Comal County Environmental Health
OSSF Inspection Sheet

Installer Name: Jeff Jay **OSSF Installer #:** OS0020500

1st Inspection Date: 8/13/24 **2nd Inspection Date:** 9/12/24 9/13/24 **3rd Inspection Date:** 2/3/25 4/2/25

Inspector Name: Corey Allen **Inspector Name:** Corey Allen Corey Allen **Inspector Name:** Hendry Hendry

Permit#: 116459 **Address:** 2060 Bella Vista

No.	Description	Answer	Citations	Notes	1st Insp.	2nd Insp.	3rd Insp.
1	SITE AND SOIL CONDITIONS & SETBACK DISTANCES Site and Soil Conditions Consistent with Submitted Planning Materials	X	285.31(a) 285.30(b)(1)(A)(iv) 285.30(b)(1)(A)(v) 285.30(b)(1)(A)(iii) 285.30(b)(1)(A)(ii) 285.30(b)(1)(A)(i)		X		
2	SITE AND SOIL CONDITIONS & SETBACK DISTANCES Setback Distances Meet Minimum Standards	X	285.91(10) 285.30(b)(4) 285.31(d)		X		
3	SEWER PIPE Proper Type Pipe from Structure to Disposal System (Cast Iron, Ductile Iron, Sch. 40, SDR 26)	X	285.32(a)(1)		X		
4	SEWER PIPE Slope from the Sewer to the Tank at least 1/8 Inch Per Foot	X	285.32(a)(3)		X		
5	SEWER PIPE Two Way Sanitary - Type Cleanout Properly Installed (Add. C/O Every 100' &/or 90 degree bends)	X	285.32(a)(5)		X		
6	PRETREATMENT Installed (if required) TCEQ Approved List PRETREATMENT Septic Tank(s) Meet Minimum Requirements		285.32(b)(1)(G) 285.32(b)(1)(E)(iii) 285.32(b)(1)(E)(iv) 285.32(b)(1)(F) 285.32(b)(1)(B) 285.32(b)(1)(C)(i) 285.32(b)(1)(C)(ii) 285.32(b)(1)(D) 285.32(b)(1)(E) 285.32(b)(1)(A) 285.32(b)(1)(E)(ii)(II) 285.32(b)(1)(E)(i) 285.32(b)(1)(E)(ii)(I)				
7	PRETREATMENT Grease Interceptors if required for commercial		285.34(d)				

Inspector Notes: **8/13/24 CA: Tank level no leaks cover tank 9/12/24 CA: Layout does not meet design need revision on layout 9/13/24 CA: Operational designer to address slope on back field before cover will need re inspection fee 2/3/25 CH: Covered, seeping of effluent observed coming off or rear of drip field is crossing the 948, set back to slope with .25 loading rate to be addressed by designer, landscape** irrigation installed across tight line, tank and throughout drip field to be addressed by designer, requires re-inspection fee

4/2/25 CH: Retaining wall with liner installed per design, irrigation has been cut and capped

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No.	Description	Answer	Citations	Notes	1st Insp.	2nd Insp.	3rd Insp.
8	SEPTIC TANK Tank(s) Clearly Marked SEPTIC TANK If SingleTank, 2Compartments Provided withBaffle SEPTIC TANK Inlet Flowline Greater than3" and " T " Provided on Inlet and OutletSEPTIC TANK Septic Tank(s) MeetMinimum Requirements		285.32(b)(1) (E)285.91(2)285.32(b)(1) (F)285.32(b)(1)(E) (iii)285.32(b)(1)(E)(ii) (II)285.32(b)(1)(E)(ii) (I)285.32(b)(1)(E) (i)285.32(b)(1) (D)285.32(b)(1)(C) (ii)285.32(b)(1)(C) (i)285.32(b)(1) (B)285.32(b)(1) (A)285.32(b)(1)(E)(iv)				
9	ALL TANKS Installed on 4" Sand Cushion/ Proper Backfill Used	X	285.32(b)(1)(F) 285.32(b)(1)(G) 285.34(b)		X		
10	SEPTIC TANK Inspection / Clean Out Port & Risers Provided on Tanks Buried Greater than 12" Sealed and Capped		285.38(d)				
11	SEPTIC TANK Secondary restraint system providedSEPTIC TANK Riser permanently fastened to lid or cast into tank SEPTIC TANK Riser cap protected against unauthorized intrusions		285.38(d) 285.38(e)				
12	SEPTIC TANK Tank Volume Installed						
13	PUMP TANK Volume Installed						
14	AEROBIC TREATMENT UNIT Size Installed	X		600	X		
15	AEROBIC TREATMENT UNIT Manufacturer AEROBIC TREATMENT UNIT Model Number	X X		Solar Aerobic	X X		
16	DISPOSAL SYSTEM Absorptive		285.33(a)(4) 285.33(a)(1) 285.33(a)(2) 285.33(a)(3)				
17	DISPOSAL SYSTEM Leaching Chamber		285.33(a)(1) 285.33(a)(3) 285.33(a)(4) 285.33(a)(2)				
18	DISPOSAL SYSTEM Drip Irrigation	X	285.33(c)(3)(A)-(F)		X		

Comal County Environmental Health
OSSF Inspection Sheet

No.	Description	Answer	Citations	Notes	1st Insp.	2nd Insp.	3rd Insp.
32	EFFLUENT DISPOSAL SYSTEM Utilized Only by Single Family Dwelling EFFLUENT DISPOSAL SYSTEM Topographic Slopes < 2.0% EFFLUENT DISPOSAL SYSTEM Adequate Length of Drain Field (1000 Linear ft. for 2 bedrooms or Less & an additional 400 ft. for each additional bedroom) EFFLUENT DISPOSAL SYSTEM Lateral Depth of 18 inches to 3 ft. & Vertical Separation of 1ft on bottom and 2 ft. to restrictive horizon and ground water respectfully EFFLUENT DISPOSAL SYSTEM Lateral Drain Pipe (1.25 - 1.5" dia.) & Pipe Holes (3/16 - 1/4" dia. Hole Size) 5 ft. Apart		285.33(b)(3)(A) 285.33(b)(3)(A) 285.33(b)(3) (B)285.91(13) 285.33(b)(3)(D) 285.33(b)(3)(F)				
33	AEROBIC TREATMENT UNIT Is Aerobic Unit Installed According to Approved Guidelines.	X	285.32(c)(1)		X		
34	AEROBIC TREATMENT UNIT Inspection/Clean Out Port & Risers Provided AEROBIC TREATMENT UNIT Secondary restraint system provided AEROBIC TREATMENT UNIT Riser permanently fastened to lid or cast into tank AEROBIC TREATMENT UNIT Riser cap protected against unauthorized intrusions	X X X			X X X		
35	AEROBIC TREATMENT UNIT Chlorinator Properly Installed with Chlorine Tablets in Place.	X			X		
36	PUMP TANK Is the Pump Tank an approved concrete tank or other acceptable materials & construction PUMP TANK Sampling Port Provided in the Treated Effluent Line PUMP TANK Check Valve and/or Anti- Siphon Device Present When Required PUMP TANK Audible and Visual High Water Alarm Installed on Separate Circuit From Pump						
37	PUMP TANK Inspection/Clean Out Port & Risers Provided PUMP TANK Secondary restraint system provided PUMP TANK Riser permanently fastened to lid or cast into tank PUMP TANK Riser cap protected against unauthorized intrusions						
38	PUMP TANK Secondary restraint system provided						
39	PUMP TANK Electrical Connections in Approved Junction Boxes / Wiring Buried	X					X

Comal County Environmental Health
OSSF Inspection Sheet

No.	Description	Answer	Citations	Notes	1st Insp.	2nd Insp.	3rd Insp.
40	APPLICATION AREA Distribution Pipe, Fitting, Sprinkler Heads & Valve Covers Color Coded Purple?	X	285.33(d)(2)(G)(iii)(II) 285.33(d)(2)(G)(iii)(III) 285.33(d)(2)(G)(v) 285.33(d)(2)(G)(iii) 285.33(d)(2)(G)(iv) 285.33(d)(2)(G)(i) 285.33(d)(2)(G)(ii) 285.33(d)(2)(G)(iii)(I)				X
41	APPLICATION AREA Low Angle Nozzles Used / Pressure is as required APPLICATION AREA Acceptable Area, nothing within 10 ft of sprinkler heads? APPLICATION AREA The Landscape Plan is as Designed	X	285.33(d)(2)(G) (i)285.33(d)(2) (A)285.33(d)(2)(F)				X
42	APPLICATION AREA Area Installed	X					X
43	PUMP TANK Meets Minimum Reserve Capacity Requirements						
44	PUMP TANK Material Type & Manufacturer						
45	PUMP TANK Type/Size of Pump Installed						


CCEO
COPY

***SEE SPECIAL PERMIT CONDITION NOTED BELOW

COMAL COUNTY
ENGINEER'S OFFICE

Permit of Authorization to Construct an On-Site Sewage Facility
Permit Valid For One Year From Date Issued

Permit Number:	116459
Issued This Date:	09/27/2023
This permit is hereby given to:	Brian and Leslie Krause

To start construction of a private, on-site sewage facility located at:

2060 BELLA VISTA
CANYON LAKE, TX 78133

Subdivision:	AVONLEA
Unit:	n/a
Lot:	68
Block:	n/a
Acreage:	0.5600

APPROVED MINIMUM SIZES AS PER ATTACHED DESIGN

Type of System:	Aerobic
	Drip Irrigation

This permit gives permission for the construction of the above referenced on-site facility to commence. Installation must be completed by an installer holding a valid registration card from the Texas Commission on Environmental Quality (TCEQ). Installation and inspection must comply with current TCEQ and Comal County requirements.

Call (830) 608-2090 to schedule inspections.

***THE US ARMY CORPS OF ENGINEERS FLOWAGE EASEMENT BOUNDARY LINE / 948 LINE MUST BE CLEARLY MARKED AT THE TIME OF INSPECTION.

RECEIVED
By Kathy Griffin at 1:22 pm, Jul 21, 2023

COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

REVISED
8:11 am, Aug 11, 2023

Date June 2, 2025

Permit Number 116459

1. APPLICANT / AGENT INFORMATION

Owner Name Brian Krause + Leslie Ann Krause
Mailing Address 2 Falling Leaf
City, State, Zip Friendswood, TX 77546
Phone # 409-218-5181
Email krausebl@sbcglobal.net

Agent Name Carl Nelson
Agent Address 14603 Huebner, Ste 3403
City, State, Zip San Antonio, TX 78230
Phone # 210-378-3845
Email carln@omnicustoms.com

2. LOCATION

Subdivision Name Avonlea Subdivision Unit Lot 68 Block
Survey Name / Abstract Number Acreage
Address 2060 Bella Vista City Canyon Lake State TX Zip 78130

3. TYPE OF DEVELOPMENT

☑ Single Family Residential

Type of Construction (House, Mobile, RV, Etc.) House
Number of Bedrooms 4
Indicate Sq Ft of Living Area 3607

☐ Non-Single Family Residential

(Planning materials must show adequate land area for doubling the required land needed for treatment units and disposal area)

Type of Facility
Offices, Factories, Churches, Schools, Parks, Etc. - Indicate Number Of Occupants
Restaurants, Lounges, Theaters - Indicate Number of Seats
Hotel, Motel, Hospital, Nursing Home - Indicate Number of Beds
Travel Trailer/RV Parks - Indicate Number of Spaces
Miscellaneous

Estimated Cost of Construction: $ 675,520 (Structure Only)

Is any portion of the proposed OSSF located in the United States Army Corps of Engineers (USACE) flowage easement?

☑ Yes ☐ No (If yes, owner must provide approval from USACE for proposed OSSF improvements within the USACE flowage easement)

Source of Water ☑ Public ☐ Private Well

4. SIGNATURE OF OWNER

By signing this application, I certify that:
- The completed application and all additional information submitted does not contain any false information and does not conceal any material facts. I certify that I am the property owner or I possess the appropriate land rights necessary to make the permitted improvements on said property.
- Authorization is hereby given to the permitting authority and designated agents to enter upon the above described property for the purpose of site/soil evaluation and inspection of private sewage facilities..
- I understand that a permit of authorization to construct will not be issued until the Floodplain Administrator has performed the reviews required by the Comal County Flood Damage Prevention Order.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

Signature of Owner

6/5/23
Date

COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

REVISED
10:29 am, Sep 12, 2024

D JONAS DR
NFELS, TX 78132
(830) 608-2090
WWW.CCEO.ORG

Planning Materials & Site Evaluation as Required Completed By Hoyt Seidensticker

System Description Aerobic with Drip Irrigation

Size of Septic System Required Based on Planning Materials & Soil Evaluation

Tank Size(s) (Gallons) 600 GPD ATU Absorption/Application Area (Sq Ft) 1584

Gallons Per Day (As Per TCEQ Table III) 360

(Sites generating more than 5000 gallons per day are required to obtain a permit through TCEQ.)

Is the property located over the Edwards Recharge Zone? ☐ Yes ☒ No

(If yes, the planning materials must be completed by a Registered Sanitarian (R.S.) or Professional Engineer (P.E.))

Is there an existing TCEQ approved WPAP for the property? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design complies with all provisions of the existing WPAP.)

Is there at least one acre per single family dwelling as per 285.40(c)(1)? ☐ Yes ☒ No

If there is no existing WPAP, does the proposed development activity require a TCEQ approved WPAP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed WPAP. A Permit to Construct will not be issued for the proposed OSSF until the proposed WPAP has been approved by the appropriate regional office.)

Is the property located over the Edwards Contributing Zone? ☒ Yes ☐ No

Is there an existing TCEQ approval CZP for the property? ☐ Yes ☒ No

(If yes, the P.E. or R.S. shall certify that the OSSF design complies with all provisions of the existing CZP.)

If there is no existing CZP, does the proposed development activity require a TCEQ approved CZP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed CZP. A Permit to Construct will not be issued for the proposed OSSF until the CZP has been approved by the appropriate regional office.)

Is this property within an incorporated city? ☐ Yes ☒ No

If yes, indicate the city: _____

By signing this application, I certify that:

- The information provided above is true and correct to the best of my knowledge.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

Hoyt Seidensticker

Signature of Designer

STATE OF TEXAS
HOYT SEIDENSTICKER
3588
REGISTERED SANITARIAN

9-11-24

Date

1/m

THE COUNTY OF COMAL
STATE OF TEXAS

202306018606 06/13/2023 11:35:21 AM 1/1

AFFIDAVIT

According to Texas Commission on Environmental Quality Rules for On-Site Sewage Facilities (OSSFs), this document is filed in the Deed Records of Comal County, Texas.

I

The Texas Health and Safety Code, Chapter 366 authorizes the Texas Commission on Environmental Quality (TCEQ) to regulate on-site sewage facilities (OSSFs). Additionally, the Texas Water Code (TWC), §5.012 and §5.013, gives the commission primary responsibility for implementing the laws of the State of Texas relating to water and adopting rules necessary to carry out its powers and duties under the TWC. The commission, under the authority of the TWC and the Texas Health and Safety Code, requires owners to provide notice to the public that certain types of OSSFs are located on specific pieces of property. To achieve this notice, the commission requires a recorded affidavit. Additionally, the owner must provide proof of the recording to the OSSF permitting authority. This recorded affidavit is not a representation or warranty by the commission of the suitability of this OSSF, nor does it constitute any guarantee by the commission that the appropriate OSSF was installed.

II

An OSSF requiring a maintenance contract, according to 30 Texas Administrative Code §285.91(12) will be installed on the property described as (insert legal description): 2060 Bella Vista Lot 68, Avonlea Subdivision, Comal County, Texas

The property is owned by (owner as per deed) Brian Wayne Krause and Leslie Ann Krause

This OSSF shall be covered by a continuous service policy for the first two years. After the initial two-year service policy, the owner of an aerobic treatment system for a single family residence shall either obtain a maintenance contract within 30 days or maintain the system personally.

Upon sale or transfer of the above-described property, the permit for the OSSF shall be transferred to the buyer or new owner. A copy of the planning materials for the OSSF may be obtained from (insert name of permitting authority).

WITNESS BY HAND(S) ON THIS 5 DAY OF M June, 2023.

Owner(s) signature(s)

Brian W. Krause
Owner (s) Printed Name(s)

Leslie A. Krause
Owner(s) signature(s)

Leslie A. Krause
Owner (s) Printed Name(s)

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS 5th DAY OF June, 2023.

Notary Public Signature

NOTARY PUBLIC STATE OF TEXAS
CESAR CASTILLEJA
MY COMMISSION EXPIRES
09/16/2026
NOTARY ID: 133967803

→ Land Stewardship SVC. LLC
124 Bristow Way
Boerne, Tx. 78006

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
06/13/2023 11:35:21 AM
TAMMY 1 Page(s)
202306018606

COUNTY COURT COMAL COUNTY, TEXAS
Bobbie Koepp

Regulatory Authority _____ Permit / License Number _____

JAJ Construction Services, LLC
Aerobic Services Division
Jeff Jay – MP0001423
1013 Hwy 46 East
Boerne, TX 78006
Phone (830) 336-3821
Fax (830) 336-3841

Customer Brian Krause
Site Address 2060 Bella Vista
City, State, Zip Canyon Lake, TX 78133
Mailing Address 2 Falling Leaf Friendswood, TX 77546
County Comal Map # _____
Email Address krausebl@sbcglobal.net
Phone # 409-218-5188

WASTEWATER TREATMENT FACILITY MONITORING AGREEMENT

The effective date, if this is an initial maintenance contract, shall be the date the license to operate is issued.

I. **General:** This Work for Hire Agreement (herein after referred to as "Agreement") is entered into by and between Brian Krause (hereinafter referred to as "Customer") and JAJ Construction Services, LLC. By this Agreement JAJ Construction Services, LLC and its employees (hereinafter inclusively referred to as "Contractor") agree to render services at the site address stated above, as described herein, and the Customer agrees to fulfill his/her/their responsibilities, as described herein. The designed flow rate for this system is a maximum of 360 gallons per day.

II. **Effective Dates:** This Agreement commences on LTO and ends on _____ for a total of X two (2) years (initial Agreement) or _____one (1) year (there after). If this is an initial Agreement (new installation), the Customer will notify the Contractor within two (2) business days of the system's first use to establish the date of commencement. If no notification is received by Contractor within ninety (90) days after completion of installation or where county authority mandates, the date of commencement will be the date the "License to operate" (Notice of Approval) was issued by the permitting authority. This Agreement may or may not commence at the same time as any warranty period of installed equipment, but in no case shall it extend the specified warranty.

III. **Renewal:** This Agreement shall automatically renew each at the same terms, conditions, and costs, unless either party gives notice of termination a minimum of thirty (30) days prior to end of first Agreement period. See Section IV.

IV. **Termination of Agreement:** This Agreement may be terminated by either party with thirty (30) days written notice for any reason, including for example, substantial failure to perform to accordance with its terms, without fault or liability of the terminating party. If this Agreement is so terminated, Contractor will be paid at the rate of $75.00 per hour for any work performed and for which compensation has not been received. After the deduction of all outstanding charges, any remaining monies from prepayment for services will be refunded to Customer within thirty (30) days. Either party terminating this Agreement for any reason, including non-renewal, shall notify in writing the equipment manufacturer and the appropriate regulatory agency a minimum of thirty (30) days prior to the date of such termination. Nonpayment of any kind shall be considered breach of contract and a termination of contract.

V. **Services:** Contractor will
   a. Inspect and perform routine upkeep on the On-Site Sewage Facility (hereinafter referred to as OSSF) as recommended by the treatment system manufacturer, and required by state and/or local regulation, for a total of three (3) visits to site per year.
   b. Provide a written record of visits to the site by means of an inspection tag attached to or contained in the control panel.
   c. Repair or replace, if Contractor has necessary materials at site, any component of the OSSF to be failing or inoperative during the course of a routine monitoring visit. If such services are not covered by warranty, and services costs are $100.00 or less, Customer hereby authorizes Contractor to perform the service and bill Customer for said service. When service costs are greater than $100.00, or if Contractor does not have necessary supplies at the site, Contractor will notify Customer of required service(s) and associated cost(s). Customer must notify Contractor of arrangements to affect repair of system within two (2) business days after said notification.
   d. Provide sample collection and laboratory testing of TSS and BOD on a yearly basis (commercial systems only).
   e. Forward copies of this Agreement and all reports to the regulatory agency and the Customer.
   f. Visit site in response to Customer's request for unscheduled service within forty-eight (48) hours of the date of notification (weekends and holidays excluded) of said request. Unless otherwise covered by warranty, costs for such unscheduled responses will be billed to Customer.

VI. **Disinfection:** X Not Required _____ Required. The responsibility to maintain the disinfection device(s) and provide any necessary chemicals is that of the Customer BL **(Initial)**.

VII. **Electric Monitoring:** Electronic Monitoring is not included in this Agreement.

VIII. **Performance of Agreement:** Commencement of performance by Contractor under this Agreement is contingent on the following conditions:
   a. If this is an Initial Agreement (new installation).
      i. Contractor's receipt of a fully executed original copy or facsimile of this Agreement and all documentation requested by Contractor.
      ii. Contractor's receipt of payment of the wastewater-monitoring fee in accordance with the terms as described in Section XIV of this Agreement.
   b. If this is not an Initial Agreement (existing system).
      i. Contractor's receipt of a fully executed original copy or facsimile of this Agreement and all documentation requested by Contractor.
      ii. Contractor's receipt of payment of the wastewater-monitoring fee in accordance with the terms as described in Section XIV of this Agreement.
   c. If the above conditions are not met, Contractor is not obligated to perform any portion of this Agreement.

IX. **Customer's Responsibilities:** The Customer is responsible for each and all of the following:

a. Provide all necessary yard or lawn maintenance and removal of all obstacles including, but not limited to, dogs and other animals, vehicles, trees, brush, trash, or debris as needed to allow the OSSF to function properly, and to allow Contractor safe and easy access to all parts of the OSSF.
b. Protect equipment from physical damage including, but not limited to, that damage caused by insects.
c. Maintain a current license to operate, and abide by the conditions and limitation of that license, and all requirements for and OSSF from the State and or local regulatory agency, whichever are more stringent, as well as proprietary system's manufacturer recommendations.
d. Notify Contractor immediately of any and all alarms, and/or any and all problems with, including failure of the OSSF.
e. Provide, upon request by Contractor, water usage records for evaluation by Contractor as to the performance of the OSSF.
f. Allow for samples at both the inlet and outlet of the OSSF to be obtained by Contractor for the purpose of evaluation on the OSSF's performance. If these samples are taken to a laboratory for testing, with the exception of the service provided under Section V sub-section 'd' above. Customer agrees to pay Contractor for sample collection and transportation, portal to portal, at a rate of $35.00 per hour plus the associated fees for laboratory testing.
g. Prevent the backwash or flushing of water treatment or conditioning equipment from entering the OSSF.
h. Prevent the condensation from air conditioning or refrigeration units, or the drains of icemakers, from hydraulically overloading the aerobic treatment units. Drain lines may discharge into the surface application pump tank if approved by system designer.
i. Provide for pumping and cleaning of tanks and treatment units, when and as recommended by Contractor, at Customer's expense.
j. Maintain site drainage to prevent adverse effects on the OSSF.
k. Pay promptly and fully all Contractor's fees, bills, or invoices as described herein.

X. **Access by Contractor:** Contractor is hereby granted an easement to the OSSF for the purpose of performing services described herein. Contractor may enter the property during Contractor's normal business hours and/or other reasonable hours without prior notice to Customer to perform the services and/or repairs described herein. Contractor shall have access to the OSSF electrical and physical components. Tanks and treatment units shall be accessible by means of man ways or risers and removable covers, for the purpose of evaluation as required by State and/or local rules and the proprietary system manufacturer. If not an initial Agreement (new installation) and this access is not in place or provided for by the Customer, the cost for the labor of excavation, and possibly other labor and material costs will be required. These costs shall be billed to Customer as an additional service at a rate of $35.00 per hour, plus materials at list price. Excavated soil shall be replaced as best as Contractor can at the time such service is performed and under no circumstances is Contractor responsible for damages to sod, grass, roots, landscaping, or any unmarked underground items (telephone, television, or electrical cable, water, air, or gas lines, etc.), or for the uneven settling of the soil.

XI. **Limit of Liability:** Contractor shall not be held liable for any incidental consequential, or special damages, or for economic loss due to expense, or for loss of profit or income, or loss of use to Customer, whether in contract tort or any other theory. In no event shall Contractor be liable to an amount exceeding the total Fee for Services amount paid by Customer under this Agreement.

XII. **Severability:** If any provision of the "Proposal and Contract" shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of the "Agreement" is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

XIII. **Fee for Services:** The fee does not include any equipment, material, or labor necessary for non-warranty repairs or for unscheduled inspections or Customer requested visits to the site.

XIV. **Payment:** Full amount due upon signature (Required of new Customer). Payment of invoice(s) for any other service or repair provided by Contractor is due upon receipt of invoice. Invoices are mailed on the date of invoice. All payments not received within thirty (30) days from the invoice date will be subject to a $29.00 late penalty and a 1.5% per month carrying charge, as well as any reasonable attorney's fees, and all collection and court costs incurred by Contractor in collection of unpaid debt(s). Contractor may terminate contract at any time for nonpayment for services. Any check returned to Contractor for any reason will be assessed a $30.00 return check fee.

XV. **Application or Transfer of Payment:** The fees paid for this Agreement may transfer to the subsequent property owner(s); however this Agreement is not transferable. Customer will advise subsequent property owner(s) of the State requirement that they sign a replacement Agreement authorizing Contractor to perform the herein described Services, and accepting Customer's Responsibilities. This replacement Agreement must be signed and received in Contractor's office within ten (10) business days of date of transfer of property ownership. Contractor will apply all funds received from Customer first to any past due obligation arising from this Agreement including late fees or penalties, return check fees, and/or charges for services or repairs not paid within thirty (30) days of invoice date. Any remaining monies shall be applied to the funding of the replacement Agreement. The consumption of funds in this manner may cause a reduction in the termination date of effective coverage per this Agreement. See Section IV.

XVI. **Entire Agreement:** This Agreement contains the entire Agreement of the parties and there are no other conditions in any other Agreement, oral or written.

The effective date of this initial maintenance contract shall be the date the license to operate is issued.

Jeff Jay / JAJ Construction Services, LLC
MP0001423

X _____ 6/5/23
Customer Signature Date

1 copy: JAJ Construction Services, LLC 1 copy: Customer 1 copy: Regulatory Authority

ON-SITE SEWAGE FACILITY
Site Evaluation Report Information

Date: 7/1/2023

Applicant Information:

Name: Brian and Leslie Krause
Address: 2 Falling Leaf
City: Friendswood State: Texas Zip 77546
Phone: 409-218-5181

Property Location:

Lot: 68 Block
Sub.: Las Brisas at Ensenada Shores
Street/Road Address: 2060 Bella Vista
City: Canyon lake State: Texas Zip: 78133
Unincorporated Area? Y or N y
Additional information

Site Evaluator Information:

Name: Hoyt Seidensticker
License OS0008771 Expires 8/31/2023
Company: Land Stewardship Services, LLC
Address: 124 Bristow Way
City: Boerne State: Texas Zip: 78006
Phone: (210) 414-6603
Email hoyt@landstewardshipservices.com

Installer information:

Name: Jeff Jay
LIC # OS0020500 Expires
Company: J.A.J. Construction Services, LLC
Address: 4 Sansom Road
City: Boerne State: Texas Zip: 78006
Phone: (830) 336-3821 Fax:

Schematic of Lot or Tract

Show:

Compass North, adjacent streets, property lines, property lines, property dimensions, location of buildings, easements, water lines, and other surface improvements where known (drainage, patios, sidewalks).
Location of existing or proposed water wells within 150 feet of property.
Indicate slope or show contour lines from the structure to the farthest location of the proposed soil absorption or irrigation area.
Location of soil borings or dug pits (show location with respect to a known reference point).
Location of natural, constructed, or proposed drainage ways, (streams, ponds, lakes, rivers, high tide of salt water bodies) water impoundments areas, cut or fill bank, sharp slopes and breaks.

SITE DRAWING Lot Size: acres

SEE ATTACHED

Signature of Site Evaluator Site Evaluator License No: OS0008771

ON-SITE SEWAGE FACILITY
Soil Evaluation Report Information

Date Soil Survey Performed: 7/1/2023

Site Location: 2060 Bella Vista

Name of Site Evaluator: Hoyt Seidensticker Registration Number: OS0008771

Proposed Excavation Depth: 6 inches County: Comal

Requirements:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area.

Location of soil boring or dug pits must be shown on the site drawing.

For subsurface disposal, soil evaluation must be performed to a depth of at least two feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.

Describe each soil horizon and identify any restrictive feature on the form. Indicate depths where features appear.

Soil Boring Number 1

Depth (feet)	Texture Class	Soil Structure	Gravel Analysis	Drainage (Redox Features/ Water Table)	Restrictive Horizon	Observations (color, consistence)
0	III	Clay loam	<30%	none		Brown
1 12 in	III	Clay loam	<30%			Cream with calcareous material
2						
3 36 in		rock			yes, rock	
4						
5						

Soil Boring Number 2

Depth (feet)	Texture Class	Soil Structure	Gravel Analysis	Drainage (Redox Features/ Water Table)	Restrictive Horizon	Observations (color, consistence)
0	III	Clay loam	<30%	none		Brown
1 12 in	III	Clay loam	<30%			Cream with calcareous material
2						
3 36 in		rock			yes, rock	
4						
5						

Features of Site Area

Presence of 100 year flood zone	Yes x	No
Presence of adjacent ponds, streams, water improvements	Yes x	No
Existing or proposed water well in nearby area	Yes	No x
Organized sewage service available to lot or tract	Yes	No x
Recharge feature within 150 feet	Yes	No x

By my signature, I herby certify that the information provided in this report is based on my site observations and are accurate to the best of my ability.

I understand that any misrepresentation of the information contained in this report my be grounds to revoke or suspend my license. The site evaluation determined the site is suitable for a Drip Irrigation disposal system with Aerobic treatment

According to table XIII, the site is suitable for this proposed system. A copy of Table XIII has been given to the property owner to inform them of other alternatives based upon the result of this site evaluation

Hoyt Seidensticker
Signature of Site Evaluator

7-20-23
Date

REVISED
1:21 pm, Sep 12, 2024

116459

Brian and Leslie Krause

Gallons per Day	360
Application Rate (gal/sq. ft/day)	0.25
Square footage required	1440
Feet between Lines	2
Feet between emitters	2
Number of zones	1
Linear feet of dripline	792
Number of emitters	396
Linear Feet of Tubing Per Zone	792
Type of emitters	Pressure compensating
Determine drip field pressure (psi)	35
Feet of head pressure	80.85
gph/emitter	0.61
gallons per minute per Zone	4.0
gallons per hour	241.56
minutes per dose	13
Minutes Per Day Per Zone	89
gallons per day	360
Doses per Zone	7
Total Doses per Day	7
Time Between Doses in Hours	3.4
Total Run time in Minutes	89.41877794
Number of Connections to Manifold	4
Linear feet of dripline per connection	198
minimum pump capacity (gpm)	4.0
header pipe size (inches)	1
Pressure loss in 100 ft. pipe (psi)	1.58
Friction head in 100 ft. of pipe (ft of head)	3.6498
Static head	
height from pump to top of tank (ft.)	4
Elevation increase (ft.)	1
Total static head (ft.)	5
Friction head	
equivalent length of fittings (ft.)	1
Distance from pump to field (ft.)	158
Total equivalent length of pipe (ft.)	159
total effective head (ft.)	5.80
head required at drip field (ft.)	80.85
Head loss through filters or headworks (ft.)	23.10
head loss through valves (ft.)	3.47
Minimum total head (ft.)	113.22

9-12-24

STATE OF TEXAS
HOYT SEIDENSTICKER
3588
REGISTERED SANITARIAN

9/11/2024
11:40 PM
Aerobic with Drip Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian and Leslie Krause

REVISED
10:28 am, Sep 12, 2024

116459

Property Information:

St. Address: 2060 Bella Vista
City: Canyon Lake State: Texas
Zip code: 78133

Predicted Quantity of Sewage (Q)

Water Saving Devises in Home (y/n): yes
Gallons/day (Q): 360
Greywater included (yes/no): yes

Rate of Adsorption (Ra)

Application rate (g/sq. ft): 0.25
Minimum Adsorptive Area (sq. ft.): 1440
Absorptive area installed (sq.ft.) 1584

Aerobic Unit

Required size of aerobic unit: 600 gpd
Pretreatment Tank (gallons): 378
Class 1 Aerobic Unit:: Solar Air SA-600 768PT
Pump tank total capacity (gal): 768
Chlorination: n/a
Pump Switch operation: Float system
Dosing cycle quantity (gals): Varied
Cycling time: night time
Pump size and capacity: Schaefer E-Series 20 GPM

House Information

No. of Bedrooms: 4
Sq. footage (Approx.): 3607
Water Supply: public
Gallons per day 360

Supply Line from House

Length of supply line (approx. ft.): 10
Type of supply line: SCH 40 PVC
Size of Supply line (in): 3 or 4

Supply Line to Drip Irrigation Manifold

Length of supply line (approx. ft): 158
Type of supply line: Purple SCH 40
Size of supply and flush line (in): 1

Required linear foot of tubing: 720
Linear feet of tubing installed: 792

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 29, 2016). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

Hoyt Seidensticker

9-11-24

Hoyt Seidensticker, R.S. No. 3588

Date

Land Stewardship Services, LLC, 124 Bristow Way, Boerne, Texas 78006
Cell (210) 414-6603 hoyt@landstewardshipservices.com

Effective Immediately: If any change(s) are made that require a revision to this design, a $200.00 fee will be assessed. This includes, but not limited to, change(s) in the house size, number of bedrooms, location of house or one type of system to another.

9/11/2024
11:40 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian and Leslie Krause

REVISED
10:28 am, Sep 12, 2024

A class 1 residential aerobic treatment unit will be designed for this home. Wastewater from the home will flow to the pretreatment tank of the aerobic unit. From the pretreatment tank, effluent will flow to the treatment unit. Treated effluent will then flow to the pump tank for disposal through subsurface drip irrigation. All warning systems shall be installed with the aerobic unit.

Field loading Rates and Distribution

All flow from the treatment compartment of the aerobic unit will flow into a pump tank. The pump tank will be equipped with a submersible pump. The pump will dose the single zone.

A 100 micron effluent filter must be installed in the supply line to prevent introduction of sediments & suspended organic materials into the drip tubing. Vacuum relief valves need to be installed in each zone at the highest point of both the supply and return manifolds. Ball valves must be installed on the return lines for pressure adjustment.

The drip lines will be laid on two foot centers and parallel with the contour of the land. The drip lines will not be laid perpendicular with the slope. The drip lines will then be covered with a minimum of 6 inches of the material.

Drip lines are to be placed on 2 ft centers and tied into a pressure manifold at one end and a return manifold which is run back to the pump tank for continuous flushing of the drip lines. A pressure gage and control valve on the return line at the pump tank is to be set at 35 psi, which maintains a minimum required pressure of the drip emitters. The drip lines will be flushed continuously when the pump doses the drip field. The drip lines will be continuously flushed.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 29, 2016). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

Hoyt Seidensticker

9-11-24

Hoyt Seidensticker, R.S. No. 3588
Date
Land Stewardship Services, LLC, 124 Bristow Way, Boerne, Texas 78006
Cell (210) 414-6603
hoyt@landstewardshipservices.com

STATE OF TEXAS
HOYT SEIDENSTICKER
3588
REGISTERED SANITARIAN

9/11/2024
11:40 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian and Leslie Krause

REVISED
10:28 am, Sep 12, 2024

The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. The drip tubing needs to be installed as level as possible. A minimum of 12 inches of class II sandy loam will be imported and leveled. The drip lines will be laid on top of the class II imported minimum of 12 inches of soil. Then a minimum of 6 inches of class II sandy loam must be placed over the drip lines.

Then entire area where the drip lines have been installed or disturbed, must be sodded with a type of vegetative cover or seeded curlex installed or seeded then a curlex blanket laid over the area or an equivalent county approved method of cover that is considered a high water user prior to system operation.

A maintenance contract for the entire system must be established at time of installation with someone holding a license to maintain the install aerobic system.

The aerobic treatment unit will be installed outside of the 100 year flood plain and will not need to be to be anchored down.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 29, 2016). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

HA

9-11-24

Hoyt Seidensticker, R.S. No. 3588

Date

STATE OF TEXAS
HOYT SEIDENSTICKER
3588
REGISTERED SANITARIAN

Land Stewardship Services, LLC, 124 Bristow Way, Boerne, Texas 78006
Cell (210) 414-6603 hoyt@landstewardshipservices.com

9/11/2024
11:40 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian and Leslie Krause

REVISED
10:29 am, Sep 12, 2024

All tanks must have inspection or cleanout ports located on the tank top over all inlet and outlet devises. Each inspection or cleanout port must be offset to allow for pumping of the tank. The ports may be configured in any manner as long as the smallest dimension of the opening is at least 12 inches, and large enough to provide for maintenance and equipment removal. All inspection and cleanout ports shall have riser over the port openings, which extend to two inches above grade. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed

The risers shall have inside diameters which are equal to or larger than the inspection or cleanout ports. Risers must be permanently fastened to the tank lid or cast into the tank. The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or another means approved by the executive director. Risers and riser caps exposed to sunlight must have ultraviolet light protection. Risers must be able to withstand the pressures created by the surrounding soil.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 29, 2016). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

Hoyt Seidensticker

Hoyt Seidensticker, R.S. No. 3588

9-11-24
Date

Land Stewardship Services, LLC, 124 Bristow Way, Boerne, Texas 78006
Cell (210) 414-6603 hoyt@landstewardshipservices.com

LAND STEWARDSHIP SERVICES
124 Bristow Way
Boerne, Texas 78006

March 9, 2025

Brenda Ritzen
Comal County Environmental
195 David Jonas Drive
New Braunfels, Texas 78132

RE: permit 116459, 2060 Bella Vista, Canyon Lake, Texas 78070

Dear Brenda,

I am requesting the variance for the placement of a drip disposal drain field to be within 25' of a slope where seeps may occur. This variance is requested due to limited space for a house, driveway, aerobic unit and drip disposal field outside of the 948-contour line. Equivalent protection with respect to the requirements of TAC chapter 285.91, Table X will be maintained by adding a retaining wall and impermeable liner consisting of 20 ml plastic liner where the drain field is less than 25' of the slope. The addition of the impermeable liner will prevent seepage from occurring where the drain field is within 25' of the slope.

In my professional opinion this variance will not pose a threat to the environment or public health.

If you have any questions, please give me a call at (210) 414-6603 or email at hoyt@landstewardshipservices.com

Sincerely,

Hoyt Seidensticker, RS 3588

Permit
116459

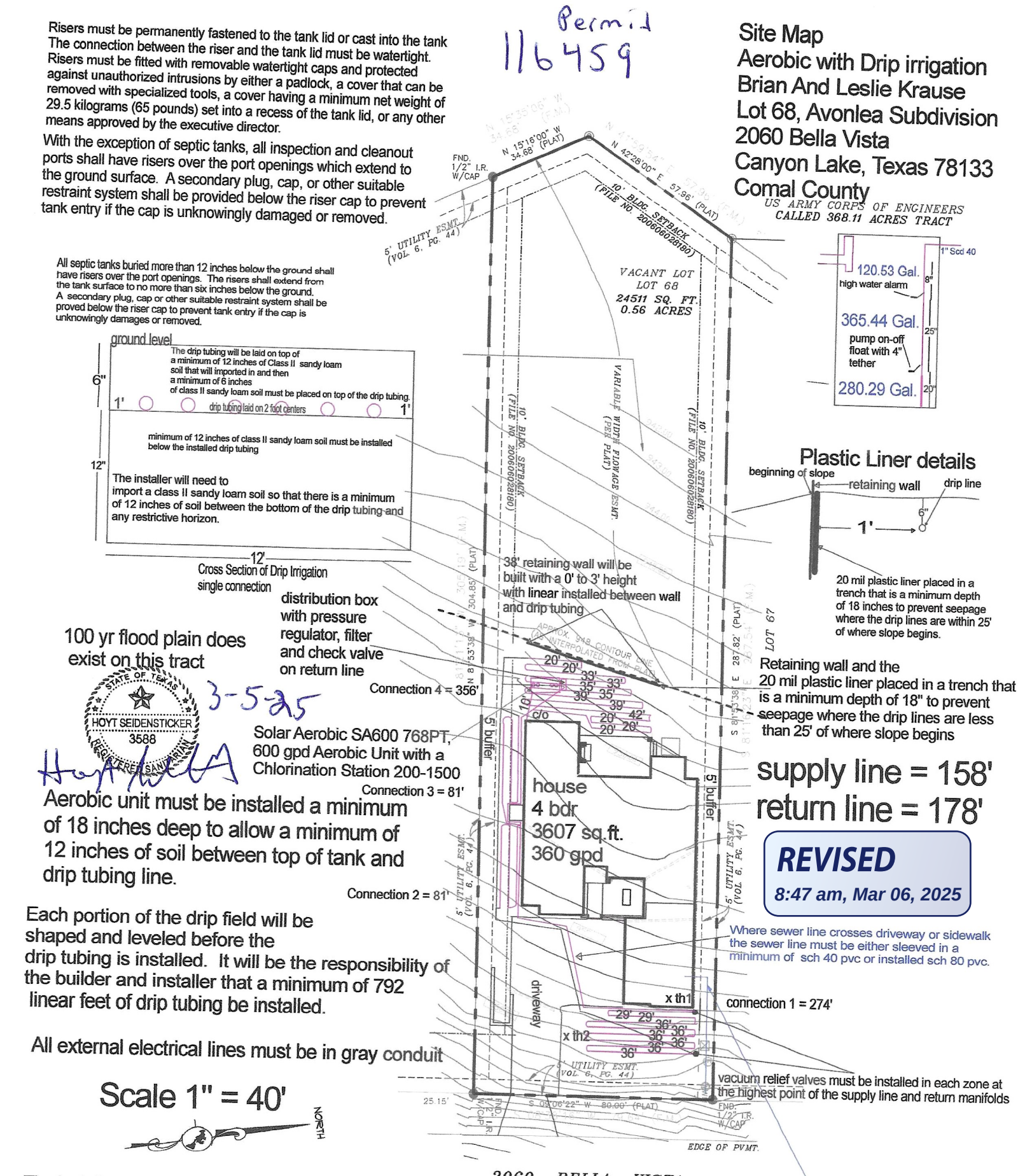
Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.

With the exception of septic tanks, all inspection and cleanout ports shall have risers over the port openings which extend to the ground surface. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

All septic tanks buried more than 12 inches below the ground shall have risers over the port openings. The risers shall extend from the tank surface to no more than six inches below the ground. A secondary plug, cap or other suitable restraint system shall be proved below the riser cap to prevent tank entry if the cap is unknowingly damages or removed.

Site Map
Aerobic with Drip irrigation
Brian And Leslie Krause
Lot 68, Avonlea Subdivision
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

Cross Section of Drip Irrigation single connection



Plastic Liner details

20 mil plastic liner placed in a trench that is a minimum depth of 18 inches to prevent seepage where the drip lines are within 25' of where slope begins.

100 yr flood plain does exist on this tract

STATE OF TEXAS
HOYT SEIDENSTICKER
3588
REGISTERED SANITARIAN

3-5-25

Solar Aerobic SA600 768PT, 600 gpd Aerobic Unit with a Chlorination Station 200-1500

Aerobic unit must be installed a minimum of 18 inches deep to allow a minimum of 12 inches of soil between top of tank and drip tubing line.

Each portion of the drip field will be shaped and leveled before the drip tubing is installed. It will be the responsibility of the builder and installer that a minimum of 792 linear feet of drip tubing be installed.

All external electrical lines must be in gray conduit

Scale 1" = 40'

NORTH

The installer will address the slope in the area of the drip filed The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.

Retaining wall and the 20 mil plastic liner placed in a trench that is a minimum depth of 18" to prevent seepage where the drip lines are less than 25' of where slope begins

supply line = 158'

return line = 178'

REVISED
8:47 am, Mar 06, 2025

Where sewer line crosses driveway or sidewalk the sewer line must be either sleeved in a minimum of sch 40 pvc or installed sch 80 pvc.

vacuum relief valves must be installed in each zone at the highest point of the supply line and return manifolds

The water line will be sleeved from the meter to where it enters the house in a minimum of sch 40 pvc, 10 feet on either side of the intersection and must maintain a 1' separation distance at the intersection and I certify that this meets the requirements of TAC Chapter 290, Subchapter D rules for Public Drinking Water Systems, Rule 290.44

8/10/2023
1:25 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian Krause

REVISED
8:13 am, Aug 11, 2023

It is in my professional opinion that since the drip tubing will be totally buried it will not increase the height of the flood.

It is in my professional opinion that the system will not create contamination during a flood, because the effluent will have gone through an aerobic treatment unit and filtered through soil.
All drip tubing and components of the distribution system will be capped, sealed and also be totally buried.

It is in my professional opinion that flooding will not damage the system or erode the system. The system will be installed as far away from the lake water as possible and not in the direct flow of floodwaters. All components will be buried and grass must be established and maintained over the entire spray area.

The aerobic treatment unit will be installed outside of the 100 year flood plain and will not need to be to be anchored down.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions.
All changes or modifications made to design must be approved by the below signed designer.

09/10/2023

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
Date
ronaldzunker@gmail.com

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

August 24, 2010

Mr. Alfred Hayes
National Wastewater Systems, Inc.
6754 Highway 90 East
Lake Charles, LA 70615

RE: Approval of the National Wastewater Systems, Solar Air, SA IITX-600 768PT, SAIITX-800, SAIITX-800 854PT and SAIITX-800 1000PT

Dear Mr. Hayes,

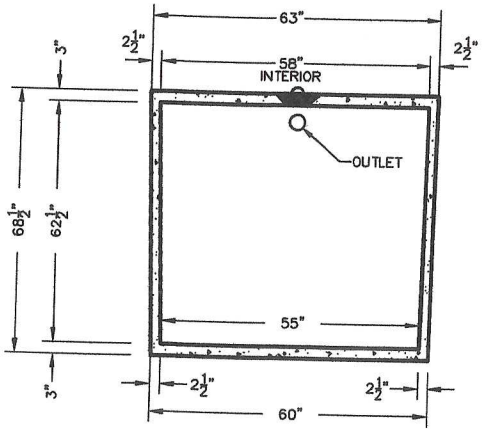
The staff of the Texas Commission on Environmental Quality has completed our review of the Gulf Coast Testing (GCT) reports on the subject products. An engineering review for compliance with provisions of NSF/ANSI Standard 40 was conducted by GCT for each unit. Based on the GCT reports, the units have been approved for use in the State of Texas. Approval of the units, along with approval of the training materials was completed August 24, 2010.

The approved product listing will note that all the subject units include pretreatment tanks so no separate pretreatment tank is required. Also, all subject units, except the SAIITX-800 include a pump tank.

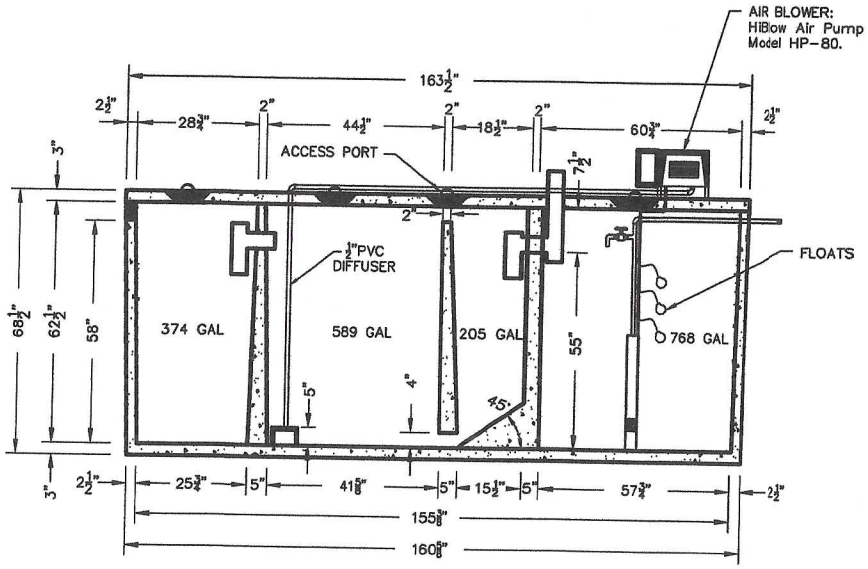
This letter will serve as verification of your approval until the SA II-600 GPD is listed on the TCEQ website. If you have any questions concerning our review, please contact me by telephone at (512) 239-2150, by E-mail at mprice@tceq.state.tx.us or by facsimile at (512) 239-6390. When responding by mail, please be sure to use mail code MC-235.

Sincerely,

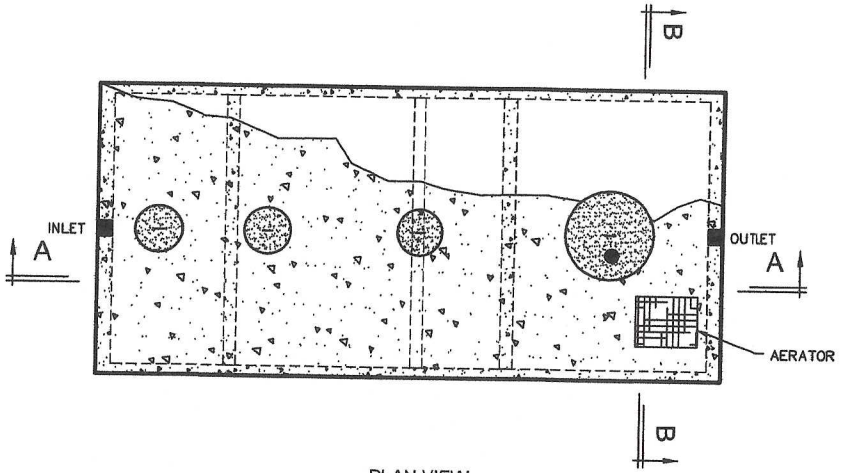
Michael Price
On-site Wastewater Team



SECTION B-B



SECTION A-A



PLAN VIEW

DESIGNED: ESC
DRAWN: ESC
CHECKED:
DATE:

MODEL SA600-768PT
SEWER TREATMENT SYSTEM

SOLAR AEROBIC
6754 HWY 90 EAST
LAKE CHARLES, LA 70615
PHONE: (337) 439-0680

TREATMENT PLANT

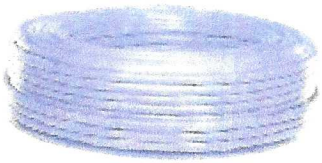
SHEET
SA-3

JULY 2011
PROJECT
-

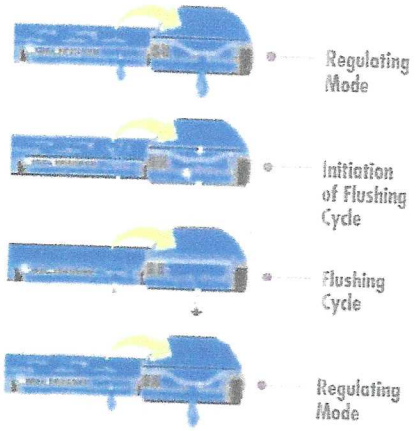
SCALE
NONE

NETAFIM

Bioline® Dripperline

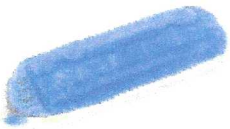


Pressure Compensating Dripperline for Wastewater



BioLine's Self-Cleaning, Pressure Compensating Dripper is a fully self-contained unit molded to the interior wall of the dripper tubing.

As shown at left, BioLine is continuously self-cleaning during operation, not just at the beginning and end of a cycle. The result is dependable, clog free operation, year after year.



Product Advantages

The Proven Performer

- Tens of millions of feet used in wastewater today.
- Bioline is permitted in every state allowing drip disposal.
- Backed by the largest, most quality-driven manufacturer of drip products in the U.S.
- Preferred choice of major wastewater designers and regulators.
- Proven track record of success for many years of hard use in wastewater applications.

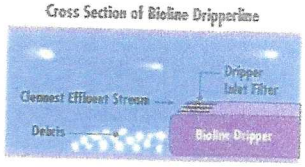
Quality Manufacturing with Specifications Designed to Meet Your Needs

- Pressure compensating drippers assure the highest application uniformity - even on sloped or rolling terrain.
- Excellent uniformity with runs of 400 feet or more - reducing installation costs.
- Highest quality-control standards in the industry: Cv of 0.25 (coefficient of manufacturer's variation).
- A selection of flows and spacings to satisfy the designer's demand for almost any application rate.

Long-Term Reliability

- Protection against plugging:
  - Dripper inlet raised 0.27" above wall of tubing to prevent sediment from entering dripper.
  - Drippers impregnated with Vinyzene to prevent buildup of microbial slime.
  - Unique self-flushing mechanism passes small particles before they can build up.

Cross Section of Bioline Dripperline



Root Safe

- A physical barrier on each BioLine dripper helps prevent root intrusion.
- Protection never wears out - never depletes - releases nothing to the environment.
- Working reliably for up to 15 years in subsurface wastewater installations.
- Additional security of chemical root inhibition with Techfilter - supplies Trifluralin to the entire system, effectively inhibiting root growth to the dripper outlets.

Applications

- For domestic strength wastewater disposal.
- Installed following a treatment process.
- Can be successfully used on straight septic effluent with proper design, filtration and operation.
- Suitable for reuse applications using municipally treated effluent designated for irrigation water.

Specifications

Wall thickness (mil): 45*

Nominal flow rates (GPH): .4, .6, .9*

Common spacings: 12", 18", 24"*

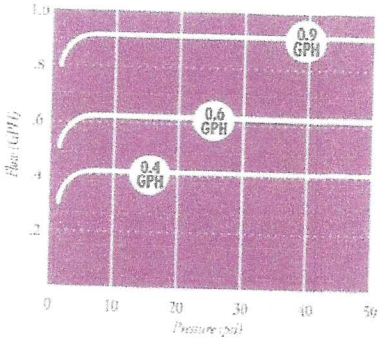
Recommended filtration: 120 mesh

Inside diameter: .570*

Color: Purple tubing indicates non-potable source

*Additional flows, spacings, and pipe sizes available by request. Please contact Netafim USA Customer Service for details.

BIOLINE Flow Rate vs. Pressure



NETAFIM

NETAFIM USA
5470 E. Home Ave. • Fresno, CA 93727
888.638.2346 • 559.453.6800
FAX 800.695.4753
www.netafimusa.com

Arkal 1" Super Filter

Catalog No. 1102 0___

Features

- A "T" shaped filter with two 1" male threads.
- A "T" volume filter for in-line installation on 1" pipelines.
- The filter prevents clogging due to its enlarged filtering area that collects sediments and particles.
- Manufactured entirely from fiber reinforced plastic.
- A cylindrical column of grooved discs constitutes the filter element.
- Spring keeps the discs compressed.
- Screw-on filter cover.
- Filter discs are available in various filtration grades.

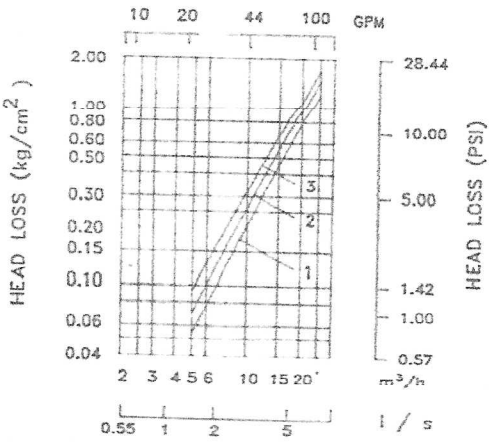
Technical Data

Inlet/outlet diameter	1" BSPT (male) 25.0 mm – nominal diameter 33.6 mm – pipe diameter (O. D.)	1" NPT (male)
Maximum pressure	10 atm	145 psi
Maximum flow rate	8 m^3/h (1.7 l/sec)	35 gpm
General filtration area	500 cm^2	77.5 in^2
Filtration volume	600 cm^3	37 in^3
Filter length L	340 mm	13 13/32"
Filter width W	130 mm	5 3/32"
Distance between end connections A	158 mm	6 7/32"
Weight	1.420 kg	3.13 lbs.
Maximum temperature	70° C	158 °F
pH	5-11	5-11

Filtration Grades

Blue	(400 micron / 40 mesh)
Yellow	(200 micron / 80 mesh)
Red	(130 micron / 120 mesh)
Black	(100 micron /140 mesh)
Green	(55 micron)

Head Loss Chart



RAIN BIRD

Inline Pressure Regulators

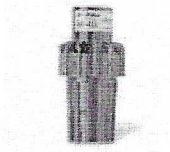
Control Zone Components

Regulates outlet pressure to 30 psi, 40 psi, or 50 psi, can be installed above or below ground.

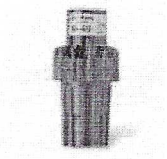
| More

Click to Enlarge Photos

PSI-L30X-075
3/4" 30 psi (2.1 bar) regulator for low flow (red label)



PSI-M30X-075
3/4" 30 psi (2.1 bar) regulator for medium flow (yellow label)



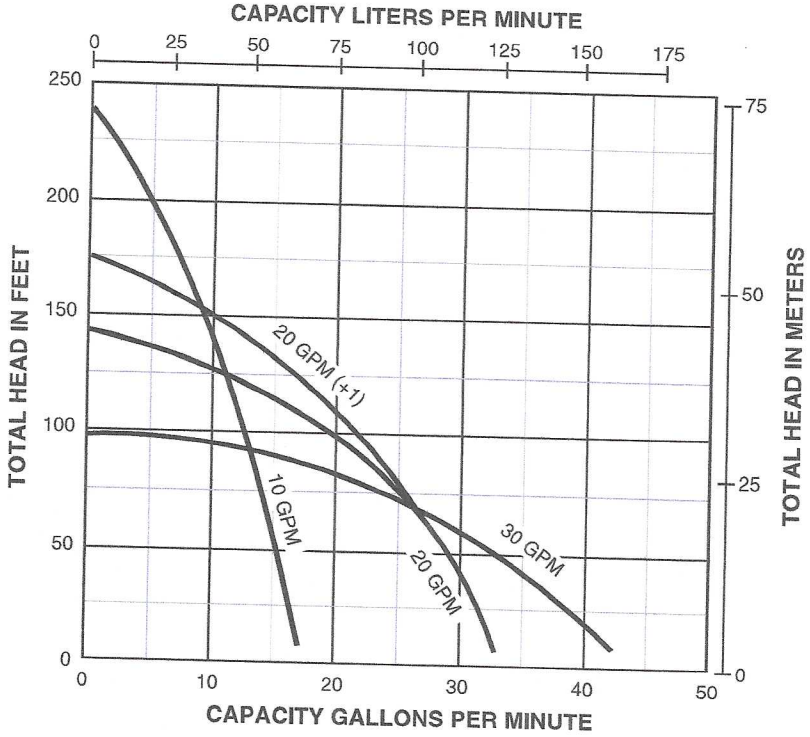
PSI-M40X-075
3/4" 40 psi (2.8 bar) regulator for medium flow (yellow label)

PSI-M40X-100
1" 40 psi (2.8 bar) regulator for medium flow

STA-RITE

4" multi-stage submersible pump

PUMP PERFORMANCE

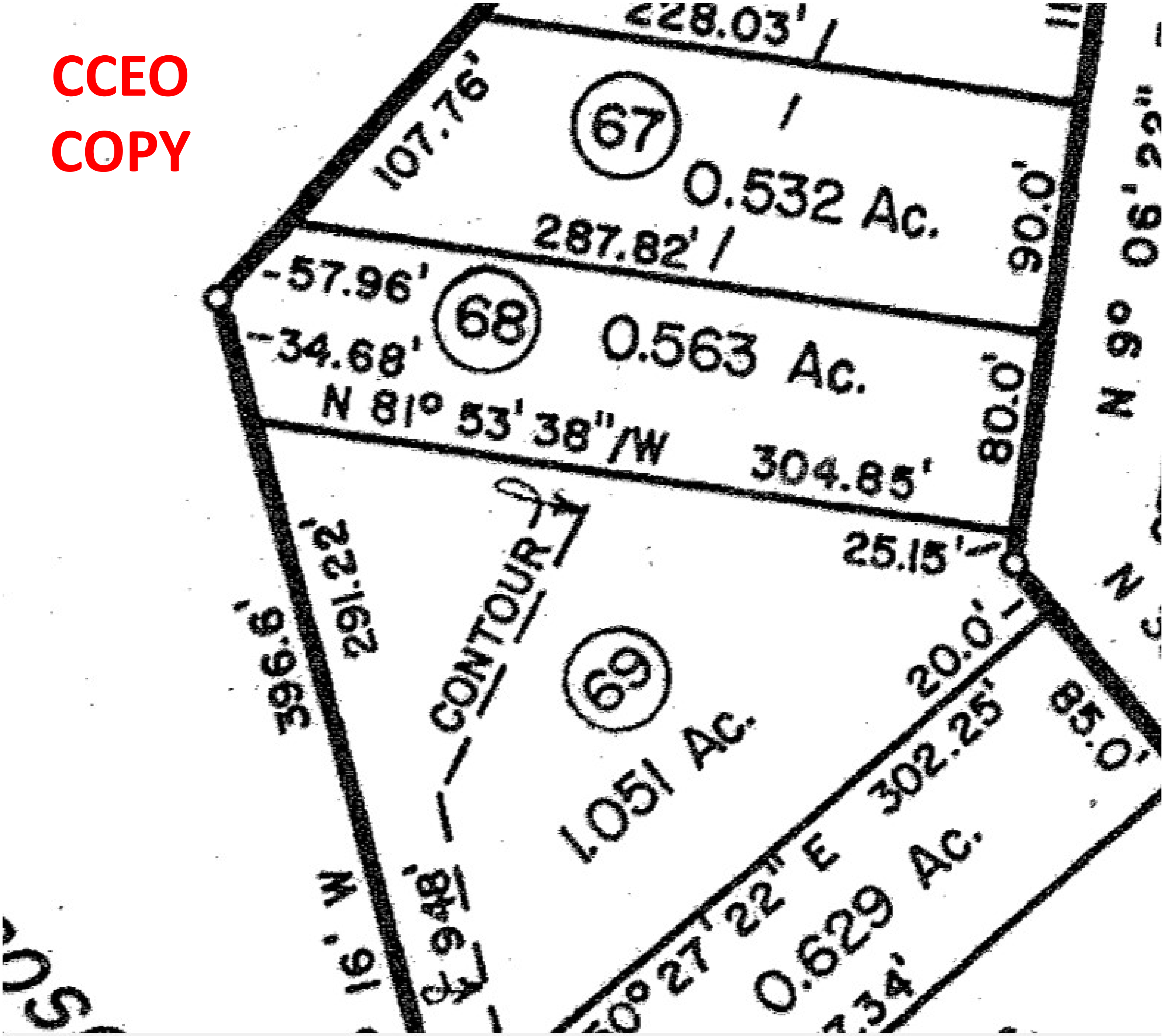


PUMP PERFORMANCE *(Capacity in Gallons per Minute)*

Pump Model	Flow Rate (GPM)	PSI											
		0	10	20	30	40	50	60	70	80	90	100	110
10DOM05221	10			15.0	13.7	12.7	11.5	10.2	8.4	6.5	4.3	1.0	
10DOM05121	10			15.0	13.7	12.7	11.5	10.2	8.4	6.5	4.3	1.0	
20DOM05221	20			30.0	26.0	21.5	14.2	4.4					
20DOM05121	20			30.0	26.0	21.5	14.2	4.4					
30DOM05221	30		38.5	33.3	25.8	16							
30DOM05121	30		38.5	33.3	25.8	16							
20DOM05221+1	20 + 1			30	27.5	24	20	13.5	6				
20DOM05121+1	20 + 1			30	27.5	24	20	13.5	6				

PUMP PERFORMANCE *(Capacity in Liters per Minute)*

Pump Model	Flow Rate (LPM)	Bar											
		0	.69	1.38	2.07	2.76	3.45	4.13	4.82	5.51	6.20	6.89	7.58
10DOM05221	37.85		56.8	51.9	48.1	43.5	38.6	31.8	24.6	16.3	3.8		
10DOM05121	37.85		56.8	51.9	48.1	43.5	38.6	31.8	24.6	16.3	3.8		
20DOM05221	75.7		113.6	98.4	81.4	53.7	16.7						
20DOM05121	75.7		113.6	98.4	81.4	53.7	16.7						
30DOM05221	113.55	145.7	126.0	97.7	60.6								
30DOM05121	113.55	145.7	126.0	97.7	60.6								
20DOM05221+1	75.7 + 1			113.4	103.9	90.7	75.6	51.0	22.6				
20DOM05121+1	75.7 + 1			113.4	103.9	90.7	75.6	51.0	22.6				


228.03'
107.76'
67
0.532 Ac.
287.82'
90.0'
-57.96'
68
0.563 Ac.
-34.68'
80.0'
N 81° 53' 38" W
304.85'
25.15'
CONTOUR
396.6'
291.22'
69
1.051 Ac.
20.0'
85.0'
302.25'
0.629 Ac.

From: Ritzen,Brenda
To: "Hoyt Seidensticker"
Cc: Olvera,Brandon; Jason Gallas; Carl Nelson; Jeff Jay
Subject: RE: permit 116459
Date: Tuesday, March 11, 2025 8:33:00 AM
Attachments: image001.png

Hoyt,

This has been added to the permit file.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Sunday, March 9, 2025 10:39 PM
To: Ritzen,Brenda <rabbjr@co.comal.tx.us>
Cc: Olvera,Brandon <Olverb@co.comal.tx.us>; Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Jeff Jay <jajconstruction1@gmail.com>
Subject: Re: permit 116459

---

here is my variance request for permit 116459

thanks

Hoyt Seidensticker
hoyt@landstewardshipservices.com

Please note my new email and mailing address

Land Stewardship Services, LLC
124 Bristow Way

From: Ritzen,Brenda
To: Hoyt Seidensticker; Olvera,Brandon; Jason Gallas; Carl Nelson; Jeff Jay
Subject: RE: permit 116459
Date: Thursday, March 6, 2025 9:34:00 AM
Attachments: image001.png

Hoyt,

Include a variance request for the use of the retaining wall as your equivalent protection from the steep slope.

Thank you,

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Wednesday, March 5, 2025 12:44 PM
To: Ritzen,Brenda <rabbjr@co.comal.tx.us>; Olvera,Brandon <Olverb@co.comal.tx.us>; Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Jeff Jay <jajconstruction1@gmail.com>
Subject: permit 116459

Here is the revised site map showing the liner to be installed to prevent seepage.

thanks

Hoyt Seidensticker
hoyt@landstewardshipservices.com

Please note my new email and mailing address

Land Stewardship Services, LLC

Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.

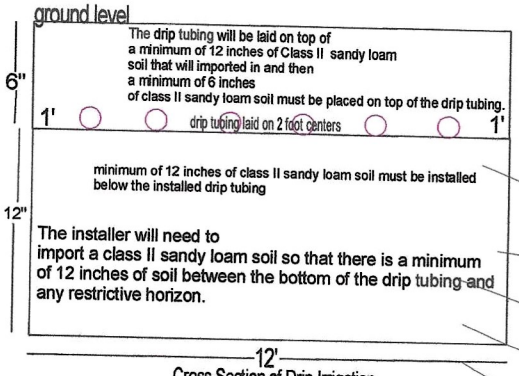
With the exception of septic tanks, all inspection and cleanout ports shall have risers over the port openings which extend to the ground surface. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

REVISED
10:29 am, Sep 12, 2024

VOID

Site Map
Aerobic with Drip irrigation
Brian And Leslie Krause
Lot 68, Avonlea Subdivision
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

All septic tanks buried more than 12 inches below the ground shall have risers over the port openings. The risers shall extend from the tank surface to no more than six inches below the ground. A secondary plug, cap or other suitable restraint system shall be proved below the riser cap to prevent tank entry if the cap is unknowingly damages or removed.



Cross Section of Drip Irrigation single connection

100 yr flood plain does exist on this tract

distribution box with pressure regulator, filter and check valve on return line

Connection 4 = 356'

Solar Aerobic SA600 768PT
600 gpd Aerobic Unit with a
Chlorination Station 200-15

VOID

Connection 3 =

Aerobic unit must be installed a minimum of 18 inches deep to allow a minimum of 12 inches of soil between top of tank and drip tubing line.

Connection 2 = 81'

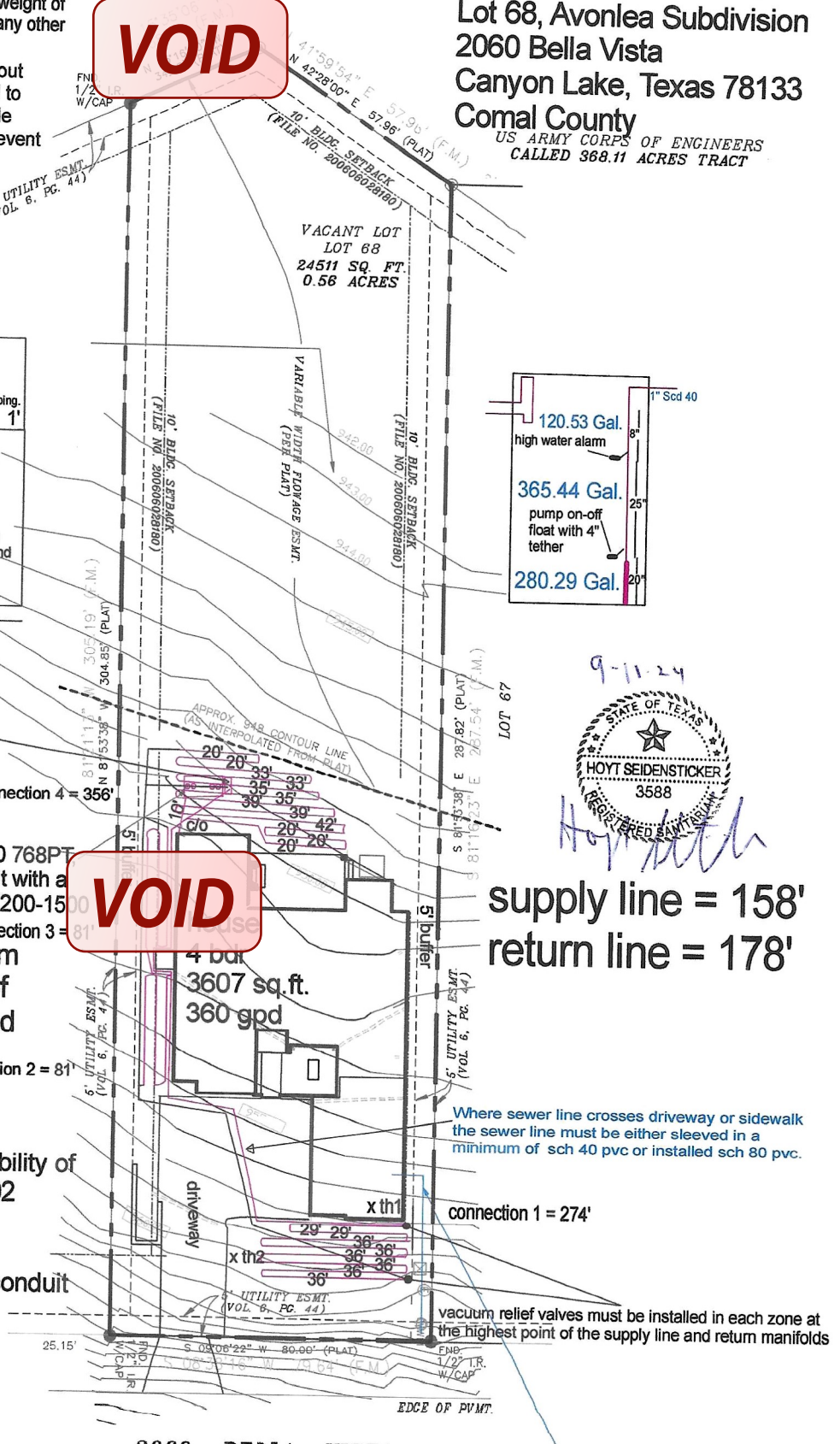
Each portion of the drip field will be shaped and leveled before the drip tubing is installed. It will be the responsibility of the builder and installer that a minimum of 792 linear feet of drip tubing be installed.

All external electrical lines must be in gray conduit

Scale 1" = 40'

NORTH

The installer will address the slope in the area of the drip filed The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.



9-11-24

supply line = 158'
return line = 178'

Where sewer line crosses driveway or sidewalk the sewer line must be either sleeved in a minimum of sch 40 pvc or installed sch 80 pvc.

The water line will be sleeved from the meter to where it enters the house in a minimum of sch 40 pvc, 10 feet on either side of the intersection and must maintain a 1' separation distance at the intersection and I certify that this meets the requirements of TAC Chapter 290, Subchapter D rules for Public Drinking Water Systems, Rule 290.44

From: Ritzen, Brenda
To: "Hoyt Seidensticker"
Cc: Jeff Jay; Olvera,Brandon; Jason Gallas; Carl Nelson; Boyd, Robert
Subject: RE: permit 116459
Date: Thursday, September 12, 2024 1:24:00 PM
Attachments: image001.png

Hoyt,

The permit file has been updated. The installer may proceed.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Thursday, September 12, 2024 10:49 AM
To: Ritzen, Brenda <rabbjr@co.comal.tx.us>
Cc: Jeff Jay <jajconstruction1@gmail.com>; Olvera,Brandon <Olverb@co.comal.tx.us>; Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Boyd, Robert <boydro@co.comal.tx.us>
Subject: Re: permit 116459

---

oops forgot to include in previous file

here it is

thanks

Hoyt Seidensticker
hoyt@landstewardshipservices.com

Please note my new email and mailing address

From: Ritzen, Brenda
To: "Hoyt Seidensticker"; Jeff Jay
Cc: Olvera,Brandon; Jason Gallas; Carl Nelson; Boyd, Robert
Subject: RE: permit 116459
Date: Thursday, September 12, 2024 10:35:00 AM
Attachments: Page from 116459.pdf
image001.png

Hoyt,

The attached page must be updated to match the revised planning materials.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Wednesday, September 11, 2024 11:50 PM
To: Ritzen, Brenda <rabbjr@co.comal.tx.us>; Jeff Jay <jajconstruction1@gmail.com>
Cc: Olvera,Brandon <Olverb@co.comal.tx.us>; Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Boyd, Robert <boydro@co.comal.tx.us>
Subject: permit 116459

Brenda and Jeff,

I have made several changes to this septic system design. All components will be outside of the 948 elevation line.

Please let me know if you have any questions or concerns.

thanks

Hoyt Seidensticker

REVISED
1:45 pm, Sep 26, 2023

Brian and Leslie Krause

VOID

Gallons per Day	360
Application Rate (gal/sq. ft/day)	0.25
Square footage required	1440
Feet between Lines	2
Feet between emitters	2
Number of zones	1
Linear feet of dripline	751
Number of emitters	375.5
Linear Feet of Tubing Per Zone	751
Type of emitters	Pressure compensating
Determine drip field pressure (psi)	35
Feet of head pressure	80.85
gph/emitter	0.61
gallons per minute per Zone	3.8
gallons per hour	229.055
minutes per dose	13
Minutes Per Day Per Zone	94
gallons per day	360
Doses per Zone	7
Total Doses per Day	7
Time Between Doses in Hours	3.4
Total Run time in Minutes	94.30049551
Number of Connections to Manifold	2
Linear feet of dripline per connection	375.5
minimum pump capacity (gpm)	3.8
header pipe size (inches)	1
Pressure loss in 100 ft. pipe (psi)	1.58
Friction head in 100 ft. of pipe (ft of head)	3.6498

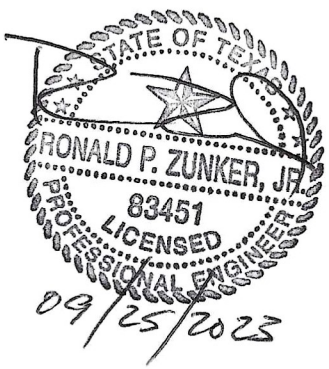
VOID

Static head

height from pump to top of tank (ft.)	4
Elevation increase (ft.)	1
Total static head (ft.)	5

Friction head

equivalent length of fittings (ft.)	1
Distance from pump to field (ft.)	57
Total equivalent length of pipe (ft.)	58
total effective head (ft.)	2.12
head required at drip field (ft.)	80.85
Head loss through filters or headworks (ft.)	23.10
head loss through valves (ft.)	3.47
Minimum total head (ft.)	109.53



COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

VOID

REVISED
8:11 am, Aug 11, 2023

195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
(830) 608-2090
WWW.CCEO.ORG

Planning Materials & Site Evaluation as Required Completed By Ron Zunker

System Description Aerobic with Drip Irrigation

Size of Septic System Required Based on Planning Materials & Soil Evaluation

Tank Size(s) (Gallons) 600 GPD ATU Absorption/Application Area (Sq Ft) 2880

Gallons Per Day (As Per TCEQ Table III) 360

(Sites generating more than 5000 gallons per day are required to obtain a permit through TCEQ.)

Is the property located over the Edwards Recharge Zone? ☐ Yes ☒ No

(If yes, the planning materials must be completed by a Registered Sanitarian (R.S.) or Professional Engineer (P.E.))

Is there an existing TCEQ approved WPAP for the property? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design complies with all provisions of the existing WPAP.)

If there is no existing WPAP, does the proposed development activity require a TCEQ approved WPAP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed WPAP. A Permit to Construct will not be issued for the proposed OSSF until the proposed WPAP has been approved by the appropriate regional office.)

Is the property located over the Edwards Contributing Zone? ☒ Yes ☐ No

Is there an existing TCEQ approval CZP for the property? ☐ Yes ☒ No

(If yes, the P.E. or R.S. shall certify that the OSSF design complies with all provisions of the existing CZP.)

VOID

If there is no existing CZP, does the proposed development activity require a TCEQ approved CZP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed CZP. A Permit to Construct will not be issued for the proposed OSSF until the CZP has been approved by the appropriate regional office.)

Is this property within an incorporated city? ☐ Yes ☒ No

If yes, indicate the city: _____

By signing this application, I certify that:

- The information provided above is true and correct to the best of my knowledge.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

RPZ

Signature of Designer

STATE OF TEXAS
RONALD P. ZUNKER, JR.
03451
LICENSED
PROFESSIONAL ENGINEER

08/10/2023

Date

9/22/2023
2:28 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian and Leslie Krause

VOID

REVISED
1:45 pm, Sep 26, 2023

The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. The drip tubing needs to be installed as level as possible. A minimum of 12 inches of class II sandy loam will be imported and leveled. The drip lines will be laid on top of the class II imported minimum of 12 inches of soil. Then a minimum of 6 inches of class II sandy loam must be placed over the drip lines.

Then entire area where the drip lines have been installed or disturbed, must be sodded with a type of vegetative cover or seeded curlex installed or seeded then a curlex blanket laid over the area or an equivalent county approved method of cover that is considered a high water user prior to system operation.

A maintenance contract for the entire system must be established at time of installation with someone holding a license to maintain the install aerobic system.

The aerobic treatment unit will be installed outside of the 100 year flood plain and will not need to be to be anchored down.

VOID

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 29, 2016). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

09/25/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

9/22/2023
2:28 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

VOID

REVISED
1:45 pm, Sep 26, 2023

116459

Brian and Leslie Krause

Property Information:

St. Address: 2060 Bella Vista
City: Canyon Lake State: Texas
Zip code: 78133

Predicted Quantity of Sewage (Q)

Water Saving Devises in Home (y/n): yes
Gallons/day (Q): 360
Greywater included (yes/no): yes

Rate of Adsorption (Ra)

Application rate (g/sq. ft): 0.25
Minimum Adsorptive Area (sq. ft.): 1440
Absorptive area installed (sq.ft.) 1502

Aerobic Unit

Required size of aerobic unit: 600 gpd
Pretreatment Tank (gallons): 378
Class 1 Aerobic Unit:: Solar Air SA-600 768PT
Pump tank total capacity (gal): 768
Chlorination: n/a
Pump Switch operation: Float system
Dosing cycle quantity (gals): Varied
Cycling time: night time
Pump size and capacity: Schaefer E-Series 20 GPM

House Information

No. of Bedrooms: 4
Sq. footage (Approx.): 3607
Water Supply: public
Gallons per day 360

Supply Line from House

Length of supply line (approx. ft.): 5
Type of supply line: SCH 40 PVC
Size of Supply line (in): 3 or 4

Supply Line to Drip Irrigation Manifold

Length of supply line (approx. ft): 57
Type of supply line: Purple SCH 40
Size of supply and flush line (in): 1

Required linear foot of tubing: 720
Linear feet of tubing installed: 751

VOID

All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

09/25/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

Effective Immediately: If any change(s) are made that require a revision to this design, a $200.00 fee will be assessed. This includes, but not limited to, change(s) in the house size, number of bedrooms, location of house or one type of system to another.

9/22/2023
2:28 PM
Aerobic with Drip Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

VOID

Brian and [illegible] Krause

REVISED
1:45 pm, Sep 26, 2023

A class 1 residential aerobic treatment unit will be designed for this home. Wastewater from the home will flow to the pretreatment tank of the aerobic unit. From the pretreatment tank, effluent will flow to the treatment unit. Treated effluent will then flow to the pump tank for disposal through subsurface drip irrigation. All warning systems shall be installed with the aerobic unit.

Field loading Rates and Distribution

All flow from the treatment compartment of the aerobic unit will flow into a pump tank. The pump tank will be equipped with a submersible pump. The pump will dose the single zone.

A 100 micron effluent filter must be installed in the supply line to prevent introduction of sediments & suspended organic materials into the drip tubing. Vacuum relief valves need to be installed in each zone at the highest point of both the supply and return manifolds. Ball valves must be installed on the return lines for pressure adjustment.

The drip lines will be laid on two foot centers and parallel with the contour of the land. The drip lines will not be laid perpendicular with the slope. The drip lines will then be covered with a minimum of 6 inches of the material.

VOID

Drip lines are to be placed on 2 ft centers and tied to a supply manifold at one end and a return manifold which is run back to the pump tank for continuous flushing of the drip lines. A pressure gage and control valve on the return line at the pump tank is to be set at 35 psi, which maintains a minimum required pressure of the drip emitters. The drip lines will be flushed continuously when the pump doses the drip field. The drip lines will be continuously flushed.

All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

09/25/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.

With the exception of septic tanks, all inspection and cleanout ports shall have risers over the port openings which extend to the ground surface. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

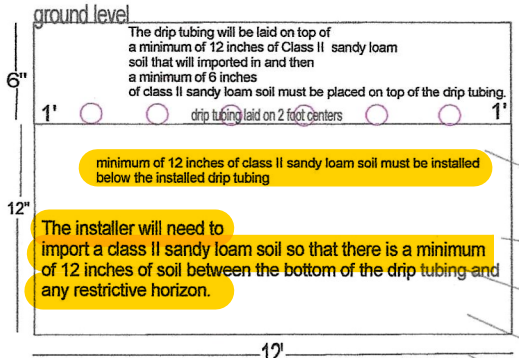
Permit 116459

VOID

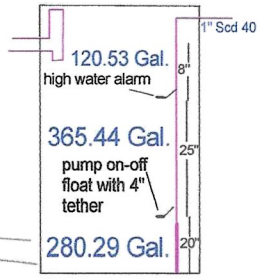
Site Map
Aerobic with Drip irrigation
Brian And Leslie Krause
Lot 68, Avonlea Subdivision
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

REVISED
8:01 am, Sep 27, 2023

All septic tanks buried more than 12 inches below the ground shall have risers over the port openings. The risers shall extend from the tank surface to no more than six inches below the ground. A secondary plug, cap or other suitable restraint system shall be proved below the riser cap to prevent tank entry if the cap is unknowingly damages or removed.



Cross Section of Drip Irrigation single connection



100 yr flood plain does exist on this tract

distribution box with pressure regulator, filter and check valve on return line

Must maintain a 1' setback between the drip line and the utility easements

Solar Aerobic SA600 768PT, 600 gpd Aerobic Unit with a Chlorination Station 200-1500

VOID

supply line = 57'
return line = 173'

Each portion of the drip field will be shaped and leveled before the drip tubing is installed. It will be the responsibility of the builder and installer that a minimum of 751 linear feet of drip tubing be installed.

All external electrical lines must be in gray conduit

Scale 1" = 40'

NORTH

connection 1 = 363'

connection 2 = 388'

vacuum relief valves must be installed in each zone at the highest point of the supply line and return manifolds

2060 BELLA VISTA
(PER PLAT KRAUSE DRIVE-60' R.O.W.)

The installer will address the slope in the area of the drip filed The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.

The water line will be sleeved from the meter to where it enters the house in a minimum of sch 40 pvc, 10 feet on either side of the intersection and must maintain a 1' separation distance at the intersection and I certify that this meets the requirements of TAC Chapter 290, Subchapter D rules for Public Drinking Water Systems, Rule 290.44

From: Ritzen, Brenda
To: Hoyt Seidensticker; kbrausebl@sbcglobal.net
Cc: Jason Gallas; Carl Nelson; Olvera,Brandon; Jeff Jay; Ronald Zunker
Subject: RE: 2060 Bella Vista deficiencies, Permit 116459
Date: Wednesday, September 27, 2023 8:38:00 AM
Attachments: 116459.pdf
image001.png

Hoyt :

A copy of the Permit to Construct is attached. Please note the condition on the permit to mark the 948 line.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Wednesday, September 27, 2023 5:45 AM
To: Ritzen, Brenda <rabbjr@co.comal.tx.us>
Cc: Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Olvera,Brandon <Olverb@co.comal.tx.us>; Jeff Jay <jajconstruction1@gmail.com>; Ronald Zunker <ronaldzunker@gmail.com>
Subject: Re: 2060 Bella Vista deficiencies, Permit 116459

---

here is the revised site map addressing the setback from the utility easement

thanks

Hoyt Seidensticker

From: Ritzen, Brenda
To: Hoyt Seidensticker
Cc: Jason Gallas; Carl Nelson; Olvera,Brandon; Jeff Jay; Ronald Zunker
Subject: RE: 2060 Bella Vista deficiencies, Permit 116459
Date: Tuesday, September 26, 2023 1:56:00 PM
Attachments: image001.png

Hoyt,

✔ Identify the required 1 ft. setback from the drip field to the easements.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Tuesday, September 26, 2023 11:43 AM
To: Ritzen, Brenda <rabbjr@co.comal.tx.us>
Cc: Jason Gallas <jasong@omnicustoms.com>; Carl Nelson <carln@omnicustoms.com>; Olvera,Brandon <Olverb@co.comal.tx.us>; Jeff Jay <jajconstruction1@gmail.com>; Ronald Zunker <ronaldzunker@gmail.com>
Subject: Re: 2060 Bella Vista deficiencies, Permit 116459

---

here is an updated septic system design revising the drip field location, permit 116459

thanks

Hoyt Seidensticker
hoyt@landstewardshipservices.com

Please note my new email and mailing address

Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.

With the exception of septic tanks, all inspection and cleanout ports shall have risers over the port openings which extend to the ground surface. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

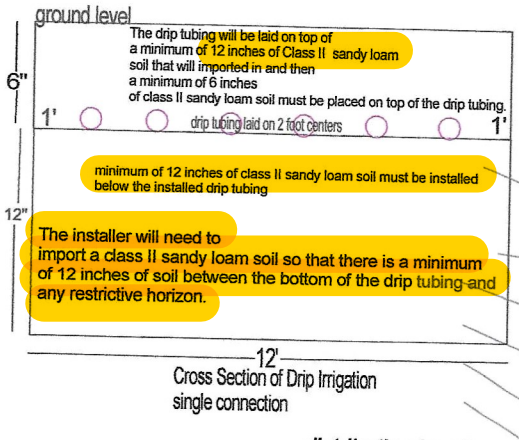
Permit 16459

VOID

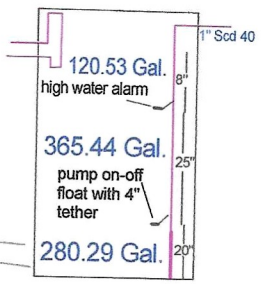
Site Map
Aerobic with Drip irrigation
Brian And Leslie Krause
Lot 68, Avonlea Subdivision
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

REVISED
1:45 pm, Sep 26, 2023

All septic tanks buried more than 12 inches below the ground shall have risers over the port openings. The risers shall extend from the tank surface to no more than six inches below the ground. A secondary plug, cap or other suitable restraint system shall be proved below the riser cap to prevent tank entry if the cap is unknowingly damages or removed.



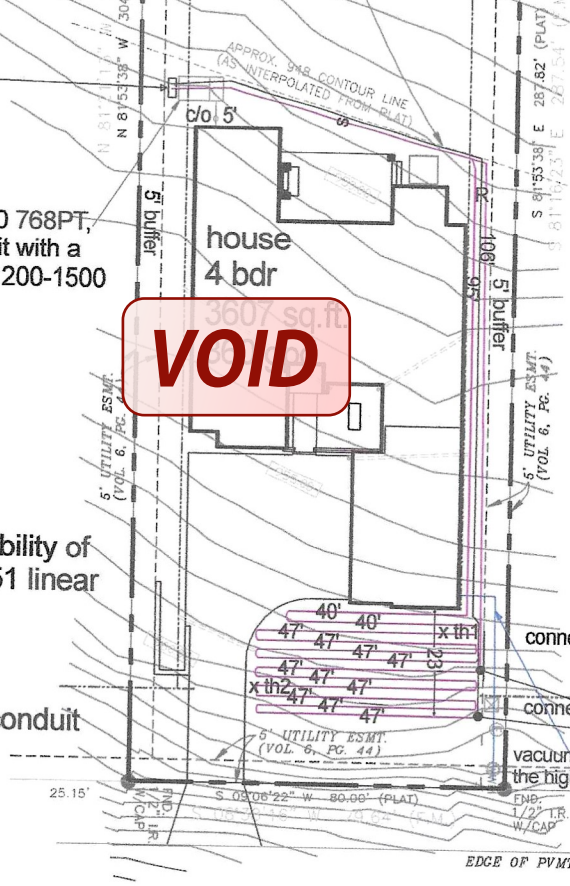
Cross Section of Drip Irrigation
single connection



100 yr flood plain does exist on this tract

distribution box with pressure regulator, filter and check valve on return line

Solar Aerobic SA600 768PT, 600 gpd Aerobic Unit with a Chlorination Station 200-1500



VOID

supply line = 57'
return line = 173'

Each portion of the drip field will be shaped and leveled before the drip tubing is installed. It will be the responsibility of the builder and installer that a minimum of 751 linear feet of drip tubing be installed.

All external electrical lines must be in gray conduit

Scale 1" = 40'

NORTH

The installer will address the slope in the area of the drip filed The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.

The water line will be sleeved from the meter to where it enters the house in a minimum of sch 40 pvc, 10 feet on either side of the intersection and must maintain a 1' separation distance at the intersection and I certify that this meets the requirements of TAC Chapter 290, Subchapter D rules for Public Drinking Water Systems, Rule 290.44

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER
09/25/2023

From: Ritzen, Brenda
To: "Hoyt Seidensticker"; Jason Gallas
Cc: Carl Nelson; Olvera,Brandon; Jeff Jay
Subject: RE: 2060 Bella Vista deficiencies, Permit 116459
Date: Friday, August 11, 2023 3:00:00 PM
Attachments: image001.png

Hoyt,

The following information is still needed:

1. ✓ The subdivision name on the design needs to be corrected.
2. ✗ The US Army Corps of Engineers (USACE) Flowage Easement is located at the 948 contour line. Revise the design accordingly. Be advised that you must provide documentation of approval from the USACE before the Permit to Construct will be issued..
3. ✓ A portion of the tanks are shown within the floodplain. Provide documentation on how tank flotation will be eliminated.
4. Revise as requested and resubmit.

Thank you,

COMAL COUNTY TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

From: Hoyt Seidensticker <hoyt@landstewardshipservices.com>
Sent: Thursday, August 10, 2023 9:38 PM
To: Jason Gallas <jasong@omnicustoms.com>; Ritzen, Brenda <rabbjr@co.comal.tx.us>
Cc: Carl Nelson <carln@omnicustoms.com>; Olvera,Brandon <Olverb@co.comal.tx.us>; Jeff Jay <jajconstruction1@gmail.com>
Subject: Re: 2060 Bella Vista deficiencies

From: Ritzen, Brenda
To: "kbrausebl@sbcglobal.net"; "carln@omnicustoms.com"
Subject: Permit 116459
Date: Thursday, August 10, 2023 10:12:00 AM
Attachments: image001.png

Re: Brian & Leslie Ann Krause
Avonlea Subdivision Lot 68
Application for Permit for Authorization to Construct an On-Site Sewage Facility (OSSF)

Property Owner / Agent :

I have reviewed the planning materials for the referenced permit submittal and found the following information is needed before I can continue processing this permit:

1. **The subdivision name on the permit application and within the planning materials does not match the subdivision name described on the recorded deed.**
2. **Submit a more legible copy of the design.**
3. **Show the location of the Corps of Engineers Flowage Easement on the design.**
4. **It appears that the system is located within the Corps of Engineers Flowage Easement. The permit application must be corrected and you will need to submit approval from the Corps before the Permit to Construct will be issued.**
5. **Remove the notation that no flood plain exists on this tract.**
6. **Additional comments may be necessary once a more legible copy of the design plan is received.**
7. **Revise as needed and resubmit.**

Thank you,

COMAL COUNTY
TEXAS

Brenda Ritzen
Environmental Health Coordinator
195 David Jonas Dr.
New Braunfels, TX 78132
DR:OS00007722
830-608-2090
www.cceo.org

8/10/2023
1:25 PM
Aerobic with Drip Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian Krause

VOID

REVISED
8:13 am, Aug 11, 2023

Property Information:

St. Address: 2060 Bella Vista
City: Canyon Lake State: Texas
Zip code: 78133

Predicted Quantity of Sewage (Q)

Water Saving Devises in Home (y/n): yes
Gallons/day (Q): 360
Greywater included (yes/no): yes

Rate of Adsorption (Ra)

Application rate (g/sq. ft): 0.2
Minimum Adsorptive Area (sq. ft.): 1800
Absorptive area installed (sq.ft.) 2880

Aerobic Unit

Required size of aerobic unit: 600 gpd
Pretreatment Tank (gallons): 378
Class 1 Aerobic Unit:: Solar Air SA-600 768
Pump tank total capacity (gal): 768
Chlorination: n/a
Pump Switch operation: Float system
Dosing cycle quantity (gals): Varied
Cycling time: night time
Pump size and capacity: Schaefer E-Series 20 GPM

House Information

No. of Bedrooms: 4
Sq. footage (Approx.): 3607
Water Supply: public
Gallons per day 360

Supply Line from House

Length of supply line (approx. ft.): 5
Type of supply line: SCH 40 PVC
Size of Supply line (in): 3 or 4

Supply Line to Drip Irrigation Manifold

Length of supply line (approx. ft): 64
Type of supply line: Purple SCH 40
Size of supply and flush line (in): 1

VOID

Required linear foot of tubing: 900
Linear feet of tubing installed: 1440

All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

08/10/2023
Date

Effective Immediately: If any change(s) are made that require a revision to this design, a $200.00 fee will be assessed. This includes, but not limited to, change(s) in the house size, number of bedrooms, location of house or one type of system to another.

8/10/2023
1:25 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

VOID

Brian Krause

REVISED
8:13 am, Aug 11, 2023

A class 1 residential aerobic treatment unit will be designed for this home. Wastewater from the home will flow to the pretreatment tank of the aerobic unit. From the pretreatment tank, effluent will flow to the treatment unit. Treated effluent will then flow to the pump tank for disposal through subsurface drip irrigation. All warning systems shall be installed with the aerobic unit.

Field loading Rates and Distribution

All flow from the treatment compartment of the aerobic unit will flow into a pump tank. The pump tank will be equipped with a submersible pump. The pump will dose the single zone.

A 100 micron effluent filter must be installed in the supply line to prevent introduction of sediments & suspended organic materials into the drip tubing. Vacuum relief valves need to be installed in each zone at the highest point of both the supply and return manifolds. Ball valves must be installed on the return lines for pressure adjustment.

The drip lines will be laid on two foot centers and parallel with the contour of the land. The drip lines will not be laid perpendicular with the slope. The drip lines will then be covered with a minimum of 6 inches of the material.

VOID

The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. The drip tubing needs to be installed as level as possible.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

08/10/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

8/10/2023
1:25 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Bri

VOID

REVISED
8:13 am, Aug 11, 2023

If the drip tubing is trenched in, a minimum of 6 inches, then the material that came out of the trench may be placed in the trench over the drip tubing as long as it is free of rocks. If the material that comes out of the trench is full of rocks, then a class II sandy loam or class III clay loam must be used to cove the drip tubing. If the drip lines are laid on top of the native soil and the native soil is scarified then a minimum of 6 inches of class II sandy loam or class III clay loam must be placed over the drip lines.

Drip lines are to be placed on 2 ft centers and tied into a pressure manifold at one end and a return manifold which is run back to the pump tank for continuous flushing of the drip lines. A pressure gage and control valve on the return line at the pump tank is to be set at 35 psi, which maintains a minimum required pressure of the drip emitters. The drip lines will be flushed continuously when the pump doses the drip field. The drip lines will be continuously flushed.

Then entire area where the drip lines have b disturbed, must be sodded with a type of vegetative cover or an equivalent county approved method of cover that is considered a high water user prior to system operation.

VOID

A maintenance contract for the entire system must be established at time of installation with someone holding a license to maintain the install aerobic system.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

08/10/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

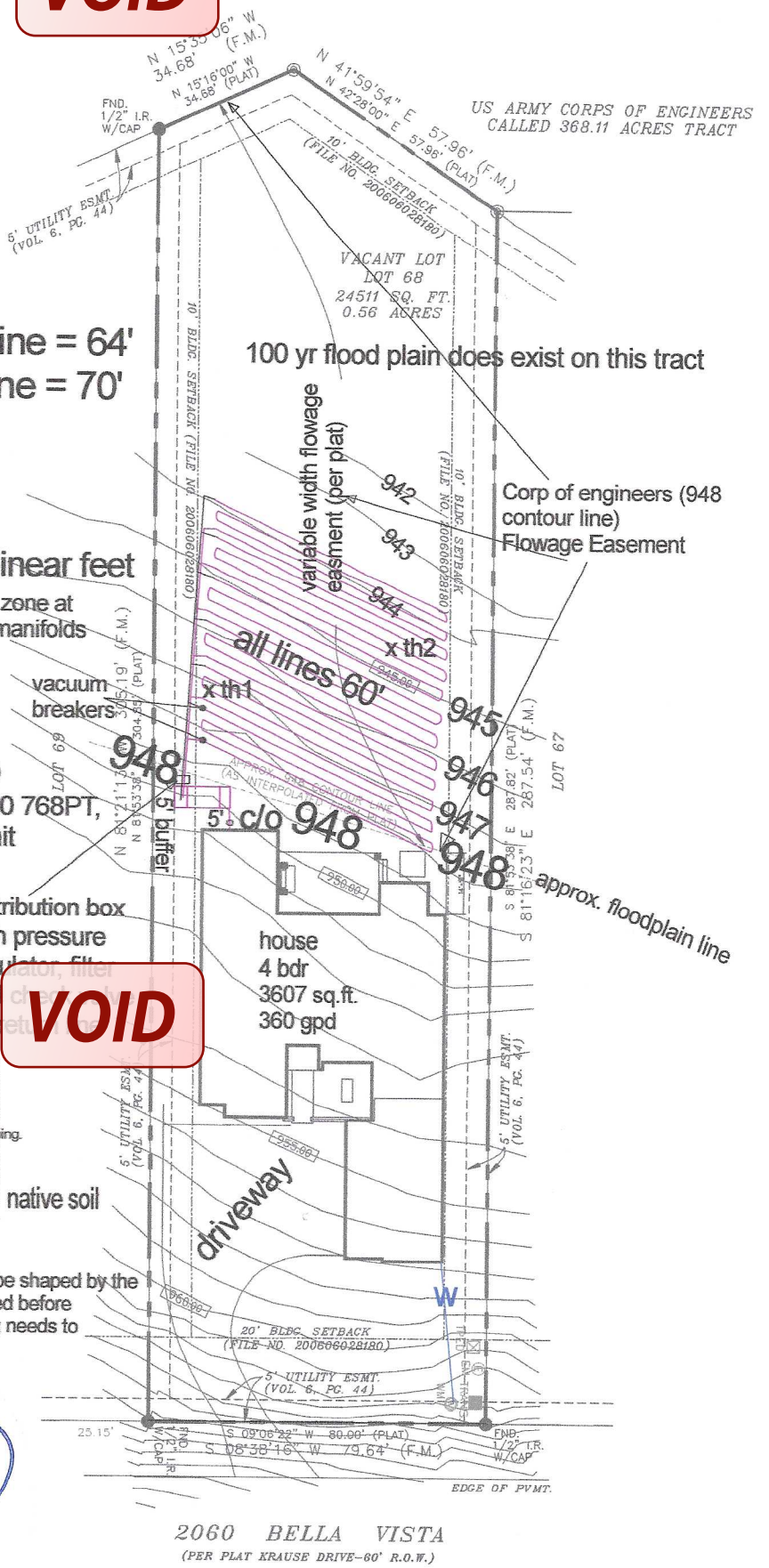
REVISED
8:37 am, Aug 21, 2023

111459

Site Map
Aerobic with Drip Irrigation
Brain And Leslie Krause
Lot 68, Avonlea Subdivision
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

VOID

Scale 1" = 40'



All drip tubing must be installed above the 943 contour line

supply line = 64'
return line = 70'

24 drip lines at 60' each for a total of 1440 linear feet of drip tubing

6 connections with each connection at 240 linear feet

vacuum relief valves must be installed in each zone at the highest point of the supply line and return manifolds

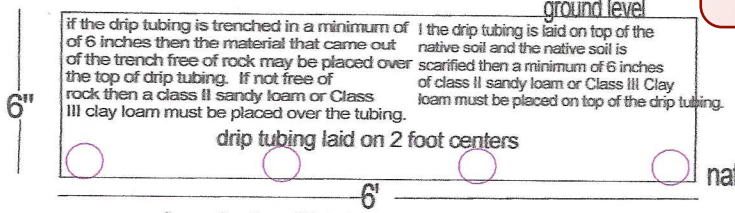
All external electrical lines must be in gray conduit

The aerobic unit will be insalled with a five foot buffer from the property line and a five foot buffer from the house. The aerobic unit will be installed outside of the Corp of Engineers flowage easement (948 contour line)

Solar Aerobic SA600 768PT, 600 gpd Aerobic Unit

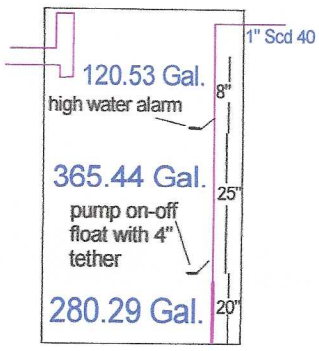
Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.

VOID



Cross Section of Drip Irrigation single connection

The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.



Site Map
Aerobic with Drip Irrigation
Brain And Leslie Krause
Lot 68, Las Brisas at Ensendad Shores
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

REVISED
8:13 am, Aug 11, 2023

VOID

Scale 1" = 40'

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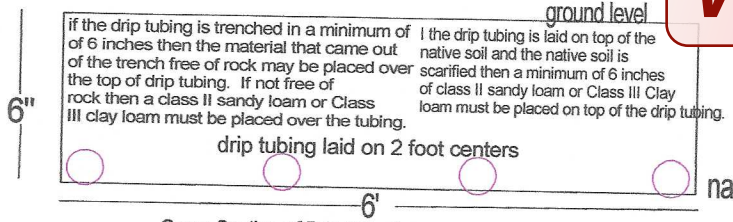
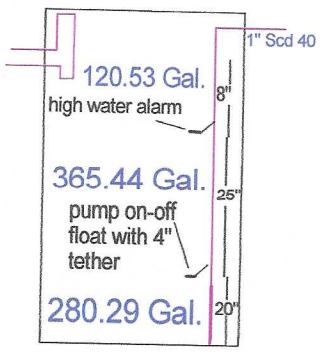
Solar Aerobic SA600 768PT,
600 gpd Aerobic Unit

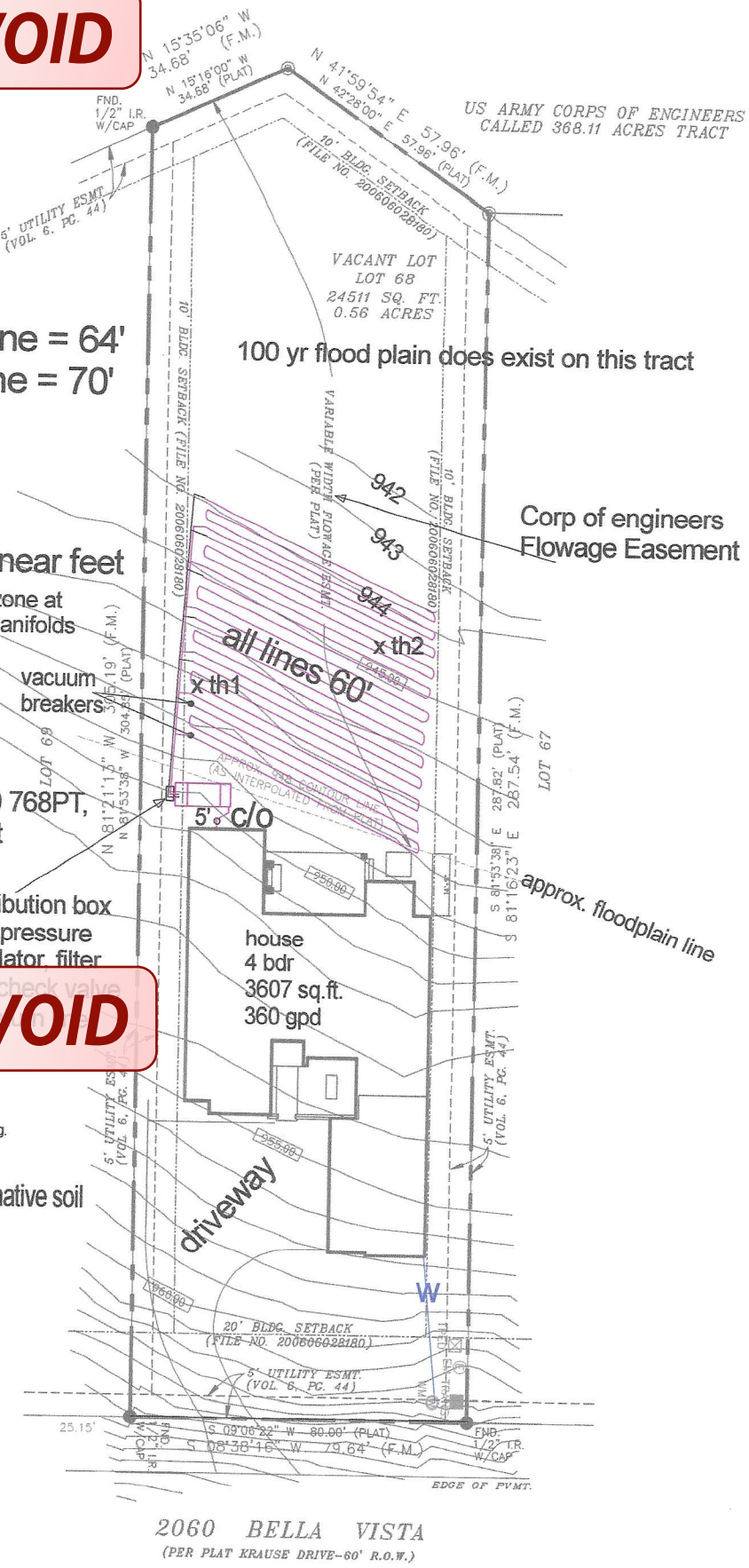
Risers must be permanently fastened to the tank lid or cast into the tank The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.



Cross Section of Drip Irrigation
single connection



STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER
09/10/2023



RECEIVED
By Kathy Griffin at 1:22 pm, Jul 21, 2023

COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
(830) 608-2090
WWW.CCEO.ORG

Date June 2, 2025

VOID

Permit Number 116459

1. APPLICANT / AGENT INFORMATION

Owner Name Brian Krause +Leslie Ann Krause
Mailing Address 2 Falling Leaf
City, State, Zip Friendswood, TX 77546
Phone # 409-218-5181
Email krausebl@sbcglobal.net

Agent Name Carl Nelson
Agent Address 14603 Huebner, Ste 3403
City, State, Zip San Antonio, TX 78230
Phone # 210-378-3845
Email carln@omnicustoms.com

2. LOCATION

Subdivision Name Las Brisas at Ensenada Shores Unit ____ Lot 68 Block ____
Survey Name / Abstract Number ____ Acreage ____
Address 2060 Bella Vista City Canyon Lake State TX Zip 78130

3. TYPE OF DEVELOPMENT

☑ Single Family Residential
Type of Construction (House, Mobile, RV, Etc.) House
Number of Bedrooms 4
Indicate Sq Ft of Living Area 3607

☐ Non-Single Family Residential
(Planning materials must show adequate land area for doubling the required land needed for treatment units and disposal area)
Type of Facility ____
Offices, Factories, Churches, Schools, Parks, Etc. - Indicate Number Of Occupants ____
Restaurants, Lounges, Theaters - Indicate Number of Seats ____
Hotel, Motel, Hospital, Nursing Home - Indicate Number of Beds ____
Travel Trailer/RV Parks - Indicate Number of Spaces ____
Miscellaneous ____

Estimated Cost of Construction: $ 675,520 (Structure Only)

Is any portion of the proposed OSSF located in the United States Army Corps of Engineers (USACE) flowage easement?
☑ Yes ☐ No (If yes, owner must provide approval from USACE for proposed OSSF improvements within the USACE flowage easement)

Source of Water ☑ Public ☐ Private Well

4. SIGNATURE OF OWNER

By signing this application, I certify that:
- The completed application and all additional information submitted does not contain any false information and does not conceal any material facts. I certify that I am the property owner or I possess the appropriate land rights necessary to make the permitted improvements on said property.
- Authorization is hereby given to the permitting authority and designated agents to enter upon the above described property for the purpose of site/soil evaluation and inspection of private sewage facilities..
- I understand that a permit of authorization to construct will not be issued until the Floodplain Administrator has performed the reviews required by the Comal County Flood Damage Prevention Order.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

Signature of Owner

6/15/23
Date

VOID

COMAL COUNTY

ON-SITE SEWAGE FACILITY APPLICATION

195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
(830)608-2090
WWW.COMAL.ORG

Planning Materials & Site Evaluation as Required Completed By Ron Zunker

System Description Aerobic with Drip Irrigation

Size of Septic System Required Based on Planning Materials & Soil Evaluation

Tank Size(s) (Gallons) 600 GPD ATU Absorption/Application Area (Sq Ft) 2880

Gallons Per Day (As Per TCEQ Table III) 360

(Sites generating more than 5000 gallons per day are required to obtain a permit through TCEQ.)

Is the property located over the Edwards Recharge Zone? ☐ Yes ☒ No

(If yes, the planning materials must be completed by a Registered Sanitarian (R.S.) or Professional Engineer (P.E.))

Is there an existing TCEQ approved WPAP for the property? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design complies with all provisions of the existing WPAP.)

If there is no existing WPAP, does the proposed development activity require a TCEQ approved WPAP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed WPAP. A Permit to Construct will not be issued for the proposed OSSF until the proposed WPAP has been approved by the appropriate regional office.)

Is the property located over the Edwards Contributing Zone? ☒ Yes ☐ No

Is there an existing TCEQ approval CZP for the property? ☐ Yes ☒ No

(If yes, the P.E. or R.S. shall certify that the OSSF design complies with all provisions of the existing CZP.)

If there is no existing CZP, does the proposed development activity require a TCEQ approved CZP? ☐ Yes ☒ No

(If yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed CZP. A Permit to Construct will not be issued for the proposed OSSF until the CZP has been approved by the appropriate regional office.)

Is this property within an incorporated city? ☐ Yes ☒ No

If yes, indicate the city: _____

By signing this application, I certify that:

- The information provided above is true and correct to the best of my knowledge.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

RZ

Signature of Designer

RONALD P. ZUNKER, JR. 85451 LICENSED PROFESSIONAL ENGINEER

07/12/2023

Date

7/11/2023
11:48 PM
Aerobic with Drip Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

VOID

Brian Krause

Property Information:

St. Address: 2060 Bella Vista
City: Canyon Lake State: Texas
Zip code: 78133

Predicted Quantity of Sewage (Q)

Water Saving Devises in Home (y/n): yes
Gallons/day (Q): 360
Greywater included (yes/no): yes

Rate of Adsorption (Ra)

Application rate (g/sq. ft): 0.2
Minimum Adsorptive Area (sq. ft.): 1800
Absorptive area installed (sq.ft.) 2880

Aerobic Unit

Required size of aerobic unit: 600 gpd
Pretreatment Tank (gallons): 378
Class 1 Aerobic Unit:: Solar Air SA-600 768PT
Pump tank total capacity (gal): 768
Chlorination: n/a
Pump Switch operation: Float system
Dosing cycle quantity (gals): Varied
Cycling time: night time
Pump size and capacity: Schaefer E-Series 20 GPM

House Information

No. of Bedrooms: 4
Sq. footage (Approx.): 3607
Water Supply: public
Gallons per day 360

Supply Line from House

Length of supply line (approx. ft.): 5
Type of supply line: SCH 40 PVC
Size of Supply line (in): 3 or 4

Supply Line to Drip Irrigation Manifold

Length of supply line (approx. ft): 64
Type of supply line: Purple SCH 40
Size of supply and flush line (in): 1

Required linear foot of tubing: 900
Linear feet of tubing installed: 1440

All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

VOID

07/12/2023

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060

Date

ronaldzunker@gmail.com

Effective Immediately: If any change(s) are made that require a revision to this design, a $200.00 fee will be assessed. This includes, but not limited to, change(s) in the house size, number of bedrooms, location of house or one type of system to another.

//11/2023
11:48 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian

VOID

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Field loading Rates and Distribution

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The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. The drip tubing needs to be installed as level as possible.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

VOID

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

07/12/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

7/11/2023
11:48 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian

VOID

If the drip tubing is trenched in, a minimum of 6 inches, then the material that came out of the trench may be placed in the trench over the drip tubing as long as it is free of rocks. If the material that comes out of the trench is full of rocks, then a class II sandy loam or class III clay loam must be used to cove the drip tubing. If the drip lines are laid on top of the native soil and the native soil is scarified then a minimum of 6 inches of class II sandy loam or class III clay loam must be placed over the drip lines.

Drip lines are to be placed on 2 ft centers and tied into a pressure manifold at one end and a return manifold which is run back to the pump tank for continuous flushing of the drip lines. A pressure gage and control valve on the return line at the pump tank is to be set at 35 psi, which maintains a minimum required pressure of the drip emitters. The drip lines will be flushed continuously when the pump doses the drip field. The drip lines will be continuously flushed.

Then entire area where the drip lines have been installed or disturbed, must be sodded with a type of vegetative cover or an equivalent county approved method of cover that is considered a high water user prior to system operation.

A maintenance contract for the entire system must be established at time of installation with someone holding a license to maintain the install aerobic system.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions.

All changes or modifications made to design must be approved by the below signed designer.

VOID

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENCED
PROFESSIONAL ENGINEER

07/12/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

7/11/2023
11:48 PM
Aerobic with Drip
Irrigation System

ON-SITE SEWAGE FACILITY DESIGN CRITERIA

Brian Kr

VOID

It is in my professional opinion that since the drip tubing will be totally buried it will not increase the height of the flood.

It is in my professional opinion that the system will not create contamination during a flood, because the effluent will have gone through an aerobic treatment unit and filtered through soil. All drip tubing and components of the distribution system will be capped, sealed and also be totally buried.

It is in my professional opinion that flooding will not damage the system or erode the system. The system will be installed as far away from the lake water as possible and not in the direct flow of floodwaters. All components will be buried and grass must be established and maintained over the entire spray area.

The aerobic treatment unit will be installed outside of the 100 year flood plain and will not need to be to be anchored down.

All design criteria is in accordance with TCEQ, Title 30, TAC Chapter 285, Subchapter D, On-Site Sewage Facilities (Effective December 27, 2012). The above design was based on the best available information and should function properly under normal operating conditions. All changes or modifications made to design must be approved by the below signed designer.

STATE OF TEXAS
RONALD P. ZUNKER, JR.
83451
LICENSED
PROFESSIONAL ENGINEER

VOID

07/12/2023
Date

Ron Zunker, PE
ZEE Consulting, PLLC
281-782-6060
ronaldzunker@gmail.com

Site Map
Aerobic with Drip Irrigation
Brain And Leslie Krause
Lot 68, Las Brisas at Ensendad Shores
2060 Bella Vista
Canyon Lake, Texas 78133
Comal County

VOID

Scale 1" = 40'

All drip tubing must be installed above the 943 contour line

supply line = 64'
return line = 70'

24 drip lines at 60' each for a total of 1440 linear feet of drip tubing

6 connections with each connection at 240 linear feet

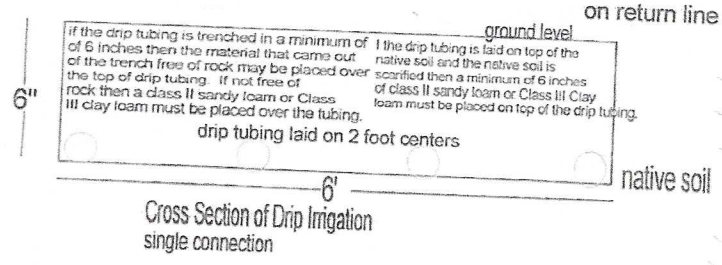
vacuum relief valves must be installed in each zone at the highest point of the supply line and return manifolds

All external electrical lines must be in gray conduit

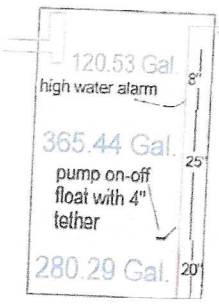
The area of the drip tubing will need to be shaped by the installer. The area will need to be leveled before installing the drip tubing. the drip tubing needs to be installed as level as possible.

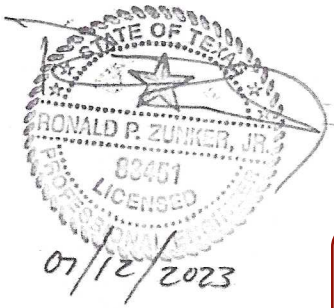
Solar Aerobic SA600 768PT,
600 gpd Aerobic Unit

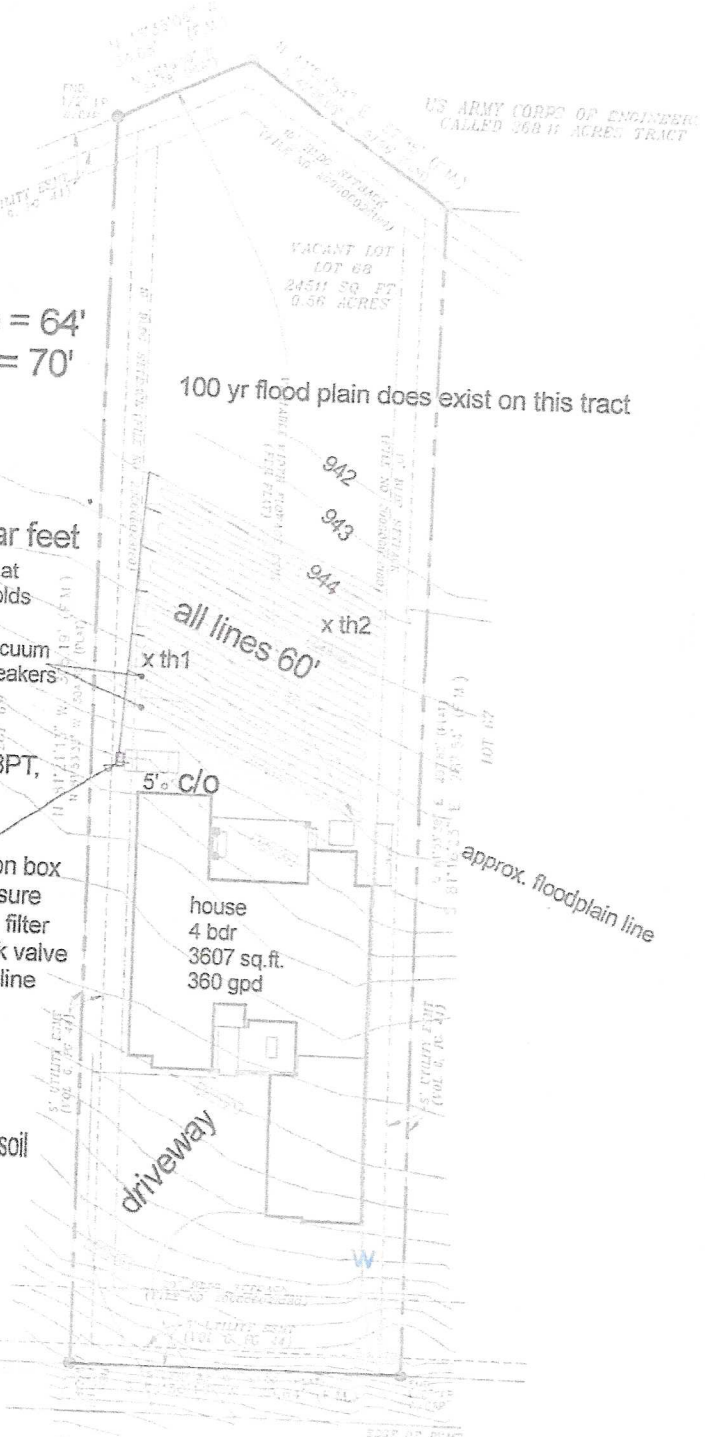
Risers must be permanently fastened to the tank lid or cast into the tank. The connection between the riser and the tank lid must be watertight. Risers must be fitted with removable watertight caps and protected against unauthorized intrusions by either a padlock, a cover that can be removed with specialized tools, a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid, or any other means approved by the executive director.



Cross Section of Drip Irrigation
single connection







VOID

PRELIMINARY PLAN

STC 545836 MW

General Warranty Deed

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

Date: October 14, 2019

Grantor: MICHELE M. DICKSON and LETICIA ELIA GARZA

Grantee: BRIAN WAYNE KRAUSE and LESLIE ANN KRAUSE

Grantee's Mailing Address: 2 Falling Leaf Court, Friendswood, TX 77546

Consideration: Cash and other valuable consideration.

Property (including any improvements):

Lot 68, AVONLEA SUBDIVISION, Comal County, Texas, according to plat thereof recorded in Volume 8, Page(s) 150-151, Map and Plat Records of Comal County, Texas;

Reservations from Conveyance: NONE.

Exceptions to Conveyance and Warranty: Any and all restrictions, covenants, conditions, reservations, mineral leases, interests, agreements and easements, shown of record in the hereinabove mentioned County and State and to all zoning laws, regulations and ordinances of municipal and/or governmental authorities, if any, but only to the extent that they are still in effect relating to the hereinabove described property, and further subject to all stand by fees, taxes and assessments by any taxing authority for the current and subsequent years, and subsequent taxes and assessments for prior years due to changes in land usage or ownership and all matters reflected on the hereinabove mentioned plat.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

When the context requires, singular nouns and pronouns include the plural.

X _____
MICHELE M. DICKSON

X _____
LETICIA ELLA GARZA

ACKNOWLEDGMENT

STATE OF TEXAS §
§
COUNTY OF Travis §

This instrument was acknowledged before me on the 14 day of October, 2019, by MICHELE M. DICKSON and LETICIA ELIA GARZA.

Mary E. Haught
Notary Public in and for the State of Texas

MARY E. HAUGHT
My Notary ID # 277319
Expires September 1, 2022

AFTER RECORDING RETURN TO:

LESLIE ANN KRAUSE
BRIAN WAYNE KRAUSE
2 Falling Leaf Court
Friendswood, TX 77546

PREPARED IN THE LAW OFFICES OF:

THE HOUGHAM LAW FIRM
5152 Fredericksburg Road, Ste. 280A
San Antonio, Texas 78229
Telephone No. (210) 375-7570

3

oly line = 64'
m line = 70'

100 yr flood plain does exist on this tract

il of

'40 linear feet

each zone at
turn manifolds

all lines 60'

Zone AE

vacuum
breakers

x th1

x th2

A600 768PT,
: Unit

5' c/o

distribution box
with pressure
regulator, filter
and check valve
on return line

approx. floodplain line

house
4 bdr
3607 sq ft.
360 gpd

native soil

driveway

RECEIVED
By Kathy Griffin at 1:23 pm, Jul 21, 2023

COMAL COUNTY
ENGINEER'S OFFICE

OSSF DEVELOPMENT APPLICATION CHECKLIST

Staff will complete shaded items

Date Received	Initials	Permit Number
		116459

Instructions:

Place a check mark next to all items that apply. For items that do not apply, place "N/A". This OSSF Development Application Checklist **must** accompany the completed application.

OSSF Permit

- [x] Completed Application for Permit for Authorization to Construct an On-Site Sewage Facility and License to Operate
- [x] Site/Soil Evaluation Completed by a Certified Site Evaluator or a Professional Engineer
- [x] Planning Materials of the OSSF as Required by the TCEQ Rules for OSSF Chapter 285. Planning Materials shall consist of a scaled design and all system specifications.
- [x] Required Permit Fee - See Attached Fee Schedule
- [x] Copy of Recorded Deed
- [x] Surface Application/Aerobic Treatment System
  - [x] Recorded Certification of OSSF Requiring Maintenance/Affidavit to the Public
  - [x] Signed Maintenance Contract with Effective Date as Issuance of License to Operate

I affirm that I have provided all information required for my OSSF Development Application and that this application constitutes a completed OSSF Development Application.

Signature of Applicant

6/15/23
Date

___ COMPLETE APPLICATION

Check No. _____ Receipt No._____

___ INCOMPLETE APPLICATION
(Missing Items Circled, Application Refeused)

Revised: September 2019