5203 Brodie Ln

5203 Brodie Ln
Sunset Valley, Travis County, Texas

Edwards Aquifer Exception Request

Prepared For:

5203 Brodie Ln
5203 Brodie Ln.
Sunset Valley, Texas 78745

Prepared by:

GARZA EMC, LLC.
7708 Rialto Blvd., Suite 125
Austin, Texas 78735
TBPE Registration No. F-14629

06.09.2023

June 2023

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: 5203 BRODIE LN						**2. Regulated Entity No.:**			
3. Customer Name: TAILWAG HOLDINGS, INC.						**4. Customer No.:**			
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):**			1.401 acres
9. Application Fee:	500		**10. Permanent BMP(s):**			N/A			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Travis		**14. Watershed:**			Onion Creek-Colorado 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.)	___	_1_	___
Region (1 req.)	___	_1_	___
County(ies)	___	_1_	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	_1_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 _1_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.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___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 ___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.
Justin Rusthoven
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 06/09/2023

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):	

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.

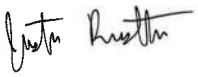
Signature

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: Justin Rusthoven

Date: 06/09/2023

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: 5203 Brodie Ln
2. County: Travis
3. Stream Basin: Williamson Creek - Onion Creek
4. Groundwater Conservation District (If applicable): Barton Springs/Edwards Aquifer CD
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Jeff Hahn
   Entity: Tailwag Holdings, Inc.
   Mailing Address: 5203 Brodie Ln
   City, State: Sunset Valley, Texas Zip: 78745
   Telephone: 512. FAX: _____
   Email Address: jeff.hahn@hahn.agency

8. Agent/Representative (If any):

   Contact Person: Justin Rusthoven
   Entity: GarzaEMC
   Mailing Address: 7708 Rialto Blvd
   City, State: Austin, Texas Zip: 78735
   Telephone: 512.298.3284 FAX: _____
   Email Address: jrusthoven@garzaemc.com

9. Project Location:

   ☒ The project site is located inside the city limits of Sunset Valley.
   ☐ 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.

    West of the site is Brodie Lane, South and East the site is surrounded by the west driveway to to the shopping center, North is another site. To the north of the site is State Highway 290.

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.

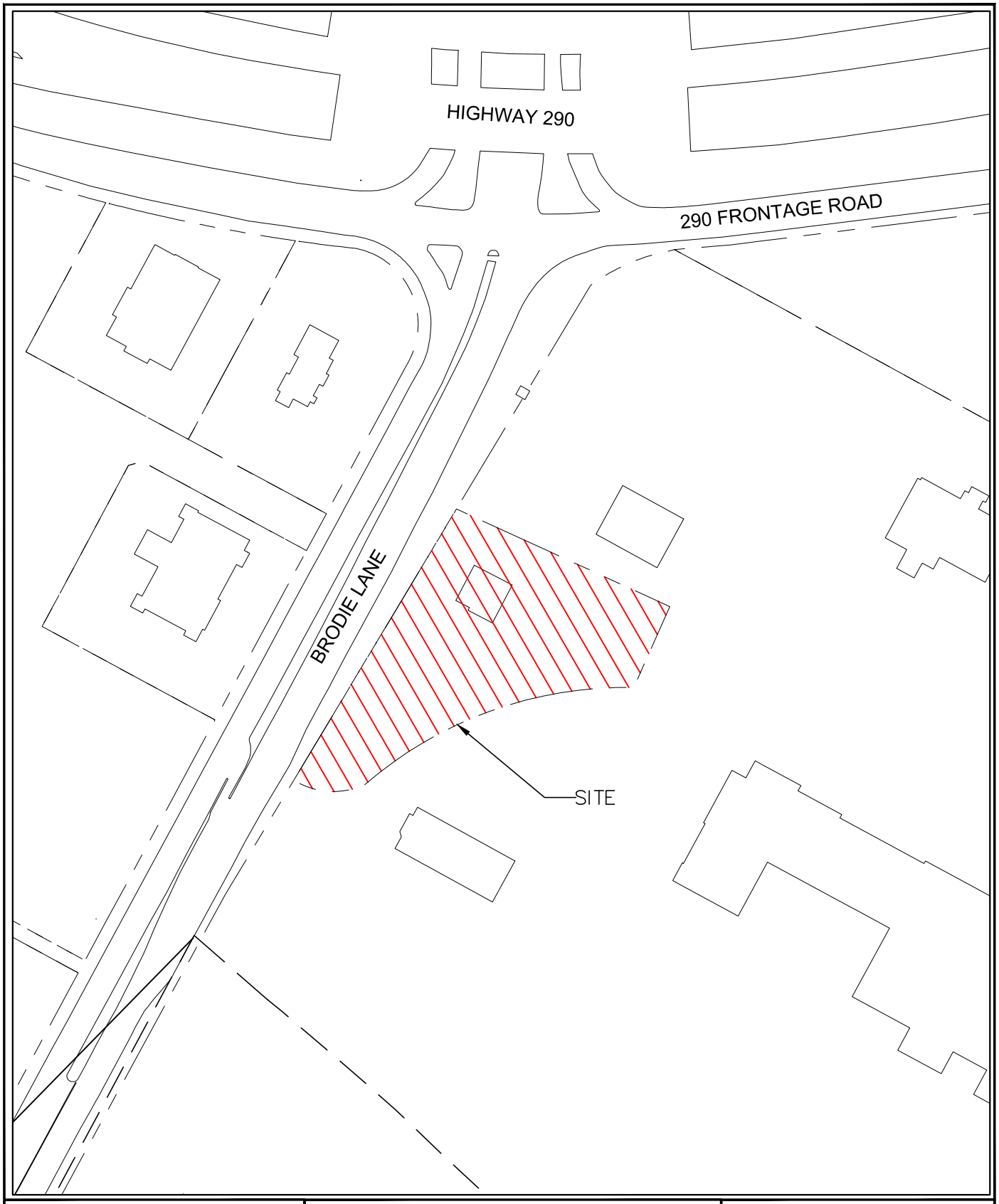
19. ☐ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ 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.

ATTACHMENT A



garza
7708 Rialto Blvd., Suite 125
Austin, Texas 78735
Tel. (512) 298-3284 Fax (512) 298-2592
TBPE # F-14629

	5203 BRODIE LN			ROAD MAP
	TAILWAG HOLDINGS, INC.			
DATE: JUNE 2023	SCALE: 1:150	DRAWN BY: JR	FILE:	PROJECT No. 114004-00001

V:\114004-00001\Civil\00-CAD\EXHIBITS\14004-00001-SITE LOCATION MAP.dwg modified by jrusthoven on Jun 6, 23 2:35 PM

ATTACHMENT B

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map OnDemand Topo

7.5-MINUTE TOPO QUADRANGLE
Custom Extent
7.5-MINUTE TOPO

-97.8745° 609000mE 10 11 12 13 14 15 16 17 18 19 20 -97.7496°
30.2504° 3347000mN 46 45 44 43 42 41 40 39 38 37 36 35 34 30.1252°
-97.8745° 09 10 11 12 13 14 15 16 17 18 19 6200000mE -97.7496° 30.1252°

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

MN
GN
3½°
62 MILS
0°36′
11 MILS
UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PU
Grid Zone Designation
14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

TEXAS

QUADRANGLE LOCATION

Austin West	Austin East
Oak Hill	Montopolis

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

7.5-MINUTE TOPO, TX
2023

ATTACHMENT C – PROJECT DESCRIPTION

The project site is approximately 1.401-acre lot within a 30.145-acre Village Homestead shopping center. The site is currently a developed two-story building with parking. The site is currently used as an office space. The proposed improvements to the lot include adding an additional 4,535 square feet in impervious cover, with area for raised garden beds, courtyard, shed structure. The increase in impervious cover for the individual lot is 4,535 SF. 3,160 SF of the proposed impervious cover is 3,160 SF of gravel while only 1,375 SF is Shed/Shade structure and pavers. There is no demolition involved in the project. The project is to be built in one phase with the area for raised garden bed already being constructed. The entirety of the site is located within Sunset Valley City Limits. The site is in Travis County. This site is zoned Conditional Overlay Combining.

This site is located within the Onion Creek-Colorado River Watershed. This site is located within the Edwards Recharge Zone. The existing bio-retention pond that serves the drainage area has the extra capacity to treat the minimal added runoff. The proposed improvements will maintain the same drainage pattern as they did in their existing conditions. There will be no permanent BMPs built with the planned improvements.

Recharge and Transition Zone Exception Request Form

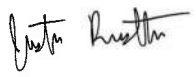
Texas Commission on Environmental Quality
30 TAC §213.9 Effective June 1, 1999

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 **Recharge and Transition Zone Exception Request Form** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Justin Rusthoven
Date: 06/09/2023
Signature of Customer/Agent:



Regulated Entity Name: 5203 Brodie Ln

Exception Request

1. ☒ **Attachment A - Nature of Exception**. A narrative description of the nature of each exception requested is attached. All provisions of 30 TAC §213 Subchapter A for which an exception is being requested have been identified in the description.
2. ☐ **Attachment B - Documentation of Equivalent Water Quality Protection**. Documentation demonstrating equivalent water quality protection for the Edwards Aquifer is attached.

Administrative Information

3. ☒ 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.
4. ☒ The applicant understands that no exception will be granted for a prohibited activity in Chapter 213.
5. ☒ The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.

From: James Slone <james.slone@tceq.texas.gov>
Sent: Thursday, April 20, 2023 3:51 PM
To: Justin Rusthoven; Betsy Yockey
Cc: Bryant Bell
Subject: RE: 5203 Brodie Edwards Aquifer Exception Request

Follow Up Flag: Follow up
Flag Status: Completed

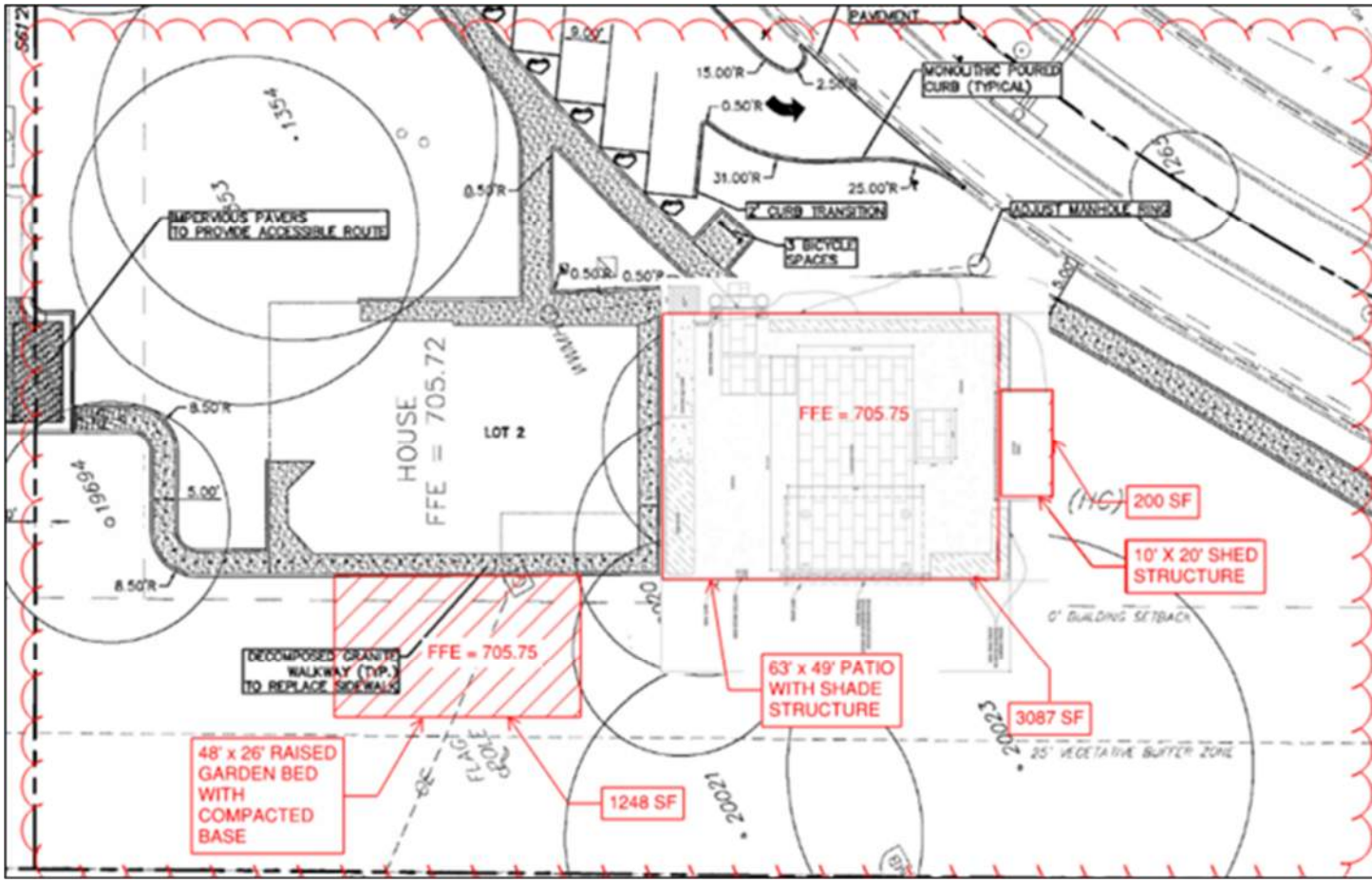
The project can be submitted as an Exception Plan. Additionally, you can request an Exception to the requirement for a Geologic Assessment (GA; no GA required). Please retain this email for your records.
Bo

James “Bo” Slone, P.G.
Geoscientist
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality
(512) 239-5711

From: Justin Rusthoven <jrusthoven@garzaemc.com>
Sent: Thursday, April 20, 2023 3:40 PM
To: Betsy Yockey <Betsy.Yockey@Tceq.Texas.Gov>; James Slone <james.slone@tceq.texas.gov>
Cc: Bryant Bell <bbell@garzaemc.com>
Subject: 5203 Brodie Edwards Aquifer Exception Request

Betsy/Bo

Following up from our meeting. Below is a screenshot of the area in question. The proposed work is within a 30-acre shopping center. Would this project fit under the Edwards Aquifer Exception Request? The project is located at 5203 Brodie Ln, Sunset Valley, TX 78745. It is in the jurisdiction of the City of Sunset Valley and is in the Edwards Aquifer Recharge Zone.



Justin Rusthoven
Engineer Associate

garza emc

7708 Rialto Blvd, Suite 125
Austin, TX 78735
512.298.3284 ex 133 TEL
jrusthoven@garzaemc.com

Please visit us at www.garzaemc.com
TBPE #F-14629

ATTACHMENT A – NATURE OF EXCEPTION

An Edwards Aquifer Exception is being requested for this project as the site is an existing shopping center that has already been developed. There are three existing bioretention/wet ponds that serve the entire Village Homestead development.

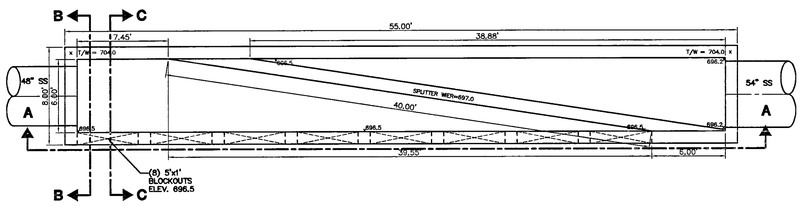
The project is in a 1.401-acre Lot. The Lot is part of an overall 30.145-acre Village Homestead development. The increase in impervious cover for the individual lot is 4,535 SF. 3,160 SF of the proposed impervious cover is 3,160 SF of gravel while only 1,375 SF is Shed/Shade structure and paver. The overall increase in impervious cover for the full 30.145-acre Village Homestead development is 0.74%.

ATTACHMENT B – DOCUMENTAITON OF EQUIIVALENT WATER QUALITY PROTECTION

The project is in a 1.401-acre Lot. The Lot is part of an overall 30.145-acre Village Homestead development. The increase in impervious cover for the individual lot is 4,535 SF. There are three existing bioretention/wet ponds that treat the entire 30.145-acre Village Homestead development. The Total Suspended Solids removal of the existing ponds is 122%. (Pg 23 Sunset Valley Village Homestead Plans). The ponds required to have 2.48 AC-FT in water quality volume but were designed to have 2.81 AC-FT in water quality volume. (Pg 24 Sunset Valley Village Homestead Plans).

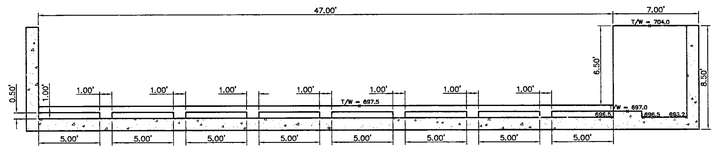
With the existing ponds being designed to exceed both TSS removal by 22% and the water quality volume by 13% the proposed development would be able to be handled and treated by the existing ponds.

ATTACHMENT B

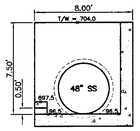


SOUTH WEST BIORETENTION POND SPLITTER BOX DETAIL

SCALE 1" = 5'



SECTION A-A



SECTION B-B

SOUTH WEST SPLITTER BOX ORIFICE CALCULATIONS

Q = CA(2gH)^0.5
C = 0.6
g = 32.2 fps
H = 0.75 ft

ORIFICE = 8-5"(W)x0.5"(H) BLOCKOUTS

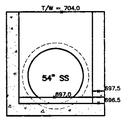
A = 20.0 sq ft

Q = 83.4 cfs
(PROPOSED Q (25-YR) = 79.7 cfs)

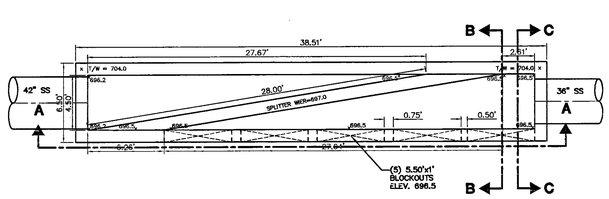
SOUTH WEST SPLITTER BOX WEIR

Q = CLH^(3/2)
C = 3.0
L = 40.0 ft
H = 1.00 ft

Q=120.00 cfs
(PROPOSED Q (100yr) = 108.3 cfs

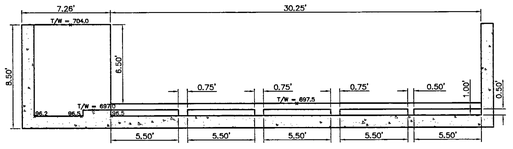


SECTION C-C

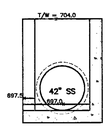


SOUTH EAST BIORETENTION POND SPLITTER BOX DETAIL

SCALE 1" = 5'



SECTION A-A



SECTION B-B

SOUTH EAST SPLITTER BOX ORIFICE CALCULATIONS

Q = CA(2gH)^0.5
C = 0.6
g = 32.2 fps
H = 0.75 ft

ORIFICE = 5-5.50'(W)x0.5'(H) BLOCKOUTS

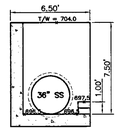
A = 13.75 sq ft

Q = 57.4 cfs
(PROPOSED Q (25-YR) = 57.4 cfs)

SOUTH EAST SPLITTER BOX WEIR

Q = CLH^(3/2)
C = 3.0
L = 28.0 ft
H = 1.00 ft

Q=84.0 cfs
(PROPOSED Q (100yr) = 76.9 cfs)



SECTION C-C

Total Suspended Solids Load Reduction Achieved by Proposed Water Quality System

Basis of Project Inputs	Village at SV Homestead	Project Name
	Travis	County/City
	Combined Bio/Wet Pond	Proposed Water Quality Control
	30.145	Site Area (ac.)
	21.236	Site Drainage Area to Control (ac.)
	8.909	Area Bypassing Control (ac.)
	1.507	Existing Developed Area (ac.)
	5%	Existing Impervious Cover (%)
	14.252	Proposed Impervious Cover (ac.)
	47%	Percent Impervious Cover of Site
	66%	Percent Impervious Cover of Site Draining to Pond
Calculation Inputs	21.236	A = Site/Contributing Drainage Area to Control (ac.)
	32.0	P = Average Annual Precipitation (in.) (Per TCEQ)
	0.226	Conversion Constant (Per TCEQ)
	80	Ce = TSS concentration (mg/L) undeveloped areas
	170	Cd = TSS concentration (mg/L) developed areas
	21.236	Au = Area of the previously undeveloped portion of the contributing area (ac.)
	1.507	Ad = Area of the previously developed portion of the tract (ac.)
	12.745	An = Net increase in impervious cover = proposed IC − existing IC
	0.08	Rv = Pre Development Runoff Coefficient
		1.72(IC)^3 − 1.97(IC)^2 + 1.23(IC) + 0.02
	0.47	Rv = Post Development Runoff Coefficient =
		1.72(IC)^3 − 1.97(IC)^2 + 1.23(IC) + 0.02
Calculation Outputs		**Post Development Load**
	12223	Ld = A x P x Rv x Cd x Conversion Constant = Annual Pollutant Load (lbs)
		Background Load
	943	Lu = A x P x Rv x Ce x Conversion Constant = Annual Pollutant Load (lbs)
		Calculations of TSS Load Reduction
	80%	Required Removal Efficiency
	11093	Lm = Required TSS Load (lbs) Removal =
		27.2 x (An x P)
	94%	BMP Efficiency of Proposed Water Quality Control
	14965	Lr = TSS Load (lbs) Removed =
		BMP Efficiency x P x (A(Imp cov) x 34.6 + A(pervious) x 0.54)
	122%	Percent of TSS Increase removed
WQV Computations	0.38	F = Lm/Sum (Lr)
	21.236	Area
	0.47	Runoff Coeff.
	0.27	Rainfall Depth
	117388	WQV Combined
	109426	WQV for Wet Pond
	7962	WQV for Bioretention (required) = WQV Combined − WQV Wet Pond

All calculations are based on The Edwards Aquifer Rules: Technical Guidance on Best Management Practices (TCEQ, June 20, 2005)

BIORETENTION POND CAPTURE VOLUMES

POND	POND AREA (SF)	*CAPTURE VOLUME (CF)	% OF TOTAL CAPTURE VOLUME	CONTRIBUTING DRAINAGE AREA (AC)	% OF TOTAL DRAINAGE AREA
EAST	1,201.21	1,321.33	3.90	2.758	13.45
WEST	9,092.02	10,001.22	29.55	6.124	29.86
S.E.	8,314.97	9,146.47	27.03	4.566	22.26
S.W.	12,157.19	13,372.91	39.52	7.061	34.43
TOTAL	30,765.39	33,841.93	100.00	20.509	100.00

*CAPTURE VOLUME = 1.1 X BIORETENTION AREA (SF)
INCLUDES: 6" PONDING DEPTH, 15% ABSORPTION IN 2' OF PLANTING SOIL AND 20% ABSORPTION IN 12" OF GRAVEL.

BIORETENTION DETENTION VOLUMES

East:

Elevation *	Depth	Area	Avg. Area	Inc. Vol.	Total Vol.	Total Vol.
Ft. msl	Ft.	S. F.	S. F.	C. F.	C. F.	Ac. Ft.
698	0	1,201.21	0.00	0.00	0.00	0
699	1	1,790.11	1,495.66	1,485.93	1,485.93	0.03
700	1	2,488.89	2,139.50	2,129.97	3,615.90	0.08
701	1	3,255.65	2,872.27	2,863.76	6,479.66	0.15
702	1	4,053.92	3,654.79	3,647.57	10,127.23	0.23
703	1	4,908.73	4,481.33	4,474.61	14,601.84	0.34

West:

Elevation *	Depth	Area	Avg. Area	Inc. Vol.	Total Vol.	Total Vol.
Ft. msl	Ft.	S. F.	S. F.	C. F.	C. F.	Ac. Ft.
699	0	9,092.02	0.00	0.00	0.00	0
700	1	10,389.70	9,740.86	9,733.84	9,733.84	0.22
701	1	11,746.89	11,068.30	11,061.58	20,795.42	0.48
702	1	13,183.60	12,455.25	12,448.77	33,244.19	0.76
703	1	14,639.84	13,901.72	13,895.46	47,139.65	1.08
704	1	16,175.59	15,407.72	15,401.64	62,541.30	1.44

Southeast:

Elevation *	Depth	Area	Avg. Area	Inc. Vol.	Total Vol.	Total Vol.
Ft. msl	Ft.	S. F.	S. F.	C. F.	C. F.	Ac. Ft.
696.5	0	8,314.97	0.00	0.00	0.00	0
697	0.5	9,145.18	8,730.08	4,363.48	4,363.48	0.10
698	1	10,805.29	9,975.24	9,963.90	14,327.38	0.33

Southwest:

Elevation *	Depth	Area	Avg. Area	Inc. Vol.	Total Vol.	Total Vol.
Ft. msl	Ft.	S. F.	S. F.	C. F.	C. F.	Ac. Ft.
696.5	0	12,157.19	0.00	0.00	0.00	0
697	0.5	13,170.68	12,663.93	6,330.40	6,330.40	0.15
698	1	15,240.98	14,205.82	14,193.52	20,523.91	0.47

GEOTEXTILE FABRIC (NON-WOVEN) SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
UNIT WEIGHT		oz/sy	20
FLOW RATE		gpm/sf	180 (min.)
PERMEABILITY	ASTM D-2434	cm/sec	12.4 x 10-2
GRAB STRENGTH (FABRIC)	ASTM D-1682	lb	LONG: 90 DRY, 95 WET WIDE: 70 DRY & WET
PUNCTURE STRENGTH (FABRIC)	COE CW-02215	lb	45 (min.)
MULLEN BURST STRENGTH	ASTM D-1117	psi	140
TENSILE STRENGTH	ASTM D-1682	lb	200
EQUIV. OPENING SIZE	US STANDARD SIEVE	No.	100 (70-120)
FLOW RATE (DRAINAGE CORE)	DREXEL UNIVERSITY	gpm/ft	14

SOURCE: CITY OF SUNSET VALLEY WATER QUALITY CONTROL DESIGN STANDARDS.

PLANTING SOIL SPECIFICATIONS

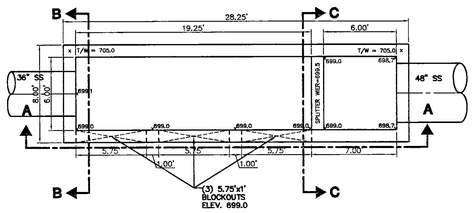
PROPERTY	UNIT	SPECIFICATION
pH RANGE		6.5 TO 7.5
CLAY	% BY WT.	0 TO 5
SAND	% BY WT.	50 TO 60
SILT	% BY WT.	35 TO 40
ORGANIC MATTER	% BY WT.	3 TO 5
NITROGEN	% BY WT.	0.05 TO 0.4
POTASSIUM	% BY WT.	0.004 TO 0.05

CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
PERMEABILITY	ASTM D-2434	CM/SEC	< 1 X 10^-7 (12" MIN DEPTH)
PLASTIC INDEX OF CLAY	ASTM D-423 & D-424	%	20 < PI < 30
LIQUID LIMIT OF CLAY	ASTM D-2216	%	NOT LESS THAN 50
CLAY PARTICLES PASSING NO. 200	ASTM D-422	%	NOT LESS THAN 60
CLAY COMPACTION	ASTM D-2216	%	95% OF STANDARD PROCTOR DENSITY

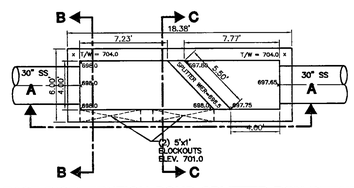
* REFER TO RECOMMENDATION IN GEOTECHNICAL REPORT. ANY DISCREPANCIES BETWEEN THIS SET OF PLANS AND THE GEOTECHNICAL REPORT WILL FOLLOW THE RECOMMENDATION(S) OF THE GEOTECHNICAL REPORT.

LINER PLACEMENT OVER EXCAVATED ROCK REQUIRES INSTALLATION OF PROTECTIVE MATERIAL TO PREVENT DAMAGE TO A GEOMEMBRANE OR CLAY LINER. EXAMPLES OF PROTECTIVE MATERIAL INCLUDE SPRAY-ON FIBERGLASS, ADDITIONAL CLAY LINER MATERIAL, OR PLACEMENT OF A GEOSYNTHETIC FABRIC.



WEST BIORETENTION POND SPLITTER BOX DETAIL

SCALE 1" = 5'



EAST BIORETENTION POND SPLITTER BOX DETAIL

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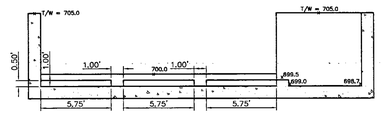


SECTION A-A

WEST SPLITTER BOX ORIFICE CALCULATIONS

Q = CA(2gH)^0.5
C = 0.6
g = 32.2 fps
H = 0.75 ft

ORIFICE = 3-5.75'(W)x0.5'(H) BLOCKOUTS

A = 8.625 sq ft

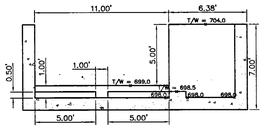
Q = 36.0 cfs
(PROPOSED Q (25-YR) = 26.9 cfs)

WEST SPLITTER BOX WEIR

Q = CLH^(3/2)
C = 3.0
L = 5.80 ft
H = 2.00 ft

Q=50.9 cfs
(PROPOSED Q (100yr) = 37.3 cfs) 43.62 42.2

RS



SECTION A-A

EAST SPLITTER BOX ORIFICE CALCULATIONS

Q = CA(2gH)^0.5
C = 0.6
g = 32.2 fps
H = 0.75 ft

ORIFICE = 2-5'(W)x0.5'(H) BLOCKOUTS

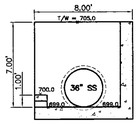
A = 8.625 sq ft

Q = 36.0 cfs
(PROPOSED Q (25-YR) = 28.6 cfs)

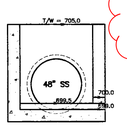
EAST SPLITTER BOX WEIR

Q = CLH^(3/2)
C = 3.0
L = 5.50 ft
H = 1.50 ft

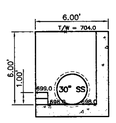
Q=70.3 cfs
(PROPOSED Q (100yr) = 28.6 cfs



SECTION B-B



SECTION C-C



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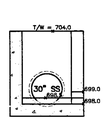

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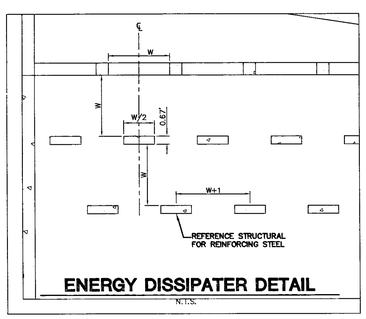
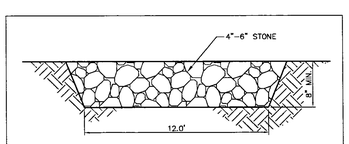


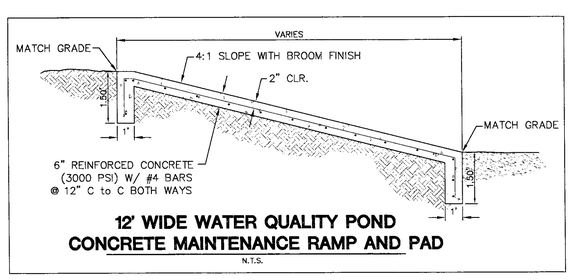
ENERGY DISSIPATER DETAIL

N.T.S.



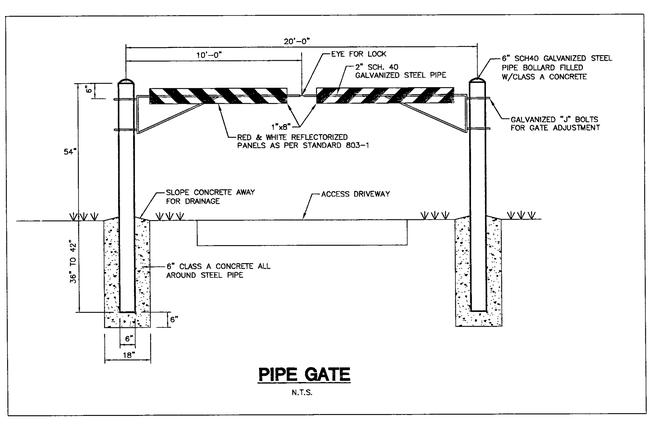
POND MAINTENANCE ACCESS DRIVE

TYPICAL CROSS SECTION



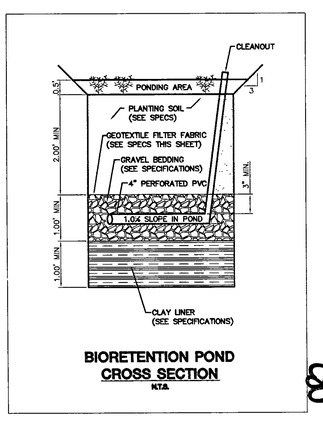
12' WIDE WATER QUALITY POND CONCRETE MAINTENANCE RAMP AND PAD

N.T.S.



PIPE GATE

N.T.S.



BIORETENTION POND CROSS SECTION

N.T.S.

APPROVAL	REVISION	NO.	DATE

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STATE OF TEXAS
DEAN KOLEAN
95749
LICENSED PROFESSIONAL ENGINEER
06/13/06

WATER QUALITY PONDS NOTES AND DETAILS

SUNSET VALLEY VILLAGE HOMESTEAD

RETAIL DEVELOPMENT

PLOTTING SCALE: 1" = 1'
DATE REVISED: Jun 12, 2006
FILE: G:\1000\...\100044PND02.dwg
DRAWN BY: DD\KW\DK
DESIGNED BY: DK
REVIEWED BY: DK\TG
PROJECT NO.: 1000-44.

SHEET 23 OF 58

G:\1000\44\100044PND02.dwg modified by kwhittier on Jun 12, 2006 - 11:18am

WETLAND PLANT LIST

INSTALL BULLRUSH IN CLUMPS, WITH INDIVIDUAL PLANTS SPACED APPROXIMATELY THREE TO FOUR FEET ON CENTER. AT LEAST TWO OF THE FOLLOWING SPECIES SHALL BE USED:

BULLRUSH	WATER DEPTH	NOTES
SCHOENOPLECTUS TABERNAEMONTANI GIANT BULLRUSH	1' – 2'	EMERGENT 8' TALL EVERGREEN, 2 ACRE MINIMUM POND SIZE
SCHOENOPLECTUS CALIFORNICUS GIANT BULLRUSH	1' – 2'	EMERGENT 8' TALL EVERGREEN, 2 ACRE MINIMUM POND SIZE

INSTALL SPIKERUSH AT OR NEAR WATER'S EDGE, WITH INDIVIDUAL PLANTS SPACED APPROXIMATELY THREE TO SIX FEET ON CENTER. AT LEAST TWO OF THE FOLLOWING SPECIES SHALL BE USED:

SPIKEBRUSH	WATER DEPTH	NOTES
ELEOCHARIS MONTEVIDENSIS SPIKERUSH	0" – 6"	1' TALL, RHIZOMATOUS, REDUCES EROSION AT THE POND EDGE

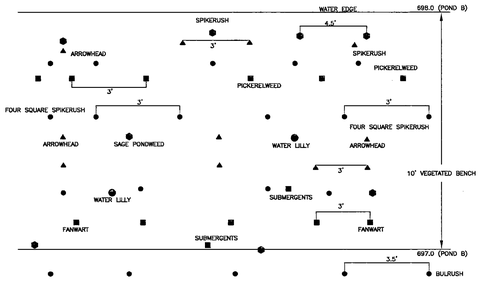
MARSH DIVERSITY	WATER DEPTH	NOTES
1. CYPERUS OCHRACEUS FLATSEDGE	2" –6"	1' TO 2' TALL, CLUMP–FORMING, COMMON TO CENTRAL TEXAS
2. ELEOCHARIS QUADRANGULATA FOUR–SQUARE SPIKERUSH	6" – 1'	1' TO 2' TALL, COLONIZES, INHABITS DEEPER WATER THAN SPIKEBRUSHES
3. JUNCUS EFFUSUS SOFT RUSH	6" – 1'	3' TO 4' TALL, FORMS A TIGHT CLUMP, EVERGREEN, VERY ATTRACTIVE
4. MARSILEA MACROPODA WATER CLOVER	2" – 6"	LOOKS LOKE FLOATING FOUR–LEAF CLOVER, ENDEMIC TO TEXAS
5. NAJAS GUADALUPENSIS WATER–NAIAD	1' – 4'	SUBMERGENT, VALUABLE TO FISH AND WILDLIFE
6. PONTEDERIA CORDATA PICKERELWEED	2" – 1'	3' TALL, COLONIZES, COSMOPOLITAN, PURPLE FLOWERS

INSTALL ARROWHEAD IN CLUMPS IN SHALLOW WATER, WITH INDIVIDUAL PLANTS SPACED APPROXIMATELY THREE FEET ON CENTER.

ARROWHEAD	WATER DEPTH	NOTES
SAGITTARIA LATIFOLIA ARROWHEAD	2" – 1'	2' HEIGHT, WILDLIFE VALUE, WHITE FLOWERS, PROVEN WATER QUALITY PERFORMER

THE FOLLOWING CATEGORY, AQUATICS, INCLUDES SUBMERGENTS AND FLOATING–LEAVED AQUATICS. SUBMERGENTS ARE ROOTED IN THE SEDIMENT OF THE POND, AND ARE COMPLETELY SUBMERGED IN THE WATER. FLOATING–LEAVED AQUATIC PLANTS ARE ROOTED IN THE SEDIMENT OF THE POND, AND HAVE LEAVES THAT FLOAT ON THE SURFACE OF THE WATER. THESE LEAVES SHADE THE WATER, WHICH LIMITS POTENTIAL ALGAE GROWTH. AT LEAST TWO OF THE FOLLOWING SPECIES SHALL BE USED AND SHOULD BE PLACED AT RANDOM LOCATIONS THROUGHOUT THE POND:

AQUATICS	WATER DEPTH	NOTES
1. CABOMBA CAROLINIANA FANWORT	1' – 4'	APPROXIMATELY 6' LENGTH UNDERWATER, SUBMERGENT
2. CERATOPHYLLUM SPP. COON–TAIL	1' – 4'	MAXIMUM 8' LENGTH, TOLERANT OF TURBIDITY AND WATER FLUCTUATION, WILDLIFE FOOD



TYPICAL WET POND SPACING

N.T.S.

WET POND CALCULATIONS

Drainage Area Data

Total Site Area	30.145	ac.
Total Site Area to be treated per Settlement Agreement	29.779	ac.
Drainage Area to Pond (DA)	21.236	ac.
Site Impervious Cover (IC) draining to pond	67%	
Recharge Zone (enter 1) Non–recharge Zone (enter 0)	1	
Runoff Coefficient (Rf)	0.475	

Water Quality Control Calculations

Volume Required = 0.182 * Rf* DA			1.84	ac–ft
			71,242	cf
Volume required by Settlement Agreement (Total Site Area to be treated times 1")			2.48	ac–ft
			108,097	cf
Sediment Forebay Volume (15 – 25%)		15%	10,686	cf
	Provided	25%	31,052	cf
		25%	17,810	cf
Main Pool Volume (75 –85%)		75%	53,431	cf
	Provided	75%	91,397	cf
		85%	60,556	cf
Total Volume Provided			122,449	cf
			2.81	ac. Ft.

Sediment Forebay:

Elevation * Ft. msl	Depth Ft.	Area S. F.	Avg. Area S. F.	Inc. Vol. C. F.	Total Vol. C. F.	Total Vol. Ac. Ft.
689.50	0.00	–		–	–	0.00
690.00	0.50	3,560.00	1,780.00	593.35	593.35	0.01
691.00	1.00	4,445.00	4,002.50	3,994.40	4,587.75	0.11
692.00	1.00	5,388.00	4,916.50	4,909.04	9,496.79	0.22
693.00	1.00	6,387.00	5,887.50	5,880.54	15,377.33	0.35
694.00	1.00	7,442.00	6,914.50	6,907.92	22,285.25	0.51
695.00	1.00	10,161.00	8,801.50	8,766.47	31,051.72	0.71

Main Pool:

Elevation * Ft. msl	Depth Ft.	Area S. F.	Avg. Area S. F.	Inc. Vol. C. F.	Total Vol. C. F.	Total Vol. Ac. Ft.
687.00	0.00	–		–	–	0.00
688.00	1.00	8,100.00	4,050.00	2,700.05	2,700.05	0.06
689.00	1.00	9,222.00	8,661.00	8,655.11	11,355.16	0.26
690.00	1.00	10,402.00	9,812.00	9,806.28	21,161.44	0.49
691.00	1.00	11,639.00	11,020.50	11,014.93	32,176.37	0.74
692.00	1.00	12,932.00	12,285.50	12,280.07	44,456.44	1.02
693.00	1.00	14,281.00	13,606.50	13,601.20	58,057.64	1.33
694.00	1.00	15,687.00	14,984.00	14,978.80	73,036.44	1.68
695.00	1.00	21,170.00	18,428.50	18,360.51	91,396.95	2.10

Extended Pond:

Elevation * Ft. msl	Depth Ft.	Area S. F.	Avg. Area S. F.	Inc. Vol. C. F.	Total Vol. C. F.	Total Vol. Ac. Ft.
695.00	0.00	31,331.00		–	–	0.00
696.00	1.00	34,792.00	33,061.50	33,047.05	33,047.05	0.76
697.00	1.00	37,229.00	36,010.50	36,004.35	69,051.40	1.59
698.00	1.00	39,761.00	38,495.00	38,488.83	107,540.23	2.47

* In one foot or less increments

WET POND NOTES:

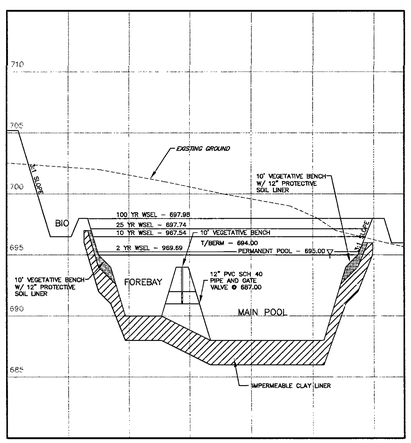
1. CONTRACTOR IS TO CONSTRUCT ALL POND EMBANKMENT SECTIONS AND LINERS PER T.E.C.Q. GUIDELINES FOR CLAY LINERS.
2. WETLAND PLANTS PROVIDED IN BARE–ROOT FORM SHALL BE EQUAL IN ROOT BALL SIZE TO THE LISTED MINIMUM CONTAINER SIZES.
3. ALL WETLAND PLANTS WHICH FULFILL THE MINIMUM LANDSCAPE REQUIREMENTS SHALL BE PROPAGATED OR HARVESTED FROM REGIONALLY ADAPTED STOCK (WHENEVER POSSIBLE). THESE ARE PLANT SPECIES OR GENOTYPES WHICH ARE NATIVE TO A RANGE OF WITHIN 250 MILES OF THE PROJECT SITE.
4. A MINIMUM OF 90% OF THE VEGETATION SHALL BE ALIVE AND VIABLE FOR ONE YEAR FOLLOWING INSTALLATION.
5. WETLAND PLANTS MUST BE INSTALLED AT WATER DEPTHS APPROPRIATE TO THE SPECIES. THE WATER DEPTHS NOTED IN THE TABLE ON THIS SHEET SHOW THE RANGE OF NATURAL ZONES IN WHICH THESE PLANTS CAN BE FOUND. PLANTING DEPTHS ARE USUALLY SHALLOWER DUE TO THE SMALL SIZE OF THE PLANTS AT THE TIME OF INSTALLATION. IF USING THE MINIMUM–SIZED PLANT MATERIAL, PLANTS SHALL BE INSTALLED AT THE SHALLOW WATER DEPTH LISTED.
6. CATTAILS (TYPHA SPP.) TEND TO INVADE ALMOST ALL WETLANDS AND AGGRESSIVELY COLONIZE THE SHALLOW WATER BENCH. THEREFORE CATTAILS SHALL NOT BE SPECIFIED ON THE PLANTING PLAN.
7. THE DESIGNER IS NOT LIMITED TO THE SPECIES DESCRIBED. ADDITIONAL SPECIES USED FOR AESTHETIC REASONS, ETC. ARE ENCOURAGED. PLANTS NOT INTENDED TO MEET MINIMUM REQUIREMENTS DO NOT NEED TO BE NATIVE OR REGIONALLY ADAPTED STOCK.
8. MICROBIAL INITIATION: A SUBSTANTIAL PORTION OF THE POLLUTANT REMOVAL IN WET PONDS IS DUE TO BIOLOGICAL PROCESSES THAT OCCUR IN THE SEDIMENT. BACTERIA IN THE POND SUBSTRATE REMOVE NUTRIENTS THROUGH A PROCESS OF DENITRIFICATION. THESE MICROBIAL PROCESSES REQUIRE AN ORGANIC FOOD SOURCE, SUCH AS DECAYING PLANT LITTER. BECAUSE IT IS THE SUPPLY OF ORGANIC CARBON THAT DETERMINES NUTRIENT REMOVAL – MORE THAN UPTAKE BY LIVING PLANTS – DENITRIFICATION CAN BE EXPECTED TO CONTINUE EVEN DURING COLD–WEATHER PLANT DORMANCY. IN MATURE PONDS WITH ABUNDANT VEGETATION, AQUATIC PLANTS SUPPLY THE NECESSARY LITTER LAYER AND AEROBIC ZONE FOR MICROBIAL ACTIVITY. HOWEVER, SINCE NEW PONDS LACK A SUFFICIENT SOURCE OF ORGANIC MATTER, AN APPROPRIATE AMOUNT OF CARBON (STRAW, HAY, LEAF CLIPPINGS, AND OTHER NON–WOODY MATERIAL) SHALL BE INSTALLED DURING CONSTRUCTION. AFTER THE POND LINER IS IN PLACE YET PRIOR TO ALLOWING THE POND TO BE FILLED, SPREAD A MINIMUM OF ONE INCH OF PLANT LITTER EVENLY ON THE SIDES OF THE POND (BELOW THE PERMANENT POOL LEVEL). TREAT THE ENTIRE SHALLOW WATER BENCH IN THIS THIS MANNER AND ALL POND SLOPES (RANGING FROM 3:1 TO 10:1). CRIMP THE PLANT LITTER INTO THE POND SUBSTRATE TO PREVENT THE MATERIAL FROM BEING TRANSPORTED DOWNSTREAM AS THE POND FILLS. THE MINIMUM REQUIRED PLANT LITTER IS 45 POUNDS PER 1000 SQUARE FEET OF SLOPE.
9. ALGAE: HIGH NUTRIENT LOADS IN WET PONDS MAY CAUSE ALGAE BLOOMS TO OCCUR. PUNGENT ODOR IS OFTEN ASSOCIATED WITH THESE ALGAE BLOOMS. HOWEVER, TREATING WITH AN ALGAECIDE IS PROHIBITED BECAUSE OF TOXIC RISK TO THE SUNSET VALLEY BRANCH OF WILLIAMSON CREEK. THE USE OF SUBMERGENTS AND FLOATING–LEAFED AQUATICS CAN REDUCE THE EXTENT OF ALGAE BLOOMS BY REDUCING NUTRIENT LOADS AND SHADING THE WATER.
10. NUTRIA: WILDLIFE, SUCH AS NUTRIAS, HAS BEEN REPORTED TO DESTROY THE VEGETATED ELEMENT OF WET PONDS IN THE AUSTIN AREA. EVALUATION OF THE POTENTIAL OF SUCH WILDLIFE INHABITING OR BEING ATTRACTED TO THE PROPOSED POND SITE IS REQUIRED. WHEN THERE IS A POTENTIAL FOR SUCH ACTIVITY, FENCING (SUCH AS CHAIN LINK) SHOULD BE PROVIDED.
11. MOSQUITO CONTROL: MOSQUITOES ARE PROBLEMS IN URBAN AREAS. STANDING WATER IN WET PONDS BECOMES IDEAL BREEDING LOCALITIES. THE WET POND SHOULD BE STOCKED WITH THE FISH SPECIES GAMBUSIA AFFINIS TO SERVE AS A BIOLOGICAL CONTROL FOR MOSQUITOES. GAMBUSIA IS EFFECTIVE CONTROL FOR MOSQUITOES ELIMINATING THE NEED FOR CHEMICAL CONTROL. GAMBUSIA SHOULD BE STOCKED AT THE INITIAL DENSITY OF 200 INDIVIDUALS PER SURFACE ACRE.
12. DOMESTIC WATERFOWL: DOMESTIC WATERFOWL CAN DESTROY VEGETATION AND INCREASE POLLUTANT LOADING IN WET POND SYSTEMS IN ADDITION, WATERFOWL CAN BECOME NUISANCES TO PROPERTY OWNERS NEAR THE POND. FOR THESE REASONS, DOMESTIC WATERFOWL SHOULD NOT BE INTRODUCED INTO THESE SYSTEMS.
13. CARP AND GOLDFISH: CARP AND GOLDFISH ARE BOTTOM–FEEDERS THAT CAN CAUSE TURBIDITY AND OTHER PROBLEMS. THEY SHOULD NOT BE INTRODUCED INTO A WET POND.
14. INITIAL FILLING: WHILE THE POND IS IN CONSTRUCTION, IT IS INTENDED THAT STORM WATER RUNOFF, NOT POTABLE WATER, BE USED TO FILL TO FILL UP THE POND. UTILITY LINES: UTILITY LINES MAY NOT BE LOCATED WITHIN THE LIMITS OF THE MAXIMUM WATER SURFACE ELEVATION OF A WET POND. THE POND MUST BE FILLED WITHIN ONE WEEK ON COMPLETION TO MAINTAIN LINER INTEGRITY. IF STORM WATER IS INADEQUATE, FILL WITH NONCHLORINATED WELL WATER. CHLORINATED WATER FROM THE MUNICIPAL WATER SUPPLY MUST NOT BE USED BECAUSE OF THE IMPACT OF CHLORINE ON THE BIOLOGICAL TREATMENT PROCESS.
15. HAZARDOUS MATERIAL TRAP: SPILLS OF HAZARDOUS LIQUIDS CAN SEVERELY DAMAGE OR KILL THE BIOTA OF A WET POND. THEREFORE, DEVELOPMENTS WHERE THE TRANSPORTATION, STORAGE, OR DISTRIBUTION OF HAZARDOUS MATERIALS IS ANTICIPATED SHOULD INCLUDE HAZARDOUS MATERIAL TRAPS IN THE DRAINAGE SYSTEM IMMEDIATELY UPSTREAM OF THE WET POND INLET.
16. AERATION AND RECIRCULATION UNIT (OPTIONAL): PRIVATELY MAINTAINED WET PONDS MAY INCLUDE SOME TYPE OF AERATION DEVICE (SUCH AS A FOUNTAIN) WHICH COULD ENHANCE THE DISSOLVED OXYGEN CONCENTRATION. INCREASED DISSOLVED OXYGEN PREVENTS THE POND FROM BECOMING ANAEROBIC, HENCE MINIMIZING PROBLEMS WITH ODOR FROM BACTERIAL DECOMPOSITION.

CONSTRUCTION NOTES:

1. STORM WATER SHALL BE USED TO INITIALLY FILL THE POND.
2. WETLAND PLANTS SHALL BE PROPAGATED OR HARVESTED FROM REGIONALLY ADAPTED STOCK (WITHIN 250 MILES OF THE PROJECT SITE) WHENEVER POSSIBLE.
3. A MINIMUM OF 90% OF THE VEGETATION SHALL BE ALIVE AND VIABLE FOR ONE YEAR AFTER INSTALLATION.

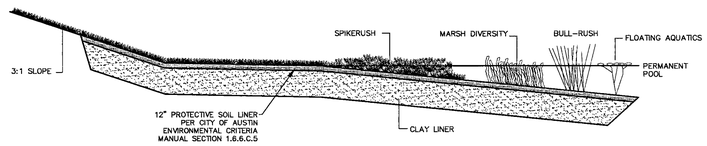
MAINTENANCE NOTES:

1. DURING SITE CONSTRUCTION – THE SEDIMENT LOAD TO THE SEDIMENT FOREBAY SHALL BE CLOSELY MONITORED AFTER EVERY STORM EVENT. IF HEAVY SEDIMENT LOADS ARE DETECTED DURING AN INSPECTION, THE SOURCE SHOULD BE CORRECTED. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT FOREBAY WHEN ONE–THIRD OF THE FOREBAY VOLUME IS LOST.
2. UPON COMPLETION OF SITE REVEGETATION – ANY SEDIMENT BUILDUP (GREATER THAN 5% VOLUME LOSS) SHALL BE REMOVED FROM THE FOREBAY UPON COMPLETION OF SITE REVEGETATION. THE SEDIMENT BUILDUP IN THE MAIN POOL SHALL BE CHECKED AND IF MORE THE TEN–PERCENT OF THE VOLUME IS LOST, IT SHOULD BE CLEANED AT THAT TIME.
3. EVERY THREE MONTHS FOR THE FIRST TWO YEARS – DURING THE THREE MONTH INITIAL INSPECTION CYCLE, IF MORE THAN FIFTEEN PERCENT OF THE VOLUME OF THE FOREBAY IS LOST, IT SHALL BE CLEANED AT THAT TIME.
4. EVERY THREE MONTHS – TURF AREAS AROUND THE POND SHOULD BE MOWED. ACCUMULATED PAPER, TRASH, AND DEBRIS SHALL BE REMOVED EVERY THREE MONTHS OR AS NECESSARY. CATTAILS, COTTONWOODS, AND WILLOWS CAN QUICKLY COLONIZE SHALLOW WATER AND THE EDGE OF THE POND. THESE SPECIES, OR ANY AREAS OF PLANT OVERGROWTH MAY BE THINNED AT THIS TIME OR AS NEEDED.
5. ANNUALLY – THE BASIN SHOULD BE INSPECTED ANNUALLY FOR SIDE SLOPE EROSION AND DETERIORATION OR DAMAGE TO STRUCTURE ELEMENTS. ANY DAMAGE SHALL BE REPAIRED. LARGE AREAS, WHICH HAVE DEAD OR MISSING VEGETATION, SHALL BE REPLANTED.
6. EVERY THREE YEARS – THE SEDIMENT BUILDUP IN THE SEDIMENT FOREBAY SHALL BE CHECKED. THE SEDIMENT FOREBAY SHALL BE CLEANED IF MORE THAN ONE–THIRD OF THE FOREBAY VOLUME IS LOST.
7. EVERY SIX YEARS – THE SEDIMENT BUILDUP IN THE MAIN POOL SHALL BE CHECKED. SEDIMENT SHALL BE REMOVED FROM THE MAIN POOL WHEN TWENTY PERCENT OF THE MAIN POOL VOLUME IS LOST.



POND CROSS SECTION A – A

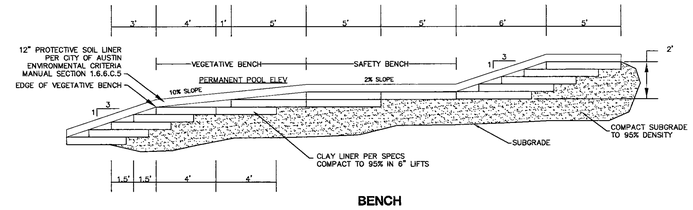
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



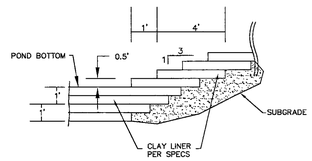
CROSS SECTION OF A TYPICAL VEGETATED BENCH AREA

N.T.S.

*** NOTE: REFER TO PLANTING PLAN PREPARED BY LICENSED LANDSCAPE ARCHITECT (LAND DESIGN PARTNERS, INC.) SHOWN ON LANDSCAPE DRAWINGS.



BENCH



AT POND BOTTOM

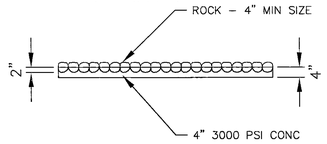
CLAY LINER

N.T.S.

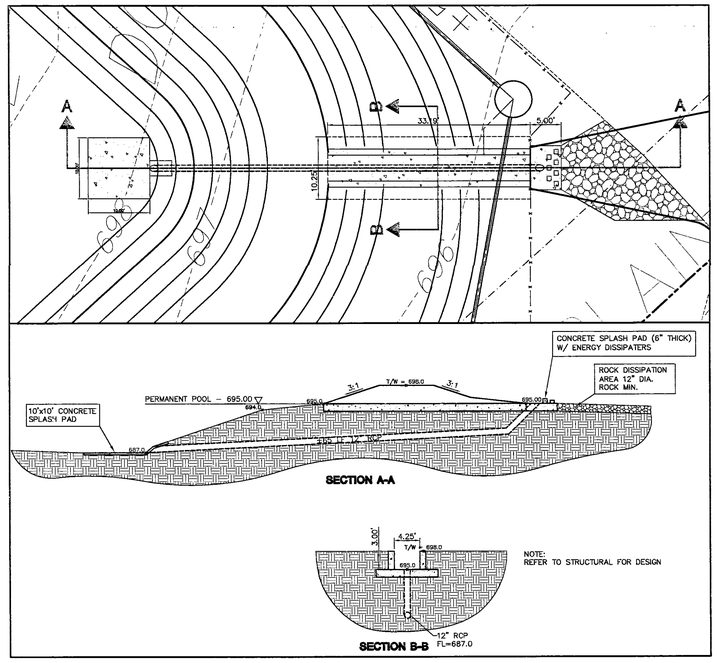
CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
PERMEABILITY	ASTM D–2434	CM/SEC	(12" MIN DEPTH) 1 X 10^–7 OR LESS
PLASTIC INDEX OF CLAY	ASTM D–423 & D–424	%	NOT LESS THAN 30
LIQUID LIMIT OF CLAY	ASTM D–2216	%	NOT LESS THAN 50
CLAY PARTICLES PASSING (NO. 200)	ASTM D–422	%	NOT LESS THAN 60
CLAY COMPACTION	ASTM D–2216	%	95% OF STANDARD PROCTOR DENSITY

* REFER TO RECOMMENDATION IN GEOTECHNICAL REPORT. ANY DISCREPANCIES BETWEEN THIS SET OF PLANS AND THE GEOTECHNICAL REPORT WILL FOLLOW THE RECOMMENDATION(S) OF THE GEOTECHNICAL REPORT.



4" GRADED ROCK RIP–RAP



OUTLET STRUCTURE

SCALE: 1" = 10'

Bury+Partners
ENGINEERING SOLUTIONS
3345 Bee Cave Road, Suite 200 Austin, Texas 78746
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NO.	DATE	REVISION	APPROVAL

STATE OF TEXAS
DEAN KOLEADA
95749
LICENSED PROFESSIONAL ENGINEER
6/21/06

WET POND CALCULATIONS, NOTES AND DETAILS

SUNSET VALLEY VILLAGE HOMESTEAD

RETAIL DEVELOPMENT

PLOTTING SCALE: 1" = 1'
DATE REVISED: Jun 21, 2006
FILE:G:\1000\..\100044PND03.dwg
DRAWN BY: DD\KW\DK
DESIGNED BY: DK
REVIEWED BY: DK\TG
PROJECT NO.: 1000–44.

SHEET 24 OF 58

G:\1000\44\100044PND03.dwg modified by kwhittier on Jun 21, 2006 – 11:52am

ATTACHMENT B

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: Justin Rusthoven

Date: 06/09/2023

Signature of Customer/Agent:

Regulated Entity Name: 5203 Brodie Ln

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: Williamson Creek-Onion Creek

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.

ATTACHMENT A – SPILL RESPONSE ACTIONS

The contractor shall be responsible for the adequate cleanup of any chemical spills during construction. The clean up will be performed to the TNRCC Regulatory Guidance Handbook standards, RG-285, June 1997. The contractor will notify TCEQ of any chemical spills as required and outlined in the TNRCC Regulatory Guidance Handbook, at 512-463-7727 or 512-239-2507.

Reportable quantities as defined by 30 TAC Chapter 327 are as follows:

(a) Hazardous substances. The reportable quantities for hazardous substances shall be:

1. for spills or discharges onto land--the quantity designated as the Final Reportable Quantity (RQ) in Table 302.4 in 40 CPR §302.4; or
2. for spills or discharges into waters in the state--the quantity designated as the Final RQ in Table 302.4 in 40 CPR §302.4, except where the Final RQ is greater than 100 pounds in which case the RQ shall be 100 pounds.

(b) Oil, petroleum product, and used oil.

1. The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:

   (A) for spills or discharges onto land--210 gallons (five barrels); or

   (B) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.

2. The RQ for petroleum product and used oil shall be:

   (A) except as noted in subparagraph (B) of this paragraph, for spills or discharges onto land--25 gallons;

   (B) for spills or discharges to land from PST exempted facilities--210 gallons (five barrels); or

   (C) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.

(c) Industrial solid waste or other substances. The RQ for spills or discharges into water in the state shall be 100 pounds.

ATTACHMENT B – POTENTIAL SOURCES OF CONTAMINATION

Sediment and soil from disturbed areas are another potential source of contamination. During activities causing soil disturbance, temporary best management practices outlined in Attachment D.

Other potential sources of contamination include hydraulic fluid and diesel fuel from mechanical equipment, as well as paints and chemicals used on site. Any spills shall be handled according to the Spill Response Actions in Attachment A.

ATTACHMENT C – SEQUENCE OF MAJOR ACTIVITIES

1. Install erosion controls and tree protection per approved plans. (.21 ac)
2. Hold pre-construction meeting. (N/A)
3. Begin grading and rough excavation for courtyard and shed structure. (.07 ac)
4. Begin construction of courtyard and shed structure. (.07 ac)
5. The contractor shall obtain the Engineer's concurrence letter prior to step 7.
6. Restore the disturbed areas. (.07 ac)
7. Remove temporary erosion/sedimentation controls only after the Engineer has accepted the permanent erosion/sedimentation controls. (.21 ac)

ATTACHMENT D – TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Before construction begins, mulch sock will be installed around the perimeter of the limits of construction as needed and on the downgradient side of the contractor staging and materials storage area. Inlet protection will be installed as well to prevent sediment from going into the stormsewer.

Proposed BMPs and measures will prevent pollution of surface water or groundwater that originates on-site, by directing and filtering the runoff through the silt fence and mulch sock and maintaining natural drainage patterns on the site.

Proposed BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer, by filtering the runoff through mulch sock prior to leaving the site and entering the storm sewer system.

ATTACHMENT G

	Transition Zone				Uplands Area				Totals
Proposed Impervious Cover (SF)	Concrete Pavement	Impervious Pavers	Pervious Pavers	Building	Concrete Pavement	Impervious Pavers	Pervious Pavers	Building	Site Total IC
Lot 1 1.458 AC	18,850	260	1,500	5,757					26,367
Lot 2 1.401 AC	1,793				9,552	~~93~~ 4428	48	2,858 ~~3,058~~	~~14,943~~ 18,878

IMPERVIOUS COVER TABLES DO NOT REPRESENT HISTORIC ENTITLEMENTS, IMPERVIOUS COVER DEDUCTIONS AND/OR ANY SITE VARIANCES.

1R

COSI D2 2,926 SF FF 706.00
ZEN D3 2,363 SF
JAMBA JUICE D4 1,200 SF
ROBIN BOND D5 1,100 SF
DOCS MOTORWORKS REST D6 3938 SF FF 706.00
RETAIL F 4200 SF FF 706.75
HOUSE FFE = 705.72
EXISTING BARN FFE = 704.36
ROCK BARN FFE = 715.00 ELEV AT WEST DOOR = 704.36 HIGHWAY COMMERCIAL (HC)
LOT 1
LOT 2
3087 SF
200 SF
1248 SF
NODE A
NODE B
NODE C
0-1 0.21 AC.
0-2 0.21 AC.
0-3 0.04 AC.
0-4 0.03 AC.
0-5 0.14 AC.
0-6 0.13 AC.
0-7 0.14 AC.
0-8 0.11 AC.
0-9 0.49 AC.
1 0.61 AC.
2 0.10 AC.
3 0.30 AC.
4 0.42 AC.
5 0.14 AC.
6 0.81 AC.
100 YR FLOODPLAIN
100 YR FLOODPLAIN (UNDEVELOPED CONDITIONS)
100 YR FLOODPLAIN (DEVELOPED CONDITIONS)
CWQZ
WQZ
30' BUILDING SETBACK
50' BUILDING SETBACK
25' VEGETATIVE BUFFER ZONE
EXISTING WATER QUALITY POND
EXISTING CONCRETE SPILLWAY
BRODIE LANE (R.O.W. VARIES)

30 0 15 30 60

LEGEND

EXISTING	PROPOSED	
		PROPERTY (R.O.W.) LINE
678	678	DIRECTION OF FLOW / CONTOUR
1 1.03 AC.	1 1.03 AC.	DRAINAGE AREA NUMBER
		DRAINAGE DIVIDE

NOTE
ALL DEVELOPED FLOWS ARE DIVERTED TO STORMSEWER SYSTEM.

STORM FREQUENCY	NODE A		NODE B		NODE C	
	EX.	PROP.	EX.	PROP.	EX.	PROP.
2-YR	1.8	1.5	2.4	3.0	2.8	2.3
10-YR	2.8	2.2	3.6	4.5	4.2	3.5
25-YR	3.4	2.8	4.5	5.6	5.2	4.2
100-YR	4.8	3.9	6.3	7.8	7.0	5.8

PROPOSED DRAINAGE SUMMARY TABLE

STORM FREQUENCY	1 (CFS)	2 (CFS)	3 (CFS)	4 (CFS)	5 (CFS)	6 (CFS)	O-1 (CFS)	O-2 (CFS)	O-3 (CFS)	O-4 (CFS)	O-5 (CFS)	O-6 (CFS)	O-7 (CFS)	O-8 (CFS)	O-9 (CFS)	NODE A	NODE B	NODE C
2-YR	2.26	0.38	0.43	0.61	0.91	2.09	0.85	0.85	0.15	0.13	0.37	0.32	0.30	0.24	1.24	1.47	3.00	2.31
10-YR	3.38	0.57	0.65	0.94	1.37	3.17	1.27	1.26	0.23	0.20	0.56	0.49	0.46	0.36	1.88	2.24	4.54	3.46
25-YR	4.12	0.69	0.82	1.17	1.69	3.94	1.54	1.53	0.27	0.24	0.70	0.62	0.58	0.45	2.34	2.80	5.63	4.25
100-YR	5.57	0.94	1.16	1.65	2.32	5.47	2.08	2.06	0.37	0.32	0.97	0.86	0.81	0.64	3.25	3.89	7.78	5.78

*MINIMUM TIME OF CONCENTRATION OF 5 MINUTES ASSUMED FOR CALCULATIONS

PROPOSED DRAINAGE C VALUES

STORM FREQUENCY	1	2	3	4	5	6	O-1	O-2	O-3	O-4	O-5	O-6	O-7	O-8	O-9
2-YR	0.57	0.60	0.34	0.35	0.46	0.40	0.62	0.62	0.61	0.60	0.40	0.37	0.33	0.33	0.39
10-YR	0.64	0.67	0.39	0.40	0.52	0.45	0.69	0.69	0.69	0.67	0.46	0.43	0.38	0.38	0.44
25-YR	0.69	0.71	0.43	0.44	0.57	0.49	0.74	0.74	0.73	0.72	0.50	0.47	0.42	0.42	0.49
100-YR	0.77	0.80	0.51	0.51	0.65	0.57	0.82	0.82	0.82	0.80	0.57	0.54	0.49	0.49	0.56

Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO.	DATE	REVISION	APPROVAL

Bury+Partners
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512)328-0011 Fax (512)328-0325
TBPE Registration Number F-1046
Bury+Partners, Inc. ©Copyright 2012

STATE OF TEXAS
DAVID S. RATCLIFF
97351
LICENSED PROFESSIONAL ENGINEER
7/17/2012

PROPOSED DRAINAGE AREA MAP

VILLAGE HOMESTEAD BRODIE EVENT CENTER
5207 BRODIE LANE

ALLAN-THRASHER, LLC

DRAWN BY: SCI /RJB
DESIGNED BY: DSR
REVIEWED BY: DSR
PROJECT NO.: 109870-10001

SHEET 13 OF 32

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ATTACHMENT I - INSECTION AND MAINTENANCE FOR BMPs

Implementation of site controls shall be performed by a qualified contractor experienced in the proper installation of such devices in accordance with manufacturers' specifications, and in keeping with recognized Best Management Practices (BMP's), and in keeping with TPDES regulations. Qualification of installing Contractor shall be reviewed with the Owner prior to entering into a contract with them for services.

The Contractor shall inspect all BMP's at regular intervals as specified in the Storm Water Pollution Prevention Plan for this project.

- Use standard Owner Inspection forms for each inspection.
- Record all deficiencies of site controls and take immediate action to correct any deficiencies recorded.
- Keep records of inspections current and on file, available for review by EPA, TCEQ, MS4 operator and Owner.

The temporary controls must be inspected at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The following BMP's must be maintained after a rain storm:

The inlet protection must be checked for silt build up and when it is prohibiting the conveyance of water into the storm sewer, the silt must be removed.

ATTACHMENT J – SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

All area disturbed during construction will be reseeded.

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

I Jeff Hahn,
Print Name

Owner,
Title - Owner/President/Other

of Tailwag Holdings, Inc.,
Corporation/Partnership/Entity Name

have authorized Justin Rusthoven
Print Name of Agent/Engineer

of GarzaEMC
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

6-7-23
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Jack Hahn 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 8th day of June, 2023.

NOTARY PUBLIC

STEPHEN A. LANIER
My Notary ID # 7396971
Expires November 12, 2025

Stephen A. Lanier
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/12/25

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: 5203 Brodie Ln
Regulated Entity Location: 5203 Brodie Ln, Sunset Valley, TX 78745
Name of Customer: Jeff Hahn
Contact Person: Justin Rusthoven Phone: 512.298.3284
Customer Reference Number (if issued):CN _____
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	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	1 Each	$ 500
Extension of Time	Each	$

Signature: Justin Rusthoven Date: 06/09/2023

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

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		**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, John)* — *If new Customer, enter previous Customer below:*

Tailwag Holdings, 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)*
803801427	N/A	83-3561652	N/A

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

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

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

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

15. Mailing Address:	5203 Brodie Lane							
	City	Sunset Valley	**State**	TX	**ZIP**	78745	**ZIP + 4**	2514

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

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

(512) 344-2017		( ) -

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.)*

5203 Brodie Ln

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	5203 Brodie Lane							
	City	Sunset Valley	**State**	TX	**ZIP**	78745	**ZIP + 4**	2514
24. County	Travis							

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

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

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

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

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
8742	8748	54161	541618

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

Hahn Agency

34. Mailing Address:	**5203 Brodie Lane**							
	City	**Sunset Valley**	**State**	**TX**	**ZIP**	**7745**	**ZIP + 4**	**2514**
35. E-Mail Address:	**jeff.hahn@hahn.agency**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 344-2017		( ) -

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

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

SECTION IV: Preparer Information

40. Name:	Justin Rusthoven	**41. Title:**	Engineer Assoicate

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 298-3284	133	**( )** -	jrusthoven@garzaemc.com

SECTION V: Authorized Signature

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

Company:	GarzaEMC	**Job Title:**	Engineer Assoicate	
Name *(In Print):*	Jusitn Rusthoven		**Phone:**	**(** 512 **)** 298- **3284**
Signature:			**Date:**	6/9/2023