Comal County Environmental Health
OSSF Inspection Sheet

Installer Name: A&R **OSSF Installer #:** OS0038409

1st Inspection Date: 8/7/24 **2nd Inspection Date:** 2/3/25 **3rd Inspection Date:** 2/21/25

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

Permit#: 117602 **Address:** 606 Stenen

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: **8/7/24 CA: Tank location revision needed deck built over tightline cleanout on outside of deck operational cover**
2/3/25 CA: More curlex or sod needed on Drainfield area
2/21/25 CA: Covered

Comal County Environmental Health
OSSF Inspection Sheet

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		NuWater	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					

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)				
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 X	285.33(d)(2)(G) (i)285.33(d)(2) (A)285.33(d)(2)(F)				
42	APPLICATION AREA Area Installed	X					
43	PUMP TANK Meets Minimum Reserve Capacity Requirements						
44	PUMP TANK Material Type & Manufacturer						
45	PUMP TANK Type/Size of Pump Installed						

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:	117602
Issued This Date:	07/29/2024
This permit is hereby given to:	Quest Trust Company fbo Donald D. Moser IRA #41654-11

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

606 STENEN DR
CANYON LAKE, TX 78133

Subdivision:	Emerald Valley
Unit:	N/A
Lot:	68K
Block:	N/A
Acreage:	0.5000

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.

RECEIVED
By Kathy Griffin at 10:44 am, Jun 19, 2024

COMAL COUNTY
ENGINEER'S OFFICE

OSSF DEVELOPMENT APPLICATION CHECKLIST

Staff will complete shaded items

		117602
Date Received	*Initials*	*Permit Number*

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

☒ Completed Application for Permit for Authorization to Construct an On-Site Sewage Facility and License to Operate

☒ Site/Soil Evaluation Completed by a Certified Site Evaluator or a Professional Engineer

☒ 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.

☒ Required Permit Fee - See Attached Fee Schedule

☒ Copy of Recorded Deed

☒ Surface Application/Aerobic Treatment System

- ☒ Recorded Certification of OSSF Requiring Maintenance/Affidavit to the Public
- ☒ 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

_____ Date

___ COMPLETE APPLICATION

Check No. _____ Receipt No._____

___ INCOMPLETE APPLICATION
(Missing Items Circled, Application Refeused)

RECEIVED
By Kathy Griffin at 10:44 am, Jun 19, 2024

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 05/23/2024 Permit Number 117602

1. APPLICANT / AGENT INFORMATION

Owner Name	Quest Trust Company fbo Donald D. Moser IRA #41654-11	Agent Name	John J. Haag, P.E.
Mailing Address	17171 Park Row STE 100	Agent Address	15831 Secret Trails
City, State, Zip	Houston, Tx. 77084	City, State, Zip	San Antonio, Tx. 78247
Phone #	832-366-6096	Phone #	210-705-4268
Email	dmoser003@gmail.com	Email	jhaag@satx.rr.com

2. LOCATION

Subdivision Name Emerald Valley Unit _____ Lot 68K Block _____

Survey Name / Abstract Number _____ Acreage 0.5

Address 606 Stenen Dr. City Canyon Lake State Tx. Zip 78133

3. TYPE OF DEVELOPMENT

[x] Single Family Residential

Type of Construction (House, Mobile, RV, Etc.) House

Number of Bedrooms 1

Indicate Sq Ft of Living Area 768

[ ] 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: $ 225000 (Structure Only)

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

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

Source of Water [x] 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.

Quest Trust Co. FBO IRA 416541 Dwayne Moser — Quest Trust Company 6/11/2024 — 6.11.24

Signature of Owner — Rebecca Miller, CISP Gold Family Accounts Officer — Date

read and approved: Dwayne Moser (Jun 11, 2024 14:26 CDT)

COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

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

Planning Materials & Site Evaluation as Required Completed By John J. Haag, P.E.

System Description Proprietary aerobic with drip line disposal

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

Tank Size(s) (Gallons) 600 gpd Absorption/Application Area (Sq Ft) 900 min

Gallons Per Day (As Per TCEQ Table III) 180

(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.

John J. Haag
Signature of Designer

06/17/2024
Date

Revised March 2024

YCB

202406018241 06/18/2024 11:56:14 AM 1/1

THE COUNTY OF COMAL

STATE OF TEXAS

CERTIFICATION OF OSSF REQUIRING MAINTENANCE

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

I

The Texas Health and Safety Code, Chapter 366 authorizes the TCEQ to regulate on-site sewage facilities (OSSFs). Additionally, the Texas Water Code (TWC), § 5.012 and § 5.013, gives the TCEQ 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 TCEQ, 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 TCEQ 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 TCEQ of the suitability of this OSSF, nor does it constitute any guarantee by the TCEQ 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):

Legal Description: Lot 68K, Emerald Valley Subdivision

Donald Moser (Jun 17, 2024 15:12 CDT)

This property is owned by: Quest Trust Company fbo Donald D. Moser IRA #41651-11 Read & Approved

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

The owner will, upon any sale or transfer of the above-described property, request a transfer of the permit for the OSSF to the buyer or new owner. A copy of the planning materials for the OSSF can be obtained from Comal County.

WITNESS BY HAND(S) ON THIS 17 DAY OF June, 2024.

Quest Trust Company

Rebecca Miller, CISP
Gold Family Accounts Officer

Sign Above and Insert Printed Name and Title on this line

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS 17th DAY OF June, 2024.

LERANDER GRAYS
Notary Public, State of Texas
Comm. Expires 07-26-2026
Notary ID 126850549

Notary Public, State of Texas

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
06/18/2024 11:56:14 AM
LAURA 1 Page(s)
202406018241

Bobbie Koepp

WASTEWATER TREATMENT FACILITY MAINTENANCE AGREEMENT

Regulatory Authority Comal

Tyler Mason
A&R Construction LLC &
Cisco Septic Service
(830) 837-0050
(210) 598-9090

Permit/License Number _____
Customer Quest Trust Company fbo Donald Dwayne Moser IRA # 4165111
Site Address 606 Stenen Dr.
City Canyon Lake **Zip** 78133
Mailing Address 17171 Park Row Dr., Houston, Tx. 77084
County Comal **Map #** ^STE 100
Phone 281-492-3434 ext. 3569
Email Gold.Family@questtrust.com

I. General: This Work for Hire Agreement (hereinafter referred to as "Agreement") is entered into by and between Quest Trust Company fbo Donald Dwayne Moser IRA # 4165111 (hereinafter referred to as "Customer") and A&R Construction, LLC & Cisco Septic Service. By this agreement, A&R Construction, LLC & Cisco Septic Service 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.

II. Effective Date:

This Agreement commences on County issue of License to Operate (LTO) and ends on _____ (two (2) years thereafter). The Customer shall 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. Termination of Agreement:

This Agreement may be terminated by either party for any reason, including for example, substantial failure of either party to perform in accordance with the terms of this Agreement, without fault or liability of the terminating party. The terminating party must provide written notice to the non-terminating party thirty (30) days prior to the termination of this Agreement. If this Agreement is 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 of termination of this Agreement. 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.

IV. 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 visits to site per year. The list of items checked at each visit shall be comprised of items required as per the manufacturer, the controlling regulatory board, and deemed by the Contractor as necessary for proper OSSF operation.

b. Provide a written record of visits to the site.

c. Repair or replace, if Contractor has the necessary materials at site, any component of the OSSF found to be failing or inoperative during the course of a routine monitoring visit. If such services are not covered by warranty, and the service(s) cost less than $100.00, Customer hereby authorizes Contractor to perform the service(s) and bill Customer for said service(s). When service costs are greater than $100.00, or if contractor does not have the necessary supplies at the site, Contractor will notify Customer of the required service(s) and the 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 services 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.

V. Disinfection:

☑ Customer Responsible. The responsibility to maintain the disinfection device(s) and provide any necessary chemicals is that of the Customer.

RM
Customer's Initials

TM
Contractor's Initials

DM

_____ Contractor Responsible. The responsibility to maintain the disinfection device(s) and provide any necessary chemicals is that of the Contractor.

_____ Not Required. The installed septic system does not require disinfection.

VI. Electronic Monitoring:

Electronic Monitoring is not included in this Agreement.

VII. Performance of Agreement:

Commencement of performance by Contractor under this Agreement is contingent on the following conditions:

a. Contractor's receipt of a fully executed original copy or facsimile of this agreement and all documentation requested by Contractor.

If the above conditions are not met, Contractor is not obligated to perform any portion of this Agreement.

VIII. Customer's Responsibilities:

The customer is responsible for all 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, abide by the conditions and limitations of that license, and all requirements for an OSSF from the State and/or local regulatory agency, whichever requirements are more stringent, as well as the proprietary system's manufacturer recommendations.

d. Notify Contactor 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 the OSSF so that the Contractor can perform a proper evaluation of 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 evaluating the OSSF's performance if needed to diagnosis an issue. If these samples are taken to a laboratory for testing, with the exception of the service provided under Section IV (d) above, Customer agrees to pay Contractor for the 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 Contactor, 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.

IX. 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. It is Customer's responsibility to keep lids exposed and accessible at all times.

X. 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 profits or income, or loss of use to Customer, whether in contract tort or any other theory. In no event shall Contractor be liable in an amount exceeding the total Fee for Services amount paid by Customer under this Agreement.

XI. Indemnification:

Customer (whether one or more) shall and does hereby agree to indemnify, hold harmless and defend Contractor and each of its successors, assigns, heirs, legal representatives, devisees, employees, agents and/or counsel (collectively "Indemnitees") from and against any and all liabilities, claims, damages, losses, liens, causes of action, suits, fines, judgments and other expenses (including, but not limited to, attorneys' fees and expenses and costs of investigation), of any kind, nature or description, (hereinafter collectively referred to as "Liabilities") arising out of, caused by, or resulting, in whole or in part, from this Agreement.

Customer's Initials

DM

Contractor's Initials

THIS INDEMNITIFCATION APPLIES EVEN IF SUCH LIABILITIES ARE CAUSED BY THE CONCURRENT OR CONTRIBUTORY NEGLIGENCE OR BY THE STRICT LIABILITY OF ANY INDEMNITEE.

Customer hereby waives its right of recourse as to any Indemnitee when Indemnification applies, and Customer shall require its insurer(s) to waive its/their right of subrogation to the extent such action is required to render such waiver of subrogation effective. Customer shall be subrogated to Indemnitees with respect to all rights Indemnitees may have against third parties with respect to matters as to which Customer provides indemnity and/or defense to Indemnitees. No Indemnification is provided to Indemnitees when the liability or loss results from (1) the sole responsibility of such Indemnitee; or (2) the willful misconduct of such Indemnitee. Upon irrevocable acceptance of this Indemnification obligation, Customer, in its sole discretion, shall select and pay counsel to defend Indemnitees of and from any action that is subject to this Indemnification provision. Indemnitees hereby covenant not to compromise or settle any claim or cause of action for which Customer has provided Indemnification without the consent of Customer.

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 for Services does not include any fees for equipment, material, labor necessary for non-warranty repairs, unscheduled inspections, or Customer requested visits to the site.

XIV. Payment:

Full payment is due upon execution of this Agreement. For any other service(s) or repair(s) provided by Contractor the Customer shall pay the invoice(s) for said service(s) or repair(s) within thirty (30) days of the invoice date. The Contractor shall mail all invoices 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 be transferred to subsequent property owner(s); however, this Agreement is not transferable. Customer shall advise the 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 offices 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 III.

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.

Quest Trust Company
Rebecca Miller, CISP
Gold Family Accounts Officer

June 14th, 2024

Customer Signature — Date

A&R Construction LLC / Cisco Septic Service
Tyler Mason
Contractor
MP#0002228

read and approved:

Dwayne Moser (Jun 11, 2024 14:26 CDT)

Customer's Initials — DM

TM
Contractor's Initials

ON-SITE SEWAGE FACILITY (OSSF)
SITE EVALUATION FORM

1. OWNER INFORMATION
Property Owner's Full Legal Name: Quest Trust Company fbo Donald D. Moser IRA #41654-11

2. PROPERTY INFORMATION				
City: Canyon Lake			Zip Code: 78133	
Legal Description:				
Lot: 68K	Block:	Subdivision: Emerald Valley	Unit:	Phase:
If not located in subdivision: Survey:				
	Abstract:		Recorded (Vol/Pg):	

3. SITE EVALUATION INFORMATION:	
Name of Site Evaluator: John J. Haag	PE #: 90158
Date Performed: 05/20/24	Proposed Excavation Depth: Surface

4. REQUIREMENTS:

- At least two soil evaluations must be performed on the site at opposite ends of the proposed disposal area. Locations of soil evaluations must be shown on the application site drawing or designer's site drawing.
- For subsurface disposal, soil evaluations must be performed to a depth of at least 2 feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.

Soil Profile Hole Number: 1					
Depth (ft.)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0	IV	<30%	No	Yes	Fractured limestone @ surface
1					
2					
3					
4					
5					

ON-SITE SEWAGE FACILITY (OSSF)
SITE EVALUATION FORM

Soil Profile Hole Number: 2					
Depth (ft.)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0	IV	<30%	No	Yes	Fractured limestone @ surface
1					
2					
3					
4					
5					

5. FEATURES OF SITE AREA:

Presence of 100 year flood zone:	☐ Yes	☒ No
Presence of adjacent ponds, streams or water impoundments	☐ Yes	☒ No
Existing or proposed water well in nearby area	☐ Yes	☒ No
Organized sewage available to lot or tract	☐ Yes	☒ No
Recharge features within 150 feet	☐ Yes	☒ No (none found)

6. I certify that the above statements are true and correct and are based on my own field observations.

06/17/024

Haag Engineering Consultants, LLC
Firm: F-5789

Comments

Add Comment Sort ▲

JCONNOR **07/10/2024 2:20 PM**

Site confirms soil report.

Close

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RECEIVED
By Brandon Olvera at 10:04 am, Sep 03, 2024

AEROBIC TREATMENT
DRIP TUBING SYSTEM
FOR:
LOT 68K, 606 STENEN DR.
EMERALD VALLEY

SITE DESCRIPTION:

Located in Emerald Valley, Lot 68K, the proposed system will serve at 1-bedroom, 768 s.f. residence situated with soils per the Site Evaluation report. An aerobic treatment plant utilizing drip irrigation was chosen as the most appropriate system to serve the conditions on this lot.

PROPOSED SYSTEM:

A 3 or 4 inch SCH-40 pipe discharges from the residence into a NuWater B-550 (600 gpd) aerobic treatment plant containing a 353 gallon pretreatment tank and a 768 gallon pump chamber. The pump chamber contains a 0.5 HP Franklin C1-Series-20XC1-05P4-2W115 submersible well pump. The well pump is activated by a time controller allowing the distribution ten times per day with a 6-minute run time with the float setting at min. 180 gallons. A high level audible and visual alarm will activate should the pump fail. Distribution is through a self-flushing 100 micron Arkal Disk filter then through a 1" SCH-40 manifold to a minimum 900 sf drip tubing field with Netifim Bioline drip lines approximately two feet apart with 0.61 gph emitters set every two feet as per the attached schematic. A pressure regulator Model PMR35MF 35psi installed in the pump tank on the manifold to the field will maintain pressure at 35 psi. A 1" SCH-40 return line is installed to continuously flush the system by cycling a 1" ball valve. Solids caught in the disk filter are flushed each cycle back to the pump tank. Agricultural Products, Inc. (Model #VBK-1) 1" PVC vacuum breakers installed on the highest point on each manifold will prevent siphoning of effluent from higher to lower parts in the field. The field area shall be scarified and then built up so that a minimum of 12" of Type III soil is above any bedrock or type IV soils then the drip tubing shall be laid and capped with a minimum of 6" of Type II or Type III soil (NOT SAND). The field area shall be covered with Bermuda seeded erosion control mat or sodded with grass prior to system startup. The tank must have risers 2-inches minimum above finished grade on each opening with watertight caps that must be 65# or have a padlock or can only be removed with tools – all risers shall meet the minimum requirements of 30 TAC 285 effective July 6, 2023. A secondary plug, cap or suitable restraint must be provided below riser cap to prevent tank entry should the cap be damaged or removed.

DESIGN SPECIFICATIONS:

Daily flow = Q=180 gpd
Pretreatment tank size: 353 gal
Plant size: NuWater B-550; 600 gpd (TCEQ approved)
Pump tank size: 768 gal
Min. Reserve capacity after high level: 60 gal (1/3 day req'd)
Application rate: Ra=0.2 gal/sf
Total absorption area: Q/Ra = min. 900 sf (1,120 sf actual)
Total linear feet of drip tubing: 560' Netifim Bioline drip tubing 0.61 gph
Pump requirement: 0.5 HP Franklin C1-Series-20XC1-05P4-2W115

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By Brandon Olvera at 10:04 am, Sep 03, 2024

Calculation Outputs

Total System Information

Application Area Required (square feet)	1,120
Total Amount of Bioline® Required (feet)	560
Total Number of Emitters in the Dripfield	280

Zone Information

Number of Zones	1
Amount of Bioline® Per Zone (feet)	560
Number of Emitters Per Zone	280
Minimum Number of Laterals Per Zone	1
Maximum Number of Laterals Per Zone	11
Number of Laterals That Will be Used	2
Maximum Length of Bioline® Laterals Based on Inlet Pressure	391
Flow Rate Per Zone (GPM)	2.8
Holding Capacity of Dripperline Per Zone (Gallons)	7.4
Additional Flow Requirement to Accommodate Flushing Velocity	3.2

Holding Capacity of Piping

Holding Capacity (Gallons) of Supply Line & Supply & Flush Manifolds	5.6
Holding Capacity (Gallons per Zone) of Bioline	7.4
Holding Capacity (Gallons) of Supply Line, Manifolds and Dripperline	13.0

Head Loss Data - Dosing & Flushing Cycle

Friction Loss per 100' (psi) in Supply Line & Manifolds	0.9
Velocity (fps)	2.2
Friction Loss in Supply Line & Supply Manifolds (psi)	1.2
Friction Loss in Supply Line & Supply Manifolds (Feet of Head)	2.7
Additional Pressure Required for Return Manifold and Piping to Tank (psi)	0.9
Additional Pressure Required for Return Manifold and Piping to Tank (Feet of Head)	2.1
TDH (Total Dynamic Head) in Feet of Head	84.6

Control Settings Information

Total System Runtime Per Day (Minutes)	63
Total Runtime Per Zone Per Day (Minutes)	63
Total System Dosing Events Per Day	10
Runtime For Each Dose (Minutes)	6
Off Time Between Doses in the Same Zone (Hours to nearest 0.1)	2.3

Miscellaneous Information

Dosing Volume Per Emitter Per Dose (gallons)	0.07
Inches Per Week of Dosing	1.80
Volume of a Single Dose (gallons)	19.9

Pump Selection

Pump Flow Rating (GPM)	6.0
TDH (Total Dynamic Head in Feet of Head)	84.6
Pump Manufacturer	Franklin
Pump Model	20XC1-05P4-2W115

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By Brandon Olvera at 10:04 am, Sep 03, 2024

PIPE AND FITTINGS:

All pipes and fittings in this drip tubing system shall be 1" schedule 40 pvc. All joints shall be sealed with approved solvent type pvc cement. Clipper type cutters are recommended to prevent pvc burrs during cutting of pipes causing possible plugging.

Designed in accordance with Chapter 285, Subchapter D, §285 and §285.40 Texas Commission on Environmental Quality (Revised March 2013).

05/17/2024

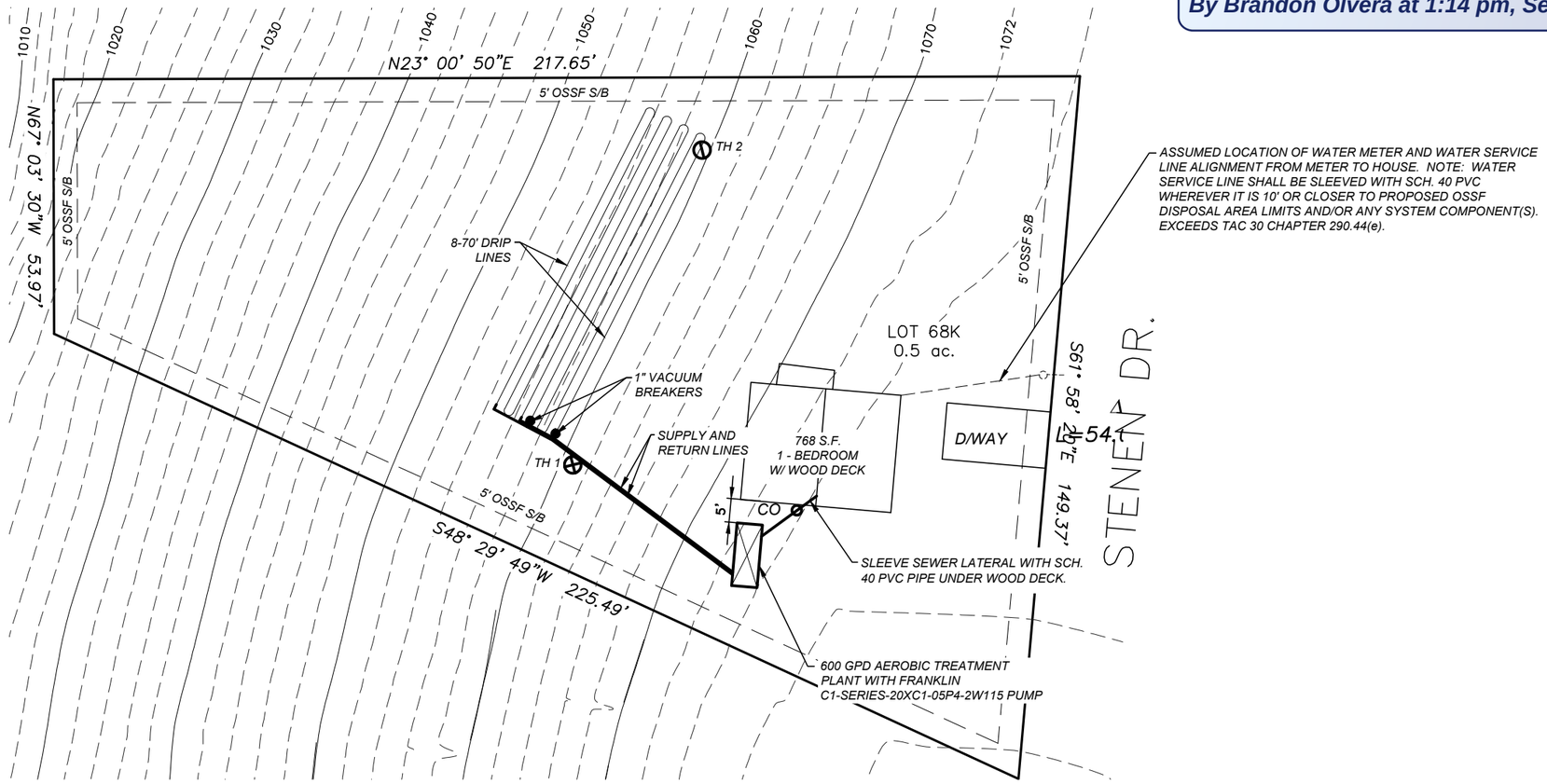
Haag Engineering Consultants, LLC
Firm No.: F-5786

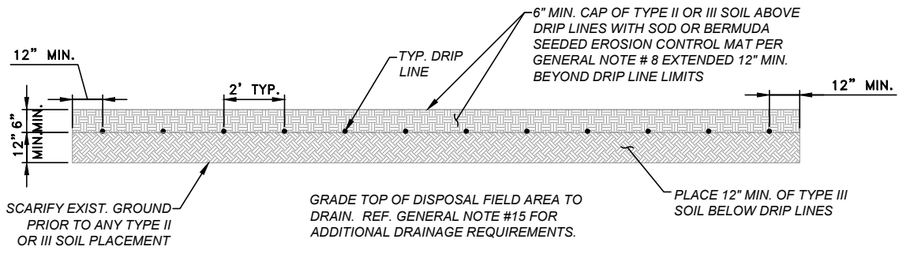
GENERAL NOTES:

1. NO VEHICULAR TRAFFIC IS ALLOWED ON ANY PORTION OF THE DISPOSAL SYSTEM, UNLESS THE DESIGN SPECIFIES OTHERWISE.
2. PIPE ALIGNMENT TO THE DISPOSAL BEDS MAY BE ALTERED AS REQUIRED. ANY CHANGE FROM THE PLANS MUST BE APPROVED BY THE ENGINEER AND THE APPROPRIATE GOVERNMENTAL AGENCY(IES).
3. CONTRACTOR SHALL PROTECT TREES WHICH ARE NOT IN THE EXCAVATED CONSTRUCTION AREAS. CONTRACTOR SHALL MINIMIZE ROOT DAMAGE AND REASONABLY ADHERE TO THE DESIGN.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING A MINIMUM OF 1/4" PER FOOT OF FALL FROM THE BUILDING TO THE SEPTIC TANK.
5. NOT AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED OVER THE DISPOSAL AREAS. ANY WATERING IN THESE AREAS SHALL BE DONE BY HAND AND ONLY WHEN REQUIRED TO MAINTAIN GRASS COVER.
6. ALL CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE APPROPRIATE AUTHORITY - TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND ANY APPLICABLE LOCAL BUILDING AND SAFETY CODES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE CONSTRUCTION OF THIS SYSTEM.
8. THE DRIP FIELD SHALL BE VEGETATED WITH EITHER ST. AUGUSTINE, BERMUDA SOD OR BERMUDA SEEDED EROSION CONTROL MAT.
9. FIELDS MUST BE MOWED AT REGULAR INTERVALS. FAILURE TO PROPERLY MAINTAIN VEGETATIVE COVER MAY RESULT IN SYSTEM FAILURE AND SHALL BE THE RESPONSIBILITY OF THE OWNER.
10. ALL PIPES SHALL BE SCHEDULE 40 PVC OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. ALL JOINTS SHALL BE CLEANED WITH THE APPROPRIATE SOLVENT AND GLUED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
11. ALL POTABLE WATER LINES SHALL BE A MINIMUM OF 10 FEET FROM ANY DISPOSAL SYSTEM OR SEWERAGE PIPE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF WATER LINES LESS THAN 10 FEET FROM THE DISPOSAL AREA.
12. HIGH WATER ALARM SHALL BE LOCATED IN A NOTICEABLE LOCATION. THE ALARM SHALL BE A VISUAL AND AUDIBLE ALARM AND WIRED ON A SEPARATE CIRCUIT FROM THE PUMPS. ALL EXTERIOR CONTROLS AND CONNECTIONS SHALL BE ENCLOSED IN A WEATHER-PROOF HOUSING. ELECTRICAL CONSTRUCTION SHALL COMPLY WITH ALL LOCAL ELECTRICAL AND BUILDING CODES.
13. NO EXCAVATION IS PERMITTED NEAR THE DISPOSAL FIELDS THAT WILL RESULT IN THE NONCOMPLIANCE OF APPLICABLE SETBACKS STATED IN THE RULES AND REGULATIONS OF THE APPROPRIATE AUTHORITY.
14. ONLY GOOD QUALITY SANDY LOAM SHALL BE APPLIED OVER THE DISPOSAL FIELDS. CLAY LOAM IS UNACCEPTABLE AND WILL CAUSE SYSTEM FAILURE. SANDY LOAM SHALL BE DEFINED AS SHOWN IN TABLE VI (USDA SOIL TEXTURAL CLASSIFICATIONS) OF THE RULES AND REGULATIONS OF THE TCEQ. THE INSTALLER IS RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE SYSTEM.
15. STORM WATER (RAINFALL RUNOFF) SHOULD NOT BE ALLOWED TO FLOW OVER THE DISPOSAL FIELDS OR THE TANKS. DIVERSION BERMS, SWALES AND/OR RAIN GUTTERS SHOULD BE INSTALLED AS NECESSARY TO PREVENT SUCH RUNOFF.
16. THE CONTRACTOR IS RESPONSIBLE FOR STAKING AND VERIFYING THE GRADES PRIOR TO EXCAVATION. ANY DISCREPANCIES OF MORE THAN 6 INCHES SHALL BE REPORTED TO THE ENGINEER PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOT DEVIATE FROM THESE PLANS WITHOUT THE WRITTEN CONSENT OF THE APPROPRIATE AUTHORITY AND THE ENGINEER.
17. THIS DISPOSAL SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY AT SPECIFICATIONS NOTED IN THESE PLANS. ALTERATIONS TO THE SYSTEM BY THE OWNER, INCLUDING BUT NOT LIMITED TO LANDSCAPING, DRAINAGE, BUILDING AND/OR WATER USAGE, MAY CAUSE PREMATURE FAILURE AND SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PLUMBING FIXTURES ARE CONNECTED TO THE DESIGNATED SEPTIC TANK(S). LOW FLOW TOILETS (1.6 GAL), SHOWERHEADS AND FAUCETS SHALL BE USED IN THE STRUCTURES.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY AND PROTECTION OF THE PUBLIC FROM INJURY DURING CONSTRUCTION. THE OWNER SHALL BE RESPONSIBLE FOR THE PREVENTION OF PERSONAL INJURY TO ANYONE ON OR NEAR THE DISPOSAL SYSTEM.
20. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL TANKS HAVE ADEQUATE STRENGTH AND INTEGRITY TO PERFORM SATISFACTORILY AS SHOWN ON THESE PLANS.
21. THE WASTEWATER FLOW TO THE SEPTIC SYSTEM SHALL NOT EXCEED THE DESIGN FLOW SHOWN ON THIS PLAN.

PLAN REVISION NOTE:

THIS PLAN WAS REVISED ON 08/27/2024 TO REFLECT, AS MUCH AS POSSIBLE, AS-BUILT INFORMATION PROVIDED TO HAAG ENGINEERING CONSULTANTS BY THE SEPTIC SYSTEM INSTALLER. HAAG ENGINEERING CONSULTANTS HAS NOT FIELD VERIFIED ANY SEPTIC SYSTEM AS-BUILT CONDITIONS FOR THIS PROJECT AND DOES NOT ATTEST TO IT'S VALIDITY AND/OR ACCURACY.





DRIP FIELD CROSS SECTION
SCALE: 1"=5'

1" = 30'

STATE OF TEXAS
JOHN J. HAAG
90158
LICENSED
PROFESSIONAL ENGINEER

09/03/24

OSSF LAYOUT PLAN
LOT 66K, STENEN DR.
EMERALD VALLEY
COMAL COUNTY, TEXAS

ADD'L. NOTES:

1. DESIGN DAILY WASTEWATER FLOW = 180 GPD (WATER SAVING DEVICES WERE ASSUMED FOR SEPTIC SYSTEM DESIGN).
2. TOPOGRAPHIC DATA SOURCE: FEMA 2011 DATA
3. INSTALLER SHALL VERIFY ALL EASEMENTS, SETBACKS AND PROPERTY LINE BEARINGS AND DISTANCES PRIOR TO CONSTRUCTION.
4. ALL RISERS SHALL MEET THE MINIMUM REQUIREMENST OF 30 TAC 285 EFFECTIVE 07/06/2023

NOTE: OSSF IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE OR FEMA 100 YEAR FLOODPLAIN.
SITE EVALUATION BY JOHN J. HAAG, P.E. ON 05/02/2023

DRAWN BY: JJH
CHECKED BY: JJH
DATE: 09/03/24
JOB NO. DMOSER24001

SHEET 1 OF 1

HAAG ENGINEERING CONSULTANTS
15831 SECRET TRAILS
SAN ANTONIO, TEXAS 78247
FIRM: F-5789
TEL: (210) 705-4268

Assembly Details

OSSF

Pump float settings for 180 gpd design flow and min. 60 gal reserve:

Pump off position: 12 inches above tank bottom (166.90 gal)

Pump on position: 25 inches above tank bottom (352.03 gal)

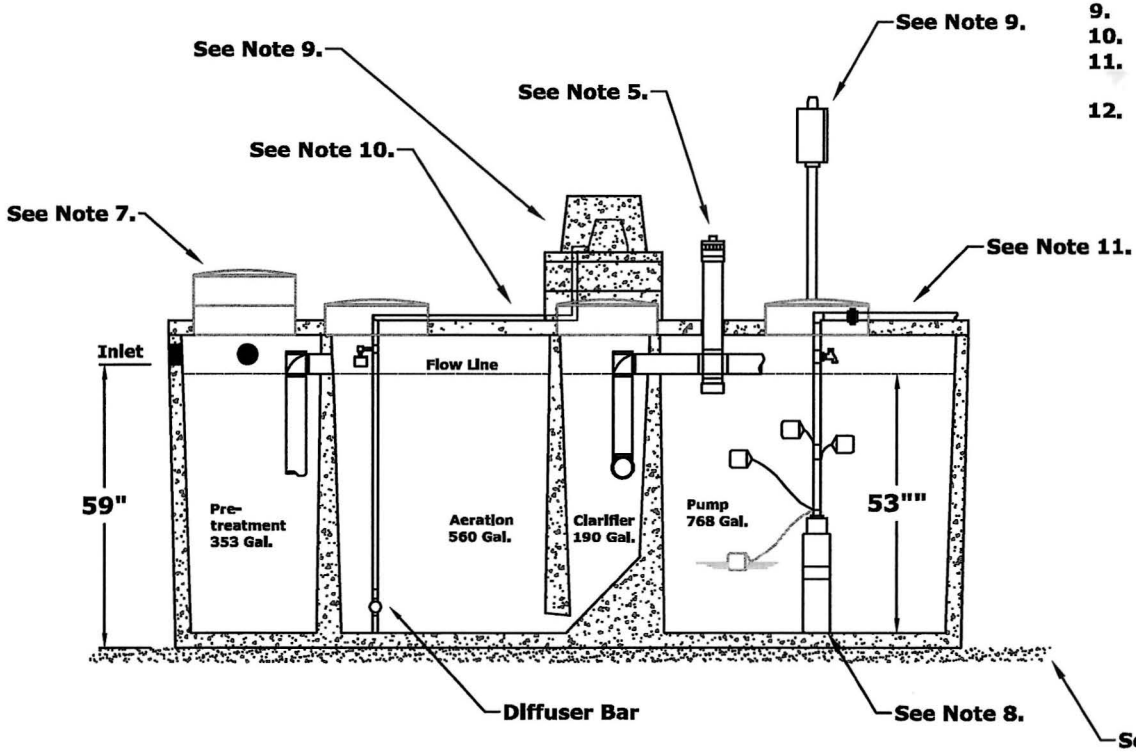
Alarm on position: 31 inches above tank bottom (439.00 gal)

327.26 gal reserve capacity at approx. 53 inches above tank bottom

STATE OF TEXAS
JOHN J. HAAG
90158
LICENSED
PROFESSIONAL ENGINEER
P.E.
06/17/24

GENERAL NOTES:

1. Plant structure material to be precast concrete and steel.
2. Maximum burial depth is 30" from slab top to grade.
3. Weight = 14,900 lbs.
4. Treatment capacity is 600 GPD. Pump compartment set-up for a 360 GPD Flow Rate (4 beedroom, < 4,000 sq/ft living aera). Please specify for additional set-up requirements. BOD Loading = 1.62 lbs. per day.
5. Standard tablet chlorinator or Optional Liquid chlorinator. NSF approved chlorinators (tablet & liquid) available.
6. Bio-Robix B-550 Control Center w/ Timer for night spray application. Optional Micro Dose (min/sec)timer available for drip applications. Electrical Requirement to be 115 Volts, 60 Hz, Single Phase, 30 AMP, Grounded Receptacle.
7. 20" Ø acess riser w/ lid (Typical 4). Optional extension risers available.
8. 20 GPM 1/2 HP, high head effluent pump.
9. HIBLOW Air Compressor w/ concrete housing.
10. 1/2" Sch. 40 PVC Air Line (Max. 50 Lft from Plant).
11. 1" Sch. 40 PVC pipe to distribution system provided by contractor.
12. 4" min. compacted sand or gravel pad by Contractor



DIMENSIONS:
Outside Height: 67"
Outside Width: 63"
Outside Length: 164"

MINIMUM EXCAVATION DIMENSIONS:
Width: 76"
Length: 176"

NuWater B-550 (600 GPD) Aerobic Treatment Plant (Assembled)

Model: B-550-PC-400PT

March, 2012 - Rev 1
By: A.S.

Scale:
* All Dimensions subject to allowable specification tolerances.

Dwg. #: ADV-B550-3

Advantage Wastewater Solutions llc

Advantage Wastewater Solutions llc.
444 A Old Hwy No 9
Comfort, TX 78013
830-995-3189
fax 830-995-4051

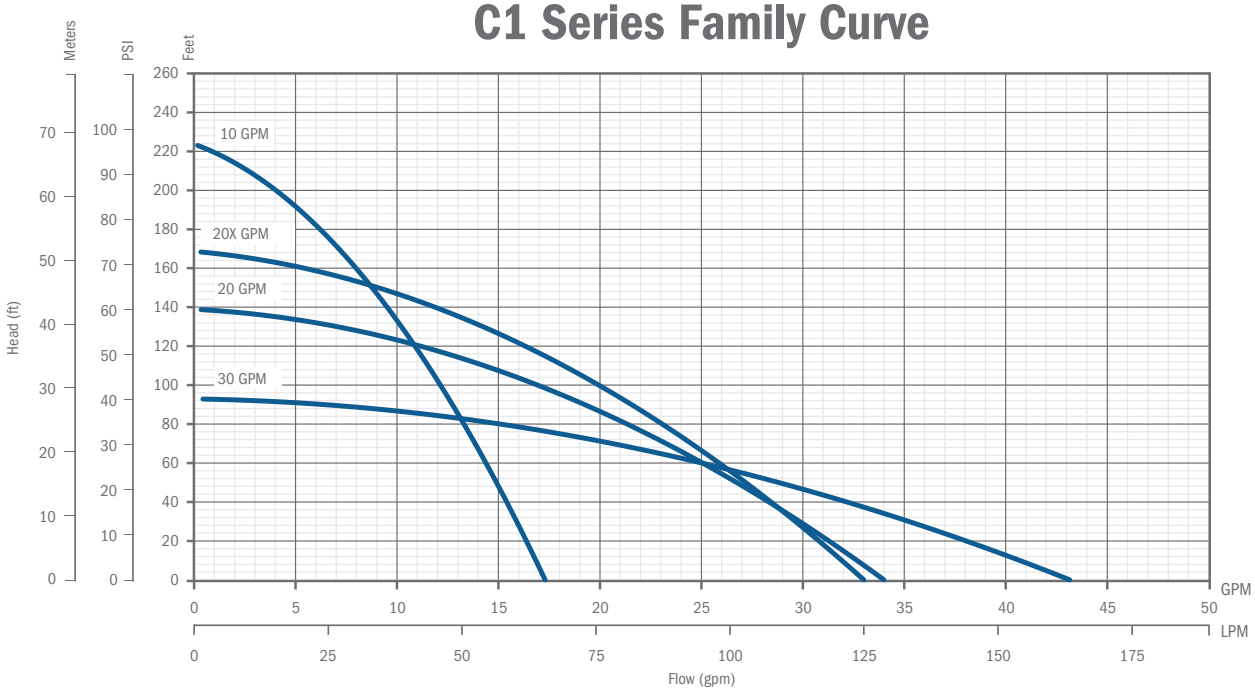
C1 SERIES
CISTERN PUMPS

Designed for use in gray water / filtered effluent service applications, the C1 Series cistern pump provides high performance and long life in less than ideal water conditions. The C1 Series pump is able to pass solids up to 1/8" without having a negative effect on the internal hydraulic components.

The pump's unique bottom suction design allows for maximum fluid drawdown without compromising durability or overall life, and it does not require the use of a flow induction sleeve. Intended specifically for use in a cistern or tank, C1 Series pumps are suitable for use in agricultural, residential, and commercial installations.

Franklin Electric

C1 Series Family Curve



FEATURES

- Supplied with a removable 5" base for secure and reliable mounting
- Bottom suction design
- Robust thermoplastic discharge head design resists breakage during installation and operation
- Single shell housing design provides a compact unit while ensuring cool and quiet operation
- Hydraulic components molded from high quality engineered thermoplastics
- Optimized hydraulic design allows for increased performance and decreased power usage
- All metal components are made of high grade stainless steel for corrosion resistance
- Available with a high quality 115 V or 230 V, ½ hp motor
- Fluid flows of 10, 20, and 30 gpm, with a max shut-off pressure of over 100 psi
- Heavy duty 600 V 10 foot SJOOW jacketed lead

APPLICATIONS

- Gray water pumping
- Filtered effluent service water pumping
- Water reclamation projects such as pumping from rain catchment basins
- Aeration and other foundation or pond applications
- Agriculture and livestock water pumping

ORDERING INFORMATION

C1 Series Pumps							
GPM	HP	Volts	Stage	Model No.	Order No.	Length (in)	Weight (lbs)
10	1/2	115	7	10C1-05P4-2W115	90301005	26	17
		230	7	10C1-05P4-2W230	90301010	26	17
20		115	5	20C1-05P4-2W115	90302005	25	16
		230	5	20C1-05P4-2W230	90302010	25	16
20X		115	6	20XC1-05P4-2W115	90302015	26	17
		230	6	20XC1-05P4-2W230	90302020	26	17
30		115	4	30C1-05P4-2W115	90303005	25	16
		230	4	30C1-05P4-2W230	90303010	25	16

Note: All units have 10 foot long SJOOW leads.

1" SUPER/LONG MANUAL DISC FILTER

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

FEATURES

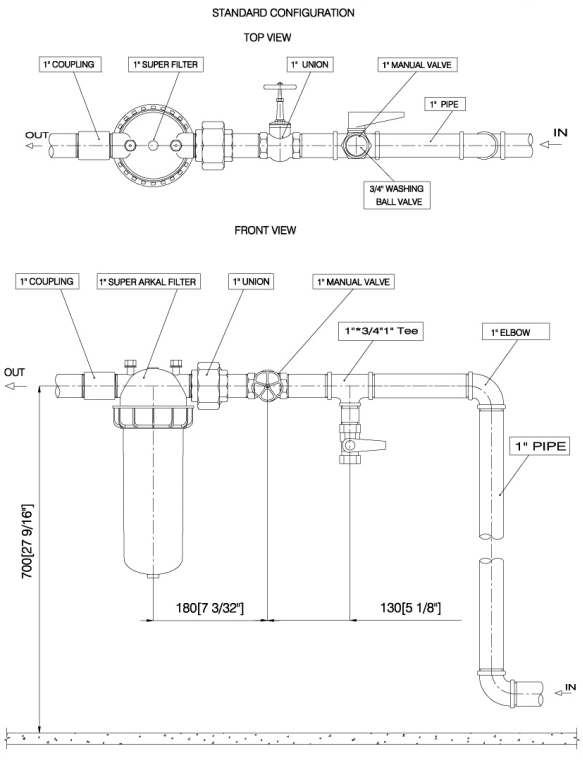
- A "T' shaped reinforced plastic filter with two 1" male connections.
- Filter element consists of grooved discs, mounted on a spine, forming a cylindrical filter element. The discs are compressed together by a spring located at the bottom of the filter cover.
- Screw-on filter cover.
- Resistant to chemicals and liquid fertilizers.
- Available filtration grades: 040, 080, 120, 140 and 200.

TECHNICAL DATA	
FLOW RANGE	10 - 35 GPM
MAXIMUM PRESSURE	140 psi
FILTERING SURFACE AREA	78 sq. in.
FILTERING VOLUME	36 cu. in.
LENGTH	13 13/32"
WIDTH	6 7/32"
WEIGHT	3.11 lbs.
DISTANCE BETWEEN ENDS	6 7/32"
INLET/OUTLET DIAMETER	1" Male
MAXIMUM TEMPERATURE	158° F
pH	5 - 11

MESH/MICRON		
MESH	MICRON	DISC COLOR
040	400	Blue
080	200	Yellow
120	130	Red
140	115	Black
200	55	Green

INSTALLATION

1. Filter can be installed either vertically or horizontally.
2. Use Teflon tape on filter threads - Do Not Use Pipe Dope.
3. Ensure correct inlet/outlet direction.
4. When connecting filter to pipe, do not overtighten.
5. Never use spanners for tighening the filter cover.



MAINTENANCE AND CLEANING

DISMANTLING

1. Ensure system is turned off and no pressure remains in the pipeline.
2. Unscrew cover from the filter body.
3. Pull out entire filter element.

CLEANING

1. Move tightening ring to end of spine and flush discs with pressurized water.
2. If discs are not clean after flushing with water:
   a. If the discs have an accumulation of algae in the grooves, soak the discs and spine in a small bucket of Clorox bleach for one hour and then reflush with fresh water.
   b. If the discs have an accumulation of iron in the grooves, soak the discs and spine in a small bucket of 10% Muriatic Acid for one hour and then reflush with fresh water. Muriatic Acid can be purchased at any pool supply store.

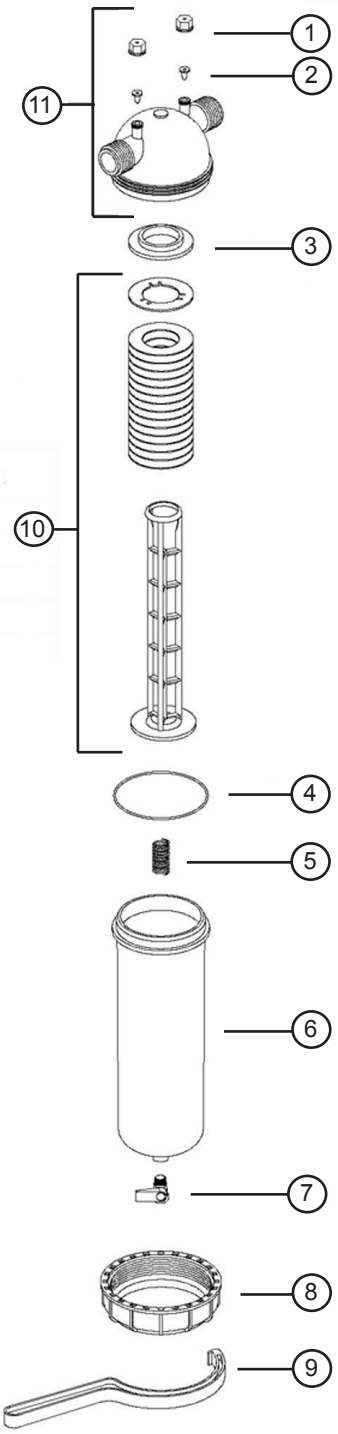
MAINTENANCE AND CLEANING

ASSEMBLY

1. Verify that spring is in place inside the filter cover.
2. Insert filter element and make sure it is seated correctly.
3. Replace cover.
4. Tighten filter cover securely by turning the fixing nut clockwise and do not overtighten.

WINTERIZATION

Drain all the water from the filter to avoid cracking due to freezing.



PARTS BREAKDOWN - 1" SUPER/LONG FILTER

KEY	MODEL NUMBER	DESCRIPTION	MATERIALS
1	SEE # 11	GAUGE PORT NUT	R.PP
2	SEE # 11	GAUGE PORT SEAL	EPDM
3	-	FILTER ADAPTER RING	R.PA
4	25AP531140	COVER O RING	NR
5	25AP50440011	COMPRESSION SPRING	SS
6	25AP23113	FILTER COVER	R.PA
7	-	1/4" TAP (OPTIONAL)	BRASS
8	25AP231131	FIXING NUT	R.PA
9	25AP131199	FILTER WRENCH	R.PA
10	25AP21121-***	RING SET WITH SPINE	PP
11	25AP25000101	FILTER BODY COMPLETE	-

Substitute *** for proper mesh size.

MATERIALS KEY

CODE	MATERIAL
SS	STAINLESS STEEL
PP	POLYPROPYLENE
NR	NITRILE RUBBER
R.PP	REINFORCED POLYPROPYLENE
R.PA	REINFORCED POLYAMIDE
EPDM	ETH. PROPY. RUBBER

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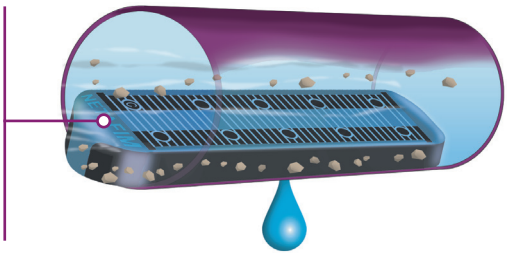
WASTEWATER DIVISION

BIOLINE® DRIPLINE

THE WORLD'S MOST ADVANCED CONTINUOUS SELF-CLEANING, PRESSURE COMPENSATING DRIPLINE SPECIFICALLY DESIGNED FOR WASTEWATER

CROSS SECTION OF BIOLINE DRIPLINE

Bioline dripper inlets are positioned in the center of flow where water is the cleanest



PRODUCT ADVANTAGES

- Pressure compensation - all drippers deliver equal flow, even on sloped or rolling terrain.
- Unique flow path - Turbonet technology provides more control of water and a high resistance to clogging.
- Continuous self-flushing dripper design - flushes debris, as it is detected - throughout operation, not just at the beginning or end of a cycle. Ensures uninterrupted dripper operation.
- Single hole dripper outlet from tubing:
  - Better protection against root intrusion
  - Allows the dripline to be used in subsurface applications without need for chemical protection
- Drippers capture water flow from the center of the tubing - ensures that only the cleanest flow enters the dripper.
- Built-in physical root barrier - drippers are protected from root intrusion without the need for chemical protection. Water exits dripper in one location while exiting the tubing in another.
- Three dripper flow rates - provides the broadest range of flow rates available. Allows the designer to match the dripline to any soil or slope condition.
- Bioline tubing is completely wrapped in purple - easily identifying it for non-potable use, regardless of how the tubing is installed.
- Anti-bacterial-impregnated drippers - prevents buildup of microbial slime.
- Can be used subsurface - Bioline can be installed on-surface, under cover or subsurface.
- No special storage requirements - does not degrade if stored outdoors.
- Techfilter compatible - an optional level of protection, provides a limited lifetime warranty against root intrusion.

APPLICATIONS

- Typically installed following a treatment process
- Can be used with domestic septic tank effluent with proper design, filtration and operation
- Reuse applications including municipally treated effluent designated for irrigation and other disinfected and non-disinfected water sources.

SPECIFICATIONS

- Dripper flow rates: 0.4, 0.6 or 0.9 GPH
- Dripper spacings: 12", 18" or 24" dripper spacings and blank tubing
- Pressure compensation range: 7 to 58 psi (stainless steel clamps recommended above 50 psi)
- Maximum recommended system pressure: 50 psi
- Tubing diameter: 0.66" OD, 0.57" ID
- Tubing color: Purple color indicates non-potable
- Coil lengths: 500' or 1,000' (Blank tubing in 250')
- Recommended filtration: 120 mesh
- Bending radius: 7"
- UV resistant
- Tubing material: Linear low-density polyethylene

Additional spacing and pipe sizes available by special order. Please contact Netafim USA Customer Service for details.

BIOLINE DRIPLINE

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 3.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 2.3 GPM REQUIRED PER LATERAL TO ACHIEVE 3 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	102	94	84	136	127	113	161	151	137
	25	151	136	118	203	184	161	245	223	197
	35	193	171	146	260	232	200	315	283	245
	40	211	186	158	286	254	218	347	311	267
	45	228	200	169	310	274	233	377	335	287
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 3 fps flushing/scouring velocity

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 2.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 2.0 GPM REQUIRED PER LATERAL TO ACHIEVE 2.5 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	128	115	100	172	155	136	205	187	165
	25	183	161	137	248	220	188	301	268	231
	35	228	198	166	310	272	229	379	333	283
	40	248	214	178	338	295	247	413	362	305
	45	266	229	190	364	316	263	447	389	327
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 2.5 fps flushing/scouring velocity

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 2.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 1.6 GPM REQUIRED PER LATERAL TO ACHIEVE 2.0 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	161	141	119	217	191	164	263	233	201
	25	221	190	157	302	261	218	369	321	270
	35	269	229	187	370	316	260	455	391	324
	40	290	246	200	399	340	278	493	421	347
	45	310	261	212	427	362	296	527	449	369
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 2 fps flushing/scouring velocity

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 1.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 1.2 GPM REQUIRED PER LATERAL TO ACHIEVE 1.5 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	201	171	140	275	235	194	337	289	241
	25	266	222	179	366	308	251	453	383	313
	35	316	262	210	437	365	295	543	455	369
	40	337	280	223	469	391	313	583	487	393
	45	358	296	235	497	413	331	619	517	415
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 1.5 fps flushing/scouring velocity

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 1.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 0.8 GPM REQUIRED PER LATERAL TO ACHIEVE 1.0 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	248	205	163	344	285	228	427	355	285
	25	315	258	203	440	361	286	549	453	359
	35	367	299	234	513	419	331	643	527	417
	40	389	316	248	545	445	350	683	559	441
	45	409	332	260	574	468	367	721	589	463
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 1 fps flushing/scouring velocity

MAXIMUM LENGTH OF A SINGLE LATERAL WITH 0.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 0.4 GPM REQUIRED PER LATERAL TO ACHIEVE 0.5 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	301	242	188	422	341	265	531	429	335
	25	369	296	228	520	418	323	655	527	409
	35	421	337	260	595	476	368	749	603	467
	40	443	354	273	626	501	387	790	635	491
	45	464	371	285	656	524	404	829	665	513
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 0.5 fps flushing/scouring velocity

Netafim recommends flushing velocities capable of breaking free any accumulated bioslimes and debris in the piping network.

Notes:
1. Refer to local regulations for information on flushing velocities that may be written into codes.
2. Netafim does not endorse a specific flushing velocity.
3. Flushing velocities should be determined based on regulations, quality of effluent, and type of flushing control.
4. Using a flushing velocity less than 1 fps does not provide turbulent flow as defined by Reynolds Number.
5. Higher flushing velocities provide more aggressive flushing.

July 9, 2024

Permit: 117602

COMAL COUNTY
ENGINEER'S OFFICE

RE: ***606 Stenen Dr.***
Emerald Valley
Lot 68K

Dear Property Owner & Agent,

Thank you for your submission. We have reviewed the planning materials for the referenced permit application, and unfortunately, they are insufficient. To proceed with processing this permit, we require the following:

1. Our office will be conducting a site visit on 07-10-2024.
2. Site Visit:
    a. Show the location of the test holes.
3. Are you purposing importing all 12 inches of class II or Class III?
4. Revise accordingly and resubmit.

If you have any questions, you can email me or call the office.

Thank You,

| **Brandon Olvera** | **Designated Representative OS0034792** |

| Comal County | www.cceo.org | f: 830-608-2078 | e: olverb@co.comal.tx.us |

AEROBIC TREATMENT
DRIP TUBING SYSTEM
FOR:
LOT 68K, 606 STENEN DR.
EMERALD VALLEY

SITE DESCRIPTION:

Located in Emerald Valley, Lot 68K, the proposed system will serve at 1-bedroom, 768 s.f. residence si[illegible]ated with soils per the Site Evaluation report. An aerobic treatment plant utilizing drip irrigation wa[illegible] chosen as the most appropriate system to serve the conditions on this lot.

PROPOSED SYSTEM:

A 3 or 4 inch SCH-40 pipe discharges from the residence into a NuWater B-550 (600 gpd) aerobic treatment plant contain[illegible] 353 gallo[illegible]eatment[illegible]a 768 gall[illegible]mp c[illegible]e pump chamber contains a 0[illegible] Franklin[illegible]eries[illegible]115 su[illegible]ible[illegible]well pump is activated by a[illegible] control[illegible]owin[illegible]istributi[illegible]times[illegible]ay w[illegible]5-minute[illegible]me with the float setting a[illegible] 180 g[illegible]s. A[illegible]evel audibl[illegible]visu[illegible]rm w[illegible]vate shou[illegible] pump fail. Distribution is[illegible]gh a[illegible]ushin[illegible]0 micron Ark[illegible]k fil[illegible]en thr[illegible]a 1" SCH-[illegible]anifold to a minimum 900[illegible]o tu[illegible]ield w[illegible]etifim Bioline[illegible]nes[illegible]oxima[illegible]wo feet ap[illegible]h 0.61 gph emitters set ev[illegible]wo[illegible]as per[illegible]ttached sch[illegible]. A[illegible]sure[illegible]tor Model[illegible]35MF 35psi installed in the[illegible]on the m[illegible]d to the fie[illegible]mai[illegible]press[illegible]t 35 psi.[illegible]CH-40 return line is installed[illegible]iously flus[illegible]ystem[illegible]ing a[illegible]ll val[illegible]olids[illegible]h the disk filter are flushed eac[illegible]back to the pu[illegible]ultural P[illegible]ds, In[illegible]) 1" PVC vacuum breakers installed on the highest point on each manifold will prevent siphoning of effluent from higher to lower parts in the field. The field area shall be scarified and then built up so that a minimum of 12" of Type II or III soil is above any bedrock or type IV soils then the drip tubing shall be laid and capped with a minimum of 6" of Type II or Type III soil (NOT SAND). The field area shall be sodded with grass prior to system startup. The tank must have risers 2-inches minimum above finished grade on each opening with wate[illegible]

the minimum requirements of 30 TAC 285 effective July 6, 2023. A secondary plug, cap or suitable restraint must be provided below riser cap to prevent tank entry should the cap be damaged or removed.

DESIGN SPECIFICATIONS:

Daily flow = Q=180 gpd
Pretreatment tank size: 353 gal
Plant size: NuWater B-550; 600 gpd (TCEQ approved)
Pump tank size: 768 gal
Min. Reserve capacity after high level: 60 gal (1/3 day req'd)
Application rate: Ra=0.2 gal/sf
Total absorption area: Q/Ra = min. 900 sf (1,120 sf actual)
Total linear feet of drip tubing: 560' Netifim Bioline drip tubing 0.61 gph
Pump requirement: 0.5 HP Franklin C1-Series-20XC1-05P4-2W115

Calculation Outputs

Total System Information

Application Area Required (square feet)	**1,120**
Total Amount of Bioline® Required (feet)	**560**
Total Number of Emitters in the Dripfield	**280**

Zone Information

Amount of Bioline® Per Zone (feet)	560
Number of Emitters Per Zone	280
Minimum Number of Laterals Per Zone	1
Maximum Number of Laterals Per Zone	11
Number of Laterals That Will be Used	3
	391
	2.8
	7.4
	4.8

	3.8
	7.4
	11.2

Head Loss Data - Dosing & Flushing Cycle

Friction Loss per 100' (psi) in Supply Line & Manifolds	1.5
Velocity (fps)	2.8
Friction Loss in Supply Line & Supply Manifolds (psi)	1.2

Additional Pressure Required for Return Manifold and Piping to Tank (psi)	**1.5**
Additional Pressure Required for Return Manifold and Piping to Tank (Feet of Head)	**3.5**
TDH (Total Dynamic Head) in Feet of Head	**86.1**

Control Settings Information

Total System Runtime Per Day (Minutes)	**63**
Total Runtime Per Zone Per Day (Minutes)	**63**
Total System Dosing Events Per Day	**10**
Runtime For Each Dose (Minutes)	**6**
Off Time Between Doses in the Same Zone (Hours to nearest 0.1)	**2.3**

Miscellaneous Information

Dosing Volume Per Emitter Per Dose (gallons)	**0.07**
Inches Per Week of Dosing	**1.80**
Volume of a Single Dose (gallons)	**19.9**

Pump Selection

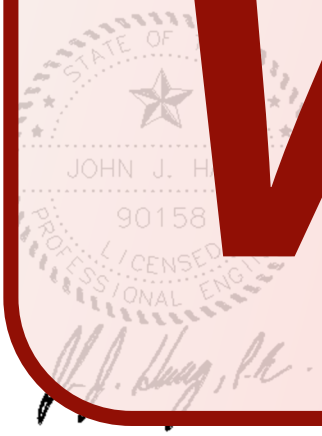
Pump Flow Rating (GPM)	**7.6**
TDH (Total Dynamic Head in Feet of Head)	**86.1**
Pump Manufacturer	**Franklin**
Pump Model	20XC1-05P4-2W115

VOID

PIPE AND FITTINGS:

All pipes and fittings in this drip tubing system shall be 1” schedule 40 pvc. All joints shall be sealed with approved solvent type pvc cement. Clipper type cutters are recommended to prevent pvc burrs during cutting of pipes causing possible plugging.

Designed in accordance with Chapter 285, Subchapter D, §285 and §285.40 Texas Commission on Environmental Quality (Revised March 201

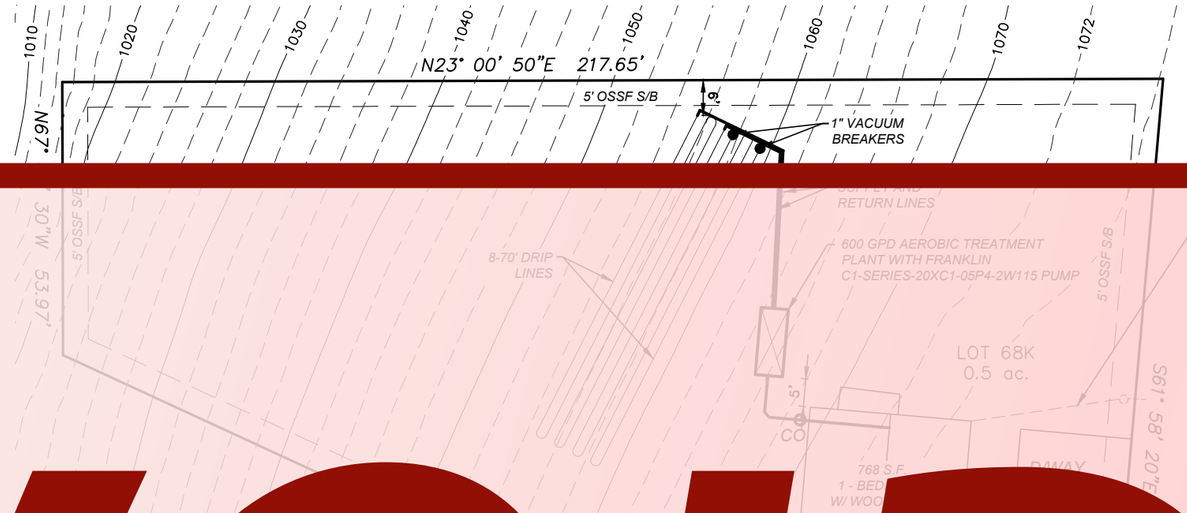


05/17/2024

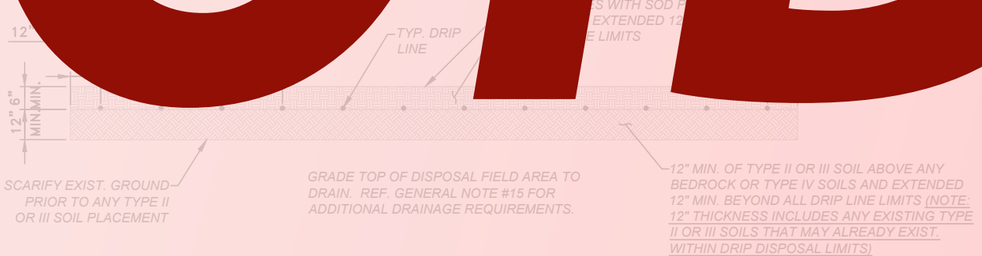
Haag Engineering Consultants, LLC
Firm No.: F-5786

GENERAL NOTES:

1. NO VEHICULAR TRAFFIC IS ALLOWED ON ANY PORTION OF THE DISPOSAL SYSTEM, UNLESS THE DESIGN SPECIFIES OTHERWISE.
2. PIPE ALIGNMENT TO THE DISPOSAL BEDS MAY BE ALTERED AS REQUIRED. ANY CHANGE FROM THE PLANS MUST BE APPROVED BY THE ENGINEER AND THE APPROPRIATE GOVERNMENTAL AGENCY(IES).
3. CONTRACTOR SHALL PROTECT TREES WHICH ARE NOT IN THE EXCAVATED CONSTRUCTION AREAS. CONTRACTOR SHALL MINIMIZE ROOT DAMAGE AND REASONABLY ADHERE TO THE DESIGN.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING A MINIMUM OF 1/4" PER FOOT OF FALL FROM THE BUILDING TO THE SEPTIC TANK.
5. NOT AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED OVER THE DISPOSAL AREAS. ANY WATERING IN THE
REQUIRED TO MAINTAIN
6. ALL CONSTRU SHALL CONFORM TO THE RULES AND REGULATIONS OF THE APPROPRIATE A TY - TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND ANY APPL LOCAL BUILDING AND SAFETY CODES.
7. CONTR OR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING THE LOCATION AL EXISTING UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE CONSTRU N OF THIS SYSTEM.
8. TH P FIELD SHALL BE VEGETATED WITH EITHER ST. AUGUSTINE OR BERMU OD.
9. F S MUST BE MOWED AT REGULAR INTERVALS. FAILURE TO PROPERLY MAINT VEGETATIVE COVER MAY RESULT IN SYSTEM FAILURE AND SHALL BE THE RESP BILITY OF THE OWNER.
10. PIPES SHALL BE SCHEDULE 40 PVC OR APPROVED EQUAL, UNLESS NOTED OTHE E. ALL JOINTS SHALL BE CLEANED WITH THE APPROPRIATE SOLVENT AND GLUE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
11. POTABLE WATER LINES SHALL BE A MINIMUM OF 10 FEET FROM ANY DISPO SYSTEM OR SEWERAGE PIPE. THE CONTRACTOR SHALL NOTIFY THE ENGIN OF WATER LINES LESS THAN 10 FEET FROM THE DISPOSAL AREA.
12. H WATER ALARM SHALL BE LOCATED IN A NOTICEABLE LOCATION. THE ALARM ALL BE A VISUAL AND AUDIBLE ALARM AND RATE CIRCUIT FROM E PUMPS. ALL EXTERIOR CONTROLS AND CO L BE ENCLO D IN A WEATHER-PROOF HOUSING. ELECTRIC ON SHALL COMP WITH ALL LOCAL ELECTRICAL AND BUILDING C
13. EXCAVATION IS PERMITTED NEAR THE DISPO WILL RESULT IN THE NCOMPLIANCE OF APPLICABLE SETBACKS ST ES AND REGU ONS OF THE APPROPRIATE AUTHORITY.
14. Y GOOD QUALITY SANDY LOAM SHALL BE APP ISPOSAL FIELD AY LOAM IS UNACCEPTABLE AND WILL CAUSE E. SANDY LOAM LL BE DEFINED AS SHOWN IN TABLE VI (USDA CLASS ATIONS) OF THE RULES AND REGULATIONS OF INSTALLER IS RESP BLE FOR VERIFYING THE QUALITY OF EACH LO CED ON THE SYSTE
15. RM WATER (RAINFALL RUNOFF) SHOULD NOT B OW OVER THE D SAL FIELDS OR THE TANKS. DIVERSION BERMS R RAIN GUTTE SHOULD BE INSTALLED AS NECESSARY TO PRE FF.
16. CONTRACTOR IS RESPONSIBLE FOR STAKING AL E GRADES PRIOR EXCAVATION. ANY DISCREPANCIES OF MORE TH ALL BE REPO D TO THE ENGINEER PRIOR TO EXCAVATION. THE SHALL NO DEVIA FROM THESE PLANS WITHOUT THE WRITTEN CONS PROPRI AUTH Y AND THE ENGINEER.
17. DISPOSAL SYSTEM HAS BEEN DESIGNED TO OPE AT SPEC TIONS NOTED IN THESE PLANS. ALTERATIONS TO OWNE INCLUDING BUT NOT LIMITED TO LANDSCAPING, DR G WATE AGE, MAY CAUSE PREMATURE FAILURE AND SHAL RESP BILITY OF THE OWNER.
18. TRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ARE C NECTED TO THE DESIGNATED SEPTIC TANK(S). LOW SHOW HEADS AND FAUCETS SHALL BE USED IN THE STRUC
19. TRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SA OF TH BLIC FROM INJURY DURING CONSTRUCTION. THE C RESP BLE FOR THE PREVENTION OF PERSONAL INJURY T THE D SAL SYSTEM.
20. TRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ADEQ E STRENGTH AND INTEGRITY TO PERFORM SATISFAC ON THESE ANS.
21. WASTEWATER FLOW TO THE SEPTIC SYSTEM SHALL NOT EXCEED THE DESIG LOW SHOWN ON THIS PLAN.



— ASSUMED LOCATION OF WATER METER AND WATER SERVICE TO HOUSE. NOTE: WATER SERVICE LINE SHALL BE WITH SCH. 40 PVC WHEREVER IT IS 10' OR CLOS PROPOSED OSSF DISPOSAL AREA LIMITS AND/OR A STEM COMPONENT(S). EXCEEDS TAC 30 CHAPTER 290.44(



DRIP FIELD CROSS SECTION
SCALE: 1"=5'

STATE OF TEXAS
JOHN J. HAAG
9017
LICENSED PROFESSIONAL ENGINEER

1" = 30'

06/19/24

OSSF LAYOUT PLAN
LOT 66K, STENEN DR.
EMERALD VALLEY
COMAL COUNTY, TEXAS

ADD'L. NOTES:

1. DESIGN DAILY WASTEWATER FLOW = 180 GPD (WATER SAVING DEVICES WERE ASSUMED FOR SEPTIC SYSTEM DESIGN).
2. TOPOGRAPHIC DATA SOURCE: FEMA 2011 DATA
3. INSTALLER SHALL VERIFY ALL EASEMENTS, SETBACKS AND PROPERTY LINE BEARINGS AND DISTANCES PRIOR TO CONSTRUCTION.
4. ALL RISERS SHALL MEET THE MINIMUM REQUIREMENST OF 30 TAC 285 EFFECTIVE 07/06/2023

NOTE: OSSF IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE OR FEMA 100 YEAR FLOODPLAIN.
SITE EVALUATION BY JOHN J. HAAG, P.E. ON 05/02/2023

DRAWN BY: JJH
CHECKED BY: JJH
DATE: 06/19/24
JOB NO. DMOSER24001

SHEET 1 OF 1

HAAG ENGINEERING CONSULTANTS
15831 SECRET TRAILS
SAN ANTONIO, TEXAS 78247
TEL: (210) 705-4268
FIRM: F-5789

AEROBIC TREATMENT
DRIP TUBING SYSTEM
FOR:
LOT 68K, 606 STENEN DR.
EMERALD VALLEY

SITE DESCRIPTION:

Located in Emerald Valley, Lot 68K, the proposed system will serve at 1-bedroom, 768 s.f. residence situated with soils per the Site Evaluation report. An aerobic treatment plant utilizing drip irrigation was chosen as the most appropriate system to serve the conditions on this lot.

PROPOSED SYSTEM:

A 3 or 4 inch SCH-40 pipe discharges from the residence into a NuWater B-550 (600 gpd) aerobic treatment plant containing a 353 gallon pretreatment tank and a 768 gallon pump chamber. The pump chamber contains a 0 P Franklin eries-20 2W115 sub ible w The well pump is activated by e controll wing times ay wi time with the float setting a 180 g A l vel audi visu m wi vate sho pump fail. Distribution is gh a shin micron Ark k filt n thro a 1" SCH- anifold to a minimum 900 p tub eld w tifim Bioline nes xima wo feet apa n 0.61 gph emitters set e wo s per ttached sche A sure r tor Model 5MF 35psi installed in the n the r ld to the fiel hain ress 35 psi. A H-40 return line is installed ously flu system b g a l val olids cau he disk filter are flushed ea ack to the p k. A ural P s, In del # PVC vacuum breakers install e highest poi nifold wi ent s nt from higher to lower parts in the field. The field area shall be scarified and then built up so that a minimum of 12" of Type III soil is above any bedrock or type IV soils then the drip tubing shall be laid and capped with a minimum of 6" of Type II or Type III soil (NOT SAND). The field area shall be sodded with grass prior to system startup. The tank must have risers 2-inches minimum above finished grade on each opening with watertight caps that must be 65# or have a padlock or can only be removed with tools – all risers shall meet the min t must be provided below riser cap to prevent tank entry should the cap be damaged or removed.

VOID

DESIGN SPECIFICATIONS:

Daily flow = Q=180 gpd
Pretreatment tank size: 353 gal
Plant size: NuWater B-550; 600 gpd (TCEQ approved)
Pump tank size: 768 gal
Min. Reserve capacity after high level: 60 gal (1/3 day req'd)
Application rate: Ra=0.2 gal/sf
Total absorption area: Q/Ra = min. 900 sf (1,120 sf actual)
Total linear feet of drip tubing: 560' Netifim Bioline drip tubing 0.61 gph
Pump requirement: 0.5 HP Franklin C1-Series-20XC1-05P4-2W115

Calculation Outputs

Total System Information

Application Area Required (square feet)	1,120
Total Amount of Bioline® Required (feet)	560
Total Number of Emitters in the Dripfield	280

Zone Information

Number of Zones	1
Amount of Bioline® Per Zone (feet)	560
Number of Emitters Per Zone	280
Minimum Number of Laterals Per Zone	1
Maximum Number of Laterals Per Zone	11
Number of Laterals That Will be Used	3
Maximum Length of Bioline® Laterals Based on Inlet Pressure	391
Flow Rate Per Zone (GPM)	2.8
Holding Capacity of Dripperline Per Zone (Gallons)	7.4
Additional Flow Requirement to Accommodate Flushing Velocity	4.8

Total System Runtime Per Day (Minutes)	63
Total Runtime Per Zone Per Day (Minutes)	63
Total System Dosing Events Per Day	10
Runtime For Each Dose (Minutes)	6
Off Time Between Doses in the Same Zone (Hours to nearest 0.1)	2.3

Miscellaneous Information

Dosing Volume Per Emitter Per Dose (gallons)	0.07
Inches Per Week of Dosing	1.80
Volume of a Single Dose (gallons)	19.9

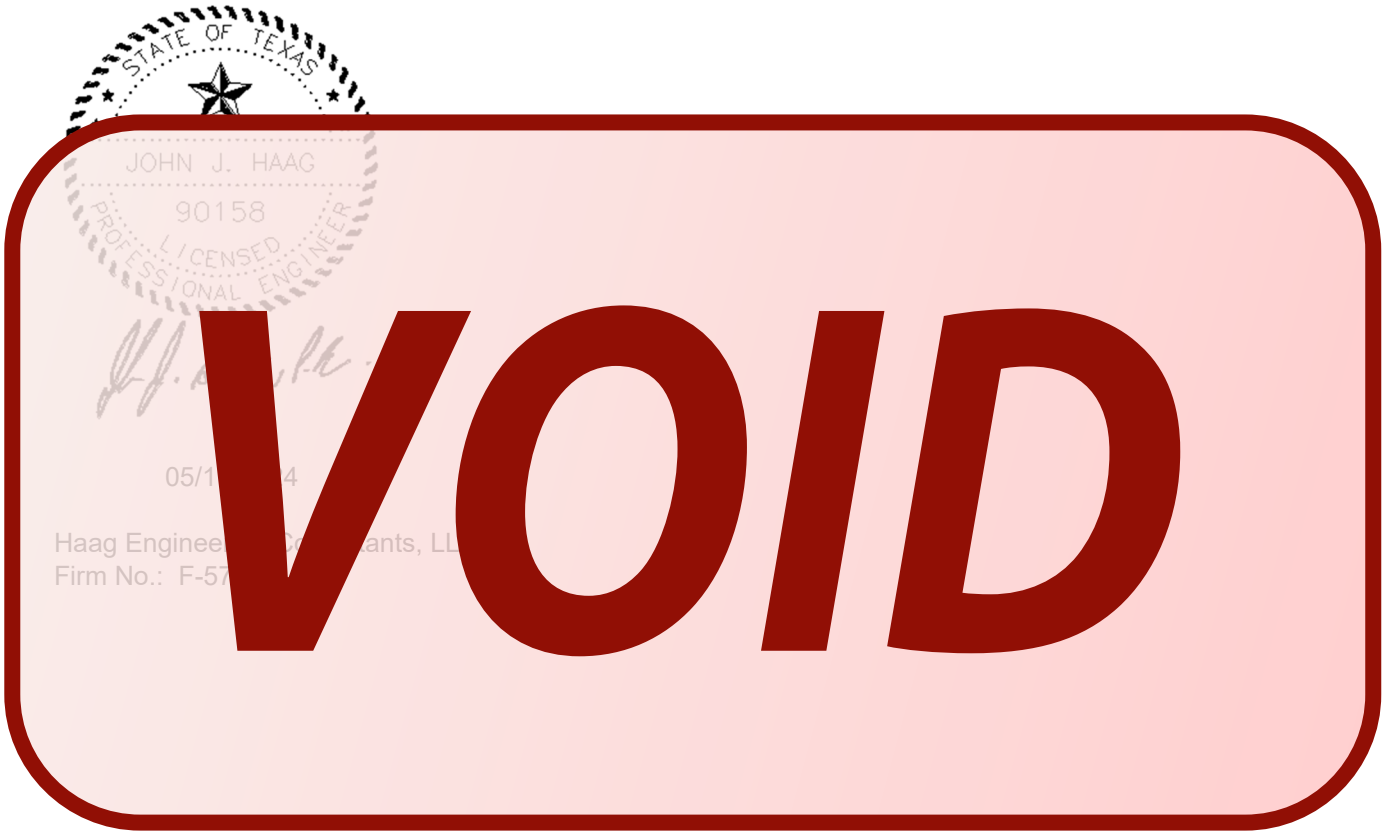
Pump Selection

Pump Flow Rating (GPM)	7.6
TDH (Total Dynamic Head in Feet of Head)	86.1
Pump Manufacturer	Franklin
Pump Model	20XC1-05P4-2W115

PIPE AND FITTINGS:

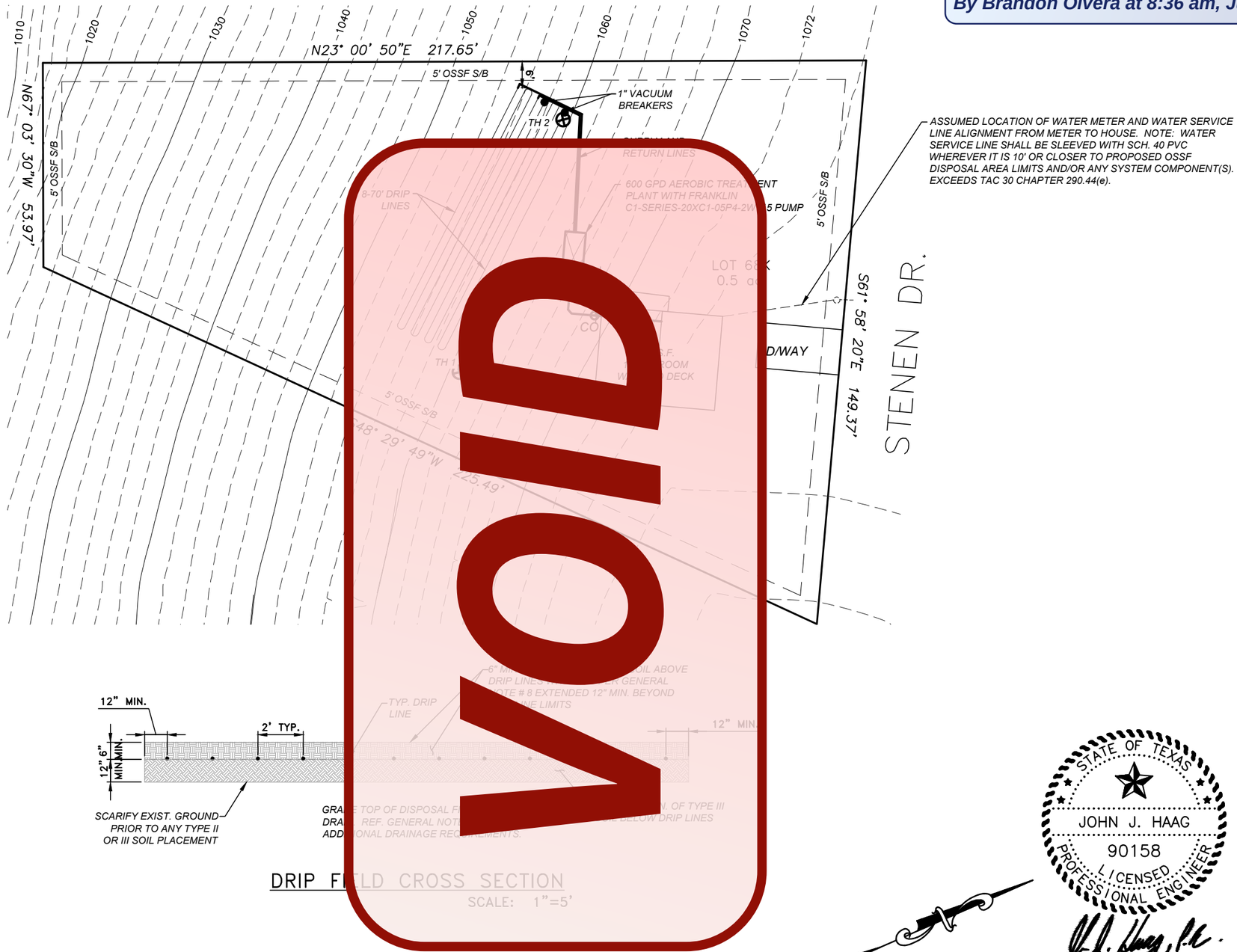
All pipes and fittings in this drip tubing system shall be 1" schedule 40 pvc. All joints shall be sealed with approved solvent type pvc cement. Clipper type cutters are recommended to prevent pvc burrs during cutting of pipes causing possible plugging.

Designed in accordance with Chapter 285, Subchapter D, §285 and §285.40 Texas Commission on Environmental Quality (Revised March 2013).



GENERAL NOTES:

1. NO VEHICULAR TRAFFIC IS ALLOWED ON ANY PORTION OF THE DISPOSAL SYSTEM, UNLESS THE DESIGN SPECIFIES OTHERWISE.
2. PIPE ALIGNMENT TO THE DISPOSAL BEDS MAY BE ALTERED AS REQUIRED. ANY CHANGE FROM THE PLANS MUST BE APPROVED BY THE ENGINEER AND THE APPROPRIATE GOVERNMENTAL AGENCY(IES).
3. CONTRACTOR SHALL PROTECT TREES WHICH ARE NOT IN THE EXCAVATED CONSTRUCTION AREAS. CONTRACTOR SHALL MINIMIZE ROOT DAMAGE AND REASONABLY ADHERE TO THE DESIGN.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING A MINIMUM OF 1/4" PER FOOT OF FALL FROM THE BUILDING TO THE SEPTIC TANK.
5. NOT AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED OVER THE DISPOSAL AREAS. ANY WATERING IN THESE AREAS SHALL BE DONE BY HAND AND ONLY WHEN REQUIRED TO MAINTAIN GRASS COVER.
6. ALL CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE APPROPRIATE AUTHORITY - TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND ANY APPLICABLE LOCAL BUILDING AND SAFETY CODES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE CONSTRUCTION OF THIS SYSTEM.
8. THE DRIP FIELD SHALL BE VEGETATED WITH EITHER ST. AUGUSTINE OR BERMUDA SOD.
9. FIELDS MUST BE MOWED AT REGULAR INTERVALS. FAILURE TO PROPERLY MAINTAIN VEGETATIVE COVER MAY RESULT IN SYSTEM FAILURE AND SHALL BE THE RESPONSIBILITY OF THE OWNER.
10. ALL PIPES SHALL BE SCHEDULE 40 PVC OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. ALL JOINTS SHALL BE CLEANED WITH THE APPROPRIATE SOLVENT AND GLUED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
11. ALL POTABLE WATER LINES SHALL BE A MINIMUM OF 10 FEET FROM ANY DISPOSAL SYSTEM OR SEWERAGE PIPE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF WATER LINES LESS THAN 10 FEET FROM THE DISPOSAL AREA.
12. HIGH WATER ALARM SHALL BE LOCATED IN A NOTICEABLE LOCATION. THE ALARM SHALL BE A VISUAL AND AUDIBLE ALARM AND WIRED ON A SEPARATE CIRCUIT FROM THE PUMPS. ALL EXTERIOR CONTROLS AND CONNECTIONS SHALL BE ENCLOSED IN A WEATHER-PROOF HOUSING. ELECTRICAL CONSTRUCTION SHALL COMPLY WITH ALL LOCAL ELECTRICAL AND BUILDING CODES.
13. NO EXCAVATION IS PERMITTED NEAR THE DISPOSAL FIELDS THAT WILL RESULT IN THE NONCOMPLIANCE OF APPLICABLE SETBACKS STATED IN THE RULES AND REGULATIONS OF THE APPROPRIATE AUTHORITY.
14. ONLY GOOD QUALITY SANDY LOAM SHALL BE APPLIED OVER THE DISPOSAL FIELDS. CLAY LOAM IS UNACCEPTABLE AND WILL CAUSE SYSTEM FAILURE. SANDY LOAM SHALL BE DEFINED AS SHOWN IN TABLE VI (USDA SOIL TEXTURAL CLASSIFICATIONS) OF THE RULES AND REGULATIONS OF THE TCEQ. THE INSTALLER IS RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE SYSTEM.
15. STORM WATER (RAINFALL RUNOFF) SHOULD NOT BE ALLOWED TO FLOW OVER THE DISPOSAL FIELDS OR THE TANKS. DIVERSION BERMS, SWALES AND/OR RAIN GUTTERS SHOULD BE INSTALLED AS NECESSARY TO PREVENT SUCH RUNOFF.
16. THE CONTRACTOR IS RESPONSIBLE FOR STAKING AND VERIFYING THE GRADES PRIOR TO EXCAVATION. ANY DISCREPANCIES OF MORE THAN 6 INCHES SHALL BE REPORTED TO THE ENGINEER PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOT DEVIATE FROM THESE PLANS WITHOUT THE WRITTEN CONSENT OF THE APPROPRIATE AUTHORITY AND THE ENGINEER.
17. THIS DISPOSAL SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY AT SPECIFICATIONS NOTED IN THESE PLANS. ALTERATIONS TO THE SYSTEM BY THE OWNER, INCLUDING BUT NOT LIMITED TO LANDSCAPING, DRAINAGE, BUILDING AND/OR WATER USAGE, MAY CAUSE PREMATURE FAILURE AND SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PLUMBING FIXTURES ARE CONNECTED TO THE DESIGNATED SEPTIC TANK(S). LOW FLOW TOILETS (1.6 GAL), SHOWERHEADS AND FAUCETS SHALL BE USED IN THE STRUCTURES.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY AND PROTECTION OF THE PUBLIC FROM INJURY DURING CONSTRUCTION. THE OWNER SHALL BE RESPONSIBLE FOR THE PREVENTION OF PERSONAL INJURY TO ANYONE ON OR NEAR THE DISPOSAL SYSTEM.
20. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL TANKS HAVE ADEQUATE STRENGTH AND INTEGRITY TO PERFORM SATISFACTORILY AS SHOWN ON THESE PLANS.
21. THE WASTEWATER FLOW TO THE SEPTIC SYSTEM SHALL NOT EXCEED THE DESIGN FLOW SHOWN ON THIS PLAN.



VOID

STATE OF TEXAS
JOHN J. HAAG
90158
LICENSED PROFESSIONAL ENGINEER
07/18/24

OSSF LAYOUT PLAN
LOT 66K, STENEN DR.
EMERALD VALLEY
COMAL COUNTY, TEXAS

ADD'L. NOTES:

1. DESIGN DAILY WASTEWATER FLOW = 180 GPD (WATER SAVING DEVICES WERE ASSUMED FOR SEPTIC SYSTEM DESIGN).
2. TOPOGRAPHIC DATA SOURCE: FEMA 2011 DATA
3. INSTALLER SHALL VERIFY ALL EASEMENTS, SETBACKS AND PROPERTY LINE BEARINGS AND DISTANCES PRIOR TO CONSTRUCTION.
4. ALL RISERS SHALL MEET THE MINIMUM REQUIREMENST OF 30 TAC 285 EFFECTIVE 07/06/2023

NOTE: OSSF IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE OR FEMA 100 YEAR FLOODPLAIN.
SITE EVALUATION BY JOHN J. HAAG, P.E. ON 05/02/2023

DRAWN BY: JJH
CHECKED BY: JJH
DATE: 07/18/24
JOB NO. DMOSER24001

SHEET 1 OF 1

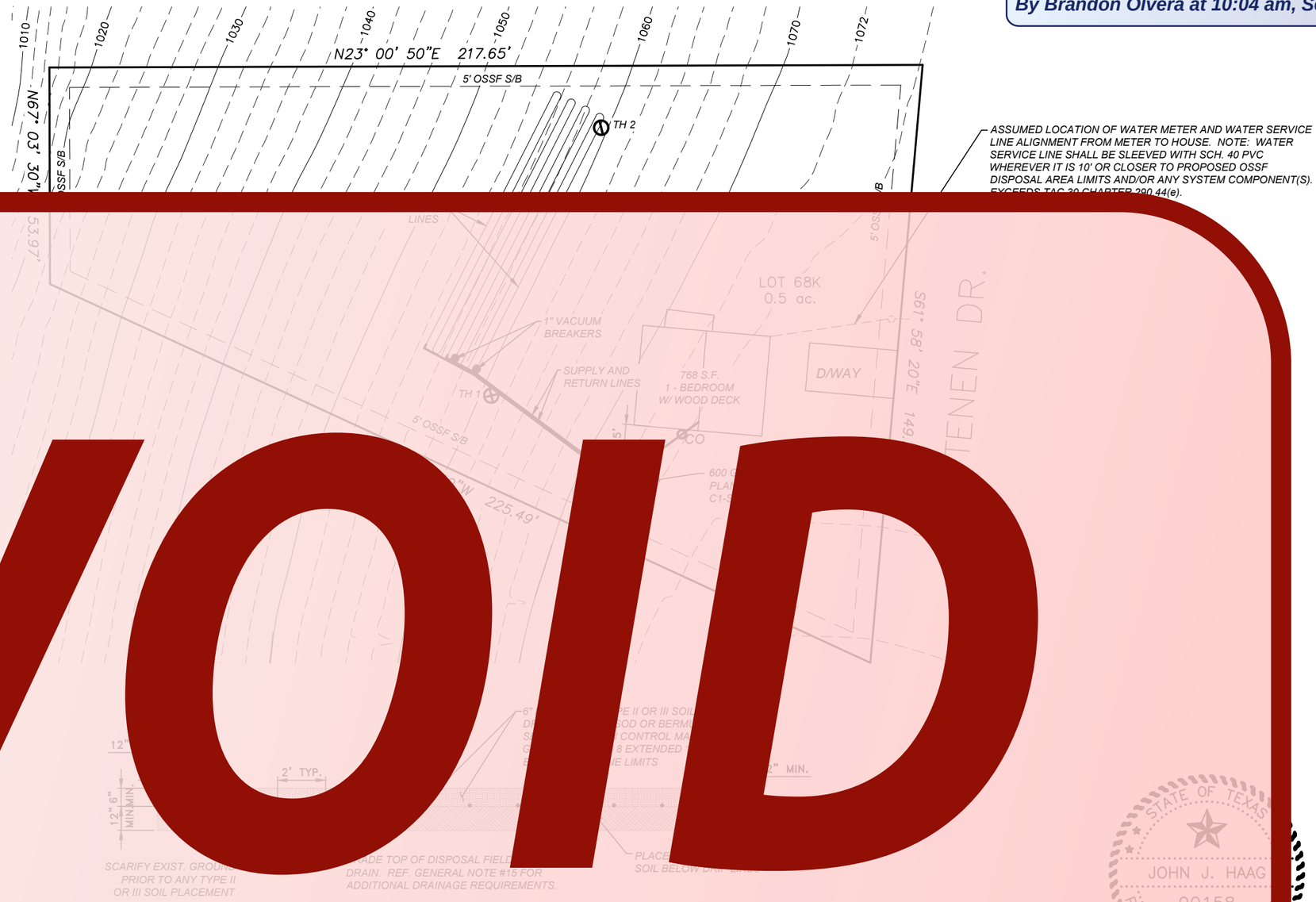
HAAG ENGINEERING CONSULTANTS
15831 SECRET TRAILS
SAN ANTONIO, TEXAS 78247
TEL: (210) 705-4268
FIRM: F-5789

GENERAL NOTES:

1. NO VEHICULAR TRAFFIC IS ALLOWED ON ANY PORTION OF THE DISPOSAL SYSTEM, UNLESS THE DESIGN SPECIFIES OTHERWISE.
2. PIPE ALIGNMENT TO THE DISPOSAL BEDS MAY BE ALTERED AS REQUIRED. ANY CHANGE FROM THE PLANS MUST BE APPROVED BY THE ENGINEER AND THE APPROPRIATE GOVERNMENTAL AGENCY(IES).
3. CONTRACTOR SHALL PROTECT TREES WHICH ARE NOT IN THE EXCAVATED CONSTRUCTION AREAS. CONTRACTOR SHALL MINIMIZE ROOT DAMAGE AND REASONABLY ADHERE TO THE DESIGN.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING A MINIMUM OF 1/4" PER FOOT OF FALL FROM THE BUILDING TO THE SEPTIC TANK.
5. NOT AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED OVER THE DISPOSAL AREAS. ANY WATERING IN THESE AREAS SHALL BE DONE BY HAND AND ONLY WHEN REQUIRED TO MAINTAIN GRASS COVER.
6. ALL CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE APPROPRIATE AUTHORITY - TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND ANY APPLICABLE LOCAL BUILDING AND SAFETY CODES.
7. CONTRACTOR SHALL BE RES… LOCATION OF ALL EXISTING … AND UTILITIES THAT MAY BE AFFECTED BY THE CONSTRUCTION OF THIS …
8. THE DRIP FIELD … BE VEGETATED WITH EITHER ST. AUGUSTINE, BERMUDA SOD OR BERMUDA … ED EROSION CONTROL MAT.
9. FIELDS MU… MOWED AT REGULAR INTERVALS. FAILURE TO PROPERLY MAINTAIN VEGE… VE COVER MAY RESULT IN SYSTEM FAILURE AND SHALL BE THE RESPONSIBIL… OF THE OWNER.
10. ALL PI… SHALL BE SCHEDULE 40 PVC OR APPROVED EQUAL, UNLESS NOTED OTHERWISE… L JOINTS SHALL BE CLEANED WITH THE APPROPRIATE SOLVENT AND GLUED IN A… RDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
11. ALL … ABLE WATER LINES SHALL BE A MINIMUM OF 10 FEET FROM ANY DISPOSAL… TEM OR SEWERAGE PIPE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER … WATER LINES LESS THAN 10 FEET FROM THE DISPOSAL AREA.
12. HIGH… TER ALARM SHALL BE LOCATED IN A NOTICEABLE LOCATION. THE ALARM SH… BE A VISUAL AND AUDIBLE ALARM AND WIRED ON A SEPARATE CIRCUIT FROM THE… MPS. ALL EXTERIOR CONTROLS AND CONNECTIONS SHALL BE ENCLOSE… A WEATHER-PROOF HOUSING. ELECTRICAL CONSTRUCTION SHALL COMPLY W… ALL LOCAL ELECTRICAL AND BUILDING CODES.
13. NO E… VATION IS PERMITTED NEAR THE DISPOSAL FIELDS THAT WILL RESULT IN THE NO… MPLIANCE OF APPLICABLE SETBACKS STATE… AND REGULATI… OF THE APPROPRIATE AUTHORITY.
14. ONL… OD QUALITY SANDY LOAM SHALL BE APPLIED … OSAL FIELDS. C… LOAM IS UNACCEPTABLE AND WILL CAUSE S… SANDY LOAM SHA… E DEFINED AS SHOWN IN TABLE VI (USDA SOI… CLASSIFIC… NS) OF THE RULES AND REGULATIONS OF TH… TALLER IS RESPONS… FOR VERIFYING THE QUALITY OF EACH LOAD … ON THE SYSTEM.
15. STO… WATER (RAINFALL RUNOFF) SHOULD NOT BE AL… OVER THE DISPO… FIELDS OR THE TANKS. DIVERSION BERMS, SW… AIN GUTTERS … OULD BE INSTALLED AS NECESSARY TO PREVEN…
16. THE … NTRACTOR IS RESPONSIBLE FOR STAKING AND … GRADES PRIOR TO … CAVATION. ANY DISCREPANCIES OF MORE THAN … BE REPORTE… THE ENGINEER PRIOR TO EXCAVATION. THE C… LL NOT DEVIATE F… M THESE PLANS WITHOUT THE WRITTEN CONSEN… OPRIATE AUTHORIT… ND THE ENGINEER.
17. THIS … OSAL SYSTEM HAS BEEN DESIGNED TO OPERAT… SPECIFICA… NS NOTED IN THESE PLANS. ALTERATIONS TO TH… E OWNER, IN… DING BUT NOT LIMITED TO LANDSCAPING, DRAIN… ND/OR WATER US… E, MAY CAUSE PREMATURE FAILURE AND SHALL B… RESPONS… TY OF THE OWNER.
18. CON… CTOR SHALL BE RESPONSIBLE FOR VERIFYING AL… URES ARE CONN… TED TO THE DESIGNATED SEPTIC TANK(S). LOW FL… GAL SHOWERH… S AND FAUCETS SHALL BE USED IN THE STRUCTU…
19. CON… CTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFET… OF THE PU… C FROM INJURY DURING CONSTRUCTION. THE OWN… RESPONS… FOR THE PREVENTION OF PERSONAL INJURY TO A… THE DISPO… SYSTEM.
20. CON… CTOR SHALL BE RESPONSIBLE TO ENSURE THAT AL… ADEQUAT… RENGTH AND INTEGRITY TO PERFORM SATISFACTO… THESE PL…
21. THE … STEWATER FLOW TO THE SEPTIC SYSTEM SHALL NOT … DESIGN FL… SHOWN ON THIS PLAN.

PLAN R… ISION NOTE:

THIS P… N WAS REVISED ON 08/27/2024 TO REFLECT, AS MU… AS POSSIBLE, AS-BUILT INFORMATION PROVI… D TO HAAG ENGINEERING CONSULTANTS BY THE SE… C SYSTEM INSTALLER. HAAG ENGINEERING CONSUL… NTS HAS NOT FIELD VERIFIED ANY SEPTIC SYSTEM… BUILT CONDITIONS FOR THIS PROJECT AND DOE… OT ATTEST TO IT'S VALIDITY AND/OR ACCURACY…



ASSUMED LOCATION OF WATER METER AND WATER SERVICE LINE ALIGNMENT FROM METER TO HOUSE. NOTE: WATER SERVICE LINE SHALL BE SLEEVED WITH SCH. 40 PVC WHEREVER IT IS 10' OR CLOSER TO PROPOSED OSSF DISPOSAL AREA LIMITS AND/OR ANY SYSTEM COMPONENT(S). EXCEEDS TAC 30 CHAPTER 290.44(e).

VOID

STATE OF TEXAS
JOHN J. HAAG
90158
LICENSED
PROFESSIONAL ENGINEER

OSSF LAYOUT PLAN
LOT 66K, STENEN DR.
EMERALD VALLEY
COMAL COUNTY, TEXAS

ADD'L NOTES:
1. DESIGN DAILY WASTEWATER FLOW = 180 GPD (WATER SAVING DEVICES WERE ASSUMED FOR SEPTIC SYSTEM DESIGN).
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4. ALL RISERS SHALL MEET THE MINIMUM REQUIREMENST OF 30 TAC 285 EFFECTIVE 07/06/2023

NOTE: OSSF IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE OR FEMA 100 YEAR FLOODPLAIN.
SITE EVALUATION BY JOHN J. HAAG, P.E. ON 05/02/2023

DRAWN BY: …HH
CHECKED BY: JJH
DATE: 08/27/24
JOB NO. DMOSER24001

SHEET 1 OF 1

HAAG ENGINEERING CONSULTANTS
15831 SECRET TRAILS
SAN ANTONIO, TEXAS 78247
FIRM: F-5789
TEL: (210) 705-4268

Olvera,Brandon

From: Olvera,Brandon
Sent: Tuesday, September 3, 2024 10:10 AM
To: jhaagpe@gmail.com; Ritzen, Brenda
Cc: yoursepticteam@gmail.com; Allen,Corey
Subject: RE: 606 Stenen Permit number 117602

Good Mor[illegible],
[illegible] has been updated. There is a 5 ft separation distance from sewer pipe with watertight joints and surface improvements (wooden deck).

285.91(10[illegible]able X
Pipe [illegible] run beneath driveways and sidewalks or up to surface improvements if it is schedule 80 pipe or sleeve[illegible] in schedule 40 pipe.

Thank You,

| **Brandon Olvera** | **Designated Representative OS0034792** | Comal County | www.cceo.org |
| 195 David Jonas Dr, New Braunfels, TX-78132 | t: 830-608-2090 | f: 830-608-2078 | e: olverb@co.comal.tx.us |

NBTKP 1014-2022

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.

Special Warranty Deed

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF COMAL §

Executed on date of acknowledgement to be Effective on: July 20, 2022

Grantor: **Thomas A. Brandes**

Grantor's Mailing Address: PO Box 1229, Lake Villa, Lake County, Illinois 60046

Grantee: **Quest Trust Company fbo Donald D. Moser IRA #41654-11**

Grantee's Mailing Address: 17171 Park Row Dr., Ste. 100, Houston, Harris County, Texas 77084

Consideration: TEN DOLLARS ($10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged.

Property (including any improvements): **Lots 68J and 68K, Emerald Valley Subdivision a subdivision in Comal County, Texas, according to the map or plat thereof recorded in Volume 8, Page 326 of the Map and Plat Records, Comal County, Texas.**

Reservations from Conveyance: None.

Exceptions to Conveyance and Warranty: All presently recorded restrictions, reservations, easements, covenants and conditions that affect the property and taxes for the current year, the payment of which Grantee assumes.

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 when the claim is by, through, or under Grantor but not otherwise, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

Donald D Moser (Jul 18, 2022 13:20 CDT)

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

Thomas A. Brandes

THE STATE OF North Carolina *
COUNTY OF Cumberland *

This instrument was acknowledged before me on this the 22nd day of July, 2022, by **Thomas A. Brandes**.

Sheronica S. R. Grayer
Notary Public
Cumberland County, NC
My Commission Expires: 28 OCT 2023

NOTARY PUBLIC,
STATE OF North Carolina

AFTER RECORDING RETURN TO:
Kristen Quinney Porter
GF NBKP-1014-2022

PREPARED IN THE LAW OFFICE OF:
Kristen Quinney Porter
P.O. Box 312643
New Braunfels, Texas 78131-2643

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
07/28/2022 02:52:15 PM
TERRI 2 Pages(s)
202206034379

County Court of Comal County, Texas

Bobbie Koepp

RE: 606 Stenen, docs for execution (DT)

Final Audit Report 2024-06-11

Created:	2024-06-11
By:	Gold Family (gold.family@questtrust.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAMTOI-hOqMOmU7WjUUILFF7qpI7Uqu2GJ

"RE: 606 Stenen, docs for execution (DT)" History

Document created by Gold Family (gold.family@questtrust.com)
2024-06-11 - 7:08:44 PM GMT- IP address: 66.64.7.134

Document emailed to Dwayne Moser (dmoser003@gmail.com) for signature
2024-06-11 - 7:13:07 PM GMT

Email viewed by Dwayne Moser (dmoser003@gmail.com)
2024-06-11 - 7:23:48 PM GMT- IP address: 66.249.80.64

Dwayne Moser (dmoser003@gmail.com) verified identity with knowledge based authentication performed by LexisNexis. Authentication token 31030137450291
2024-06-11 - 7:24:17 PM GMT

Document e-signed by Dwayne Moser (dmoser003@gmail.com)
Signature Date: 2024 06 11 7:26:59 PM GMT - Time Source: server- IP address: 96.8.135.240

Agreement completed.
2024-06-11 - 7:26:59 PM GMT