<4D	>4D	<1.6	>1.6	
S-1	29° 42' 38.41"	-98° 9' 42.08"	CD	5	Kdr	6.00	5.00	0.50					C, V	7	12	X		X		Hilltop
S-2	29° 42' 37.76"	-98° 9' 41.4"	CD	5	Kgt	3.00	3.00	0.75					V, F, O	6	11	X		X		Hilltop
B-1	29° 42' 37.76"	-98° 9' 41.87"	MB	30	Kdr	~0.25	~0.25	20.00					F,C	8	38	X		X		Hilltop
B-2	29° 42' 37.26"	-98° 9' 41.51"	MB	30	Kgt	~0.25	~0.25	20.00					F,C	8	38	X		X		Hilltop
B-3	29° 42' 37.66"	-98° 9' 40.35"	MB	30	Kgt	~0.25	~0.25	10.00					F,C	8	38	X		X		Hilltop
B-4	29° 42' 38.02"	-98° 9' 41.29"	MB	30	Kgt	~0.25	~0.25	10.00					F,C	8	38	X		X		Hilltop
B-5	29° 42' 38.95"	-98° 9' 41.98"	MB	30	Kdr	~0.25	~0.25	10.00					F,C	8	38	X		X		Hilltop
B-6	29° 42' 37.94"	-98° 9' 42.26"	MB	30	Kdr	~0.25	~0.25	10.00					F,C	8	38	X		X		Hilltop
B-7	29° 42' 38.12"	-98° 9' 43.09"	MB	30	Kdr	~0.25	~0.25	10.00					F,C	8	38	X		X		Hilltop

* Datum: WGS84 * Method of Collection: GPS * Date of Collection: May 16, 2023 * Horizontal Accuracy: approx. 10 feet * Collected By: Justin Turknett, P.G.

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

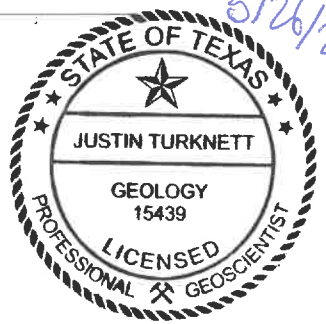
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Justin Turknett, P.G. 5/26/2023

Date: May 26, 2023

Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)



STRATIGRAPHIC COLUMN

Water Pollution Abatement Plan for Panda Express D25605
New Braunfels, Comal County, Texas
Terracon Project No 90237140

Hydrogeologic subdivision			Group, formation, or member			Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/ permeability type
Upper Cretaceous	Upper confining units		Navarro and Taylor Groups, undivided			CU	600	Clay, chalky limestone	Gray-brown clay; marly limestone	None	Low porosity/low permeability
			Austin Group			CU; rarely AQ	130 - 150	White to gray limestone	White-chalky limestone; *Gryphaea aucella*	None	Low porosity; rare water production from fractures/low permeability
			Eagle Ford Group			CU	30 - 50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/low permeability
			Buda Limestone			CU	40 - 50	Buff, light gray, dense mudstone	Porcelaneous limestone	Minor surface karst	Low porosity/low permeability
			Del Rio Clay			CU	40 - 50	Blue-green to yellow-brown clay	Fossiliferous; *Ilymatogyra arietina*	None	None/primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			CU	Less than 10	Gray to light tan marly limestone	Marker fossil: *Waconella waconsis*	None	Low porosity/low permeability
	II		Edwards Group	Person Formation	Cyclic and marine members, undivided	AQ	80 - 100	Mudstone to packstone; *miliolid* grainstone; chert	Light tan, massive; some *Toucasia*	Many subsurface; may be associated with earlier karst development	Laterally extensive; both fabric and not fabric/ water-yielding; one of most permeable
	III				Leached and collapsed members, undivided	AQ	80 - 100	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; *Montastrea sp.*	Extensive lateral development, large rooms	Majority not fabric/one of most permeable
	IV				Regional dense member	CU	20 - 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	None, only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V			Kainer Formation	Grainstone member	AQ	50 - 60	*Miliolid* grainstone; mudstone to wackestone; chert	White crossbedded grainstone; *Toucasia*	Few	Not fabric/recrystallization reduces permeability
	VI				Kirschberg evaporite member	AQ	50 - 60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric/one of the most permeable
	VII				Dolomitic member	AQ	110 - 130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, *Toucasia* abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane-fabric/water-yielding; locally permeable
	VIII				Basal nodular member	Karst AQ; not karst CU	50 - 60	Shaly, nodular limestone; mudstone and *miliolid* grainstone	Massive, nodular and mottled, *Exogyra texana*	Large lateral caves at surface; a few caves near Cibolo Creek	Fabric/large conduit flow at surface; no permeability in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350 - 500	Yellowish tan, thinly bedded limestone and marl	Stair-step topography, alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/ relatively impermeable

The stratigraphy of the site is indicated by the red box and is based on observations made in the field and information provided in the *Geologic Framework and Hydrogeologic Characteristics of the Outcrops of the Edwards Aquifer Recharge Zone, Comal County, Texas* (USGS, 1994).

Water Pollution Abatement Plan for Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, Texas
Terracon Project No. 90237140
May 26, 2023

INTRODUCTION

Panda Restaurant Group Inc. (Client) retained Terracon Consultants, Inc. (Terracon) to conduct a Geologic Assessment (GA) at the location of 2696 Loop 337 in New Braunfels, Comal County, Texas (here after referred to as the site). The site is approximately 1.26-acres of vacant land, shown on Exhibits 1 and 2. The site is located on the designated Edwards Aquifer Recharge Zone (EARZ). A restaurant is proposed at the site which requires a Water Pollution Abatement Plan (WPAP). Therefore, a WPAP requires a GA to be conducted at the site.

EXPLANATION OF ASSESSMENT

This assessment follows general guidelines contained in the Texas Commission on Environmental Quality (TCEQ) *"Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones"* (TCEQ Guidance 0585, dated October 4, 2004). The EARZ is known to contain karst features formed by selective dissolving of carbonate minerals by water. Karst features may be formed and be visible at the ground surface but more commonly tend to be smaller at the surface and develop with depth. Because the site is located on the EARZ, future development of the site must comply with the TCEQ Edwards Aquifer Protection Program Rules specified in Title 30 of the Texas Administrative Code (TAC), Chapter 213 (30 TAC 213).

The assessment consisted of a pedestrian survey of the subject property and non-intrusive visual observations of readily accessible and visible surface conditions to identify the presence of geologic and man-made features. Geologic or man-made features, for the purposes of this assessment, are those features that are visible at the ground surface or have been mapped within the EARZ which have a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer. In accordance with the GA guidelines, intrusive subsurface testing, such as excavation, cave mapping, infiltrometer testing, geophysical studies, or tracer studies, was not required or conducted for the GA of features identified at the site.

The GA was performed by Mr. Justin Turknett, a Professional Geoscientist (P.G.), on May 16, 2023. Mr. Kevin Bryant, P.G., conducted the technical review of the GA.

GENERAL SITE DESCRIPTION

According to elevation data obtained from the Comal County, Texas Open Data Download website[1], the topography of the site ranges between approximately 910 feet to 904 feet above mean sea level (amsl).

Historical aerial photographs, available through Google Earth Pro software, were reviewed during this assessment. According to the aerial photographs, dated between 1995 and 2021, the site appears as undeveloped woodlands beginning in 1995 through 2008. By 2010, Oak Run Parkway was constructed west of the site. By 2012, the majority of the trees at the site have been removed. By 2018, a second lane of Loop 337 was constructed southeast of the site. Following the addition of the second lane of Loop 337 the site appears relatively unchanged through 2021.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM)[2] 48091C0435F (dated September 2, 2009), the site is not zoned for potential flood hazards.

According to the Texas Water Development Board (TWDB) database website[3], water wells have not been mapped within the boundary of the project site.

SOIL DESCRIPTION

Based on a review of the United States Department of Agriculture (USDA) *Web Soil Survey*[4], the majority of the site is mapped on the Rumple-Comfort association, rubbly association, 1 to 8 percent slopes (RUD) with the northern portion of the site mapped on the Krum clay, 1 to 3 percent slopes (KrB). Exhibit 1, attached at the end of this report, depicts the locations of the mapped soil types at the site.

The RUD consists of shallow and moderately deep soils on uplands in the Edwards Plateau. Regionally, the RUD soils are approximately 12- to 28-inches deep. The soil is well drained. Surface runoff is very high. The capacity of the most limiting layer to transmit water is moderately low to moderately high (Ksat 0.06 to 0.20 inches per hour). Water erosion is a moderate hazard. These soils are classified as Soil Group D, having a very slow infiltration rate when thoroughly wetted.

The KrB consists of moderately deep soils on stream terraces. Regionally, the KrB soils are at least 80 inches deep. The soil is well drained. Surface runoff is high. The capacity of the most limiting layer to transmit water is moderately low to moderately high (Ksat 0.06 to 0.20 inches per hour). These soils are classified as Soil Group C, having a slow infiltration rate when thoroughly wetted.

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1 https://www.cceo.org/gis/GisOpenDataDownload
2 https://msc.fema.gov/portal/home
3 https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer
4 https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

NARRATIVE DESCRIPTION OF SITE GEOLOGY

Several published sources were reviewed to assist in identifying the underlying geology of the site, including maps from the U.S. Geological Survey (USGS) and the Bureau of Economic Geology (BEG). The documents listed below were reviewed as part of this GA.

- *Geologic Atlas of Texas, San Antonio Sheet (Barnes, 1983).*
- *Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas (Blome and others, 2005).*
- *Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within the Northern Bexar and Comal Counties, Texas. U.S. Geological Survey Scientific Investigations Map 3366 (*Clark and others, 2016).
- *Miscellaneous Map No. 39, Geologic Map of the New Braunfels, Texas, 30 x 60 Minute Quadrangle (Collins, 2000).*
- *Geologic Map of the New Braunfels West, Texas (Collins, 1993).*
- *Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas (Small and Hanson, 1994).*

Based on the review of these documents, the western portion of the site is most likely located on the Del Rio Clay (Kdr) formation and the eastern portion of the site is most likely located on the Georgetown Formation (Kgt).

The Kdr is a clay that is dark blue-green to yellow-brown in color. Abundant *Ilymatogyra arientina* are present. Because the Del Rio is clay, karst features do not develop in this formation. The Del Rio has no meaningful porosity or permeability and is considered the upper confining unit of the Edwards Aquifer. Regionally, the Del Rio Clay is 40- to 50-feet thick but can be as thin as 15-feet in some areas.

The Kgt consists of gray to light-tan marly limestone. This formation is easily identifiable in the field by the presence of the characteristic fossil *Waconella wacoensis*. No cavern development occurs within the formation and the porosity and permeability are both low. Regionally, the Georgetown is very thin locally, usually measuring 10-feet thick or less.

Review of *The Caves and Karst of Texas* (Veni and Elliot, 1994) indicates that caves have not been mapped on the project site.

SITE-SPECIFIC GEOLOGIC FEATURE DESCRIPTIONS

The following is a description of the features identified during literature research and observations made during the field reconnaissance at the site. Observations of the site were made to identify features such as caves, solution cavities, solution-enlarged fractures, faults, other natural bedrock features, man-made features in bedrock, swallow holes, sinkholes, non-karst closed depressions, and zone/clustered/aligned features, using the survey guidance

from the TCEQ *Instructions to Geologists for Geologic Assessments* as revised October 1, 2004. Features identified at the site are listed in the following subsections. If geologic features were identified, the sidewalls and floors of the features were probed by hand using a 4.5-foot long, 3/8-inch diameter metal soil probe.

The numbering system of the individual features discussed below has been preserved so as to relate to the field markings, such as stakes and flagging, which may have been used to mark potential features at the site.

For the purposes of completing the GA forms and associated table included at the end of this report text, each feature has been assigned a point value where higher values indicate an increased probability for rapid infiltration into the subsurface. As required by the TCEQ survey guidance documents, some features not readily identifiable in the field, such as mapped faults, have also been included in this section, if applicable. Exhibit 2, attached at the end of this report, depicts the locations of the geologic and man-made features discussed below.

Feature Assessment

S-1 Non-karst Closed Depression: This feature is a non-karst closed depression. The feature was measured in the field to be approximately 6-feet long, 5-feet wide, and 6-inches deep. The interior of the feature contained coarse-grained materials (gravel and cobbles) along with vegetation consisting of weeds and grasses. The catchment area of the feature is believed to be less than 1.6 acres. Detectable voids, conduits, or depressions were not noted in the vicinity of the feature. Sunken soil, differential vegetation patterns, or other visual indicators of concentrated subsurface drainage were also not noted in the vicinity of the feature. The feature is located in a hilltop topography. Given the lack of evidence regarding concentrated flow in the subsurface in the vicinity of the feature, the potential recharge into the feature to the Edwards Aquifer is believed to be low – scoring 12 points on the Geological Assessment Table. Therefore, this feature would not be considered sensitive.

S-2 Non-karst Closed Depression: This feature is a small animal burrow. The feature was measured in the field to be approximately 3-feet long, 3-feet wide, and 9-inches deep. The interior of the feature contained fine-grained materials (such as clay and silt), organic debris (such as leaves), and vegetation consisting of weeds and grasses. The catchment area of the feature is believed to be less than 1.6 acres. Detectable voids, conduits, or depressions were not noted in the vicinity of the feature. Sunken soil, differential vegetation patterns, or other visual indicators of concentrated subsurface drainage were also not noted in the vicinity of the feature. The feature is located in a hilltop topography. Given the lack of evidence regarding concentrated flow in the subsurface in the vicinity of the feature, the potential recharge into the feature to the Edwards Aquifer is believed to be low – scoring 11 points on the Geological Assessment Table. Therefore, this feature would not be considered sensitive.

B-1 through B-7 Man-Made Borings in Bedrock: These features are boreholes installed during a recent geotechnical investigation of the site. The boreholes were installed using a combination of air-rotary and flight-auger drilling techniques with a diameter of approximately 3- to 4-inches in size. The depth of the boreholes ranged from approximately 20-feet deep for boreholes B-1 and B-2 and approximately 10-feet deep for boreholes B-3 through B-7. Fat clay and/or clayey gravel was encountered at the surface of the boreholes with tan, hard limestone encountered at depths between 2- and 6-feet deep in the boreholes. The boreholes were backfilled with a combination of soil cuttings and bentonite. Voids were not encountered during the advancement of the boreholes. The catchment area of a borehole is believed to be less than 1.6 acres. Given the lack of voids encountered during the advancement of the boreholes and backfilling that included bentonite, the potential recharge into the features to the Edwards Aquifer is believed to be low – scoring 38 points on the Geological Assessment Table. Therefore, these features would not be considered sensitive.

COMMENTS AND OBSERVATIONS

Slight modification of the site topography or surface water flow during construction is anticipated. Within the Edwards Aquifer Recharge and Transition Zones, potential recharge features lacking visible surface expression (such as subsurface solution enlarged fractures, caves, cavities, and other karst features) are often present which would not be identifiable during the site inspection. Accordingly, this assessment does not address the possible presence of subsurface conditions that may be exposed during excavation or other construction activities. Should solution features or conditions be exposed during construction, construction should be halted and the TCEQ Edwards Aquifer Protection Program should be contacted and notified of the site conditions immediately in accordance with 30 TAC §213.5(f)(2).

REFERENCES

- Barnes, V.E., 1983, *Geologic Atlas of Texas, San Antonio Sheet: Bureau of Economic Geology, Scale 1:250,000.*
- Blome, C.D., Faith, J.R., Pedraza, D.E., Ozuna, G.B., Cole, J.C., Clark, A.K., Small, T.A., and Morris, R.R., 2005, *Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas: U.S. Geological Survey Scientific Investigations Map 2873, Version 1.1, 1 pl., scale 1:200,000.*
- Clark, Allen K.; Golab, J.A., and Morris, R.R, 2016, *Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within the Northern Bexar and Comal Counties, Texas. U.S. Geological Survey Scientific Investigations Map 3366.*
- Collins, E., 2000, *Miscellaneous Map No. 39, Geologic Map of the New Braunfels, Texas, 30 x 60 Minute Quadrangle: Geologic Framework of an Urban-Growth Corridor along the Edwards Aquifer, South-Central Texas. The University of Texas at Austin, Bureau of Economic Geology.*
- Collins, E., 1993, *Geologic Map of the New Braunfels West Quadrangle, Texas. University of Texas at Austin, Bureau of Economic Geology.*
- Comal County, Texas Open Data Download, *Contours*, (https://www.cceo.org/gis/GisOpenDataDownload), accessed May 24, 2023
- Federal Emergency Management Agency, *Flood Insurance Rate Map Panel No. 48091C0435F, dated September 2, 2009.*
- Google. *Google Earth Pro Software. V. 7.3.3.7786 (64-bit),* accessed May 13, 2023.
- Small, Ted A. and John A. Hanson, 1994, *Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas, U.S. Geological Survey, Water Resources Investigations 94-4117.*
- Texas Water Development Board, Water Data Interactive, *Groundwater Data Viewer (https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer)*, accessed May 13, 2023.
- U.S. Department of Agriculture. *Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov)*, accessed May 24, 2023.
- Veni and Elliot, 1994, *The Caves and Karst of Texas, 1994 NSS Convention Guidebook.*

Photo #1 View of the northern portion of the site, looking west.

Photo #2 View of the northern portion of the site, looking south.

Photo #3 View of the southeastern portion of the site, looking north.

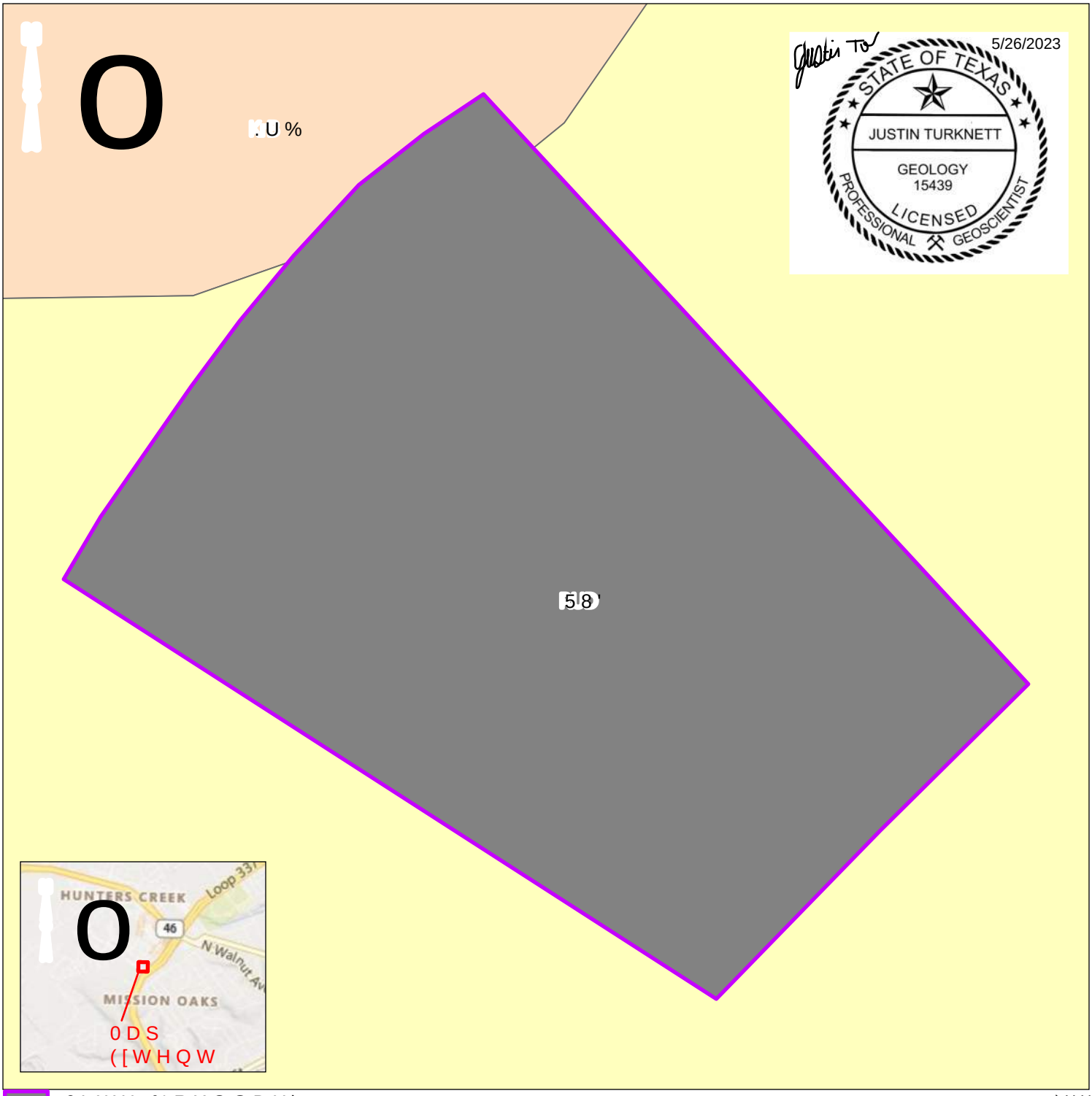
Photo #4 View of the south-central portion of the site, looking west.

Photo #5 View of the southwestern portion of the site, looking north.

Photo #6 View of the south-central portion of the site, looking north.

Photo #7 View of non-karst closed depression at the location of feature S-1.

Photo #8 View of non-karst closed depression at the location of feature S-2.



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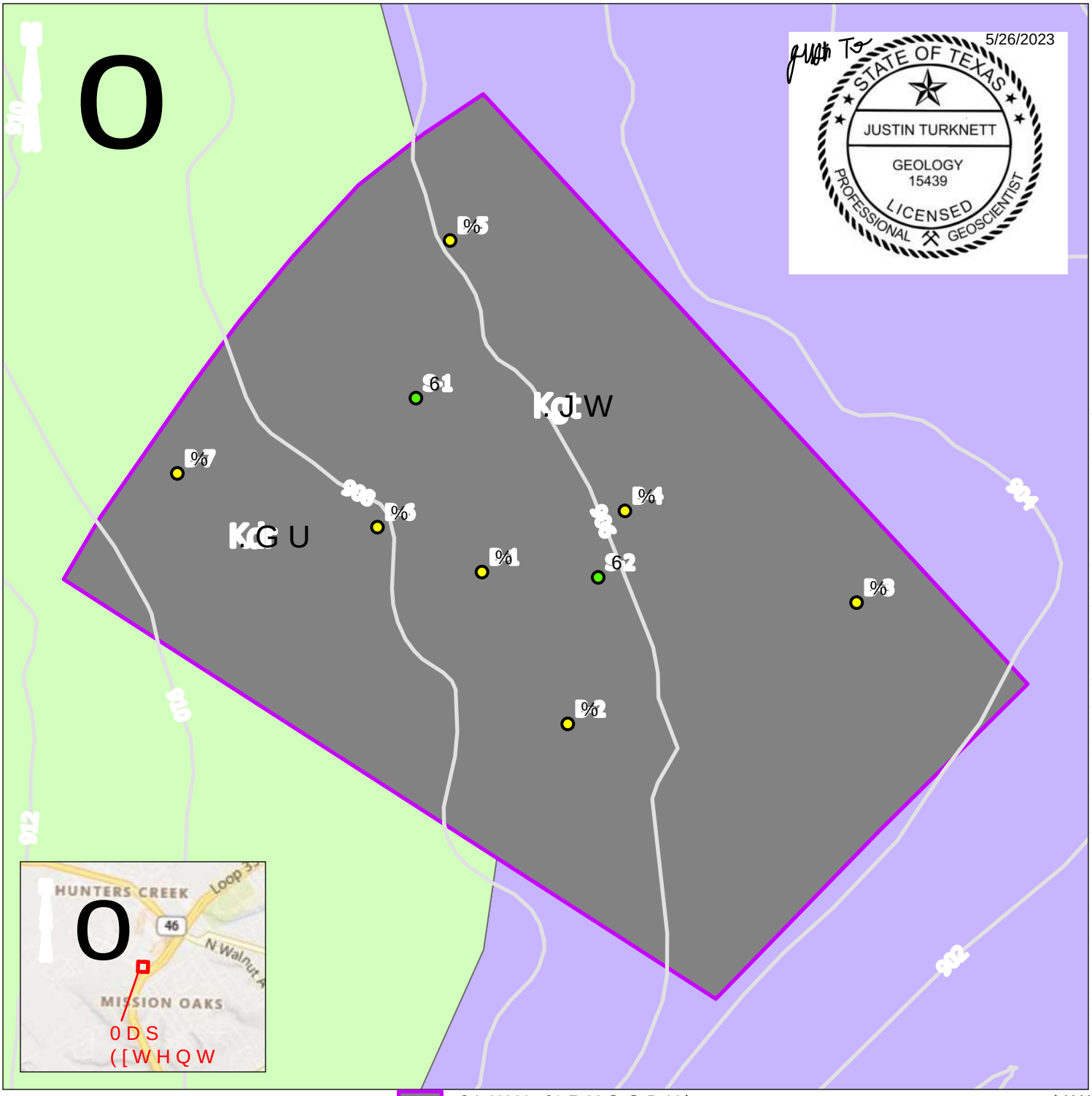

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Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Water Pollution Abatement Plan Application

- Attachment A - Factors Affecting Surface Water Quality
- Attachment B - Volume and Character of Stormwater
- Attachment C - Suitability Letter from Authorized Agent (if OSSF is proposed)
- Attachment D - Exception to the Required Geologic Assessment (if requested)
- Site Plan

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Mark Guess, Civil Engineering Services, PC

Date: 07/06/2023

Signature of Customer/Agent:

Regulated Entity Name: Panda Express D25605

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☒ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):1.262

3. Estimated projected population:n/a

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	2,647	÷ 43,560 =	0.061
Parking	35,081	÷ 43,560 =	0.805
Other paved surfaces	0	÷ 43,560 =	0.000
Total Impervious Cover	37,728	÷ 43,560 =	0.866

Total Impervious Cover 0.866 **÷ Total Acreage** 1.262 **X 100 =** 68.6**% Impervious Cover**

5. ☒ **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

6. ☒ Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. Type of project:

   ☐ TXDOT road project.
   ☐ County road or roads built to county specifications.
   ☐ City thoroughfare or roads to be dedicated to a municipality.
   ☐ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

   Width of R.O.W.: _____ feet.
   L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.

    Width of pavement area: _____ feet.
    L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
    Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

11. ☐ A rest stop will be included in this project.

    ☐ A rest stop will not be included in this project.

12. ☐ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to be generated by the Proposed Project

13. ☒ **Attachment B - Volume and Character of Stormwater**. A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on the area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Wastewater to be generated by the Proposed Project

14. The character and volume of wastewater is shown below:

_____% Domestic	_____Gallons/day
_____% Industrial	_____Gallons/day
100 % Commingled	1000 Gallons/day
TOTAL gallons/day 1000	

15. Wastewater will be disposed of by:

☐ On-Site Sewage Facility (OSSF/Septic Tank):

☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

☒ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

☐ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

☐ The SCS was previously submitted on_____.

☐ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Gruene Water Reclamation Facility (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 20'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FIRM Map Number 48091C0435F

19. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

☒ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

☐ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☒ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

23. ☒ Areas of soil disturbance and areas which will not be disturbed.

24. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. ☒ Locations where soil stabilization practices are expected to occur.

26. ☐ Surface waters (including wetlands).

    ☒ N/A

27. ☒ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☐ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

29. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Factors Affecting Surface Water and Groundwater Quality

Panda Express D25605

Stormwater runoff from construction sites carries silt and sediment from disturbed soils, along with trash and construction debris, and other contaminants from uncovered materials and chemical storage. Chemical and fueling spills during construction are another potential source of stormwater pollution.

Runoff from commercial and urban areas can collect trash, debris and sedimentation, carrying these into the receiving stream. Urban runoff increases concentrations of phosphorus and nitrogen, heavy metals and sediments, fecal coliform and pathogens, petroleum products and lawn chemicals. Urban runoff also increases the temperature of the water due to the paved surfaces heated by the sun, lowers the dissolved oxygen in the receiving stream and increases pH.

Improper clean-up practices that allow food particles, oils, grease, and cleaning products to flow to paved areas and/or storm drains. Improper storage and/or disposal of fats, oils and grease in outdoor areas. Other operational impacts could include landscape fertilizers and pesticides, and trash.

Form 0584
Attachment B

Volume and Character of Stormwater

Panda Express D25605

This 1.262-acre site is located within the Comal River Watershed. This property lies on the northwest side of Loop 337, and northeast of Oak Run Parkway. Stormwater runoff flows southeasterly to an existing concrete channel along Loop 337. The stormwater is then conveyed to the off-site stormwater detention pond, via open channel flow and an existing storm sewer system. Stormwater detention for this site is provided by the development, located northeasterly from the site approximately 1,500 feet.

The SCS TR-55 method was used to determine the 25-year and 100-year storms for the existing and proposed conditions. The runoff coefficients and rainfall intensities used are as stipulated in the New Braunfels Drainage Manual. Results of these calculations are tabulated below:

	weighted runoff coefficient, CN	25-year Storm	100-year Storm
Existing Conditions	84.1	11.23 cfs	14.83 cfs
Proposed Conditions	92.2	11.81 cfs	15.33 cfs

Form 0584
Attachment C

Suitability Letter from Authorized Agent

Panda Express D25605

There are no on-site sewage facilities proposed for this project.

Exception to the Required Geologic Assessment

Panda Express D25605

There are exceptions requested for this project.

Temporary Stormwater Section

- Attachment A - Spill Response Actions
- Attachment B - Potential Sources of Contamination
- Attachment C - Sequence of Major Activities
- Attachment D - Temporary Best Management Practices and Measures
- Attachment E - Request to Temporarily Seal a Feature (if requested)
- Attachment F - Structural Practices
- Attachment G - Drainage Area Map
- Attachment H - Temporary Sediment Pond(s) Plans and Calculations
- Attachment I - Inspection and Maintenance for BMPs
- Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

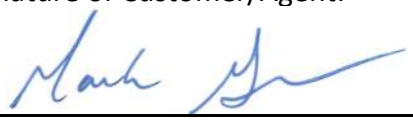
Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Mark Guess, Civil Engineering Services, PC

Date: 07/06/2023

Signature of Customer/Agent:



Regulated Entity Name: Panda Express D25605

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☐ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: off-site detention pond, Dry Comal Creek, Comal River

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☐ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   ☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

   ☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

    ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

    ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

    ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

    ☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

Spill Response Plan

Panda Express D25605

The pollution prevention measures outlined in the SWPPP and on the plans provide methods to minimize and prevent non-stormwater discharges, leaks and spills.

- Contractor is required to provide a spill kit on-site, and to train all personnel on-site on how to use the spill kit.
- Fuel and hazardous substances must be stored off-site.
- Keep an accurate inventory of all stored materials, including locations on-site.
- Minimize the quantities of stored materials, to only those that are needed currently or in the near future.
- Store all materials as previously discussed, and always in accordance with manufacturer's recommendations and applicable laws.
- Perform regular inspections of all listed facilities as discussed in this plan.
- Designate qualified personnel who shall be responsible for implementation of the response plan in the event of leaks and/or spills.
- Establish procedures for responding to spills based on the level of the leak or spill (minor, appreciable, or significant / hazardous).
- Develop safety procedures to protect on-site personnel from exposure to hazardous materials in the event of a leak or spill.
- Post emergency phone numbers for all local emergency personnel including police, fire and rescue, public utilities, the Department of Environmental Quality, and the local sanitary sewer authority.

Potential Sources of Contamination

Panda Express D25605

Potential sources of contamination during construction include:

- Waste storage areas
- Sanitary waste facilities
- Materials storage areas
- Equipment maintenance
- Concrete wash-out areas
- Equipment emissions
- Dust
- ~~Fuel~~
- ~~Hazardous substances~~

Items ~~crossed out~~ must be stored off-site to prevent the potential source of contamination.

Sequence of Construction Activities

Panda Express D25605

Below is a sequence of construction activities and means to prevent erosion onsite and sediment deposition in the receiving waters. Earth moving activities are to include multiple phases of construction to limit area and time soils are exposed, and pre-construction vegetation is not to be disturbed more than 15 days prior to excavating activities onsite.

Some of the items in the sequence of activities may change sequence or may be going on at the same time.

Construction Activity	Estimate of Area Disturbed
1. Install temporary construction entrance and perimeter erosion controls (silt fence or filtersoxx) as shown on the Erosion Control Plan.	0.06 acres
2. Begin earth moving activities to establish subgrade.	1.26 acres
3. Construct/install all underground utilities and storm sewer, including storm inlet protection devices.	0.30 acres
4. Install concrete washout area.	< 0.01 acres
5. Construct commercial building.	0.05 acres
6. Perform concrete paving activities.	0.03 acres
7. Perform asphalt paving activities.	0.78 acres
8. Install landscaping in landscaped areas and stabilize all disturbed areas with vegetation.	0.40 acres
9. Remove perimeter temporary erosion control devices only once a hardy stand of vegetation has been established.	-

The estimates of disturbed area are not intended to be cumulative.

Temporary Best Management Practices

Panda Express D25605

- Stormwater originating upgradient from the site will be prevented from entering the site by means of the existing curb & gutter along the existing street, which diverts runoff to the existing storm sewer system.
- Stormwater originating on- site, and stormwater which would flow off-site, will be filtered by means of the following BMPs:

    1. A construction entrance/exit will be constructed near the northeast corner of the site, in the location of the proposed drive entrance to the site. All construction traffic will be controlled to enter and exit the site, across this BMP. The construction entrance/exit consists of a stone pad over geotextile fabric, which aids in reducing or eliminating the transport of soil material from the construction site.
    2. Perimeter silt fence, or Siltsoxx®, will be installed at the downstream edge of all areas of planned exposed soil prior to the commencement of construction activities. This BMP will prevent sediment carried by runoff from leaving the site by filtering the water, and by deposition of sediment upstream of the device.
    3. Inlet protection devices will be installed around all storm sewer structures as they are constructed (prior to completion of the structure). There are numerous options available to contractors for inlet protection, including using silt fence, Filtersoxx® or a gravel berm constructed around the inlet to filter the water before it enters the storm sewer system. This bmp functions similar to the perimeter filtration devices discussed in 2 above.
    4. A concrete wash-out area must be constructed prior to any concrete work performed on-site. The concrete wash-out is a lined, excavated structure, or must be surrounded by an earthen berm, to prevent breaches. This BMP is used to contain the excess concrete, mortar and slurries until such time that the deposits are hardened and can be broken up and disposed of properly.
    5. Materials storage areas, waste disposal areas and sanitary waste facilities shall be located away from concentrated flow of stormwater runoff, and these areas shall be covered as required.

- Proper installation and maintenance of the BMPs listed above and designated on the construction plans, in addition to proper pollution prevention measures for the sources outlined in Attachment B, will prevent pollutants from reaching surface streams, sensitive features and the aquifer.
- There are no naturally-occurring sensitive features identified on, or adjacent to, this site. If such features are exposed or identified during construction or excavation, the Contractor shall immediately notify the Owner, Engineer and TCEQ for further instructions for the 1protection of these sensitive features.

Request to Temporarily Seal a Sensitive Feature

Panda Express D25605

There are no naturally-occurring sensitive features identified on, or adjacent to, this site for which a request to temporarily seal is being made.

Structural Practices

Panda Express D25605

There are no proposed structural practices to be constructed as part of this project.

Drainage Area Maps

Panda Express D25605

Please refer to the Drainage Area Map for the proposed conditions, on the following page.

STORM STRUCTURE TABLE				
STRUCTURE	TYPE	CASTING	INV IN	INV OUT
CB-01	Curb Inlet	905.46		902.46
CB-02	Curb Inlet	903.90	899.91 899.91	899.91
CB-03	Curb Inlet	903.70		901.76
CB-04	Curb Inlet	903.50	900.46	900.46
JB-01	Junction Manhole	906.77	901.86	901.86
JB-02	Structure by Developer	904.59	899.41 896.60	896.17
WQU-01	Water Quality Unit	901.47	899.76	899.51

STORM SEWER PIPE SCHEDULE					
PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE	5.8 LF	2.57%	899.91	899.76
ST-03b	18" HDPE	5.4 LF	1.86%	899.51	899.41
ST-04	15" HDPE	124.0 LF	1.05%	901.76	900.46
ST-05	15" HDPE	54.6 LF	1.01%	900.46	899.91
ST-EX-01	21" RCP	110.0 LF	1.59%	898.35	896.60
ST-EX-02	30" RCP	117.0 LF	0.59%	896.17	895.48

** NOTES:
1. PIPE LENGTHS AND SLOPES ARE CALCULATED TO INSIDE FACE OF STRUCTURE
2. CASTING ELEVATION SHOWN FOR CURB INLET REPRESENTS GRADE AT PAVEMENT
3. PIPES AND STRUCTURES DESIGNATED WITH "EX" ARE TO BE INSTALLED BY OTHERS
4. WQU SHALL BE CONTECH JELLYFISH JFPD0406, AS SHOWN ON SHEET C-05.2, OR APPROVED EQUAL

PANDA EXPRESS
NEW BRAUNFELS, COMAL COUNTY, TX

DRAINAGE AREA MAP

Temporary Sediment Pond(s)

Panda Express D25605

There are no proposed temporary sediment ponds to be constructed as part of this project.

Inspection and Maintenance of BMPs

Panda Express D25605

INSPECTIONS

1. Inspections of all disturbed areas, EPSC measures (BMPs), at each outfall onsite, and directly downstream of each outfall are to be conducted twice weekly and before anticipated rain events.
2. Inspections are to be performed by the site stormwater coordinator, or a qualified inspector under the supervision of the site stormwater coordinator who is certified and trained.
3. The inspection findings and observations from each inspection are to be documented using the Inspection Checklist in the SWPPP. Checklist to be copied and/or reproduced as needed for duration of construction.
4. Any failure to control erosion or sedimentation and/or improper installation of EPSC measures, is to be documented using the Inspection Checklist in the SWPPP.
5. If inspections find that EPSC measures have been properly installed and maintained, but provide inadequate protection, the engineer shall be notified immediately, and the SWPPP and plan documents shall be modified within seven (7) days of being identified to address the identified issue, and then the changes to the SWPPP and plan documents are to be made within fourteen (14) days of being identified.

MAINTENANCE

1. All maintenance and or repair work to BMPs, EPSC measures, and or vegetation onsite to be documented in the inspection forms, and all maintenance and or repair work to be completed before the next anticipated storm event and within a minimum of seven (7) days after being identified.
2. Ditches, open channels, and surfaces shall be cleaned and graded to maintain adequate flow conditions as shown on the erosion control plans.
3. Sediment retained behind the Tubes/Wattles are to be removed when the sediment depth reaches one-third (1/3) the height of the exposed tube, and Tubes/Wattles are to be replaced as effectiveness is significantly reduced.
4. Temporary and permanent seeding, or sod, will be inspected for bare spots and washouts.
5. Any accumulations escaping from this jobsite are to be removed by the contractor immediately, and the failing device repaired before the next anticipated storm event and within a minimum of seven (7) days after being identified.
6. The Stormwater Coordinator will select and train a person to inspect, maintain and repair erosion control devices and filling out the inspection and maintenance reports.

Interim and Permanent Soil Stabilization

Panda Express D25605

Soil stabilization measures shall be implemented immediately whenever earth-disturbing activities have, or will, permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.

Interim soil stabilization measures include straw mulch and wood mulch, rolled erosion control products, soil binders, riprap, and hydroseeding. Permanent soil stabilization measures include planted vegetation (either seeded or sod), riprap, and pavements.

A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the SWPPP.

Permanent Stormwater Section

- Attachment A - 20% or Less Impervious Cover Waiver (if requested for multi-family, school, or small business site)
- Attachment B - BMPs for Upgradient Stormwater
- Attachment C - BMPs for On-site Stormwater
- Attachment D - BMPs for Surface Streams
- Attachment E - Request to Seal Features (if sealing a feature)
- Attachment F - Construction Plans
- Attachment G - Inspection, Maintenance, Repair and Retrofit Plan
- Attachment H - Pilot-Scale Field Testing Plan (if proposed)
- Attachment I -Measures for Minimizing Surface Stream Contamination

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Mark Guess, Civil Engineering Services, PC

Date: 07/06/2023

Signature of Customer/Agent

Regulated Entity Name: Panda Express D25605

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   ☐ N/A

2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   ☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____

☐ N/A

3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

   ☐ N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☒ The site will not be used for low density single-family residential development.

5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☒ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ **Attachment B - BMPs for Upgradient Stormwater**.

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

☒ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater**.

☒ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

8. ☐ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☒ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☒ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☒ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☒ Signed by the owner or responsible party
    ☒ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☒ A discussion of record keeping procedures

    ☐ N/A

12. ☐ **Attachment H - Pilot-Scale Field Testing Plan**. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

    ☒ N/A

13. ☐ **Attachment I -Measures for Minimizing Surface Stream Contamination**. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

    ☒ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☒ The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

    ☐ N/A

15. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    ☐ N/A

20% or Less Impervious Cover Waiver

Panda Express D25605

- This site will not be used for multi-family residential developments, schools, or small business sites.

BMPs for Upgradient Stormwater

Panda Express D25605

- Stormwater originating upgradient from the site will be prevented from entering the site by means of the existing curb & gutter along the existing street, which diverts runoff to the existing storm sewer system.

Permanent BMPs for On-site Stormwater

Panda Express D25605

- Stormwater originating on- site will be directed to the proposed storm sewer system, which will be conveyed to the proposed treatment device described below, and then discharged into the concrete channel along the right-of-way of Loop 337, which flows to the off-site stormwater detention pond.
- Stormwater Treatment Device
  A Contech Jellyfish Treatment Unit is proposed to receive and treat all stormwater runoff from this site, prior to being discharged from the site. Quoted from the Contech website: "The Jellyfish Filter is a stormwater quality treatment technology featuring high flow pretreatment and membrane filtration in a compact stand-alone system. Jellyfish removes floatables, trash, oil, debris, TSS, fine silt-sized particles, and a high percentage of particulate-bound pollutants; including phosphorus, nitrogen, metals and hydrocarbons."

Permanent BMPs for Surface Streams

Panda Express D25605

There are no surface streams or sensitive features identified by the Geologic Assessment.

Request to Seal a Sensitive Feature

Panda Express D25605

There are no naturally-occurring sensitive features identified on, or adjacent to, this site for which a request to seal is being made.

Construction Plans

Panda Express D25605

Please refer to the SWMP (stormwater design calculations including TSS removal) and construction plans for the project.

CIVIL CONSTRUCTION PLANS
FOR

PANDA EXPRESS
2696 LOOP 337
NEW BRAUNFELS, TX, 78132

PROJECT CONTACTS

DEVELOPER:
PANDA EXPRESS INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770

LANDSCAPE ARBORIST:
MR. MATTHEW SIMMONT
SENIOR PLANNER
550 LANDA ST.
NEW BRAUNFELS TX 78130
830-221-4058
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PLANNING AND ZONING AGENCY:
MS. KAITLYN BUCK
ASSISTANT PLANNER
550 LANDA ST
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SURVEYOR:
MASON DECKER
GENERAL MANAGER
EAGLE SURVEYING, LLC
222 SOUTH ELM STREET SUITE 200
DENTON, TX 76201
OFFICE: 940.222.3009
CELL: 972.839.2260
MASON@EAGLESURVEYING.COM

BUILDING DEPARTMENT:
LATIFAT OLUFEMI
ASST. BUILDING OFFICIAL
550 LANDA ST.
NEW BRAUNFELS TX 78130
830-221-4067
LOLUFEMI@NEWBRAUNFELS.GOV

FIRE DEPARTMENT:
ANTHONY PITZER
FIRE CAPTAIN
550 LANDA ST.
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ENGINEERING DEPARTMENT:
MR. COREY RAYBURN
ASST. CITY ENGINEER
550 LANDA ST
NEW BRAUNFELS TX 78130
830-221-4273
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OWNER:
PANDA EXPRESS
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
PHONE: 626-799-9898
FAX: 626-372-8288

COMMUNICATIONS/DATA PROVIDER:
CASEY DAVIS
BUSINESS SALES REPRESENTATIVE, SPECTRUM
12405 POWERSCOURT DR.
ST LOUIS, MO 63131
507-573-4058 EXT. 0343
CONSTRUCTION #, 833-487-4772
CASEY.DAVIS@CHARTER.COM

STORMWATER MANAGEMENT:
MR. BRYAN RUIZ
ENVIRONMENTAL SERVICES MANAGER
550 LANDA ST
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GAS COMPANY:
POLO SOLIS
AGENCY CENTER POINT ENERGY
830-643-6938
830-481-8494 CELL
POLO.SOLIS@CENTERPOINTENERGY.COM

ENVIRONMENTAL HEALTH DEPARTMENT:
MR RUIZ, NEIGHBORHOOD SERVICES
HEALTH & FOOD SAFETY
550 LANDA ST.
NEW BRAUNFELS TX 78130
830-221-4070

SANITARY SEWER DEPARTMENT:
DESIRAE MEDELLIN
ADMINISTRATIVE ASSISTANT NBU UTILITIES
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NEW BRAUNFELS TX 78130
830-608-8971
DMEDELLIN@NBUTEXAS.COM

ELECTRIC:
ASHLEY OWEN
ELECTRICAL ENGINEERING TECH
355 FM 306
NEW BRAUNFELS TX 78130
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AOWEN@NBUTEXAS.COM

DEPARTMENT OF TRANSPORTATION:
MR. DAVID WINKLER
EASEMENTS & ROW
550 LANDA ST
NEW BRAUNFELS TX 78130
DWINKLER@NBUTEXAS.COM

WATER DEPARTMENT/AGENCY:
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ADMINISTRATIVE ASSISTANT NBU UTILITIES
355 FM 306
NEW BRAUNFELS TX 78130
830-608-8971
DMEDELLIN@NBUTEXAS.COM

GENERAL NOTES

THIS SITE HAS BEEN DESIGNED TO MEET CITY OF NEW BRAUNFELS, TX. STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION. CHANGES SHALL NOT BE MADE TO THE APPROVED SITE PLAN UNLESS APPROVED BY EITHER THE RELEVANT DEPARTMENT SUPERINTENDENT OR THE PLANNING COMMISSION

THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATION OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.

BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY OTHERS. CIVIL ENGINEERING SERVICES AND THEIR CONSULTANTS SHALL NOT BE HELD RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF THE THIS INFORMATION SHOWN.

PANDA EXPRESS PM:
RICK DICKERSON
RICHARD.DICKERSON@PANDARG.COM

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Land Planning, and Environmental

PREPARED FOR:
PANDA EXPRESS INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770

SHEET INDEX

NO.	TITLE	ISSUE 01 - (PERMIT/BID) XX/XX/XXXX					
C01.0	CIVIL COVER SHEET	●					
C01.1	GENERAL NOTES	●					
1 OF 1	ALTA/ACSM SURVEY (BY OTHERS)	●					
C02.1	DEMOLITION PLAN	●					
C03.0	SITE PLAN	●					
C03.1	HARDSCAPE DETAILS I	●					
C03.2	HARDSCAPE DETAILS II	●					
C04.0	UTILITY PLAN	●					
C04.1	UTILITY DETAILS	●					
C05.0	GRADING PLAN	●					
C05.1	DRAINAGE PLAN	●					
C05.2	GRADING DETAILS I	●					
C05.3	GRADING DETAILS II	●					
C06.0	EROSION CONTROL PLAN	●					
C06.1	EROSION CONTROL DETAILS	●					
L01.0	LANDSCAPE PLAN	●					
L01.1	LANDSCAPE PLAN	●					

SITE DATA TABLE

ZONING:
EXISTING ZONING: C-1B (GENERAL BUSINESS DISTRICT)
PROPOSED USE: EATING ESTABLISHMENT, DRIVE THRU FACILITY

REQUIRED BUILDING SETBACKS:
FRONT (SW) = 25'
REAR (NE) = 20'
SIDE (NW) = 15' (Adjacent Street)
SIDE (SE) = 25'

SITE ACREAGE:
PANDA EXPRESS SITE = 54,990.02 SF / 1.26 ACRES

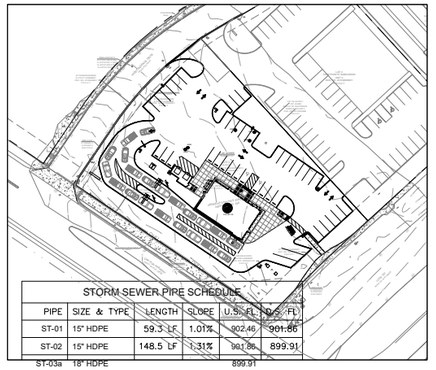
FLOOR AREA RATIO:
PANDA EXPRESS = 2,661 SF BLDG / SITE AREA 54,990.02 SF = 4.84%

PROPOSED SITE IMPERVIOUS SURFACE RATIO
TOTAL SITE = 54,990.02 SF
PAVEMENT/SIDEWALKS = 34,519.70 SF
BUILDING = 2,705.45 SF
TOTAL IMPERVIOUS = 37,225.15 SF
TOTAL PERVIOUS = 17,764.87 SF
PERCENT IMPERVIOUS = 67.69%

PARKING
RESTAURANT: 1/100 SF
PANDA EXPRESS - 2,661SF / 100 SF = 27 SPACES
TOTAL ADA PARKING: 2
TOTAL PARKING PROVIDED: 46

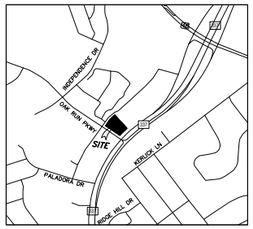
REQUIRED PARKING SETBACKS:
FRONT (W)= N/A
REAR (E) = N/A
SIDE (N) = N/A
SIDE (S) = N/A

FLOOD HAZARD:
FLOOD ZONE X
F.I.R.M. MAP NO. 48091C0435F



STORM SEWER PIPE SCHEDULE					
PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE			899.91	

SITE MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

REGIONAL MAP
NOT TO SCALE

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES, INC. STATE OF TENNESSEE RAY G. FLAKE 121137 REGISTERED PROFESSIONAL ENGINEER FIRM# F178085
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

COVER SHEET

C01.0

ISSUE FOR CONSTRUCTION XX-XX-XXXX

TRUE WARM & WELCOME 2600 RX

UTILITY NOTES

1. ALL SEWER, ELECTRIC, AND TELEPHONE SERVICE LINES AND EXTENSIONS ARE TO BE CONSTRUCTED TO THE RESPECTIVE UTILITY COMPANY SPECIFICATIONS. UTILITY DISCONNECTION'S TO BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
2. THE GENERAL CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON UTILITY COMPANY RECORDS, AND WHERE POSSIBLE, FILLED MEASUREMENTS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO THE EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. BEFORE INSTALLATION OF WATER LINES, STORM SEWERS OR SANITARY SEWERS, THE CONTRACTOR SHOW EXCAVATE AND VERIFY ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT HE IS NOT NOTIFIED OF DESIGN CONFLICTS PRIOR TO CONSTRUCTION.
4. ALL SEWER CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LOCAL SERVICE PROVIDER SEWER SPECIFICATIONS AND DETAILS (LATEST REVISIONS).
5. ALL SEWER SERVICE LINES, SHALL BE TESTED BY THE CONTRACTOR. THE TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE LOCAL SERVICE PROVIDER REPRESENTATIVE.
6. THE CONTRACTOR SHALL PAY ANY APPLICABLE WATER AND SEWERAGE SERVICES INSPECTION FEES.
7. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN, REPAIR ANY DAMAGE, ACCORDING TO LOCAL STANDARDS AND AT THE CONTRACTORS EXPENSE, AND COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES AND GAS LINES DO NOT CONFLICT WITH SANITARY SEWERS, SANITARY SEWER SERVICES OR STORM SEWERS.
9. WATER SERVICE PIPE SHALL BE POLYETHYLENE (PE), DR9. LOCATION AND SIZE OF WATER SERVICE SHALL BE SHOWN ON THE UTILITY PLAN, IN COORDINATION WITH REPRESENTATIVES OF THE LOCAL WATER AUTHORITY.
10. SEWER SERVICE SHALL BE 6" DIAMETER NON-PRESSURE POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ASTM D 3034, SDR 26, WITH PUSH-ON RUBBER GASKETS. INSTALL IN THE LOCATIONS SHOWN HERE ON.
11. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION.
12. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
13. THE DEVELOPER IS TO SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPERS ENGINEER, THE CITIES REPRESENTATIVE AND THE CITIES ENGINEER.
14. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
15. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
16. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS, ETC.
17. THESE PLANS, PREPARED BY CIVIL ENGINEERING SERVICES, DID NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE CIVIL ENGINEERING SERVICES REGISTERED PROFESSIONAL ENGINEER HERE ON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
18. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.
19. ANY AND ALL FEES, LICENSES AND PERMITS NECESSARY FOR THIS CONSTRUCTION ARE TO BE OBTAINED PRIOR TO THE INITIATION OF CONSTRUCTION AND THE COST OF SAME TO BE BORNE BY THE CONTRACTOR.
20. FOR WATER SERVICE ALL CORPORATION STOPS SHALL CONFORM TO LOCAL SERVICE PROVIDER SPECS.
21. FITTINGS SHALL BE BRASS, CAST AND MACHINED IN ACCORDANCE WITH AWWA C800 AND AWWA C901, WITH COMPATIBLE PIPE CONNECTIONS.
22. SERVICE SADDLES AND ANCHORS SHALL CONFORM TO ALL SERVICE PROVIDER SPECIFICATIONS.
23. ALL SEWER SERVICE FITTINGS AND ACCESSORIES SHALL BE MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER OR PRIOR-APPROVED EQUAL.
24. BEDDING AND INITIAL BACKFILL OVER SEWER MAINS AND SERVICES SHALL CONFORM TO THE GEOTECHNICAL REPORT RECOMMENDATIONS OR LOCAL SERVICE PROVIDER RECOMMENDATION WHICH EVER IS MORE STRICT.
25. ALL UTILITY SERVICES IN EXISTING ROADS SHALL BE INSTALLED BY BORING. ALL TRENCHES IN EXISTING PARKING LOTS SHALL UTILIZE A CLEAN SAW CUT AND SHALL BE BACKFILLED (100%) TO FINAL SUBGRADE WITH #57 STONE. REPAIR ROADS PER CITY REQUIREMENTS.

UTILITY NOTES CONTINUED

28. REINFORCED CONCRETE PIPE (RCP): O-RING SHALL CONFORM TO ASTM C 76 (CLASS III, UNLESS OTHERWISE SPECIFIED) AND AASHTO M 170 STANDARD SPECIFICATIONS, AND ASTM C 443 STANDARD SPECIFICATIONS FOR JOINTS FOR RCP USING RUBBER GASKETS.
29. ELLIPTICAL RCP SHALL CONFORM TO ASTM C 507 (CLASS III) AND AASHTO M 207 STANDARD SPECIFICATIONS.
30. HDPE PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M 25 (3"-10"), M 294 (12" AND LARGER), TYPE S (CORRUGATED OUTSIDE - SMOOTH INSIDE, 4" - 60"), AND MP 7 (60" TYPE S).
31. BELL/SPIGOT GASKET FOR HDPE PIPE SHALL BE SOIL/SILT TIGHT PER AASHTO SECTION 26 WITH RUBBER GASKET MEETING ASTM F 477.
32. PVC STORM SEWER PIPE (12" OF LESS) AND FITTINGS SHALL BE NON-PRESSURE PVC CONFORMING TO ASTM D 3034, SDR 26, WITH PUSH-ON RUBBER GASKET JOINTS.
33. REPAIR ALL DAMAGE TO EXISTING FEATURES(I.E. DRIVES, ROADS, YARDS, LANDSCAPING, ETC.) TO PRECONSTRUCTION CONDITION.
34. COORDINATE THE EXACT LOCATION OF ALL UTILITIES ENTERING THE BUILDING WITH THE PLUMBING PLANS PROVIDED BY OTHERS.
35. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE MANUAL OF ACCIDENT PREVENTION AND CONSTRUCTION ISSUED BY AGC OF AMERICA.
36. SOME UTILITIES CAN BE LOCATED BY CALLING THE XXXXX ONE CALL. THE CONTRACTOR SHALL CALL "811", PRIOR TO PROCEEDING WITH ANY EXCAVATION.
37. REPAIR EXISTING PAVEMENT, CURBS, WALKS, LANDSCAPING, ETC. THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES TO A LIKE NEW CONDITION AT NO ADDITIONAL COST TO THE OWNER.
38. THE PROPOSED GAS LINE CONSTRUCTION AND INSTALLATION SHALL BE COORDINATED WITH THE LOCAL GAS COMPANY BY THE CONTRACTOR.
39. THE PROPOSED ELECTRIC LINE CONSTRUCTION AND INSTALLATION SHALL BE COORDINATED WITH THE LOCAL ELECTRIC COMPANY BY THE CONTRACTOR.
40. THE PROPOSED TELEPHONE LINE CONSTRUCTION AND INSTALLATION SHALL BE COORDINATED WITH THE LOCAL TELEPHONE COMPANY BY THE CONTRACTOR.
41. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
42. PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATION'S AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED AROUND UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTORS OPERATIONS.
43. FIRE HYDRANT ASSEMBLIES (IF REQUIRED ON THESE PLANS) INCLUDE THE APPROPRIATE SIZED TEE (WITH KICKER), 6" LINE TO HYDRANT, 6" GATE VALVE (WITH VALVE BOX), AND FIRE HYDRANT (WITH KICKER). HYDRANT SHALL BE INSTALLED AT LOCATION SHOWN ON THE PLANS.
44. BACKFLOW PREVENTION DEVICE FOR THE DOMESTIC WATER SERVICE SHALL BE LOCATED INSIDE THE BUILDING UNLESS OTHERWISE SPECIFIED IN THESE PLANS. COORDINATE WITH LOCAL SERVICE PROVIDER.
45. MAINTAIN 18" MINIMUM VERTICAL CLEARANCE AT UTILITY CROSSING.

GRADING & DRAINAGE NOTES

1. SEE LANDSCAPE PLAN FOR REQUIRED TREES AND GROUND COVER.
2. SLOPE OF SURFACE GRADE SHALL BE A MINIMUM OF 1.00%
3. MAXIMUM CUT OF FILL SLOPES IS 2H:1V.
4. THE CONTRACTOR SHALL PROVIDE CLEAN, SUITABLE MATERIAL FOR REQUIRED FILL. SHOULD A SUFFICIENT QUANTITY OF SUITABLE MATERIAL NOT BE AVAILABLE FROM THE REQUIRED EXCAVATION ON THE SITE.
5. ALL FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS (MAXIMUM 6-INCH) AND COMPACTED TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698). THE UPPER 8 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO GEOTECHNICAL RECOMMENDATIONS AND MUST BE CERTIFIED BY A TEXAS REGISTERED PROFESSIONAL SOILS ENGINEER PRIOR TO THE INSTALLATION OF PAVEMENTS, CURBS, SIDEWALKS OR FOOTINGS OF ANY TYPE.
6. DETENTION POND, DETENTION OUTLET STRUCTURES AND TEMPORARY SEDIMENT POND FEATURES ARE TO BE FULLY CONSTRUCTED AND OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
7. LENGTH OF RIP-RAP PADS AT PIPE OUTLET STRUCTURES TO BE A MINIMUM LENGTH OF (6) SIX TIMES THE DIAMETER OF THE PIPE.
8. JURISDICTIONAL LAND DISTURBANCE PERMIT MUST BE DISPLAYED ON SITE AT ALL TIMES DURING CONSTRUCTION AND IN PLAIN VIEW FROM A PUBLIC ROAD OR STREET.

EROSION CONTROL NOTES

1. SEDIMENT BARRIERS AND CONSTRUCTION ENTRANCE SHALL BE PLACED AS INDICATED ON THE PLAN PRIOR TO ANY GRADING WORK.
2. DUST CONTROL ON SITE SHALL BE KEPT WITHIN ACCEPTABLE LIMITS BY SPRINKLING WITH WATER OR OTHER ACCEPTABLE METHODS.
3. MAXIMUM SLOPES SHALL NOT EXCEED 3:1. CUT AND FILL SLOPES 3:1 SHALL BE STABILIZED BY EROSION CONTROL FABRIC, HYDROSEEDING, SOD, OR OTHER ACCEPTABLE METHODS.
4. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY BEFORE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
5. THE LOCATIONS OF EROSION CONTROL DEVICES SHALL BE ADJUSTED AS CONSTRUCTION PROGRESSES TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.
6. ANY FAILURE OF ANY EROSION CONTROL DEVICE TO FUNCTION AS INTENDED FOR ANY REASON SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
7. EROSION CONTROL DEVICES SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED PERIODS OF CONTINUOUS RAINFALL.
8. EROSION CONTROL DEVICES SHALL BE REPAIRED AS NECESSARY TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.
9. EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THEN REMOVED SO THAT DRAINAGE OF THE SITE IS NOT IMPEDED.
10. ANY CUT OR FILL SLOPES 3:1 OR GREATER SHALL BE STABILIZED WITHIN 7 DAYS OF COMPLETING WORK ON THE SLOPES.
11. CLEAN SILT BARRIERS WHEN THEY ARE APPROXIMATELY 50% OBSTRUCTED BY SEDIMENT OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. SILT BARRIERS SHALL BE REPLACED AS EFFECTIVENESS IS SIGNIFICANTLY REDUCED.
12. TOPSOIL SHALL BE RE-SPREAD A MINIMUM DEPTH OF 6" OVER ALL DISTURBED AREAS.
13. AREAS THAT HAVE BEEN STRIPPED, CUT SLOPES, FILL SLOPES OR AREAS OTHER WISE DISTURBED SHALL HAVE PERMANENT STABILIZATION APPLIED PER LANDSCAPE PLAN. PERMANENT STABILIZATION SHALL BE PLACED PRIOR TO ACCEPTANCE OF FINAL GRADING.
14. REMOVE SEDIMENT FROM ALL DRAINAGE STRUCTURES PRIOR TO ACCEPTANCE BY THE OWNER.

DEMOLITION NOTES

1. PRIOR TO COMMENCEMENT OF DEMOLITION THE CONTRACTOR WILL COORDINATE HIS ACTIVITIES WITH ALL THE UTILITY COMPANIES SERVING THIS AREA. CONTRACTOR IS TO COORDINATE FULLY WITH UTILITY COMPANIES ON EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
2. THE CONTRACTOR IS TO COMPLETELY REMOVE AND DISPOSE OF ALL STRUCTURES AND BUILDINGS THAT ARE SO INDICATED INCLUDING FOUNDATIONS, TIMBER AND BRUSH, EXCEPT AS OTHERWISE INDICATED; STUMPS AND ROOTS; EXISTING PAVEMENT; OTHER STRUCTURES AS SHOWN OR REASONABLY IMPLIED IN THE DRAWINGS.
3. EXCEPT IN AREAS WHERE EXISTING TREES SHALL BE PRESERVED, A MINIMUM DEPTH OF REMOVAL SHALL BE (2) FOOT BELOW SUBGRADE. IN ROADWAY AREAS AND TO ORIGINAL SOILS ELSEWHERE. WHERE EXISTING BUILDINGS ARE TO BE DEMOLISHED, ALL TRACES OF FOUNDATIONS AND UNDERGROUND UTILITIES ARE TO BE REMOVED (UNLESS OTHERWISE NOTED ON PLANS). THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL WASTER MATERIAL.
4. WHERE PAVING OR STRUCTURES ARE TO BE REMOVED WHICH ABUT OR ARE A PART OF CONNECTED FACILITIES (THAT ARE OFF-SITE), RESTORATION OF ANY DAMAGE THAT MIGHT RESULT FROM DEMOLITION IS TO BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.
5. THE LOCATION OF ALL EXISTING UTILITIES, STORM DRAINAGE AND TREES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION AND IS GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER OR ENGINEER ASSUMES NO RESPONSIBILITY FOR ACCURACY. PRIOR TO THE START OF DEMOLITION THE CONTRACTOR SHALL VISIT THE SITE AND DETERMINE THE EXISTENCE & LOCATION OF ALL STRUCTURES, UTILITIES & TREES SHOWN OR NOT SHOWN ON THE PLANS, WHICH WOULD NEED TO BE REMOVED OR PRESERVED.
6. THE CONTRACTOR IS TO COORDINATE THE RELOCATION OR REMOVAL OF ALL OVERHEAD/UNDERGROUND UTILITIES, UTILITY POLES, LIGHTS AND LINES IN THE RIGHT-OF-WAY AND ON THE PROPERTY WITH THE APPROPRIATE PROVIDER.
7. THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION. (UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR IN THE STATE OF THE PROJECT SITE)
8. REMOVE AND DISCARD ALL EXISTING ASPHALT PAVEMENT AND BASE MATERIAL AT LEAST 6" BELOW ASPHALT WITHIN THE LIMITS SHOWN. EXISTING SUBBASE MATERIAL MAY BE REUSED PROVIDED IT IS STABILIZED AND COMPACTED PER THE TYPICAL PAVEMENT DETAIL.
9. PRIOR TO COMMENCEMENT OF DEMOLITION, CONTRACTOR SHALL OBTAIN ANY DEMOLITION PERMITS REQUIRED.

GENERAL NOTES

1. THE CONTRACTOR(S) SHALL REMOVE ALL OBSTRUCTIONS, BOTH ABOVE AND BELOW GROUND, AS REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS SHALL INCLUDE CLEARING AND GRUBBING WHICH CONSISTS OF CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS OR WEEDS, FENCES, STRUCTURES, DEBRIS, RUBBISH, AND SUCH MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOR THE FOUNDATION OF PAVEMENTS.
2. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.
3. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS OF ALL JURISDICTIONAL BODIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVISES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
4. EXISTING A. C. PAVEMENT SHALL BE CUT TO A NEAT STRAIGHT LINE PARALLEL OR PERPENDICULAR TO THE STREET CENTERLINE AND THE EXPOSED EDGE SHALL BE CUT TO A NEAT STRAIGHT LINE PARALLEL OR PERPENDICULAR TO THE STREET CENTERLINE AND THE EDGE COATED WITH TAR AS REQUIRED BY THE CITY STREETS DEPARTMENT.
5. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT MUST MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCIES OR AS SET FORTH HEREIN, WHICHEVER IS MORE RESTRICTIVE.
6. CONTRACTORS MUST FURNISH PROOF THAT ALL MATERIALS INSTALLED ON THIS PROJECT MEET THE REQUIREMENTS OF ITEM #5 AT THE REQUEST OF THE AGENCY AND/OR THE ENGINEER.
7. ALL COSTS OF RETESTING FOR PREVIOUSLY FAILED TESTS SHALL BE BACK CHARGED TO THE CONTRACTOR BY THE OWNER.
8. ALL COSTS TO THE CONTRACTOR INCURRED IN CORRECTING DEFICIENT WORK SHALL BE TO THE CONTRACTORS ACCOUNT. FAILURE TO CORRECT SUCH WORK WILL BE CAUSE FOR A STOP WORK ORDER AND POSSIBLE TERMINATION.
9. THE GENERAL CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON UTILITY COMPANY RECORDS, AND WHERE POSSIBLE, FIELD MEASUREMENTS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH PREPARATIONS
10. ALL MATERIAL PLACED AS FILL OR BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE PER THE STANDARD PROCTOR METHOD (ASTM D 698) - SEE GEOTECHNICAL REPORT
11. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.
12. ALL LOT DIMENSIONS, EASEMENTS AND CERTAIN OFF-SITE EASEMENTS ARE TO BE TAKEN FROM THE FINAL PLAT PREPARED BY THE SURVEYOR.
13. OVER EXCAVATION AND ADDITIONAL GRANULAR BACKFILL MAY BE REQUIRED IN HIGH GROUNDWATER AREAS WHICH ARE TO BE DETERMINED BY THE FIELD INSPECTOR OR OWNER.

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

    C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES, INC. STATE OF TENNESSEE RAY G. FLAKE 121137 REGISTERED ENGINEER FIRM# F-11085
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

GENERAL NOTES

C01.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

TRUE WARM & WELCOME 2600 RX

VICINITY MAP
NOT TO SCALE

CURVE TABLE					
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	10.29'	27.22'	21°39'39"	N 21°59'38" E	10.23'
C2	145.66'	384.50'	21°42'19"	N 44°51'31" E	144.79'
C3	99.58'	2024.86'	2°49'04"	S 45°00'13" W	99.57'

ALTA / NSPS
LAND TITLE SURVEY

Being 1.26 Acres of land
out of the A. Sanchez Survey, Abstract Number 528
in the City of New Braunfels, Comal County, Texas

LEGEND

Water Riser	Guy Wire	Sign		Boundary Monumentation
Water Manhole	Power Pole	Concrete	( )	Record Call
Water Utility Mark	Electric Utility Mark	Ramp	CIRS	Capped Iron Rod Set
Water Valve	Traffic Signal Pole	Overhead Utilities	CIRF	Capped Iron Rod Found
Fire Hydrant	Light Pole	Edge of Asphalt	IRF	Iron Rod Found
Telecommunications Vault	Gas Utility Mark	Sanitary Manhole	DOC. NO.	Document Number
Storm Drain Manhole	Gas Valve	Clean Out	P.R.C.C.T.	Plat Records, Comal County, Texas

LEGAL DESCRIPTION

Being Lot 2, Block 1, of Westpointe Subdivision Unit 2, an Addition to the City of New Braunfels, Comal County, Texas, according to the Plat thereof recorded under Document 201006009911, Plat Records, Comal County, Texas.

FLOOD NOTE

This property is located in **Non-Shaded Zone "X"** as scaled from the F.E.M.A. Flood Insurance Rate Map dated September 2nd, 2009 and is located in Community Number 485493 as shown on Map Number 48091C0435F. The location of the Flood Zone is approximate. For additional information regarding Flood Zone designation, please contact 1-(877) FEMA MAP.

GENERAL NOTES

1. This survey was performed without the benefit of an Abstract of Title or Title Commitment. Research of record documents done by Eagle Surveying was performed for the purpose of determining the boundary of this property and adjoining parcels. Additional record documents may exist and encumber this property.
2. This survey is being provided by Eagle Surveying, LLC solely for the use of the parties to whom the survey is certified and no license has been created, express or implied to copy the survey except as necessary in conjunction with this transaction.
3. Underground utility locations, if shown on this survey, are approximate and are based on above-ground evidence and utility markings. The surveyor makes no representation that underground utility locations are in the exact location indicated, but does certify that they are located as accurately as is reasonably practicable from the information provided and observed in the field.
4. There was no visible evidence of recent earth moving work, building construction, or building additions observed in the process of conducting the fieldwork.
5. No parking spaces were observed in the process of conducting the fieldwork.
6. Eagle Surveying, LLC has not been provided any documentation regarding proposed changes in street right of way lines, furthermore there was no visible evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.
7. There are no visible encroachments or overlapping of improvements except as shown hereon.
8. There were no buildings observed on the subject property in the process of conducting the fieldwork.
9. No substantial features were observed in the process of conducting the fieldwork except as shown hereon.
10. Eagle Surveying, LLC has not been provided a zoning report or letter at the time this survey was prepared.
11. All building lines, setbacks, and easements shown hereon are by Document Number 201006009911 of the Official Records of Comal County, Texas unless noted otherwise.
12. The bearings shown on this survey are based on GPS observations utilizing the AllTerra RTK Network. North American Datum of 1983 (Adjustment Realization 2011).
13. All Capped Iron Rods Set are 1/2 inch with green plastic cap stamped "EAGLE SURVEYING".

ALTERATIONS AND ERRORS

This survey is the work product of the signing surveyor and may not be altered or modified in any manner, except by the signing surveyor. Any alteration or modification performed to this survey by any party except for the signing surveyor will be prosecuted to the fullest extent of the law. The surveyor will not be responsible to the client for any typos or errors for which a correction is not requested by the client within thirty days following the issuance of this survey.

SURVEYORS CERTIFICATION

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 6(a) & (b), 7(a), 8, 9, 16, 17 & 18 of Table A thereof. The fieldwork was completed on December 27th, 2022.

This map or plat was prepared on _____.

PRELIMINARY
this document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document

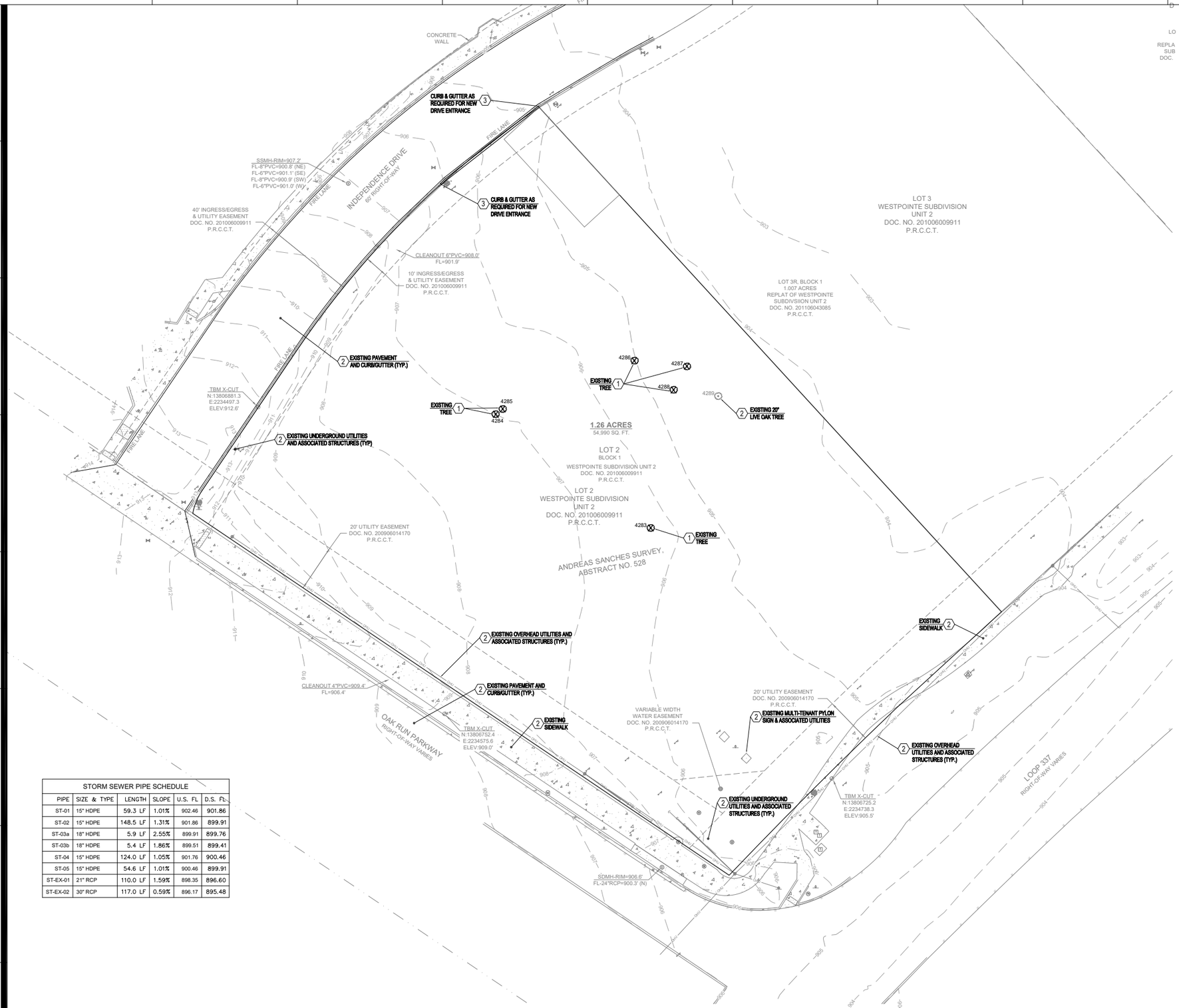
Gilbert Ybarra
R.P.L.S. #6971

JOB NUMBER
2212.013
DATE
01/03/2023
REVISION
06/29/2023
DRAWN BY
HSB/TER

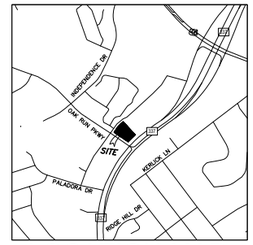
EAGLE SURVEYING
Eagle Surveying, LLC
222 South Elm Street
Suite: 200
Denton, TX 76201
940.222.3009
www.eaglesurveying.com
TX Firm # 10194177

PROPERTY ADDRESS

1659 WEST STATE
HIGHWAY 46
NEW BRAUNFELS, TX



STORM SEWER PIPE SCHEDULE					
PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE	5.9 LF	2.55%	899.91	899.76
ST-03b	18" HDPE	5.4 LF	1.86%	899.51	899.41
ST-04	15" HDPE	124.0 LF	1.05%	901.76	900.46
ST-05	15" HDPE	54.6 LF	1.01%	900.46	899.91
ST-EX-01	21" RCP	110.0 LF	1.59%	898.35	896.60
ST-EX-02	30" RCP	117.0 LF	0.59%	896.17	895.48



LOCATION MAP
NOT TO SCALE

DEMO LEGEND
PROPOSED ASPHALT OR CONCRETE SAWCUT

REMOVE EXISTING TREE

DEMO NOTES
SEE DEMOLITION NOTE ON SHEET C01.1

DEMOLITION KEYNOTES
1. REMOVE EXISTING STRUCTURE
2. PROTECT EXISTING STRUCTURE
3. SAWCUT ASPHALT / CONCRETE

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

BM #1	BM #2	BM #3	FLOOD STATEMENT:
TYPE: X-CUT	TYPE: X-CUT	TYPE: X-CUT	ACCORDING TO THE FLOOD INSURANCE RATE MAP #48091C 0435F, DATED SEPTEMBER 2, 2009, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X". AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
NORTHING: 13,806,881.3	NORTHING: 13,806,752.4	NORTHING: 13,806,725.2	
EASTING: 2,234,497.3	EASTING: 2,234,575.6	EASTING: 2,234,738.3	
ELEVATION: 912.6	ELEVATION: 909.0	ELEVATION: 905.5	

PANDA EXPRESS
CHINESE KITCHEN

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES, P.C. STATE OF TEXAS RAY G. FLAKE 121137 LICENSED PROFESSIONAL ENGINEER
TBPE FIRM# F 18065
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

DEMOLITION PLAN
C02.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

TRUE WARM & WELCOME 2600 RX

SITE DATA TABLE

ZONING:
EXISTING ZONING: C-1B (GENERAL BUSINESS DISTRICT)
PROPOSED USE: EATING ESTABLISHMENT, DRIVE THRU FACILITY

REQUIRED BUILDING SETBACKS:
FRONT (SW) = 25'
REAR (NE) = 20'
SIDE (NW) = 15' (Adjacent Street)
SIDE (SE) = 25'

SITE ACREAGE:
PANDA EXPRESS SITE = 54,990.02 SF / 1.26 ACRES

FLOOR AREA RATIO:
PANDA EXPRESS = 2,661 SF BLDG / SITE AREA 54,990.02 SF = 4.84%

PROPOSED SITE IMPERVIOUS SURFACE RATIO
TOTAL SITE = 54,990.02 SF
PAVEMENT/SIDEWALKS = 34,519.70 SF
BUILDING = 2,705.45 SF
TOTAL IMPERVIOUS = 37,225.15 SF
TOTAL PERVIOUS = 17,764.87 SF
PERCENT IMPERVIOUS = 67.69%

PARKING
RESTAURANT: 1/100 SF
PANDA EXPRESS - 2,661SF / 100 SF = 27 SPACES
TOTAL ADA PARKING: 2
TOTAL PARKING PROVIDED: 46

REQUIRED PARKING SETBACKS:
FRONT (W)= N/A
REAR (E) = N/A
SIDE (N) = N/A
SIDE (S) = N/A

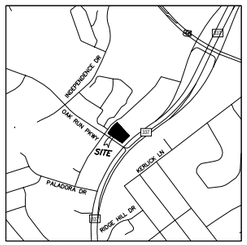
FLOOD HAZARD:
FLOOD ZONE X
F.I.R.M. MAP NO. 48091C0435F

IF EXISTING SIDEWALKS ARE DAMAGED, THESE MUST BE REPAIRED AT THE DEVELOPER'S EXPENSE.

ALL DISTURBED AREAS SHALL BE STABILIZED PER THE LANDSCAPE PLAN.

PROPOSED SITE LEGEND

- (8) PARKING STALL COUNT - SEE PLANS
- LIGHT DUTY CONCRETE PAVING - SEE DETAIL SHEET SECTION (C03.1)
- HEAVY DUTY CONCRETE PAVING - SEE DETAIL SHEET SECTION (C03.1)
- CONCRETE SIDEWALK - SEE DETAIL SHEET (C03.1)
- CONCRETE PAVING AT DUMPSTER ENCLOSURE AND DRIVE THRU PER GEOTECHNICAL REPORT
- HANDICAP PARKING
- DIRECTIONAL ARROWS
- PROPOSED CURB AND GUTTER AT CONCRETE - MONOLITHIC AT CONCRETE PAVEMENT - SEE DETAIL SHEET (C03.1)



LOCATION MAP

NOT TO SCALE

GENERAL NOTES

SEE NOTES ON SHEET C01.1

SITE KEY NOTES:

PAVEMENT AND CURBING

1. PROVIDE CURB AND GUTTER AT ASPHALT - MONOLITHIC CURB AT CONCRETE PAVEMENT - SEE DETAIL SHEET (C03.1)
2. PROVIDE CONCRETE SIDEWALKS PER DETAIL SHEET (C03.2) - PROVIDE CONCRETE SIDEWALK WITH INTEGRAL CURB AT BUILDING AND PARKING PER DETAIL SHEET (C03.1)
3. HEAVY DUTY CONCRETE PAVING AT DRIVE THRU ISLE - SEE DETAIL SHEET (C03.1) & GEOTECHNICAL REPORT (GRAY COLOR, LIGHT BROOM FINISH)
4. NEW HEAVY DUTY CONCRETE APRON AT DUMPSTER ENCLOSURE - SEE ARCHITECTURAL DETAIL SHEET - SEE DETAIL SHEET (C03.1)
5. LIGHT DUTY CONCRETE PAVING - SEE DETAIL SHEET (C03.1) & GEOTECHNICAL REPORT
6. HEAVY DUTY CONCRETE PAVING - SEE DETAIL SHEET (C03.1) & GEOTECHNICAL REPORT
7. SEALED CONC. SIDEWALK. (AQUA MIX SEALER'S CHOICE GOLD). CONCRETE TO BE LIGHT BROOM TEXTURE FINISH. PROVIDE UNDER SLAB TREATMENT PER SOIL REPORT. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. AND ALL SIDE WALKS
8. EXPANSION JOINT - SEE GEOTECHNICAL REPORT FOR SPACING - SEE DETAIL SHEET (C03.1)
9. CONTROL JOINTS - SEE GEOTECHNICAL REPORT FOR SPACING - SEE DETAIL SHEET (C03.1)

PAVEMENT STRIPING / ADA FEATURES / TRAFFIC SIGNAGE

15. ADA ACCESSIBLE RAMP - SEE GRADING PLAN FOR ELEVATIONS - SEE HANDICAP PARKING ON DETAIL SHEET (C03.1)
16. ADA DETECTABLE WARNING AT EDGE OF PAVEMENT - SEE HANDICAP PARKING DETAIL ON DETAIL SHEET (C03.1)
17. HANDICAP AND VAN ACCESSIBLE PARKING LAYOUT, SIGNAGE, AND STRIPING - SEE DETAIL SHEET (C03.1)
18. ALL SITE DIRECTIONAL SIGNAGE, PAVEMENT STRIPING AND MARKINGS SHALL BE COORDINATED WITH PRG'S PROJECT MANAGER
19. 4" WIDE DIAGONAL STRIPES PAINTED WHITE AT 2 FT. O.C. PER MUTCD SPECS
20. 4" WIDE PARKING STRIPE PAINTED YELLOW PER MUTCD SPECS
21. TRAFFIC ARROW PAINTED YELLOW - SEE DETAIL SHEET (C03.1)
22. STOP BAR PAINTED WHITE PER MUTCD SPECS
23. BOLLARD PLAN - SEE DETAIL (C03.2)

PANDA EXPRESS SITE FEATURES

30. DRIVE THRU LANE SENSOR LOOP SEE DETAIL - SEE ARCH. DETAIL SHEET
31. NEW PAINTED SWITCHGEAR LOCATION - SEE ELECTRICAL PLANS
32. ORDER CONFIRMATION BOARD - SEE ARCH DETAIL SHEET
33. DRIVE THROUGH MENU BOARD-INSTALLED BY GC. VERIFY WITH PANDA P.M. - SEE ARCH. DETAIL SHEET
34. CLEARANCE BAR INSTALLED BY SIGN VENDOR - RE: ELECTRICAL DRAWING FOR REQUIREMENTS, G.C. TO COORDINATE LOCATION WITH PRG P.M.
35. WHEEL STOP - GNR TECHNOLOGIES, "PARK-IT" 6' PARKING CURB #16201R (BLACK AND YELLOW) OR OWNER APPROVED EQUAL
36. TRASH ENCLOSURE, CONFIRM BIN SIZE WITH LOCAL WASTE MANAGEMENT COMPANY. (TYP. 6 YARD BIN) - SEE ARCH DETAIL SHEET
37. MOUNT NEW PANDA CABINET SIGN BETWEEN THE TWO EXISTING POLES, BELOW THE EXISTING SHOPPING CENTER SIGN - SEE SIGNAGE PLANS
38. LIGHT POLE - SEE PHOTO METRIC PLAN
39. TIE TO ROOF DRAIN COLLECTOR FROM BUILDING - SEE PLUMBING PLANS FOR UNDERGROUND CONNECTION AT BUILDING - SEE ELEVATION THIS SHEET - OVERFLOW PIPE FROM ROOF DRAIN TO DAYLIGHT UNDER CONCRETE FLATWORK AT FACE OF CURB - SEE PLUMBING PLANS FOR LOCATION
40. APPROXIMATE LOCATION OF PAD MOUNTED TRANSFORMER PAD PER SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO CONSTRUCTION
41. EDGE OF CONCRETE SIDEWALK AT PLANTER BED - SEE LANDSCAPE PLAN (L01.0)
42. "THANK YOU / DO NOT ENTER" SIGN

ADDITIONAL SITE FEATURES

50. MATCH EXISTING GRADE
51. SIDEWALK PER CITY SPECS
52. ALL PROPOSED SITE WORK ON THIS LOT TO BE CONSTRUCTED "BY OTHERS"
53. CURB CUT - SEE DETAIL SHEET C03.2

STORM SEWER PIPE SCHEDULE					
PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE	5.9 LF	2.55%	899.91	899.76
ST-03b	18" HDPE	5.4 LF	1.86%	899.51	899.41
ST-04	15" HDPE	124.0 LF	1.05%	901.76	900.46
ST-05	15" HDPE	54.6 LF	1.01%	900.46	899.91
ST-EX-01	21" RCP	110.0 LF	1.59%	898.35	896.60
ST-EX-02	30" RCP	117.0 LF	0.59%	896.17	895.48

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BM #1	BM #2	BM #3
TYPE: X-CUT	TYPE: X-CUT	TYPE: X-CUT
NORTHING: 13,806,881.3	NORTHING: 13,806,752.4	NORTHING: 13,806,725.2
EASTING: 2,234,497.3	EASTING: 2,234,575.6	EASTING: 2,234,738.3
ELEVATION: 912.6	ELEVATION: 909.0	ELEVATION: 905.5

FLOOD STATEMENT:
ACCORDING TO THE FLOOD INSURANCE RATE MAP #48091C 0435F, DATED SEPTEMBER 2, 2009, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X". AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

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Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES — STATE OF TEXAS — RAY G. FLAKE — 121137 — LICENSED PROFESSIONAL ENGINEER — TBPE F-18065 — 07/06/2023

Civil Engineering Services
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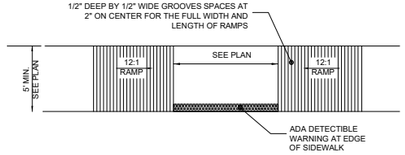
2696 Loop 337
New Braunfels, TX 78132

SITE PLAN

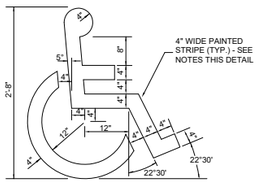
C03.0

ISSUE FOR CONSTRUCTION XX-XX-XXXX



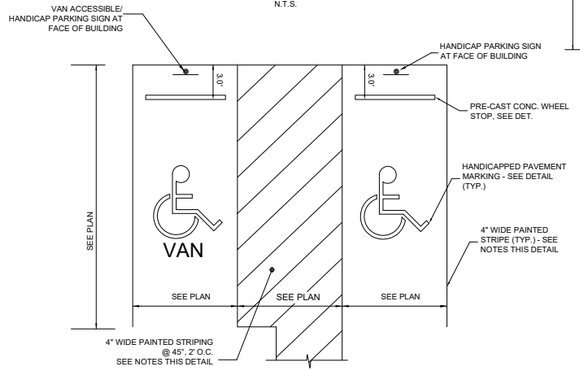
HANDICAP PARKING DETAILS

N.T.S.



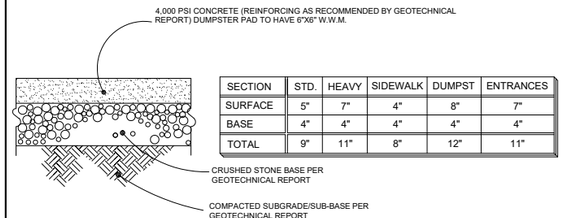
HANDICAP SYMBOL

N.T.S.



HANDICAP PARKING DETAILS

N.T.S.

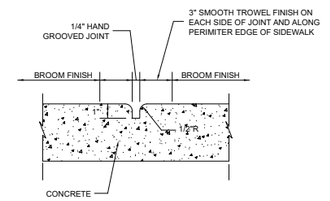


SECTION	STD.	HEAVY	SIDEWALK	DUMPST	ENTRANCES
SURFACE	5"	7"	4"	8"	7"
BASE	4"	4"	4"	4"	4"
TOTAL	9"	11"	8"	12"	11"

NOTE:
1. SEE CONTROL AND EXPANSION JOINT DETAILS THIS SHEET
2. SEE GEOTECHNICAL REPORT FOR TREATED SUBBASE OPTIONS

CONCRETE PAVING DETAIL

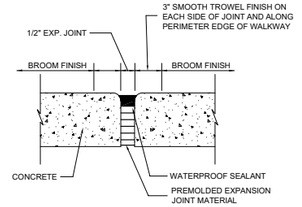
N.T.S.



SPACING NOTE
SPACE CONTROL JOINTS PER GEOTECHNICAL REPORT

CONTROL JOINT

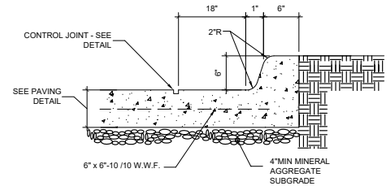
N.T.S.



SPACING NOTE
SPACE EXPANSION JOINTS PER GEOTECHNICAL REPORT

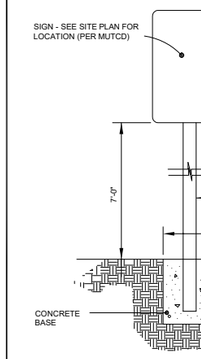
EXPANSION JOINT

N.T.S.



CONCRETE MONOLITHIC CURB

N.T.S.



SIGN DETAIL

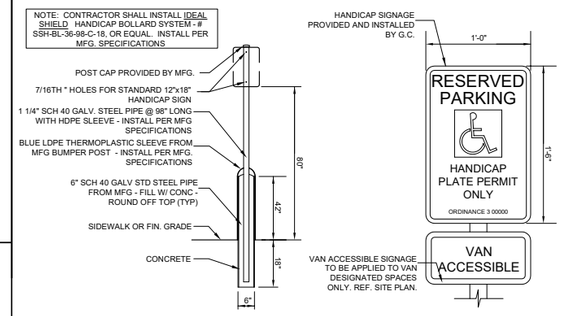
N.T.S.

NOTES:
1. METAL SURFACES SHALL BE FREE OF HEAVY RUST. BOLLARDS SHALL HAVE 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300

2. SIGNAGE SHALL COMPLY WITH AMERICAN'S WITH DISABILITIES ACT (A.D.A.) SIGNAGE GUIDELINES

3. ALL PAINTED ADA PARKING SURFACES SHALL BE CLEAN AND DRY. TOP COAT PROVIDE TWO (2) COATS SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE

NOTE: CONTRACTOR SHALL INSTALL IDEAL SHIELD HANDICAP BOLLARD SYSTEM - # SSH-BL-36-98-C-18, OR EQUAL. INSTALL PER MFG. SPECIFICATIONS

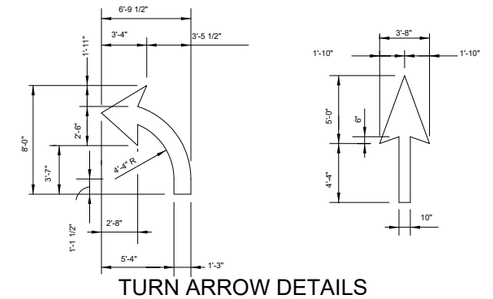


POST
N.T.S.

PARTIAL ELEVATION
N.T.S.

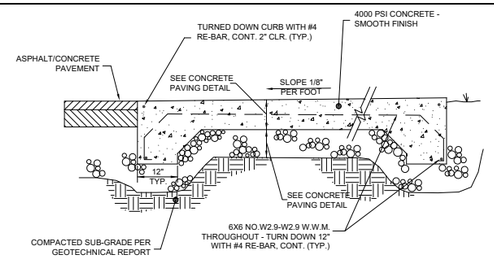
HANDICAP SIGN DETAIL

N.T.S.



TURN ARROW DETAILS

N.T.S.



DUMPSTER PAD DETAIL

N.T.S.

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
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91770
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REVISIONS:

ISSUE DATE:

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DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
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CIVIL ENGINEERING SERVICES, P.C. STATE OF TEXAS RAY G. FLAKE 121137 LICENSED PROFESSIONAL ENGINEER FIRM# F 19065
07/06/2023

Civil Engineering Services
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e-mail: ray@civilengineeringservices.net

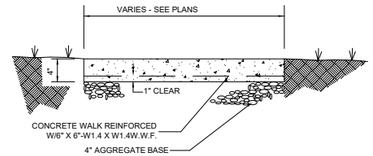
PANDA EXPRESS

TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

HARDSCAPE DETAILS I

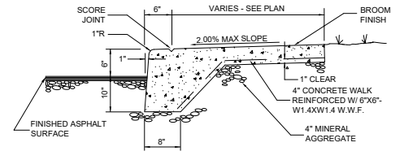
C03.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX



NOTES:
1. PROVIDE CONTROL JOINTS PER DETAIL THIS SHEET SPACED EVERY 5 FT. AND EXPANSION JOINTS PER DETAIL THIS SHEET EVERY 20 FT.
2. SUBGRADE COMPACTED PER SOILS REPORT

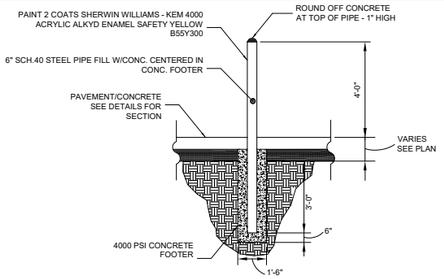
CONCRETE SIDEWALK



SPACING NOTES
1. EXPANSION JOINTS SPACED AT 20' O.C. - SEE DETAIL
2. CONTROL JOINTS SPACED AT 5' O.C. - SEE DETAIL

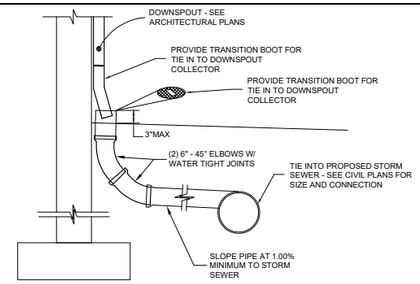
CONCRETE SIDEWALK WITH HAUNCHED CURB

N.T.S.



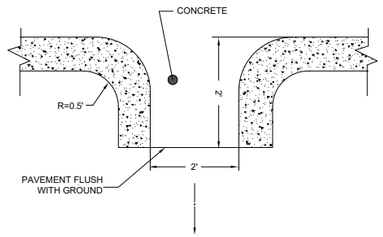
BOLLARD DETAIL

N.T.S.



DOWNSPOUT COLLECTOR DETAIL

N.T.S



CURB CUT DETAIL

N.T.S.

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CIVIL ENGINEERING SERVICES REG. STATE OF TEXAS RAY G. FLAKE 121137 LICENSED PROFESSIONAL ENGINEER
FIRM# F-18085
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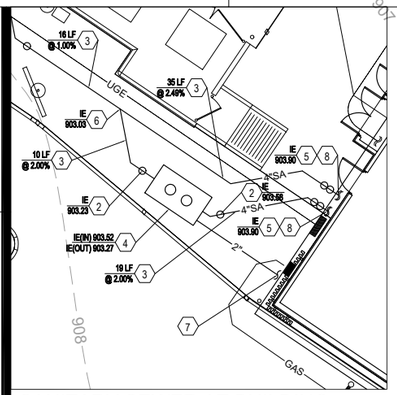
HARDSCAPE DETAILS II

C03.2

ISSUE FOR CONSTRUCTION XX-XX-XXXX



SANITARY SEWER AT BUILDING

SCALE 1"=10'

ALL UTILITY CROSSINGS SHALL BE PER SERVICE PROVIDER SPECS. COORDINATE ALL UTILITY CROSSING WITH SERVICE PROVIDERS PRIOR TO ANY WORK DONE

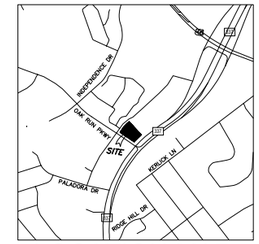
NOTE:
PROVIDE (2) 4" PVC CONDUITS UNDER DRIVES TO ALL LANDSCAPED AREAS. PROVIDE 2' COVER AND CAP OFF. MARK STUB OUT WITH FLAG/MARKER.

ALL LANDSCAPED AREAS TO BE IRRIGATED (IRRIGATION PLAN TO BE SUBBED OUT THRU G.C.) - SEE LANDSCAPE DRAWINGS FOR PLANTINGS AND DETAILS

SEE M.E.P. PLANS FOR ALL UTILITY SERVICE ENTRIES. LOCATIONS SHOW ARE APPROXIMATE.

PROPOSED LEGEND

6"DI	SANITARY SEWER LINE PER LOCAL UTILITY COMPANY SPECS.
W	WATER LINE PER LOCAL UTILITY CO SPECS.
GAS	GAS LINE PER LOCAL UTILITY CO SPECS.
UGE	UNDERGROUND ELECTRIC SERVICE PER LOCAL UTILITY CO SPECS.
UGC	UNDERGROUND TELEPHONE AND COMMUNICATIONS SERVICE PER LOCAL UTILITY CO SPECS.
	GREASE TRAP - SEE PLUMBING PLANS
WM	WATER METER PER SERVICE PROVIDER SPECS.
RPZ	ABOVE GROUND RPZ WITH HEATED ENCLOSURE
GM	GAS METER PER SERVICE PROVIDER SPECS.
EM	ELECTRIC METER PER SERVICE PROVIDER SPECS.



LOCATION MAP

NOT TO SCALE

GENERAL NOTES

SEE UTILITY NOTES ON SHEET C01.1

PROPOSED UTILITY BLOCK NOTES

SANITARY SEWER SERVICE:

1. TIE TO EXISTING SANITARY SEWER LATERAL STUB PER LOCAL SERVICE PROVIDER SPECS. - FIELD VERIFY CONNECTION AND INVERT OF CONNECTION PRIOR TO ANY WORK DONE
2. INSTALL SANITARY SEWER LATERAL CLEANOUT - SEE THIS SHEET FOR INVERT - SEE DETAIL SHEET (C04.1)
3. INSTALL SEWER LINE PER LOCAL SERVICE PROVIDER SPECS. - SEE SLOPE AND LENGTH THIS SHEET - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
4. INSTALL GREASE TRAP WITH TRAFFIC RATED MANHOLE COVERS AND FRAMES - SEE PLUMBING PLANS FOR SIZE - RIMS TO MATCH PROPOSED GRADES
5. SANITARY SEWER SERVICE ENTRY FROM BUILDING - SEE ELEVATION THIS SHEET - SEE PLUMBING PLANS FOR CONTINUATION AND POINT OF ENTRY
6. PROVIDE 6"x6"x6" SANITARY SEWER WYE WITH 4"X6" REDUCERS PER SERVICE PROVIDER SPECS. - SEE THIS SHEET FOR INVERTS
7. 2" VENT PIPE FROM GREASE TRAP TO BUILDING - SEE M.E.P. PLANS FOR ENTRY AND DETAILS
8. INSTALL SANITARY SEWER TWO WAY LATERAL CLEANOUT - SEE THIS SHEET FOR INVERT - SEE DETAIL SHEET (C04.1)

WATER SERVICE:

12. CONNECT TO EXISTING WATER MAIN WITH 2" TAPPING SLEEVE AND VALVE PER LOCAL SERVICE PROVIDER SPECS - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
13. PROVIDE 2" TEE WITH 1.5" REDUCER FOR DOMESTIC SERVICE AND 1" REDUCER FOR IRRIGATION SERVICE - PER SERVICE PROVIDER SPECS.
14. 1" METER AND VALVE WITH ABOVE GROUND RPZ IN HEATED ENCLOSURE FOR IRRIGATION WATER SERVICE PER LOCAL SERVICE PROVIDER JURISDICTION - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
15. 1.5" METER AND VALVE WITH ABOVE GROUND RPZ IN HEATED ENCLOSURE FOR DOMESTIC WATER SERVICE PER LOCAL SERVICE PROVIDER JURISDICTION - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
16. STUB OUT 1" SCH 40 PVC LINE FOR IRRIGATION
17. PRIVATE DOMESTIC WATER SERVICE LINE - INSTALL 1 1/2" CLASS 200, DR9 HDPE PIPE (POLYPIPE PW-PE3408/PE3608 OR APPROVED EQUAL) - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
18. DOMESTIC WATER SERVICE ENTRY PER CITY SPECS. - SEE PLUMBING PLANS
19. PROVIDE CONCRETE PAD AT ABOVE GROUND RPZ AND ENCLOSURE - SEE DETAIL SHEET C4.1
20. PROVIDE 2" WATERLINE PER SERVICE PROVIDER SPECS.

ELECTRIC SERVICE:

22. APPROXIMATE LOCATION FOR CONNECTION TO EXISTING ELECTRICAL SERVICE PER LOCAL SERVICE PROVIDER SPECS. - G.C. TO COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
23. PRIMARY UNDERGROUND ELECTRICAL SERVICE PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
24. PROPOSED PAD TRANSFORMER - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
25. SECONDARY UNDERGROUND ELECTRIC PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH LOCAL SERVICE PROVIDE PRIOR TO ANY WORK DONE - SEE ELECTRICAL PLANS FOR CONDUIT SIZE AND CONNECTION POINT INTO THE BUILDING.
26. ELECTRIC SERVICE POINT OF ENTRY INTO BUILDING - SEE ELECTRICAL PLANS FOR CONDUIT SIZE AND CONNECTION POINT INTO THE BUILDING.

COMMUNICATIONS SERVICE:

29. POINT OF CONNECTION FOR TELEPHONE / COMMUNICATIONS SERVICE PER SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
30. UNDERGROUND TELEPHONE / COMMUNICATIONS PER LOCAL SERVICE PROVIDER REQUIREMENTS COORDINATE WITH LOCAL SERVICE PROVIDERS PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING.
31. UNDERGROUND TELEPHONE / COMMUNICATIONS POINT INTO THE BUILDING - COORDINATE WITH ELECTRIC SERVICE PROVIDER PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING - PROVIDE BOLLARD SEE PLAN - SEE DETAIL

GAS SERVICE:

34. APPROXIMATE LOCATION FOR CONNECTION TO EXISTING GAS SERVICE PER LOCAL SERVICE PROVIDER REQUIREMENTS - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
35. GAS SERVICE PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
36. GAS METER AND SERVICE POINT INTO THE BUILDING - COORDINATE WITH ELECTRIC SERVICE PROVIDER PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BM #1	BM #2	BM #3	FLOOD STATEMENT:
TYPE: X-CUT	TYPE: X-CUT	TYPE: X-CUT	ACCORDING TO THE FLOOD INSURANCE RATE MAP #48091C 0435F, DATED SEPTEMBER 2, 2009, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
NORTHING: 13,806,881.3	NORTHING: 13,806,752.4	NORTHING: 13,806,725.2	
EASTING: 2,234,497.3	EASTING: 2,234,575.6	EASTING: 2,234,738.3	
ELEVATION: 912.6	ELEVATION: 909.0	ELEVATION: 905.5	

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CIVIL ENGINEERING SERVICES STATE OF TENNESSEE RAY G. FLAKE 121137 REGISTERED PROFESSIONAL ENGINEER FIRM# F18085 07/06/2023

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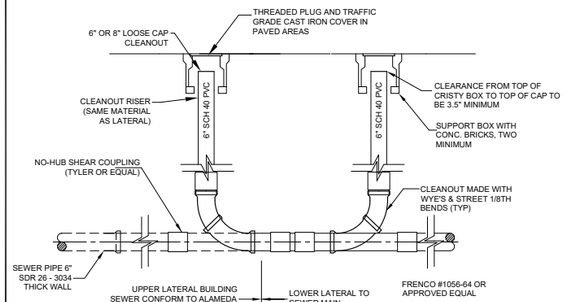
PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

UTILITY PLAN
C04.0

ISSUE FOR CONSTRUCTION XX-XX-XXXX

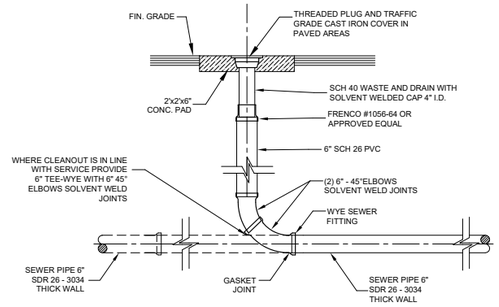
TRUE WARM & WELCOME 2600 RX



NOTE:
IN GRASS AREAS WHERE NO PAVEMENT IS PROPOSED, CONCRETE PAD SHALL NOT BE CONSTRUCTED.

PRIVATE SANITARY SEWER TWO WAY CLEANOUT

N.T.S.



NOTE:
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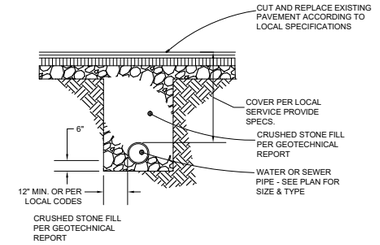
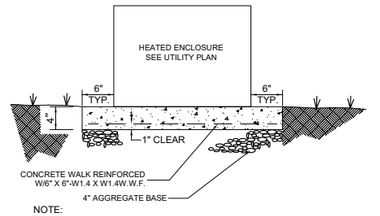
PRIVATE SANITARY SEWER CLEANOUT

N.T.S.



UTILITY TRENCH DETAIL

N.T.S.



NOTE:

1. SUBGRADE COMPACTED PER SOILS REPORT.
2. CONDUITS AND WATERLINES THRU PAD AS REQUIRED PER SERVICE PROVIDER SPECS.
3. WHERE BACK FLOW DEVICES ARE PARALLEL AND WITHIN 2' TO 3' FROM EACH OTHER, PROVIDE CONTINUOUS PAD.

CONCRETE PAD AT BACKFLOW PREVENTER

N.T.S.

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:		
1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES, LLC
STATE OF TENNESSEE
RAY G. FLAKE
121137
REGISTERED ENGINEER
FIRM# F18085
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
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37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

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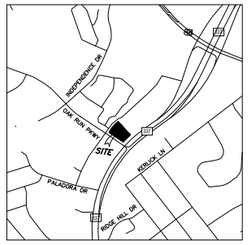
2696 Loop 337
New Braunfels, TX 78132

UTILITY DETAIL SHEET
C04.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

STORM STRUCTURE TABLE

STRUCTURE	TYPE	CASTING	INV IN	INV OUT
CB-01	Curb Inlet	905.46		902.46
CB-02	Curb Inlet	903.90	899.91 899.91	899.91
CB-03	Curb Inlet	903.70		901.76
CB-04	Curb Inlet	903.50	900.46	900.46
JB-01	Junction Manhole	906.77	901.86	901.86
JB-02	Structure by Developer	904.59	899.41 896.60	896.17
WQU-01	Water Quality Unit	901.47	899.76	899.51



LOCATION MAP

NOT TO SCALE

PROPOSED GRADING LEGEND

TC	PROPOSED TOP OF CURB ELEVATION
P	PROPOSED BOTTOM OF CURB/PAVEMENT ELEVATION
G	PROPOSED GUTTER LINE ELEVATION
FG	PROPOSED FINISHED GRADE ELEVATION
SW	PROPOSED SIDEWALK ELEVATION
HP	PROPOSED HIGH POINT ELEVATION
MG	MATCH EXISTING GRADE ELEVATION
IE	PROPOSED INVERT ELEVATION
RIM	PROPOSED TOP OF GRATE ELEVATION
	LIMITS OF DISTURBANCE
XXX	PROPOSED SLOPE DIRECTION
	PROPOSED STORM WATER CURB INLET
	PROPOSED STORM WATER MANHOLE

GRADING NOTE BLOCKS

1. LIMITS OF LAND DISTURBANCE
2. MATCH EXISTING GRADE
3. PROVIDE 2.00% MAXIMUM CROSS SLOPE

GRADING NOTES

SEE SHEET C01.1 FOR GRADING NOTES

GRADING INFORMATION

LIMITS OF DISTURBANCE = 46,270 SF / 1.06 AC

ALL DISTURBED AREA SHALL BE STABILIZED WITH SOD, COMMON TO THE REGION - SEE LANDSCAPE PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

BM #1
TYPE: X-CUT
NORTHING: 13,806,881.3
EASTING: 2,234,497.3
ELEVATION: 912.6

BM #2
TYPE: X-CUT
NORTHING: 13,806,752.4
EASTING: 2,234,575.6
ELEVATION: 909.0

BM #3
TYPE: X-CUT
NORTHING: 13,806,725.2
EASTING: 2,234,738.3
ELEVATION: 905.5

FLOOD STATEMENT:
ACCORDING TO THE FLOOD INSURANCE RATE MAP #48091C 0435F, DATED SEPTEMBER 2, 2009, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

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CIVIL ENGINEERING SERVICES PC
STATE OF TEXAS
RAY G. FLAKE
121137
LICENSED PROFESSIONAL ENGINEER
TURM # F 8065
07/06/2023

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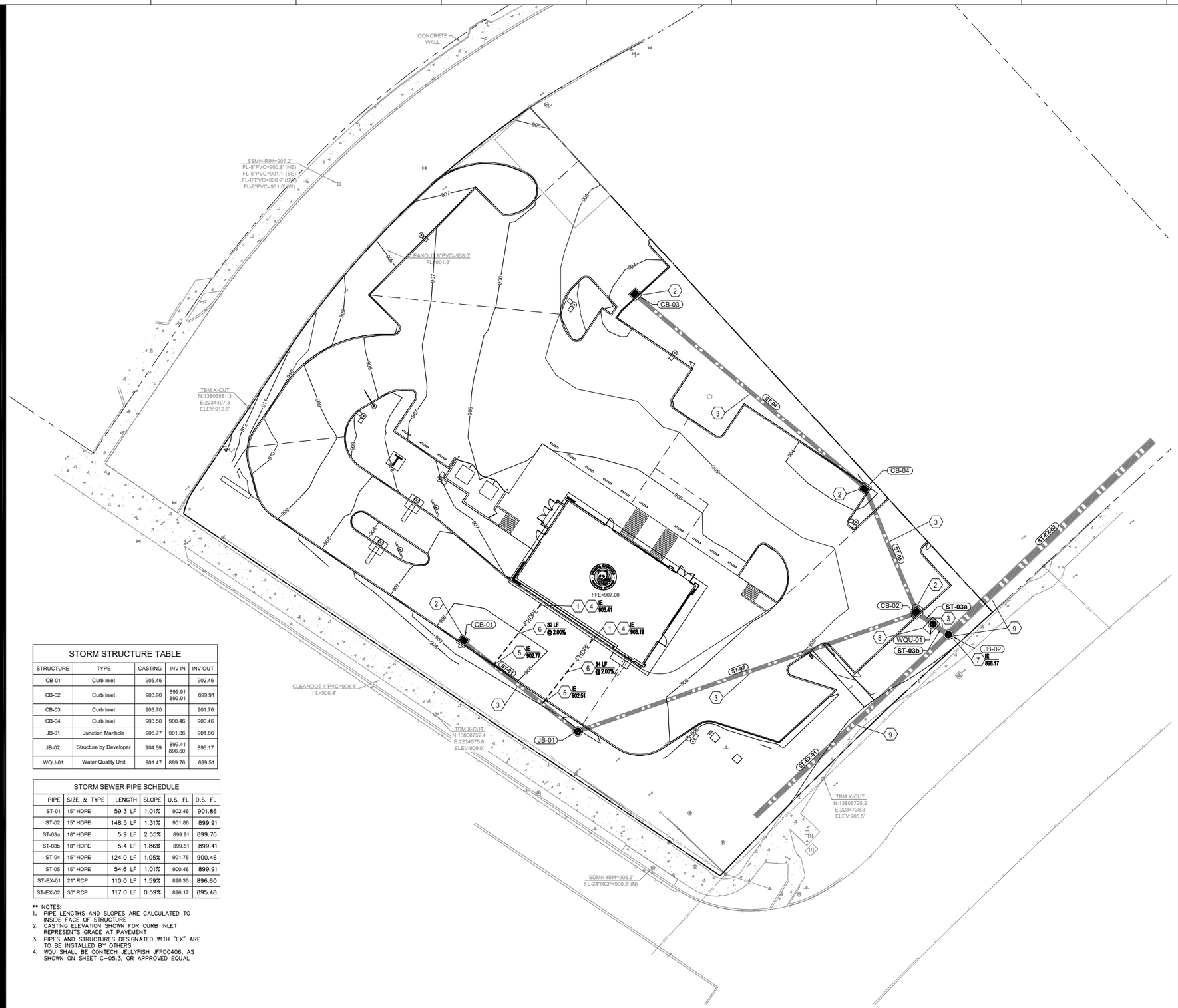
GRADING PLAN

C05.0

ISSUE FOR CONSTRUCTION XX-XX-XXXX



LOCATION MAP

NOT TO SCALE

PROPOSED GRADING LEGEND

- XX"HDPE- PROPOSED HIGH-DENSITY POLYETHYLENE STORM SEWER PIPE
- IE PROPOSED INVERT ELEVATION
- RIM PROPOSED TOP OF GRATE ELEVATION
- X.XX PROPOSED SLOPE DIRECTION
- PROPOSED STORM WATER CURB INLET
- PROPOSED STORM WATER MANHOLE

GENERAL GRADING NOTES

SEE SHEET C01.1 FOR GRADING NOTES

GRADING NOTE BLOCKS

1. PROVIDE PRIVATE STORM SEWER CLEANOUT - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C05.2)
2. PROVIDE CURB INLET - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C05.2)
3. PROVIDE STORM SEWER PIPE - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C05.2)
4. TIE TO ROOF DRAIN COLLECTOR FROM BUILDING - SEE PLUMBING PLANS FOR UNDERGROUND CONNECTION AT BUILDING - SEE ELEVATION THIS SHEET - OVERFLOW PIPE FROM ROOF DRAIN TO DAYLIGHT THROUGH FACE OF CURB - SEE PLUMBING PLANS FOR LOCATION
5. PROVIDE 4"X15" WATER TIGHT HDPE TEE PER MANUFACTURER SPECS. - SEE INVERT ELEVATION THIS SHEET
6. PROVIDE WATER TIGHT HDPE PIPE FOR ROOF DRAINS - SEE THIS SHEET FOR SIZE, TYPE AND ELEVATIONS
7. TIE TO EXISTING STRUCTURE PER MANUFACTURER SPECS. -SEE THIS SHEET FOR ELEVATIONS - FIELD VERIFY ELEVATIONS PRIOR TO ANY WORK DONE
8. WATER QUALITY CONTROL UNIT - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C05.3)
9. PLANNED STRUCTURES TO BE INSTALLED "BY OTHERS"

GRADING INFORMATION

LIMITS OF DISTURBANCE = 46,270 SF / 1.06 AC

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STORM STRUCTURE TABLE

STRUCTURE	TYPE	CASTING	INV IN	INV OUT
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WQU-01	Water Quality Unit	901.47	899.76	899.51

STORM SEWER PIPE SCHEDULE

PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE	5.9 LF	2.55%	899.91	899.76
ST-03b	18" HDPE	5.4 LF	1.86%	899.51	899.41
ST-04	15" HDPE	124.0 LF	1.05%	901.76	900.46
ST-05	15" HDPE	54.6 LF	1.01%	900.46	899.91
ST-EX-01	21" RCP	110.0 LF	1.59%	898.35	896.60
ST-EX-02	30" RCP	117.0 LF	0.59%	896.17	895.48

** NOTES:
1. PIPE LENGTHS AND SLOPES ARE CALCULATED TO INSIDE FACE OF STRUCTURE
2. CASTING ELEVATION SHOWN FOR CURB INLET REPRESENTS GRADE AT PAVEMENT
3. PIPES AND STRUCTURES DESIGNATED WITH "EX" ARE TO BE INSTALLED BY OTHERS
4. WQU SHALL BE CONTECH JELLYFISH JFPD0406, AS SHOWN ON SHEET C-05.3, OR APPROVED EQUAL

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BM #1
TYPE: X-CUT
NORTHING: 13,806,881.3
EASTING: 2,234,497.3
ELEVATION: 912.6

BM #2
TYPE: X-CUT
NORTHING: 13,806,752.4
EASTING: 2,234,575.6
ELEVATION: 909.0

BM #3
TYPE: X-CUT
NORTHING: 13,806,725.2
EASTING: 2,234,738.3
ELEVATION: 905.5

FLOOD STATEMENT:
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REVISIONS:

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DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES RC — STATE OF TENNESSEE — RAY G. FLAKE — 121137 — REGISTERED ENGINEER — CERT# F18085
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
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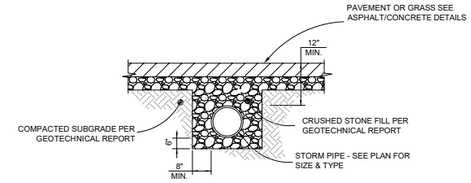
New Braunfels, TX 78132

DRAINAGE PLAN

C05.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

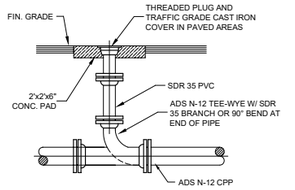
TRUE WARM & WELCOME 2600 RX



STORM SEWER PIPE TRENCH DETAIL

N.T.S.

NOTE:
IN GRASS AREAS WHERE NO PAVEMENT IS PROPOSED, CONCRETE BLOCK SHALL NOT BE CONSTRUCTED.



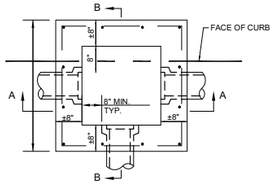
PRIVATE STORM SEWER CLEANOUT

N.T.S.

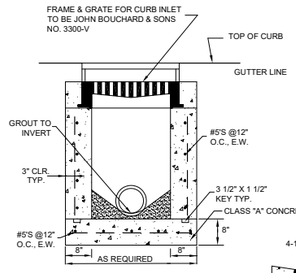
NOTE:
1. STORM WATER CURB INLET/AREA INLET TO HAVE ENVIRONMENTAL MESSAGE STAMPED INTO THE METAL"DUMP NO WASTE","DRAINS TO STREAM".

2. THE CONTRACTOR SHALL POUR THE INVERTS IN ALL STORM WATER STRUCTURES.

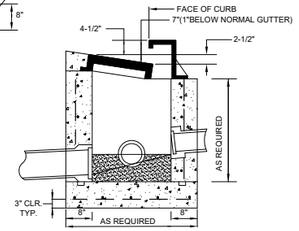
3. OPTIONAL CONSTRUCTION PRE-FAB. CONCRETE EQUIVALENT.



RAMP PLAN VIEW



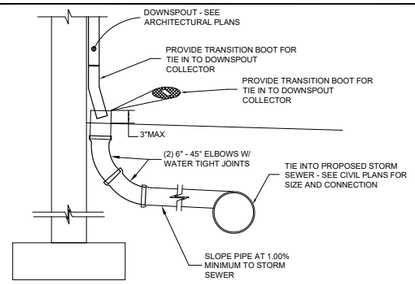
SECTION A-A



SECTION B-B

SINGLE CURB INLET

N.T.S.



DOWNSPOUT COLLECTOR DETAIL

N.T.S

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1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
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CIVIL ENGINEERING SERVICES P.C. STATE OF TEXAS RAY G. FLAKE 121137 REGISTERED PROFESSIONAL ENGINEER TURM# F 18065
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
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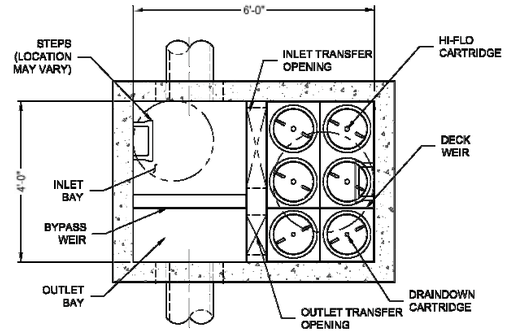
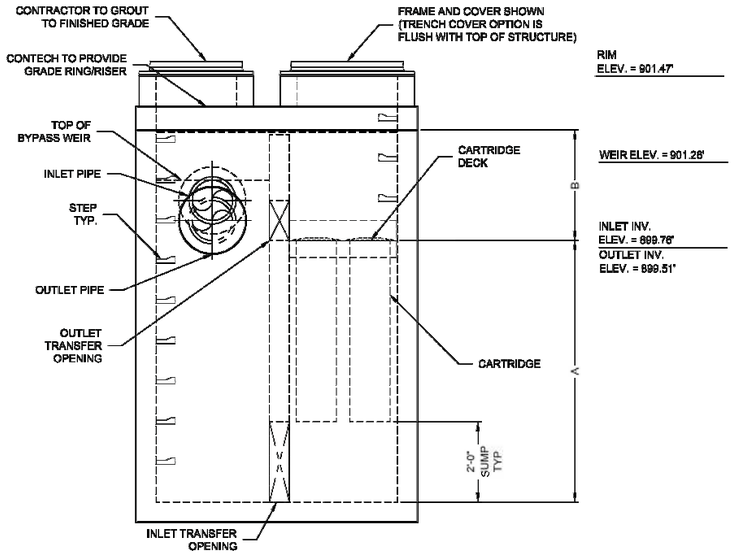
GRADING DETAIL SHEET
C05.2

ISSUE FOR CONSTRUCTION XX-XX-XXXX



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



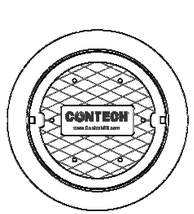
ELEVATION VIEW

JELLYFISH DESIGN NOTES

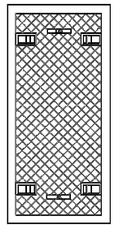
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT, CURB INLET OR SHALLOW PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HIGH-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089
MAX. TREATMENT (CFS)	0.89
DECK TO INSIDE TOP (MIN) (B)	5'-0"



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WQU-01
WATER QUALITY FLOW RATE (cfs)	0.89
PEAK FLOW RATE (cfs)	10.5
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	4 / 2
CARTRIDGE LENGTH	54"

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	899.76'	HDPE	18"	*	*
INLET #2	*	*	*	*	*
OUTLET	899.51'	HDPE	18"	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	901.47'

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION AND SITE SPECIFIC EARTH COVER REQUIREMENT. TYPICAL CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-858, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE (WHERE APPLICABLE) AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish® Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,728; 8,221,616; US 8,123,938; OTHER INTERNATIONAL PATENTS PENDING

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

4' x 6' JELLYFISH - 749419 - 10
PANDA EXPRESS - NEW BRAUNFELS
NEW BRAUNFELS, TX
SITE DESIGNATION: WQU-01

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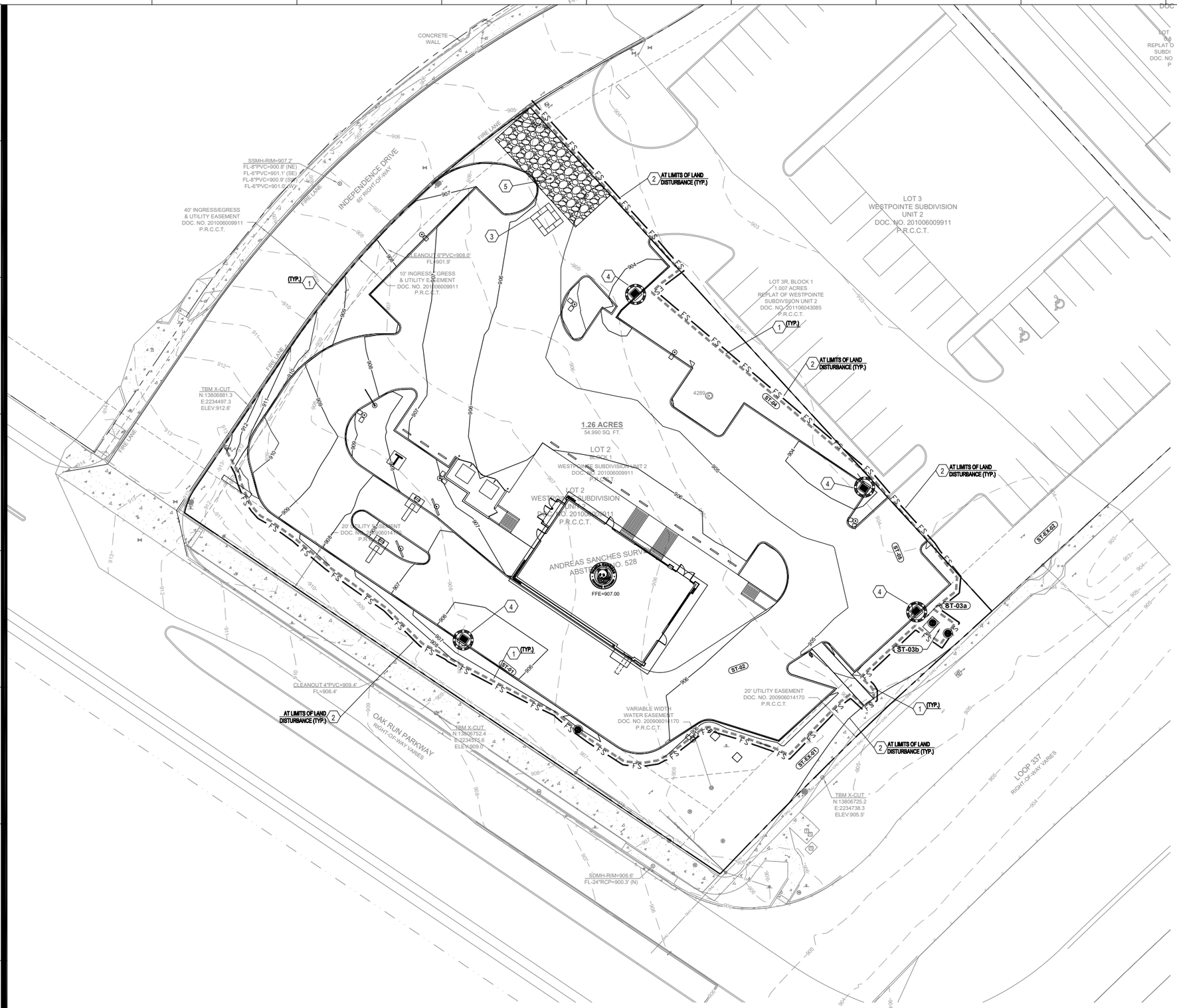
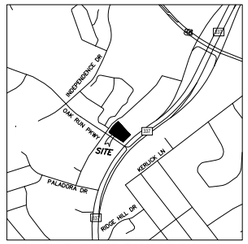
GRADING DETAIL SHEET
C05.3

ISSUE FOR CONSTRUCTION XX-XX-XXXX





LOCATION MAP

NOT TO SCALE

PROPOSED LEGEND

- TEMPORARY CONSTRUCTION EXIT
- INSTALL INLET PROTECTION (SEE DETAIL SHEET)
- FS — INSTALL FILTER SOCK (SEE DETAIL SHEET)
- CONCRETE WASHOUT AREA
- LIMITS OF DISTURBANCE

KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. INSTALL FILTREXX FILTER SOCK SEDIMENT PROTECTION OR APPROVED EQUAL - MAINTAIN THROUGHOUT CONSTRUCTION - FIELD ADJUST AS REQUIRED - SEE DETAIL SHEET (C06.1)
3. CONCRETE WASHOUT PER EPA STANDARDS - CONTRACTOR TO FIELD ADJUST LOCATION ONSITE AS NEEDED - SEE DETAIL SHEET (C06.1)
4. INSTALL FILTREXX INLET PROTECTION OR APPROVED EQUAL - SEE DETAIL SHEET (C06.1)
5. PROVIDE CONSTRUCTION ENTRANCE - SEE DETAIL SHEET (C06.1)

EROSION CONTROL NOTES

SEE SHEET C01.1 FOR EROSION CONTROL NOTES

GRADING INFORMATION

LIMITS OF DISTURBANCE = 46,270 SF / 1.06 AC

ALL DISTURBED AREA SHALL BE STABILIZED WITH SOD, COMMON TO THE REGION - SEE LANDSCAPE PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BM #1
TYPE: X-CUT
NORTHING: 13,806,881.3
EASTING: 2,234,497.3
ELEVATION: 912.6

BM #2
TYPE: X-CUT
NORTHING: 13,806,752.4
EASTING: 2,234,575.6
ELEVATION: 909.0

BM #3
TYPE: X-CUT
NORTHING: 13,806,725.2
EASTING: 2,234,738.3
ELEVATION: 905.5

FLOOD STATEMENT:
ACCORDING TO THE FLOOD INSURANCE RATE MAP #48091C 0435F, DATED SEPTEMBER 2, 2009, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES, P.C. STATE OF TEXAS RAY G. FLAKE 121137 LICENSED CIVIL ENGINEER
TURM# F-18062
07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

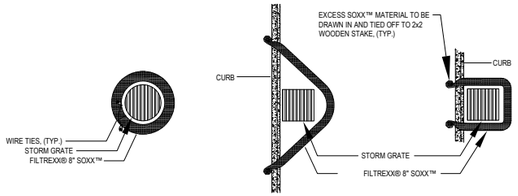
PANDA EXPRESS

TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

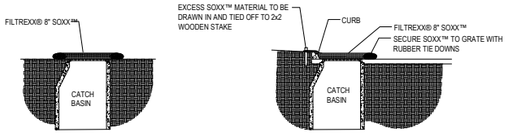
EROSION CONTROL PLAN

C06.0

ISSUE FOR CONSTRUCTION XX-XX-XXXX



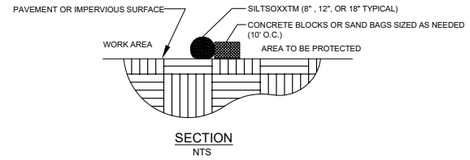
DRAIN INLET PLAN | CURBSIDE OPTION "A" PLAN | CURBSIDE OPTION "B" PLAN



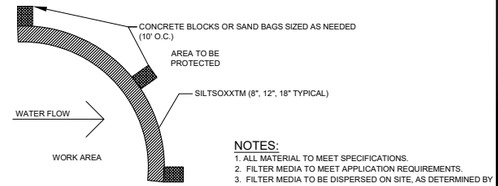
DRAIN INLET SECTION | CURBSIDE SECTION

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

FILTREXX® INLET PROTECTION
NTS



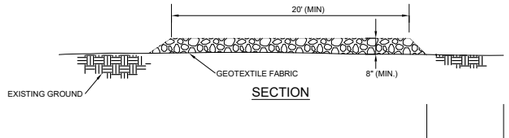
SECTION
NTS



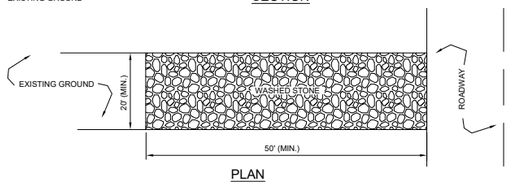
PLAN
NTS

NOTES:
1. ALL MATERIAL TO MEET SPECIFICATIONS.
2. FILTER MEDIA TO MEET APPLICATION REQUIREMENTS.
3. FILTER MEDIA TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

SILTSOXXtm FOR SEDIMENT CONTROL
NTS



SECTION

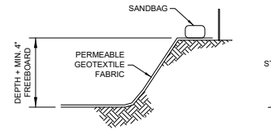


PLAN

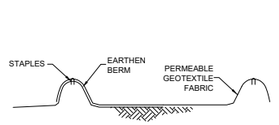
PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION EXIT AND PUBLIC ROADWAY.

CONSTRUCTION SPECIFICATIONS:
1. -STONE SIZE - USE 4" TO 8" WASHED STONE.
2. -LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50'.
3. -THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
4. -WIDTH - AS EFFECTIVE, BUT NOT LESS THAN 20'.
5. -GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD^2, A MULLEN BURST RATING OF 140 LB/IN^2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
6. -IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
7. -WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
8. -MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

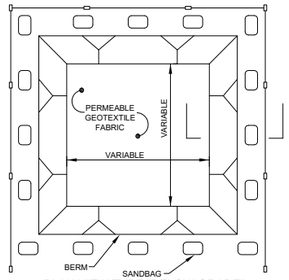
CONSTRUCTION ENTRANCE/EXIT
N.T.S.



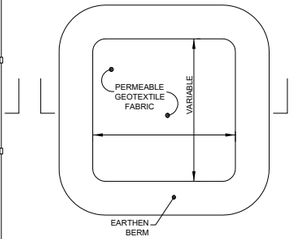
SECTION A-A
N.T.S.



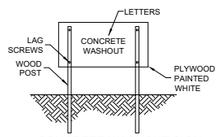
SECTION B-B
N.T.S.



PLAN VIEW TYPE "BELOW GRADE"
N.T.S.



PLAN VIEW TYPE "ABOVE GRADE" WITH EATHERN BERMS
N.T.S.



CONCRETE WASHOUT SIGN (OR EQUIVALENT)
N.T.S.

NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5FT.OF THE WASHOUT FACILITY.

CONCRETE WASHOUT
N.T.S.

PANDA EXPRESS CHINESE KITCHEN

PANDA EXPRESS, INC.
1683 Walnut Grove Ave.
Rosemead, California
91770
Telephone: 626.799.9898
Facsimile: 626.372.8288

REVISIONS:

ISSUE DATE:

1ST	CITY REVIEW/PERMIT	07-07-23

DRAWN BY: JMG

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

CIVIL ENGINEERING SERVICES INC. STATE OF TENNESSEE RAY G. FLAKE 121137 REGISTERED ENGINEER FIRM# F19083 07/06/2023

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

EROSION CONTROL DETAILS
C06.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

TRUE WARM & WELCOME 2600 RX

KITA designs
Beauty | Economy | Sustainability

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KITA Sustainable Designs, LLC
3369 Reids Chapel Rd.
Campbellsville, KY 42718
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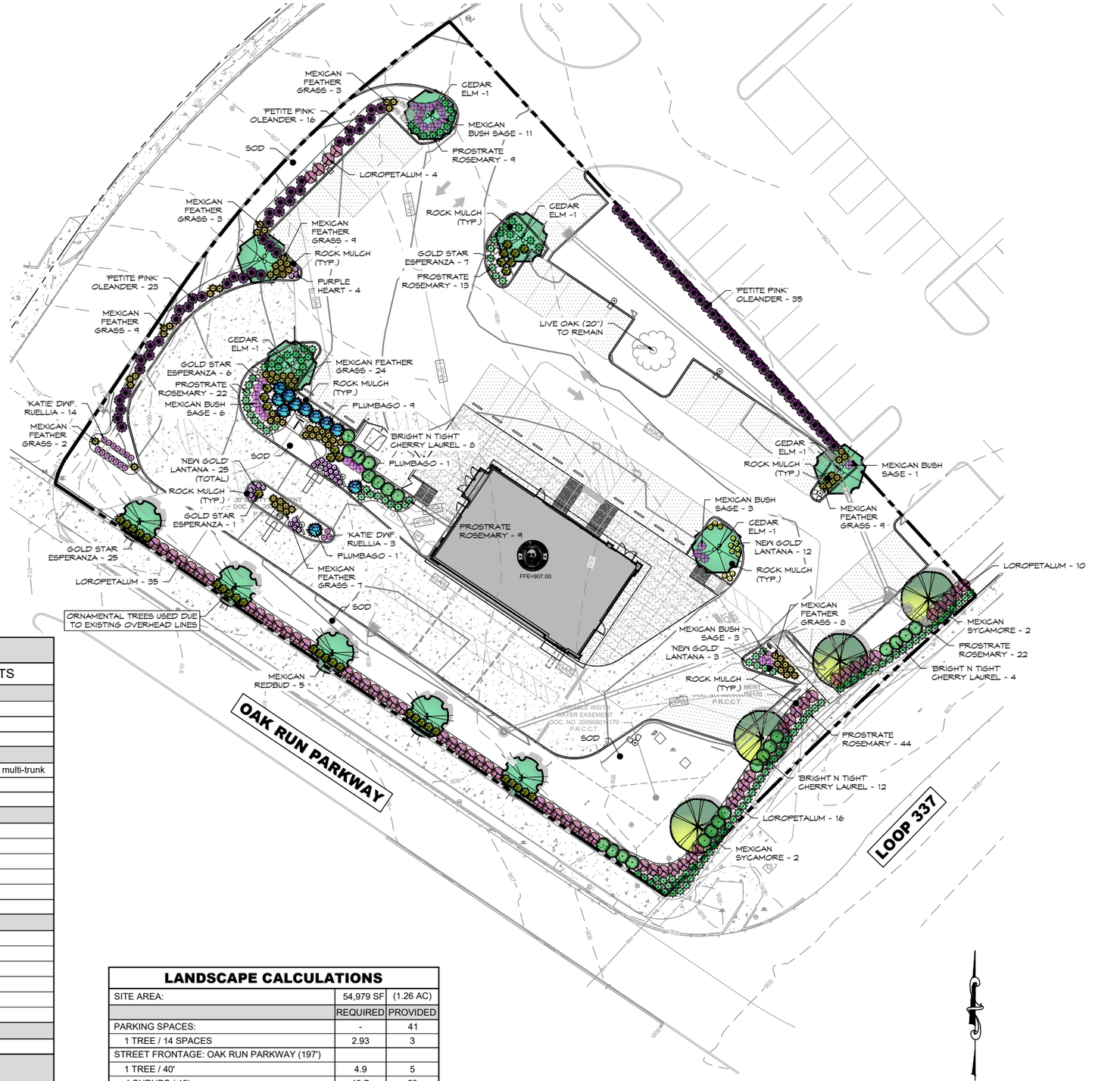
kreff@kitadesign.biz



PLANT SCHEDULE

QTY.	COMMON NAME	BOTANICAL NAME	TRUNK	COMMENTS
CANOPY TREES				
6	Cedar Elm	Ulmus crassifolia	1.5" Cal. Min.	24" Box min.
4	Mexican Sycamore	Platanus mexicana	1.5" Cal. Min.	24" Box min.
10	TOTAL - TREES			
ORNAMENTAL TREES				
5	Mexican Redbud	Cercis canadensis 'Mexicana'	6' Min.	3-5 cane min., multi-trunk
15	TOTAL - UNDERSTORY TREES			
20	TOTAL - TREES			
SHRUBS				
24	'Bright N Tight' Cherry Laurel	Prunus caroliniana 'Bright 'N Tight'	5 Gal.	Container
39	Gold Star Esperanza	Tecoma stans 'Gold Star'	3 Gal.	Container
65	Loropetalum	Loropetalum chinensis	5 Gal.	Container
74	'Petite Pink' Oleander	Nerium oleander 'Petite Pink'	3 Gal.	Container
11	Plumbago	Plumbago auriculata	1 Gal.	Container
213	TOTAL - SHRUBS			
GRASSES, PERENNIALS AND GROUND COVER				
17	'Katie' Dwarf Ruellia	Ruellia brittoniana 'Katie'	1 Gal.	Container
27	Mexican Bush Sage	Salvia leucantha	1 Gal.	Container
74	Mexican Feather Grass	Nassella tenuissima	1 Gal.	Container
12	'New Gold' Lantana	Lantana x 'New Gold'	1 Gal.	Container
125	Prostrate Rosemary	Rosmarinus officinalis 'Prostratus'	1 Gal.	Container
28	Purple Heart	Tradescantia pallida	1 Gal.	Container
TURF				
-	Buffalo Grass	Bouteloua dactyloides		Sod only
MULCH				
-	ROCK MULCH	ROCK MULCH, BUFFALO RIVER ROCK OR APPROVED EQUAL. 1" - 3" ROCK SIZE AND 3" DEEP.		

LANDSCAPE CALCULATIONS

SITE AREA:	54,979 SF	(1.26 AC)
	REQUIRED	PROVIDED
PARKING SPACES:	-	41
1 TREE / 14 SPACES	2.93	3
STREET FRONTAGE: OAK RUN PARKWAY (197')		
1 TREE / 40'	4.9	5
4 SHRUBS / 40'	19.7	60
STREET FRONTAGE: LOOP 337 (159')		
1 TREE / 40'	4.0	4
4 SHRUBS / 40'	15.9	42

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

Texas 811 Know what's below. Call before you dig.

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REVISIONS:

ISSUE DATE:

1ST	XXXXXX	XX-XX-22

DRAWN BY: RLP

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

REGISTERED LANDSCAPE ARCHITECT 7320 STATE OF TEXAS

Civil Engineering Services
Engineering, Land Planning, and Environmental
7705 Spicer Farm Lane
Fairview, Tennessee
37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
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2696 Loop 337
New Braunfels, TX 78132

LANDSCAPE PLAN

L01.1

ISSUE FOR CONSTRUCTION XX-XX-XXXX

KITA designs
Beauty | Economy | Sustainability

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3369 Reids Chapel Rd.
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(615) 469 - 1222 Ofc.
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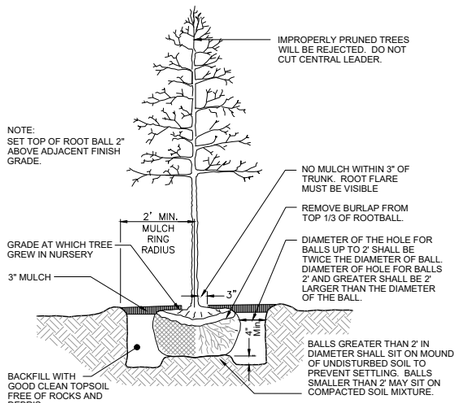
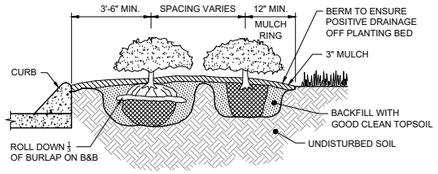
kreff@kitadesign.biz



DECIDUOUS TREE PLANTING
NOT TO SCALE



SHRUB / GROUND COVER PLANTING
NOT TO SCALE

LANDSCAPE NOTES:

1. WHEN APPLICABLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHOULD BE PERMITTED TO OPERATE OR BE STORED, NOR ANY MATERIALS TO BE HANDLED OR STORED, WITHIN THE DRIPLINES OF TREES OUTSIDE THE LIMIT OF GRADING.
2. THE QUANTITIES INDICATED ON THE PLANT LIST AND PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THOSE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIALS SHALL BE NURSERY GROWN, GRADE "A" QUALITY, UNLESS OTHERWISE NOTED AND SHALL COMPLY WITH THE AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z-60.1; LATEST EDITION, FOR SIZE AND QUALITY.
4. NO SUBSTITUTIONS AS TO TYPE, SIZE, OR SPACING OF PLANT MATERIALS SPECIFIED ON THIS PLAN MAY BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT. KITA LANDSCAPE DESIGN (615) 469-1222.
5. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND TO PROTECT UTILITIES THAT ARE TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
6. ALL AREAS DISTURBED BE STABILIZED WITH ROCK MULCH. SOD TO BE USED ONLY AS NEEDED.
7. SOIL USED FOR PLANTING SHALL CONSIST OF (5) PARTS TOPSOIL, (1) PART SAND AND (2) PARTS ORGANIC MATTER, MIXED WITH I POUND OF FERTILIZER PER CUBIC YARD.
   A. SAND SHALL BE CLEAN MASONRY SAND.
   B. ORGANIC MATTER SHALL BE PEAT MOSS, OR WELL COMPOSTED PINE BARK, OR APPROVED EQUAL AND SHALL BE FINELY GROUND AND FREE OF WEEDS.
   C. ALL FERTILIZER SHALL BE 10-10-10 WITH MINOR ELEMENTS. FERTILIZER SHALL HAVE 40-50% OF ITS TOTAL NITROGEN IN A WATER INSOLUBLE FORM.
8. PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANT BEDS AND SOD AREAS PRIOR TO INSTALLATION. TREFLAN OR AN APPROVED EQUAL SHALL BE USED.
9. ALL PLANT BEDS SHALL HAVE A MINIMUM OF 3" DEEP MULCH. MULCH SHALL BE SHREDDED HARDWOOD.
10. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO CONFIRM MATERIAL QUANTITIES. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES SHOWN ON THE PLAN SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST.
11. PRIOR TO FINAL PAYMENT, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS ON PROPER CARE OF ALL SPECIFIED PLANT MATERIALS.
12. THE LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH THE IRRIGATION INSTALLATION WHEN APPLICABLE.
13. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AND TAKE SPECIAL CARE TO INSURE THAT BED PREPARATION DOES NOT INHIBIT DRAINAGE.
14. ALL LAWN AREAS SHALL BE CULTIVATED TO A DEPTH OF 4" PRIOR TO SODDING AND SEEDING. PREPARED TURF BEDS SHALL BE FREE FROM STONES OVER 2" DIAMETER, WEEDS AND OTHER DELETERIOUS MATERIAL.
15. THE LANDSCAPE CONTRACTOR SHALL RAKE SMOOTH ALL SEED OR SOD AREAS PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING BEHIND THE CURB SO GRADE IS LEVEL WITH TOP OF CURB.
17. SODDED AREAS SHALL HAVE NO BARE AREAS. SEEDED AREAS SHALL BE CONSIDERED ACCEPTABLE WHEN FULL COVERAGE OF THE PERMANENT TURF GRASS SPECIES IS ESTABLISHED.
18. CUT AWAY ROPES OR WIRES FROM B&B PLANTS. PULL BACK BURLAP FROM TOP OF ROOT BALL. DO NOT ALLOW BURLAP TO BE EXPOSED AT SURFACE. TOTALLY REMOVE BURLAP IF IT IS SYNTHETIC.
19. IF CONTAINER GROWN PLANTS SHOW SIGNS OF BEING ROOT BOUND, SCORE ROOTS VERTICALLY.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
21. ALL REPLACEMENTS SHALL BE OF THE SAME TYPE, SIZE, AND QUALITY AS SPECIFIED ON THE PLANT LIST, UNLESS APPROVED OTHERWISE IN WRITING BY THE LANDSCAPE ARCHITECT.
22. ANY MATERIAL THAT IS DEEMED TO BE 25% DEAD OR MORE SHALL BE CONSIDERED DEAD, AND MUST BE REPLACED AT NO CHARGE. A TREE IS CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR MORE THAN 25% OF THE CROWN IS DEAD.
23. REPLACEMENTS SHALL BE MADE DURING THE NEXT PLANTING SEASON UNLESS THE LANDSCAPE CONTRACTOR AGREES TO AN EARLIER DATE.
    PLANTING DATES
    SPRING: MARCH 15 - APRIL 15
    FALL: OCTOBER 1 - NOVEMBER 30
24. THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED BY VANDALISM, FIRE, RELOCATION, WILDLIFE, THEFT, OR OTHER ACTIVITIES BEYOND THE LANDSCAPE CONTRACTOR'S CONTROL.
25. CONTRACTOR TO IRRIGATE ALL NEW LANDSCAPE PLANTINGS AND LAWN AREAS WITH AN AUTOMATED UNDERGROUND IRRIGATION SYSTEM, ENSURING HEAD-TO-HEAD COVERAGE. IRRIGATION TO BE DESIGN-BUILD. WHENEVER POSSIBLE USE DRIP IRRIGATION.
26. IRRIGATION TO HAVE A SEPARATE METER.
27. GENERAL CONTRACTOR TO COORDINATE AND BE RESPONSIBLE FOR WATERING ALL PLANTS AND SEEDED AREAS AFTER PLANTING UNTIL IRRIGATION SYSTEM IS OPERABLE.

LANDSCAPE BED NOTES:

1. ALL LANDSCAPE BEDS SHOULD BE PREPARED 3" BELOW GRADE PRIOR TO START.
2. APPLY PRE-EMERGENT TO ALL LANDSCAPE BEDS AS SUGGESTED PER MANUFACTURER'S SPECIFICATIONS. (SEE NOTE #8).
3. APPLY PERMEABLE WEED BARRIER TO ALL LANDSCAPE BEDS.
4. INSTALL RIVER ROCK MUCH (OR LOCAL EQUAL) (1" - 1.5" DIAMETER), APPROXIMATELY 3" DEEP IN ALL LANDSCAPE BEDS OVER WEED BARRIER.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

Texas 811
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CHINESE KITCHEN

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REVISIONS:

ISSUE DATE:

1ST	XXXXXX	XX-XX-22

DRAWN BY: RLP

PANDA PROJECT #: S8-24-D25605
PANDA STORE #: D25605
ARCH PROJECT #: XXX

REGISTERED LANDSCAPE ARCHITECT KEVIN V. REFF 7-3-22 STATE OF TEXAS

Civil Engineering Services
Engineering, Land Planning, and Environmental

7705 Spicer Farm Lane
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37062
Phone: (615) 533-0401
e-mail: ray@civilengineeringservices.net

PANDA EXPRESS
TRUE WARM & WELCOME
2696 Loop 337
New Braunfels, TX 78132

LANDSCAPE PLAN

L01.2

ISSUE FOR CONSTRUCTION XX-XX-XXXX

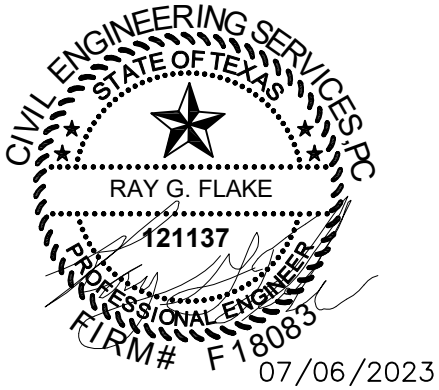
TRUE WARM & WELCOME 2600 RX

Storm Water Design Report

For

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Prepared By
Civil Engineering Services, PC
P.O. Box 1302
Fairview, TN 37062



July 6, 2023

CIVIL ENGINEERING SERVICES

P.O. Box 1302, Fairview, TN 37062 Office: (615) 533-0401

July 6, 2023

Stormwater Management
550 Landa St
New Braunfels TX 78130

RE: Stormwater Management Plan
Panda Express Restaurant
2696 Loop 337
New Braunfels, Comal County, TX 78130

Below and enclosed is the stormwater management report for the site of the proposed Panda Express restaurant located at the address referenced above.

Site/Owner Information:

Name: Panda Express Inc.
Address: 1683 Walnut Grove Avenue, Rosemead, CA 91770
Phone Number: (626) 799-9898

Existing Site Conditions:

This site is an undeveloped tract of land (Tax Map 113E, Group B, Parcel 005.00) located at 2696 Loop 337 in New Braunfels, TX. The parcel is part of WestPointe Village, being Lot 2, Block 1 of WestPointe Subdivision Unit 2. This property lies on the northwest side of Loop 337, and northeast of Oak Run Parkway.

This site generally drains from northwest to southeast. Please refer to Enclosure 3 for the existing conditions drainage map.

This site lies within Zone X, areas outside the 0.2% annual chance floodplain as shown on FEMA Firm Map Panel Number 48091C 0435F with an effective date of September 2, 2009. A FEMA Firmette of the area is included as Enclosure 2.

Proposed Site Conditions:

The proposed project is to clear and grade the site, and to construct a Panda Express restaurant with a new storm sewer system, parking spaces, drive aisles, and landscaped areas, and to bring all utilities to the building envelope.

Proposed site drainage patterns have been designed to generally match the existing drainage patterns. An increase in impervious area is planned for this project, which results in an increase of peak stormwater discharge from the site. Stormwater detention for this site is provided by the development, located northeasterly from the site approximately 1,500 feet. Refer to the 'Results' section below for a tabulation of peak stormwater runoff.

Stormwater quality provisions must be met on-site. Storm water runoff will be collected by a new storm sewer system on the site, and conveyed to a high-flow, membrane filtration treatment unit (Contech Jellyfish® or similar). Please refer to Enclosure 8 for additional information for the treatment unit. Discharge from the treatment unit is then conveyed to the off-site stormwater detention pond. Please refer to the drainage area map for proposed conditions, included in Enclosure 3.

This site lies within the Edwards Aquifer Recharge Zone. A Water Pollution Abatement Plan (WPAP) for this project has been prepared under separate cover.

Methodology:

The time of concentration was assumed to be 5 minutes for both the existing and proposed site conditions due to the small size of the site. Rainfall intensities were obtained from the rainfall values for New Braunfels provided in Engineering Bulletin dated December 21, 2020 (Enclosure 4), and the NRCS Soils Map (Enclosure 5) was consulted to determine that the existing soil classifications for this site are Rumple-Comfort, rubbly association, having a hydrologic soil group of D.

Runoff coefficients were determined for each surface type within the drainage areas contributing stormwater runoff across this site, and a weighted runoff coefficient was calculated for the total drainage area, for both the existing and proposed conditions. The SCS TR-55 was used to calculate peak stormwater runoff values for each storm event (refer to Enclosure 6 for tabulation of results). Pipe capacity calculations for the peak 25-year storm runoff are included as Enclosure 7.

Results:

Peak stormwater runoff values for the existing and proposed site conditions are included in the table below.

Summary of Peak Discharge

	Area (acres)	weighted CN	Tc (min)	2 Yr (cfs)	10 Yr (cfs)	25 Yr (cfs)	50 Yr (cfs)	100 Yr (cfs)
Existing Conditions	1.262	84.1	5	5.67	9.04	11.23	13.00	14.83
Proposed Conditions	1.262	92.2	5	6.40	9.68	11.81	13.54	15.33

On-site water quality will be provided by a membrane filtration treatment unit. Stormwater detention is provided off-site by the development.

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If you have any questions or need further information during your review of this site, please do not hesitate to call me at (615) 533-0401 to discuss.

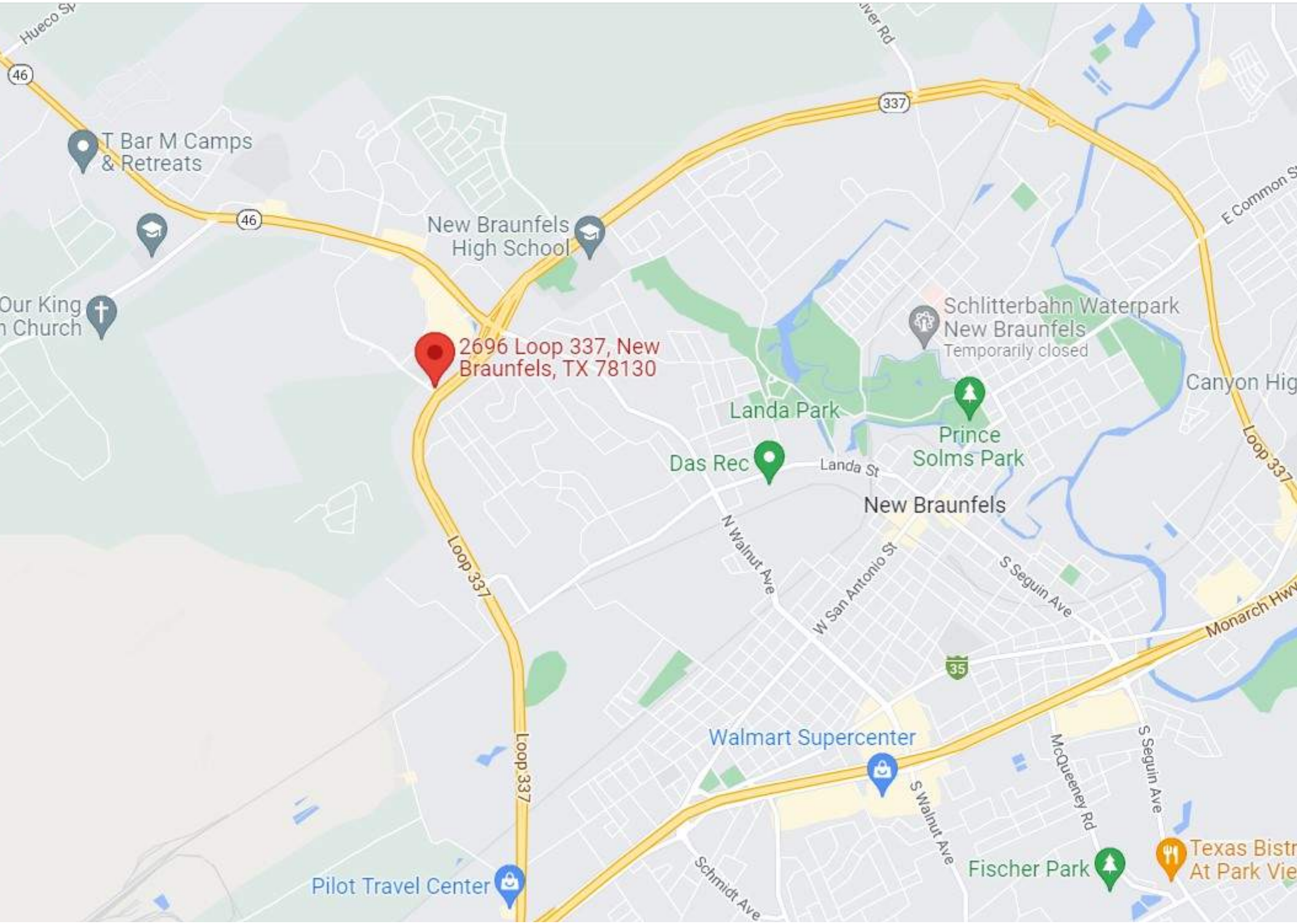
Respectfully,

Ray Flake, $PE_{(TX)}$

Enc. Enclosure 1 – Site Location Map
Enclosure 2 – FEMA Firmette
Enclosure 3 – Drainage Area Maps
Enclosure 4 – New Braunfels Rainfall Values
Enclosure 5 – NRCS Custom Soils Report
Enclosure 6 – SCS TR-55 Method results
Enclosure 7 – Storm Pipe Capacity Calculations
Enclosure 8 – Membrane Filtration Treatment Unit

Enclosure 1

Site Location Map


T Bar M Camps & Retreats
New Braunfels High School
2696 Loop 337, New Braunfels, TX 78130
Schlitterbahn Waterpark New Braunfels
Temporarily closed
Landa Park
Prince Solms Park
Das Rec
Landa St
New Braunfels
Canyon Hig
Loop 337
N Walnut Ave
W San Antonio St
S Seguin Ave
Monarch Hwy
Walmart Supercenter
S Walnut Ave
McQueeney Rd
Schmidt Ave
Fischer Park
Texas Bistr
At Park Vie
Pilot Travel Center
E Common S
Hueco Sp
46
337
35

Enclosure 2

FEMA Firmette

National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

0 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0435F

FIRM

FLOOD INSURANCE RATE MAP

COMAL COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 435 OF 505

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEW BRAUNFELS, CITY OF	485493	0435	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48091C0435F

EFFECTIVE DATE
SEPTEMBER 2, 2009

Federal Emergency Management Agency

JOINS PANEL 0430

CITY OF NEW BRAUNFELS
EXTRATERRITORIAL JURISDICTION
485493

CITY OF NEW BRAUNFELS
485493

CITY OF NEW BRAUNFELS
EXTRATERRITORIAL JURISDICTION
485493

PROJECT LOCATION

ZONE X

ZONE X

AY0211

AY1564

AY0212

AY1563

Blieders Creek Tributary 6

CITY OF NEW BRAUNFELS ETJ LIMITS

CITY OF NEW BRAUNFELS

HORSESHOE TRAIL

T BAR M DRIVE

WOODLANE DRIVE

WINDSOR

TIMBER HOLLOW ROAD

CROWN RDG ROAD

RIDGE RUN ROAD

OAK FOREST DR.

OAK PEBBLE ROAD

OAK PATH ROAD

OAK ROCK ROAD

OAKMONT CIRCLE

OAK SPRAWL ROAD

PARKWAY GLEN ROAD

OAK RUN

HUNTERS TRAIL

HUNTERS ROAD

HUNTERS CHASE RD.

MORNING STAR ROAD

MORNING MOON ROAD

MEADOW BREEZE R.

INDEPENDENCE DRIVE

ACCESS ROAD

LOOP 337

PATIO DRIVE

ARBOR CIR.

OHIO AVE.

CANYON DRIVE

FREDERICKSBURG

WOODLAND AVE.

DEER TROT RD

WOODLAND AVENUE

WALKER CIRCLE

HUNTERS TRACE ROAD

HUNTERS TROPHY ROAD

HUNTERS WAY

HUNTERS RUN ROAD

CREEK DRIVE

SKY VUE AVENUE

TIMBER WILD ROAD

FOREST TRAIL

KERLICK LANE

LAUREL LANE

LAUREL CIRCLE DRIVE

RIDGE DRIVE

ENCINO DRIVE

MESA DRIVE

TWIN OAKS LA

TIMBER LANE

MISSION RIDGE HILL DRIVE

EVERGREEN HILLS DRIVE

MISSION TRACE ROAD

SIERRA DRIVE

MISSION TRAIL DRIVE

ROYAL CREST TRAIL

MOSS ROCK DRIVE ROAD

TWIN OAKS DRIVE

Enclosure 3

Drainage Area Maps

NOTES:
1. PIPE LENGTHS AND SLOPES ARE CALCULATED TO INSIDE FACE OF STRUCTURE
2. CASTING ELEVATION SHOWN FOR CURB INLET REPRESENTS GRADE AT PAVEMENT
3. PIPES AND STRUCTURES DESIGNATED WITH "EX" ARE TO BE INSTALLED BY OTHERS
4. WQU SHALL BE CONTECH JELLYFISH JFPD0406, AS SHOWN ON SHEET C-0X.X, OR APPROVED EQUAL

PANDA EXPRESS
NEW BRAUNFELS, COMAL COUNTY, TX

DRAINAGE AREA MAP

EXISTING CONDITIONS

STORM STRUCTURE TABLE				
STRUCTURE	TYPE	CASTING	INV IN	INV OUT
CB-01	Curb Inlet	905.46		902.46
CB-02	Curb Inlet	903.90	899.91 899.91	899.91
CB-03	Curb Inlet	903.70		901.76
CB-04	Curb Inlet	903.50	900.46	900.46
JB-01	Junction Manhole	906.77	901.86	901.86
JB-02	Structure by Developer	904.59	899.41 896.60	896.17
WQU-01	Water Quality Unit	901.47	899.76	899.51

STORM SEWER PIPE SCHEDULE					
PIPE	SIZE & TYPE	LENGTH	SLOPE	U.S. FL	D.S. FL
ST-01	15" HDPE	59.3 LF	1.01%	902.46	901.86
ST-02	15" HDPE	148.5 LF	1.31%	901.86	899.91
ST-03a	18" HDPE	5.8 LF	2.57%	899.91	899.76
ST-03b	18" HDPE	5.4 LF	1.86%	899.51	899.41
ST-04	15" HDPE	124.0 LF	1.05%	901.76	900.46
ST-05	15" HDPE	54.6 LF	1.01%	900.46	899.91
ST-EX-01	21" RCP	110.0 LF	1.59%	898.35	896.60
ST-EX-02	30" RCP	117.0 LF	0.59%	896.17	895.48

** NOTES:
1. PIPE LENGTHS AND SLOPES ARE CALCULATED TO INSIDE FACE OF STRUCTURE
2. CASTING ELEVATION SHOWN FOR CURB INLET REPRESENTS GRADE AT PAVEMENT
3. PIPES AND STRUCTURES DESIGNATED WITH "EX" ARE TO BE INSTALLED BY OTHERS
4. WQU SHALL BE CONTECH JELLYFISH JFPD0406, AS SHOWN ON SHEET C-05.2, OR APPROVED EQUAL

PANDA EXPRESS
NEW BRAUNFELS, COMAL COUNTY, TX

DRAINAGE AREA MAP

Enclosure 4

New Braunfels Rainfall Values

Design Rainfall for New Development Permits (Effective January 1, 2021)

Design Rainfall

Rainfall Intensity Duration Frequency

The City evaluated precipitation based on NOAA Atlas 14, Volume 11 Texas statewide precipitation study. This study updated precipitation frequency estimates for Texas and replaces previous precipitation estimate studies. The revised rainfall data will be the standard for Design for the City of New Braunfels.

Runoff shall be calculated in accordance with Section 4 using the updated precipitation values as shown in Tables 3-1 and 3-2. The 100-year (1% AC) 24-hour rainfall depth for City of New Braunfels is 13.1 inches. The data published by NOAA Atlas 14 varies linearly across the City. The values shown below are taken from the highest rainfall data within the City limits.

Table 3-1: New Braunfels Atlas 14 Area Depth-Duration Value

Year	Depth-Duration-Frequency (inches)									
	5-Min	15-Min	1-Hr	2-Hr	3-Hr	6-Hr	12-Hr	24-Hr	2-day	3-day
2	0.528	1.06	1.96	2.4	2.67	3.13	3.59	4.08	4.66	5.05
5	0.664	1.33	2.45	3.08	3.47	4.14	4.79	5.48	6.27	6.78
10	0.781	1.66	2.88	3.71	4.23	5.13	5.97	6.86	7.82	8.43
25	0.946	1.88	3.5	4.63	5.39	6.66	7.82	8.99	10.2	10.9
50	1.08	2.14	3.97	5.4	6.39	8.03	9.46	10.9	12.3	13.1
100	1.22	2.41	4.49	6.26	7.54	9.62	11.4	13.1	14.7	15.6
500	1.57	3.09	5.95	8.74	10.8	14.2	17.1	19.8	22	23.1

Table 3-2 shows rainfall intensities by storm event. The intensities were calculated based off the depth duration table for each frequency storm. Durations range from 5 minutes up to 1 day for recurrence intervals from the 2-year to 500-year storm events, which will be the standard design for New Braunfels.

The City requires all flood study submittals to be performed using rainfall data presented in the document. If a FEMA submittal is required for the purpose of a map revision or amendment such as a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) or a Letter of Map Amendment (LOMA), FEMA will require the hydrologic and hydraulic models to be updated based on the information used for the Current Effective Flood Insurance Study (FIS). In which case, the City requires two separate submittals. One, which uses FEMA data and will be submitted for FEMA map revisions and incorporation upon City Floodplain Administrator's (FPA) approval; another which uses the guidelines published in this manual and will be submitted for review and approval by the City Engineer or his/her designee.

Regardless of a FEMA submittal, the City will require a signed and sealed memo or report, summarizing the hydrologic and hydraulic analysis as illustrated in this manual, for all improvements adjacent to a mapped or un-mapped stream with a contributing drainage area greater than 200 acres.

Table 3-2: New Braunfels Rainfall Intensities by Storm Event

Rainfall Intensity (inches/hour) by Storm Frequency							
Time (minutes)	**2**	**5**	**10**	**25**	**50**	**100**	**500**
5	6.34	7.97	9.37	11.35	12.96	14.64	18.84
6	5.98	7.53	8.88	10.78	12.29	13.88	17.72
7	5.70	7.18	8.47	10.30	11.73	13.24	16.83
8	5.45	6.88	8.11	9.87	11.24	12.68	16.08
9	5.24	6.61	7.79	9.48	10.79	12.17	15.42
10	5.05	6.36	7.50	9.12	10.38	11.70	14.82
11	4.87	6.13	7.23	8.78	9.99	11.26	14.27
12	4.70	5.92	6.97	8.45	9.61	10.83	13.76
13	4.54	5.71	6.72	8.13	9.25	10.42	13.27
14	4.39	5.51	6.47	7.82	8.90	10.03	12.81
15	4.24	5.32	6.24	7.52	8.56	9.64	12.36
16	4.10	5.14	6.03	7.26	8.25	9.29	11.93
17	3.97	4.98	5.83	7.02	7.98	8.98	11.54
18	3.86	4.83	5.66	6.81	7.74	8.71	11.19
19	3.75	4.69	5.50	6.62	7.51	8.46	10.88
20	3.65	4.57	5.36	6.45	7.31	8.23	10.59
21	3.57	4.46	5.23	6.29	7.12	8.01	10.33
22	3.48	4.35	5.10	6.14	6.95	7.82	10.09
23	3.41	4.26	4.99	6.00	6.79	7.64	9.86
24	3.34	4.17	4.88	5.87	6.64	7.47	9.65
25	3.27	4.08	4.78	5.75	6.50	7.32	9.46
26	3.20	4.00	4.69	5.64	6.37	7.17	9.27
27	3.14	3.93	4.60	5.53	6.25	7.03	9.10
28	3.09	3.85	4.52	5.43	6.13	6.90	8.94
29	3.03	3.79	4.44	5.33	6.02	6.78	8.79
30	2.98	3.72	4.36	5.24	5.92	6.66	8.64
31	2.93	3.66	4.29	5.15	5.82	6.55	8.50
32	2.88	3.60	4.22	5.07	5.73	6.44	8.37
33	2.84	3.54	4.15	4.99	5.63	6.34	8.24
34	2.79	3.49	4.09	4.91	5.55	6.24	8.12
35	2.75	3.43	4.02	4.84	5.46	6.15	8.00
36	2.71	3.38	3.96	4.77	5.38	6.06	7.89
37	2.67	3.33	3.90	4.70	5.30	5.97	7.78
38	2.63	3.28	3.85	4.63	5.23	5.89	7.68
39	2.59	3.24	3.79	4.57	5.16	5.80	7.58
40	2.55	3.19	3.74	4.50	5.09	5.73	7.48
41	2.52	3.14	3.69	4.44	5.02	5.65	7.38
42	2.48	3.10	3.64	4.38	4.95	5.58	7.29
43	2.45	3.06	3.59	4.32	4.88	5.50	7.20
44	2.42	3.02	3.54	4.27	4.82	5.43	7.12
45	2.38	2.98	3.49	4.21	4.76	5.36	7.03
46	2.35	2.94	3.45	4.16	4.70	5.30	6.95
47	2.32	2.90	3.40	4.11	4.64	5.23	6.87
48	2.29	2.86	3.36	4.06	4.58	5.17	6.79
49	2.26	2.82	3.31	4.00	4.53	5.11	6.71
50	2.23	2.79	3.27	3.95	4.47	5.04	6.64
51	2.20	2.75	3.23	3.91	4.42	4.98	6.56
52	2.17	2.72	3.19	3.86	4.36	4.93	6.49
53	2.14	2.68	3.15	3.81	4.31	4.87	6.42
54	2.11	2.65	3.11	3.76	4.26	4.81	6.35
55	2.08	2.61	3.07	3.72	4.21	4.76	6.28
56	2.06	2.58	3.03	3.67	4.16	4.70	6.21
57	2.03	2.55	2.99	3.63	4.11	4.65	6.14
58	2.00	2.51	2.95	3.59	4.06	4.59	6.08
59	1.98	2.48	2.92	3.54	4.02	4.54	6.01
60	1.95	2.45	2.88	3.50	3.97	4.49	5.95
120	1.20	1.54	1.86	2.32	2.70	3.13	4.37

180	0.89	1.16	1.41	1.80	2.13	2.51	3.60
240	0.71	0.93	1.14	1.47	1.75	2.08	3.02
360	0.52	0.69	0.85	1.11	1.34	1.60	2.37
720	0.30	0.40	0.50	0.65	0.79	0.95	1.43
1440	0.17	0.23	0.29	0.37	0.45	0.55	0.83

Enclosure 5

NRCS Custom Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Comal and Hays Counties, Texas

October 25, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:864 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 17, 2020—Jan 15, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KrB	Krum clay, 1 to 3 percent slopes	0.1	3.3%
RUD	Rumple-Comfort, rubbly association, 1 to 8 percent slopes	1.6	96.7%
Totals for Area of Interest		**1.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Comal and Hays Counties, Texas

KrB—Krum clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t2j5
Elevation: 550 to 1,750 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Krum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Krum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous silty and clayey alluvium derived from limestone

Typical profile

A - 0 to 16 inches: clay
Bk1 - 16 to 58 inches: clay
Bk2 - 58 to 66 inches: clay
Ck - 66 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Bolar

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Lewisville

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

RUD—Rumple-Comfort, rubbly association, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2ylvc
Elevation: 800 to 1,650 feet
Mean annual precipitation: 33 to 37 inches
Mean annual air temperature: 65 to 70 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Rumple and similar soils: 60 percent
Comfort and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rumple

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium and/or residuum weathered from limestone

Typical profile

A - 0 to 10 inches: very gravelly clay loam
Bt1 - 10 to 14 inches: very gravelly clay
Bt2 - 14 to 28 inches: extremely cobbly clay
R - 28 to 59 inches: bedrock

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R081CY359TX - Gravelly Redland 29-35 PZ
Hydric soil rating: No

Description of Comfort

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 6 inches: extremely stony clay
Bt - 6 to 12 inches: extremely stony clay
R - 12 to 40 inches: bedrock

Properties and qualities

Slope: 1 to 8 percent
Surface area covered with cobbles, stones or boulders: 30.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 0.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Minor Components

Tarpley

Percent of map unit: 15 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

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Enclosure 6

SCS TR-55 Method results

WinTR-55 Current Data Description

--- Identification Data ---

User: Mark Guess
Project: NewBraunfels Panda Express
SubTitle:
State: Texas
County: Comal
Filename: C:\CES_001\Current Projects\PANDA EXPRESS\TX-NEW BRAUNFELS\ENGINEERING\Calculations\NewBraunfel

Date: 6/1/2023
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
total site		Outlet	1.26	84	0.100

Total area: 1.26 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
6.34	7.97	9.37	11.35	12.96	14.64	3.15

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

Mark Guess NewBraunfels Panda Express

Comal County, Texas

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS										
total site	5.67	12.11	9.04	12.10	11.23	12.11	13.00	12.11	14.83	12.11
REACHES										
OUTLET	5.67		9.04		11.23		13.00		14.83	

WinTR-55 Current Data Description

--- Identification Data ---

User: Mark Guess
Project: NewBraunfels Panda Express
SubTitle:
State: Texas
County: Comal
Filename: C:\CES_001\Current Projects\PANDA EXPRESS\TX-NEW BRAUNFELS\ENGINEERING\Calculations\NewBraunfel

Date: 6/1/2023
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
total site		Outlet	1.26	92	0.100

Total area: 1.26 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
6.34	7.97	9.37	11.35	12.96	14.64	3.15

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

Mark Guess NewBraunfels Panda Express

Comal County, Texas

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	50-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)
SUBAREAS										
total site	6.40	12.10	9.68	12.11	11.81	12.10	13.54	12.10	15.33	12.10
REACHES										
OUTLET	6.40		9.68		11.81		13.54		15.33	

Enclosure 7

Storm Pipe Capacity Calculations

New Braunfels, Comal County, TX 78130
2696 Loop 337

Panda Express
D25605

6/5/2023
M.Guess

										24-hour storm event precipitation				Rational Method Runoff			
Catchment	Drain Area 1 (sf)	runoff C Area 1	Drain Area 2 (sf)	runoff C Area 2	Total Area (SF)	Total Area (acres)	weighted C	actual Tc (min)	chosen Tc (min)	rainfall I (10) (in/hr)	rainfall I (25) (in/hr)	rainfall I (50) (in/hr)	rainfall I (100) (in/hr)	runoff Q (10) (cfs)	runoff Q (25) (cfs)	runoff Q (50) (cfs)	runoff Q (100) (cfs)
CB-1	4,341.8	0.25	8,680.7	0.95	**13,022.5**	**0.30**	**0.72**	5.0	**5.0**	**9.37**	**11.35**	**12.96**	**14.64**	**2.01**	**2.43**	**2.78**	**3.14**
CB-2	867.2	0.25	7,237.1	0.95	**8,104.3**	**0.19**	**0.88**	5.0	**5.0**	**9.37**	**11.35**	**12.96**	**14.64**	**1.53**	**1.85**	**2.11**	**2.38**
CB-3	4,720.5	0.25	16,023.2	0.95	**20,743.7**	**0.48**	**0.79**	5.0	**5.0**	**9.37**	**11.35**	**12.96**	**14.64**	**3.53**	**4.27**	**4.88**	**5.51**
CB-4	2,917.2	0.25	4,961.3	0.95	**7,878.5**	**0.18**	**0.69**	5.0	**5.0**	**9.37**	**11.35**	**12.96**	**14.64**	**1.17**	**1.42**	**1.62**	**1.83**
CB-5	4,783.5	0.25	455.9	0.95	**5,239.4**	**0.12**	**0.31**	5.0	**5.0**	**9.37**	**11.35**	**12.96**	**14.64**	**0.35**	**0.42**	**0.48**	**0.55**
	17,630.2		37,358.2		54,988.4	1.26											

Catchment	runoff Q (25) (cfs)	Catch Basin efficiency	captured flow (cfs)	cumulat. Q (25) (cfs)	Pipe Out Desig.	U.S. Invert Elev.	D.S. Invert Elev.	Pipe Length (ft)	Pipe slope %	Pipe Size (inches)	U.S. Grade at CB	Cover over pipe (ft)	D.S. Grade at CB	Cover over pipe (ft)	Full Flow (cfs)	Q / Qfull	velocity (fps)	bypass flow (cfs)
CB-1	**2.43**	100.0%	**2.43**	**2.43**	ST-01	902.46	901.86	59.3	1.01%	15	905.46	1.50	906.77	3.41	8.50	0.3	5.3	0.00
JB-1	**0.00**	N/A	**0.00**	**2.43**	ST-02	901.86	899.91	148.5	1.31%	15	906.77	3.41	903.90	2.49	9.80	0.2	4.8	
CB-3	**4.27**	100.0%	**4.27**	**4.27**	ST-04	901.76	900.46	124.0	1.05%	15	903.70	0.44	903.47	1.51	8.70	0.5	7.0	0.00
CB-4	**1.42**	100.0%	**1.42**	**5.69**	ST-05	900.46	899.91	54.6	1.01%	15	903.47	1.51	903.90	2.49	8.50	0.7	7.8	0.00
CB-2	**1.85**	100.0%	**1.85**	**9.97**	ST-03	899.66	899.41	13.8	1.81%	18	903.90	2.49	904.59	3.43	19.00	0.5	10.5	0.00

Enclosure 8

Membrane Filtration

Treatment Unit

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter
Owner's Manual

Jellyfish® Filter

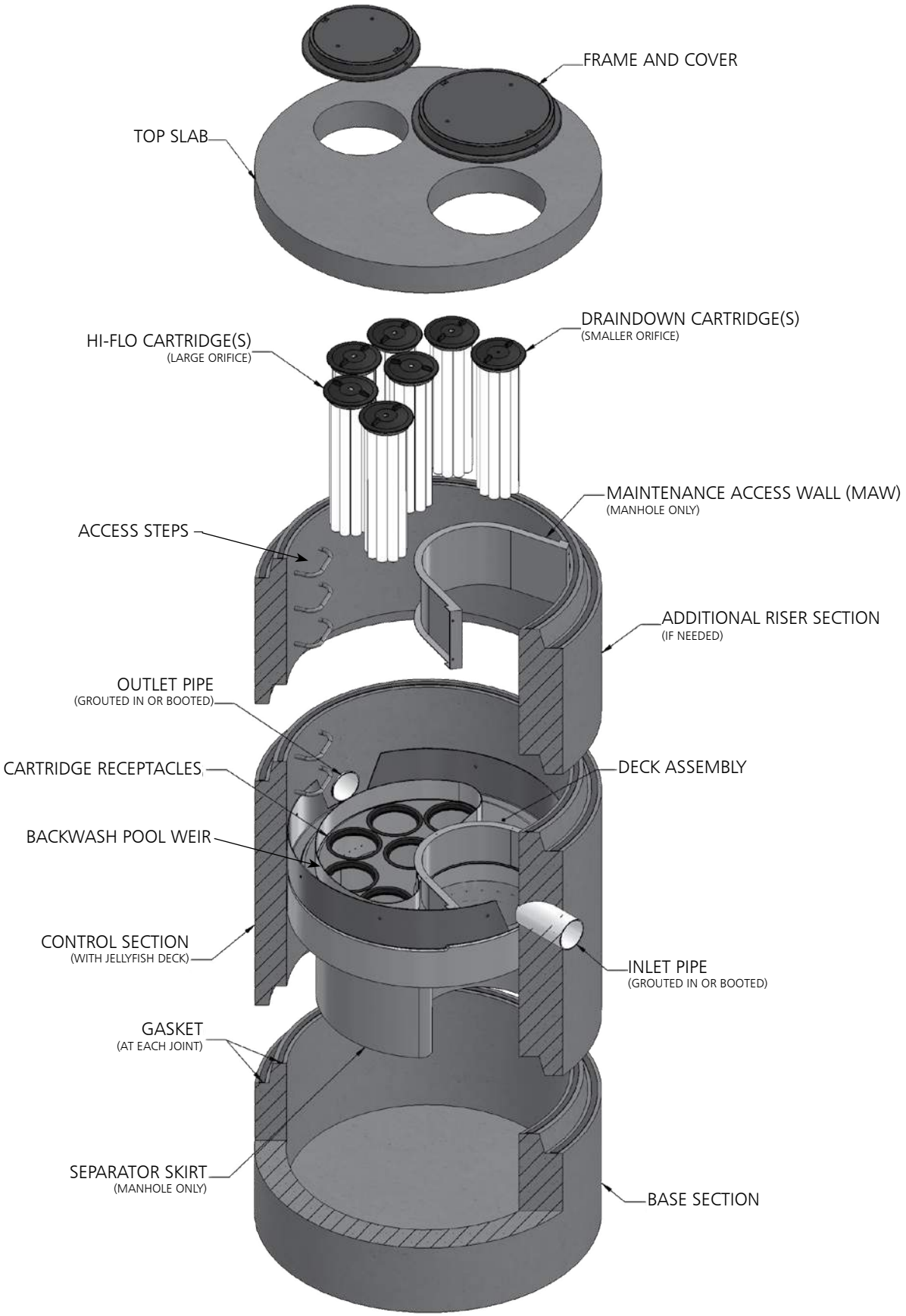
Table of Contents

THANK YOU FOR PURCHASING THE JELLYFISH® FILTER!

Contech Engineered Solutions would like to thank you for selecting the Jellyfish Filter to meet your project's stormwater treatment needs. With proper inspection and maintenance, the Jellyfish Filter is designed to deliver ongoing, high levels of stormwater pollutant removal.

If you have any questions, please feel free to call us or e-mail us:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 | West Chester, OH 45069
513-645-7000 | 800-338-1122
www.ContechES.com
info@conteches.com


FRAME AND COVER
TOP SLAB
DRAINDOWN CARTRIDGE(S)
(SMALLER ORIFICE)
HI-FLO CARTRIDGE(S)
(LARGE ORIFICE)
MAINTENANCE ACCESS WALL (MAW)
(MANHOLE ONLY)
ACCESS STEPS
ADDITIONAL RISER SECTION
(IF NEEDED)
OUTLET PIPE
(GROUTED IN OR BOOTED)
CARTRIDGE RECEPTACLES
DECK ASSEMBLY
BACKWASH POOL WEIR
CONTROL SECTION
(WITH JELLYFISH DECK)
INLET PIPE
(GROUTED IN OR BOOTED)
GASKET
(AT EACH JOINT)
SEPARATOR SKIRT
(MANHOLE ONLY)
BASE SECTION

WARNINGS / CAUTION

1. FALL PROTECTION may be required.
2. WATCH YOUR STEP if standing on the Jellyfish Filter Deck at any time; Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck. Attentive care must be taken while standing on the Jellyfish Filter Deck at all times to prevent stepping onto a lid, into or through a cartridge hole or slipping on the deck.
3. The Jellyfish Filter Deck can be SLIPPERY WHEN WET.
4. If the Top Slab, Covers or Hatches have not yet been installed, or are removed for any reason, great care must be taken to NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK. The Jellyfish Filter Deck and Cartridge Receptacle Rings can be damaged under high impact loads. This type of activity voids all warranties. All damaged items to be replaced at owner's expense.
5. Maximum deck load 2 persons, total weight 450 lbs.

Safety Notice

Jobsite safety is a topic and practice addressed comprehensively by others. The inclusions here are intended to be reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and perform all training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment as necessary. Make sure all equipment is staffed with trained and/or certified personnel, and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Eye protection
- Safety boots
- Ear protection
- Gloves
- Ventilation and respiratory protection
- Hard hat
- Maintenance and protection of traffic plan

Chapter 1

1.0 – Owner Specific Jellyfish Filter Product Information

Below you will find a reference page that can be filled out according to your Jellyfish Filter specification to help you easily inspect, maintain and order parts for your system.

Owner Name:	
Phone Number:	
Site Address:	
Site GPS Coordinates/unit location:	
Unit Location Description:	
Jellyfish Filter Model No.:	
Contech Project & Sequence Number	
No. of Hi-Flo Cartridges	
No. of Cartridges:	
Length of Draindown Cartridges:	
No. of Blank Cartridge Lids:	
Bypass Configuration (Online/Offline):	

Notes:

_____

_____

_____

_____

Chapter 2

2.0 – Jellyfish Filter System Operations and Functions

The Jellyfish Filter is an engineered stormwater quality treatment technology that removes a high level and wide variety of stormwater pollutants. Each Jellyfish Filter cartridge consists of eleven membrane - encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide a large filtration surface area, resulting in high flow and high pollutant removal capacity.

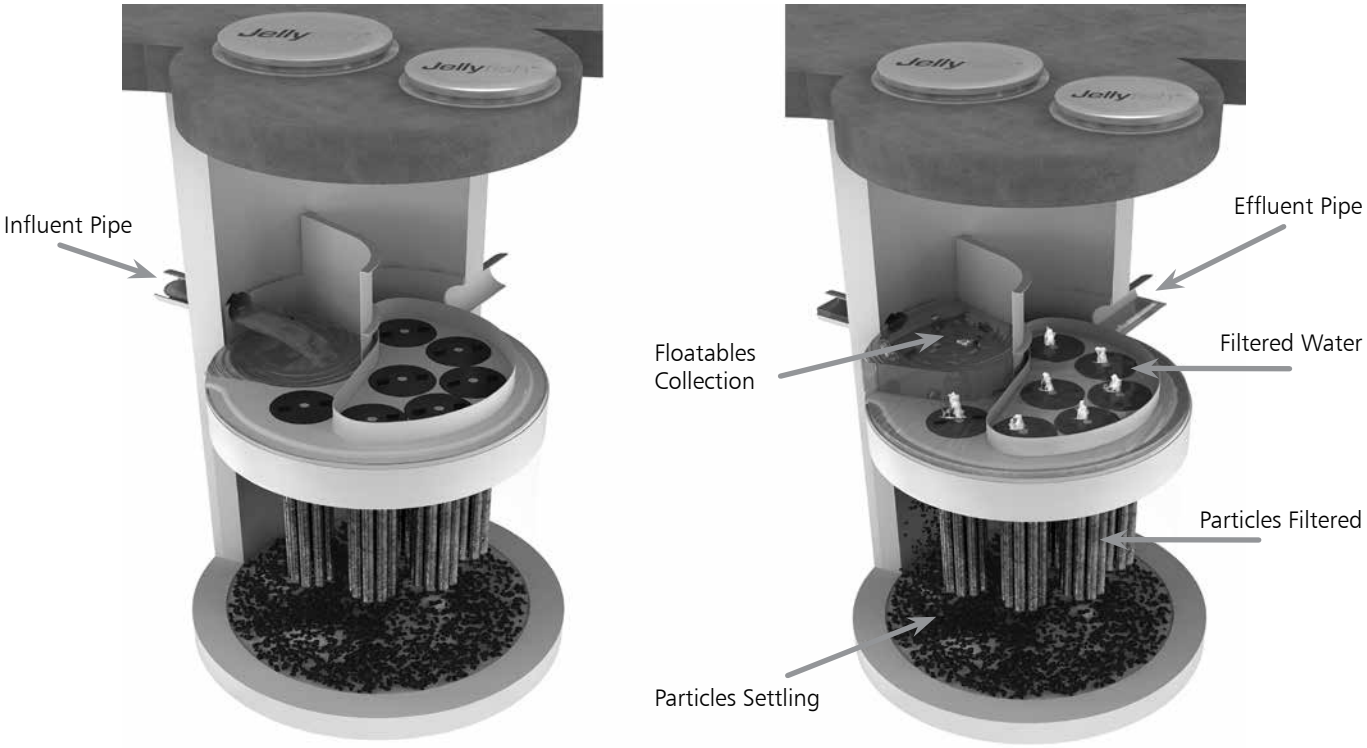
The Jellyfish Filter functions are depicted in Figure 1 below.

FIGURE 1

Jellyfish Filter Treatment Functions

Membrane Filtration

Section View with Maintenance Access Wall (MAW) Cutaway



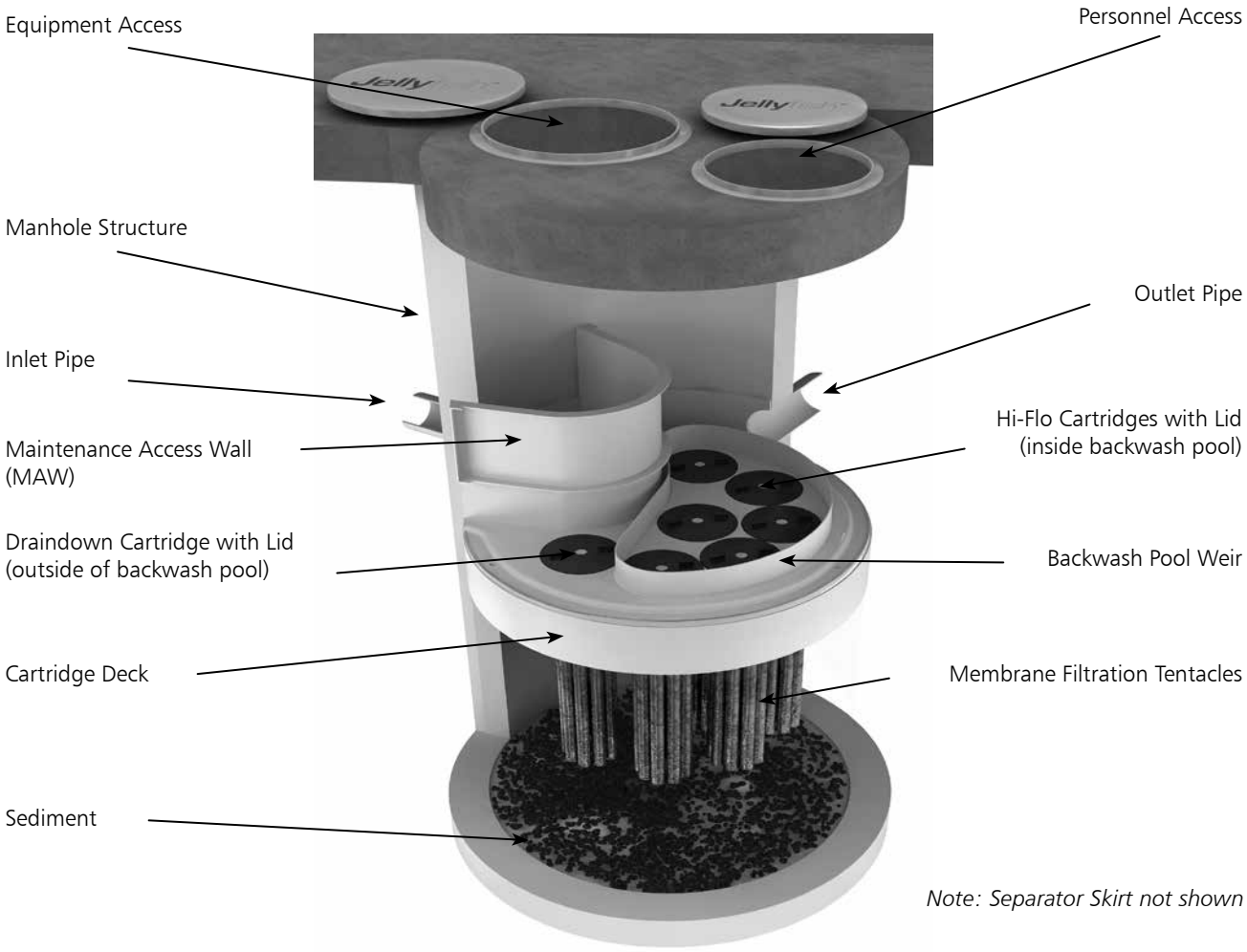
Jellyfish Filter cartridges are backwashed after each peak storm event, which removes accumulated sediment from the membranes. This backwash process extends the service life of the cartridges and increases the time between maintenance events.

For additional details on the operation and pollutant capabilities of the Jellyfish Filter please refer to additional details on our website at www.ContechES.com.

2.1 – Components and Cartridges

The Jellyfish Filter and components are depicted in Figure 2 below.

FIGURE 2 **Jellyfish Filter Components**



Tentacles are available in various lengths as depicted in Table 1 below.

Table 1 – Cartridge Lengths / Weights and Cartridge Lid Orifice Diameters

Cartridge Lengths	Dry Weight	Hi-Flo Orifice Diameter	Draindown Orifice Diameter
15 inches (381 mm)	10 lbs (4.5 kg)	35 mm	20 mm
27 inches (686 mm)	14.5 lbs (6.6 kg)	45 mm	25 mm
40 inches (1,016 mm)	19.5 lbs (8.9 kg)	55 mm	30 mm
54 inches (1,372 mm)	25 lbs (11.4 kg)	70 mm	35 mm

2.2 – Jellyfish Membrane Filtration Cartridge Assembly

The Jellyfish Filter utilizes multiple membrane filtration cartridges. Each cartridge consists of removable cylindrical filtration "tentacles" attached to a cartridge head plate. Each filtration tentacle has a threaded pipe nipple and o-ring. To attach, insert the top pipe nipples with the o-ring through the head plate holes and secure with locking nuts. Hex nuts to be hand tightened and checked with a wrench as shown below.

2.3 – Jellyfish Membrane Filtration Cartridge Installation

- Cartridge installation will be performed by trained individuals and coordinated with the installing site Contractor. Flow diversion devices are required to be in place until the site is stabilized (final paving and landscaping in place). Failure to address this step completely will reduce the time between required maintenance.
- Descend to the cartridge deck (see Safety Notice and page 3).
- Refer to Contech's submittal drawings to determine proper quantity and placement of Hi-Flo, Draindown and Blank cartridges with appropriate lids. Lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. It is possible that not all cartridge receptacles will be filled with a filter cartridge. In that case, a blank headplate and blank cartridge lid (no orifice) would be installed.

Cartridge Assembly

Do not force the tentacles down into the cartridge receptacle, as this may damage the membranes. Apply downward pressure on the cartridge head plate to seat the lubricated rim gasket (thick circular gasket surrounding the circumference of the head plate) into the cartridge receptacle. (See Figure 3 for details on approved lubricants for use with rim gasket.)

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice, and no orifice.
  - Lids with a small orifice are to be inserted into the Draindown cartridge receptacles, outside of the backwash pool weir.
  - Lids with a large orifice are to be inserted into the Hi-Flo cartridge receptacles within the backwash pool weir.
  - Lids with no orifice (blank cartridge lids) and a blank headplate are to be inserted into unoccupied cartridge receptacles.
- To install a cartridge lid, align both cartridge lid male threads with the cartridge receptacle female threads before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation.

3.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.
Inspection activities are typically conducted from surface observations and include:

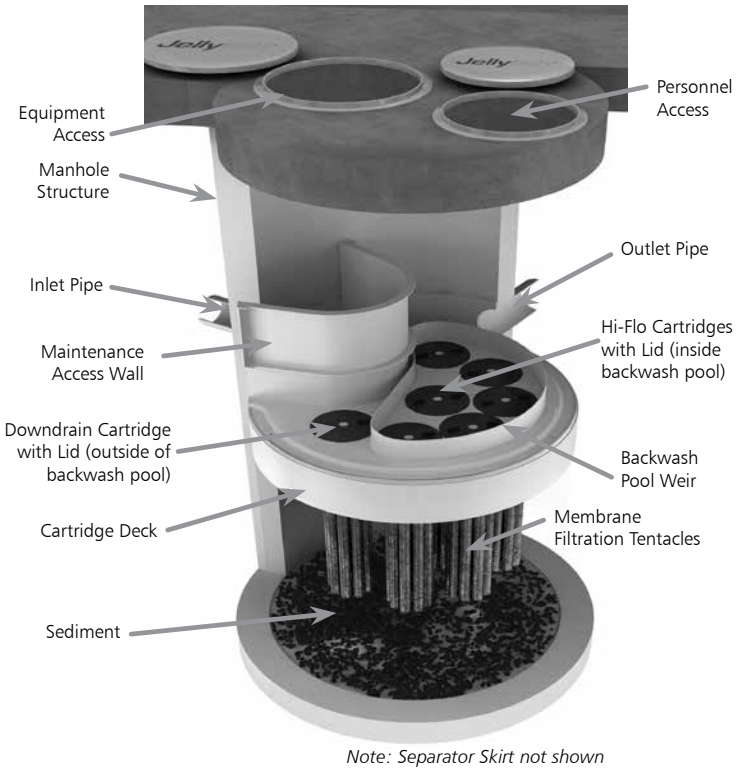
- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed

4.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.



Note: Separator Skirt not shown

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

5.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

5.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.

Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

5.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

6.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

7.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

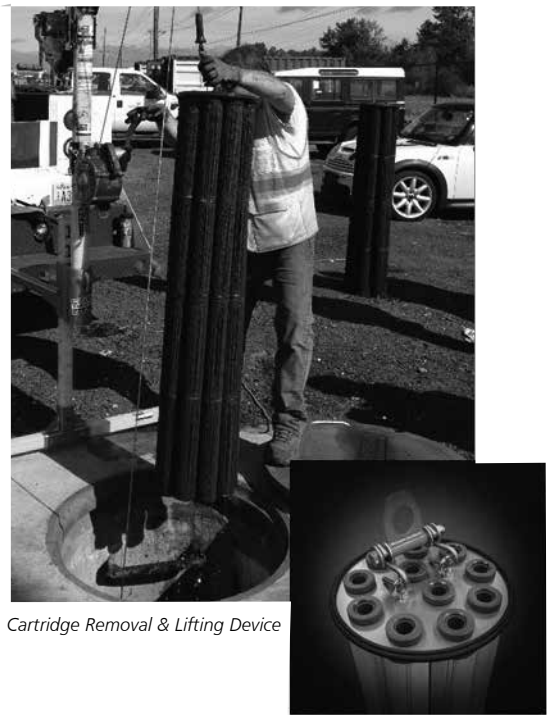
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

7.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. *Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

7.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.
2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.



Cartridge Removal & Lifting Device

3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.
4. Collected rinse water is typically removed by vacuum hose.

5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

7.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.
3. Pressure wash cartridge deck and receptacles to remove all

Rinsing Cartridge with Contech Rinse Tool

sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.

4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.
6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some

Vacuuming Sump Through MAW

vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

7.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. *Caution: Do not force the cartridge downward; damage may occur.*
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

7.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

7.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

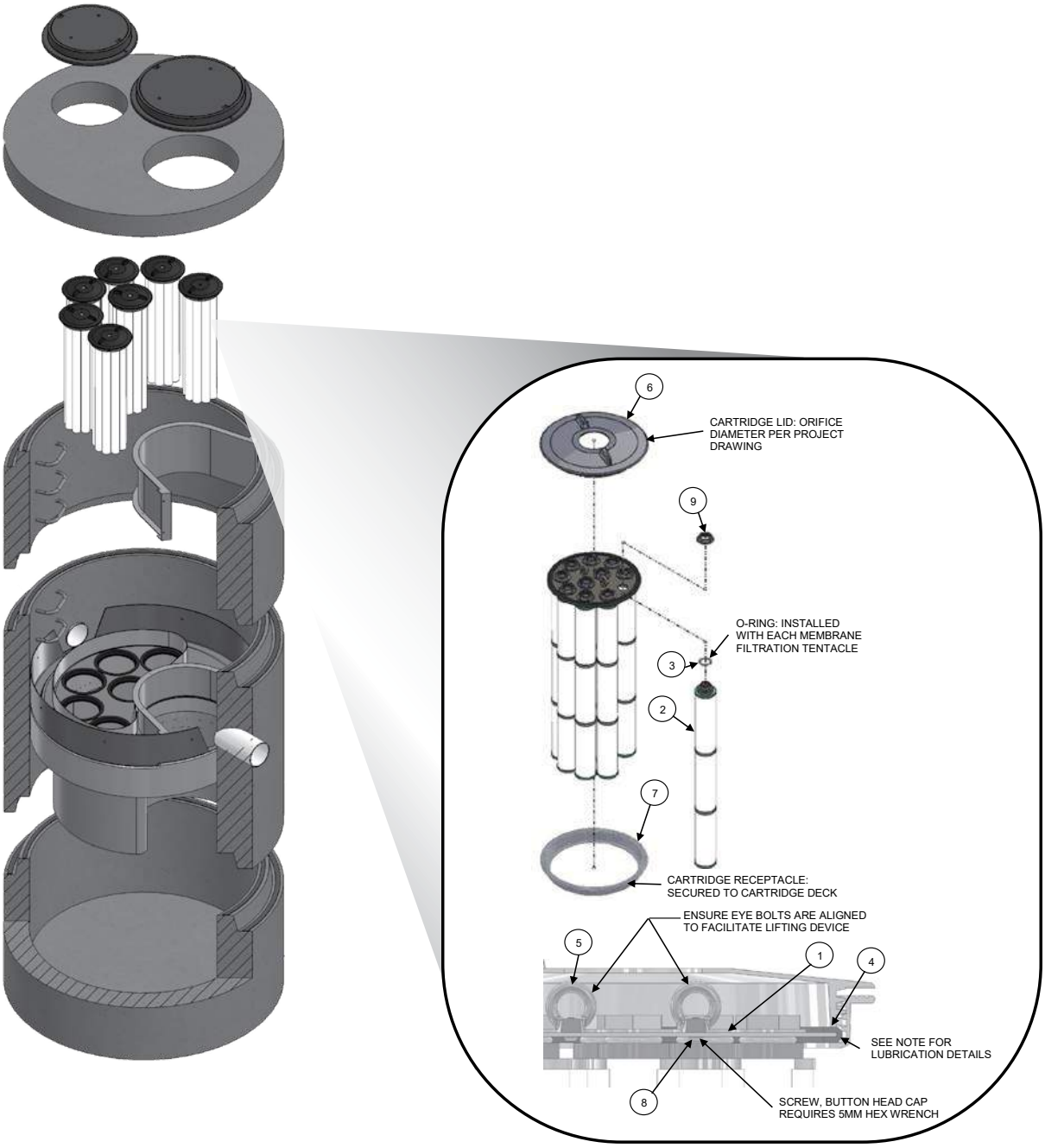


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lid (Item 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner: _____ Jellyfish Model No.:_____

Location: _____ GPS Coordinates: _____

Land Use: Commercial:_____ Industrial: _____ Service Station:_____

Road/Highway:____ Airport: _____ Residential: _____ Parking Lot:_____

Date/Time:					
Inspector:					
Maintenance Contractor:					
Visible Oil Present: (Y/N)					
Oil Quantity Removed					
Floatable Debris Present: (Y/N)					
Floatable Debris removed: (Y/N)					
Water Depth in Backwash Pool					
Cartridges externally rinsed/re-commissioned: (Y/N)					
New tentacles put on Cartridges: (Y/N)					
Sediment Depth Measured: (Y/N)					
Sediment Depth (inches or mm):					
Sediment Removed: (Y/N)					
Cartridge Lids intact: (Y/N)					
Observed Damage:					
Comments:					

Inspection, Maintenance, Repair and Retrofit Plan

Panda Express D25605

1. The Owner shall provide adequate long-term maintenance and continuation of the stormwater control measures described in this Plan, to ensure that all stormwater facilities are, and remain, in proper working condition.
2. The Owner shall maintain a copy of this Plan on site, together with a record of inspections and maintenance actions required by this Plan. All inspection and maintenance records shall be maintained on-site, and made readily available.
3. Inspections of the permanent stormwater treatment device(s) shall be made on a yearly basis, beginning no more than 12 calendar months from the completion of installation of the device(s).
4. Inspections shall be made by qualified personnel familiar with the operation and maintenance of the device(s).
5. Manufacturer's product literature is included herewith, and hereby made a part of this Plan.
6. Records of inspections shall include the following:
    a. Date of Inspection
    b. Inspector Name and Company Name
    c. Name of device inspected
    d. Overall condition of device
    e. Deficiencies or failures identified
    f. Repairs and/or replacements made

Plan prepared by:

Ray Flake, PE(TX)

Engineer of Record

Civil Engineering Services, PC

Date:_____

Owner Agreement:

Name:_____

Title:_____

Panda Express, Inc.

Date:_____

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Agent Authorization

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Roger Goldstein,
Print Name/Applicant

Executive Director, Facilities,
Title - Owner/President/Other

of Panda Express, Inc.,
Corporation/Partnership/Entity Name

have authorized Ray Flake and/or Mark Guess
Print Name of Agent/Engineer

of Civil Engineering Services, PC
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

6/29/2023
Date

THE STATE OF _____ §

County of _____ §

See attached.

BEFORE ME, the undersigned authority, on this day personally appeared _____known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this ____ day of _____,_____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles)

On June 29, 2023 before me, Yunyi Lu, Notary Public
(insert name and title of the officer)

personally appeared Roger Goldstein,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

YUNYI LU
Notary Public - California
Los Angeles County
Commission # 2373745
My Comm. Expires Sep 4, 2025

Signature Yunyi Lu (Seal)

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Application Fee Form

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Panda Express D25605
Regulated Entity Location: 2696 Loop 337, New Braunfels, TX 78130
Name of Customer: Panda Express, Inc.
Contact Person: Dennis Stone Phone: (626) 799-9898
Customer Reference Number (if issued):CN 603049529
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment**. This payment is being submitted to:

☐ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ San Antonio Regional Office
☒ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1.26 Acres	$ 4,000.00
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 07/06/2023

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

Panda Express D25605
2696 Loop 337
New Braunfels, Comal County, TX 78130

Core Data Form

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 6030495		RN

SECTION II: Customer Information

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

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

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

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

Panda Express, Inc.

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
		95-431-8504	

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

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

13. Independently Owned and Operated?
☒ Yes ☐ No

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

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

15. Mailing Address:	1683 Walnut Grove Avenue						
	City	Rosemead	State	CA	ZIP	91770	ZIP + 4

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*

(626) 799-9898		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Panda Express D25605

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	2696 Loop 337							
	City	New Braunfels	**State**	TX	**ZIP**	78130	**ZIP + 4**	
24. County	Comal							

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

25. Description to Physical Location:	n/a				
26. Nearest City			**State**	**Nearest ZIP Code**	
New Braunfels			TX	78130	
Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).					
27. Latitude (N) In Decimal:	29.710516		**28. Longitude (W) In Decimal:**	98.161597	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	42	37.9	98	09	41.8

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
5812			

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

Restaurant

34. Mailing Address:	**2696 Loop 337**							
	City	**New Braunfels**	**State**	**TX**	**ZIP**	**78130**	**ZIP + 4**	
35. E-Mail Address:								

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

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

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

SECTION IV: Preparer Information

40. Name:	Mark Guess	41. Title:	Civil Engineering Services, PC

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(573) 979-6473		( ) -	mark@civilengineeringservices.net

SECTION V: Authorized Signature

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

Company:	Panda Express Inc.	Job Title:	Executive Director, Facilities
Name *(In Print)*:	Roger Goldstein	Phone:	626 799-9898
Signature:		Date:	6/29/2023