Comal County Environmental Health
OSSF Inspection Sheet

Installer Name: Varhol **OSSF Installer #:** OS0031132

1st Inspection Date: 7/23/25 **2nd Inspection Date:** 7/25/25 **3rd Inspection Date:**

Inspector Name: Hendry **Inspector Name:** Hendry **Inspector Name:**

Permit#: 118704 **Address:** 169 SPANISH OAK ESPLANADE

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: **7/23/25 CH: Installed to design, operational, cover all**
7/25/25 CH: 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			X		
15	AEROBIC TREATMENT UNIT Manufacturer AEROBIC TREATMENT UNIT Model Number	X X		Existing Solar Air SA 500; as per design (permit #88242)	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 Evapo-transpirative		285.33(a)(3) 285.33(a)(4) 285.33(a)(1) 285.33(a)(2)				

Comal County Environmental Health
OSSF Inspection Sheet

No.	Description	Answer	Citations	Notes	1st Insp.	2nd Insp.	3rd Insp.
19	DISPOSAL SYSTEM Drip Irrigation	X	285.33(c)(3)(A)-(F)		X		
20	DISPOSAL SYSTEM Soil Substitution		285.33(d)(4)				
21	DISPOSAL SYSTEM Pumped Effluent		285.33(a)(4) 285.33(a)(3) 285.33(a)(1) 285.33(a)(2)				
22	DISPOSAL SYSTEM Gravelless Pipe		285.33(a)(3) 285.33(a)(2) 285.33(a)(4) 285.33(a)(1)				
23	DISPOSAL SYSTEM Mound		285.33(a)(3) 285.33(a)(1) 285.33(a)(2) 285.33(a)(4)				
24	DISPOSAL SYSTEM Other (describe) (Approved Design)		285.33(d)(6) 285.33(c)(4)				
25	DRAINFIELD Absorptive Drainline 3" PVC or 4" PVC						
26	DRAINFIELD Area Installed						
27	DRAINFIELD Level to within 1 inch per 25 feet and within 3 inches over entire excavation		285.33(b)(1)(A)(v)				
28	DRAINFIELD Excavation Width DRAINFIELD Excavation Depth DRAINFIELD Excavation Separation DRAINFIELD Depth of Porous Media DRAINFIELD Type of Porous Media						
29	DRAINFIELD Pipe and Gravel - Geotextile Fabric in Place		285.33(b)(1)(E)				
30	DRAINFIELD Leaching Chambers DRAINFIELD Chambers - Open End Plates w/Splash Plate, Inspection Port & Closed End Plates in Place (per manufacturers spec.)		285.33(c)(2)				
31	LOW PRESSURE DISPOSAL SYSTEM Adequate Trench Length & Width, and Adequate Separation Distance between Trenches		285.33(d)(1)(C)(i)				

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 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						

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:	118704
Issued This Date:	07/01/2025
This permit is hereby given to:	EMILY H. STAATS

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

169 SPANISH OAK ESPLANADE
CANYON LAKE, TX 78133

Subdivision:	THE OAKS
Unit:	0
Lot:	5A
Block:	0
Acreage:	0.9200

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 9:11 am, May 30, 2025

COMAL COUNTY
ENGINEER'S OFFICE

OSSF DEVELOPMENT APPLICATION CHECKLIST

Staff will complete shaded items

		118704
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

05/30/2025
Date

___ COMPLETE APPLICATION

Check No. _____ Receipt No._____

INCOMPLETE APPLICATION
___ (Missing Items Circled, Application Refeused)

Revised: September 2019

RECEIVED
By Kathy Griffin at 9:11 am, May 30, 2025

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 May 4, 2025 Permit Number 118704

1. APPLICANT / AGENT INFORMATION

Owner Name	EMILY H. STAATS	Agent Name	GREG JOHNSON, P.E.
Mailing Address	169 SPANISH OAK ESPLANADE	Agent Address	170 HOLLOW OAK
City, State, Zip	CANYON LAKE TEXAS 78133	City, State, Zip	NEW BRAUNFELS TEXAS 78132
Phone #	210-843-3720	Phone #	830-905-2778
Email	ehstaats1952@gmail.com	Email	gregjohnsonpe@yahoo.com

2. LOCATION

Subdivision Name THE OAKS Unit _____ Lot 5A Block _____

Survey Name / Abstract Number _____ Acreage _____

Address 169 SPANISH OAK ESPLANADE City CANYON LAKE State TX Zip 78133

3. TYPE OF DEVELOPMENT

☒ Single Family Residential

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

Number of Bedrooms 3

Indicate Sq Ft of Living Area 2399

☐ 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: $ EXISTING (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 ☐ Rainwater Collection

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.

X Emily Staats
Signature of Owner

5/23/25
Date

Revised January 2021

THE OAKS, LOT 5A

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 GREG W. JOHNSON, P.E.

System Description PROPRIETARY; AEROBIC TREATMENT AND DRIP TUBING

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

Tank Size(s) (Gallons) SOLAR AIR SA-N500 500 GPD (#88242) **Absorption/Application Area (Sq Ft)** 1508

Gallons Per Day (As Per TCEQ Table III) 240

(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 P.E. or R.S. 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 ap

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

If yes, indicate the city: _____

FIRM #2585

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

Signature of Designer

May 7, 2025
Date

Doc# 200606022469

1/C

AFFIDAVIT TO THE PUBLIC

THE COUNTY OF COMAL §
STATE OF TEXAS §

Before me, the undersigned authority, on this day personally appeared Emily Staats, who, after being by me duly sworn, upon oath state that they are the owner of record of that certain tract or parcel of land lying and being situated in Comal County, Texas.

CERTIFICATION OF OSSF REQUIRING MAINTENANCE

According to Texas Commission of Environmental Quality 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 Texas Commission of Environmental Quality (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 owner's 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 deed recording. Additionally, the owner must provide proof of the recording to the OSSF permitting authority. This deed certification 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:

LOT 5A, The OAKS, ACCORDING TO PLAT THEREOF RECORDED IN VOLUME 1, PAGE 39, MAP AND PLAT RECORDS OF COMAL COUNTY, TEXAS.

The property is owned by: Emily Staats

This OSSF must be covered by a continuous maintenance contract. All maintenance on this OSSF must be performed by an approved maintenance company, and a signed maintenance contract must be submitted to Comal County Engineer's Office within 30 days after the property has been transferred.

The owner will, upon 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 the Comal County Engineer's Office.

WITNESS MY/OUR HAND(S) on this 11 day of April, 2006.

Emily Staats

EMILY STAATS

SWORN TO AND SUBSCRIBED BEFORE ME on this 11 day of April, 2006.

PATRICIA KAY DAVILA
My Commission Expires
August 30, 2009

Patricia K Davila
Notary Public, State of Texas

PATRICIA K. DAVILA
Printed Name of Notary
My Commission Expires: 8/30/09

Doc# 200606022469
Pages 1
06/01/2006 12:51PM
Official Records of
COMAL COUNTY
JOY STREATER
COUNTY CLERK
Fees $16.00

Joy Streater

Doc# 200606022469

ON-SITE SEWERAGE FACILITY
SOIL EVALUATION REPORT INFORMATION

Date Soil Survey Performed: **May 06, 2025**

Site Location: **The OAKS, LOTS 5A**

Proposed Excavation Depth: **N/A**

Requirements:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area.
Locations of soil boring or dug pits must be shown on the site drawing.
For subsurface disposal, soil evaluations 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 features on the form. Indicate depths where features appear.

SOIL BORING NUMBER **SURFACE EVALUATION**

Depth (Feet)	Texture Class	Soil Texture	Gravel Analysis	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0 1 2 (14") 3 4 5	**III**	**SILTY CLAY LOAM**	**N/A**	**NONE OBSERVED**	**LIMESTONE @ 14"**	**BROWN**

SOIL BORING NUMBER **SURFACE EVALUATION**

Depth (Feet)	Texture Class	Soil Texture	Gravel Analysis	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0 1 2 3 4 5	**SAME**		**AS**		**ABOVE**	

I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.

Greg W. Johnson, P.E. 67587-F2585, S.E. 11561

05/06/25
Date

Olvera,Brandon

From: Greg Johnson <gregjohnsonpe@yahoo.com>
Sent: Thursday, June 26, 2025 6:45 AM
To: Olvera,Brandon
Cc: ehstaats1952@gmail.com
Subject: Re: 118704.pdf

Brandon,
We are replacing the drip tubing in a system installed in 2006.
At that time the field area was scarified and 14" of soil was added.
That is the reason there is more soil now than in 2006.

Thanks,
Greg

Send for Greg W. Johnson, P.E.,R.S.)

170 Hollow Oak

New Braunfels, TX 78132

Office/Fax (830) 905-2778

Email: gregjohnsonpe@yahoo.com

Comments

Add Comment

Sort

EGALLEGOS **06/26/2025 2:10 PM**

12″ + found in proposed field.

Close

OSSF SOIL EVALUATION REPORT INFORMATION

Date: May 07, 2025

Applicant Information:

Name: EMILY H. STAATS
Address: 169 SPANISH OAK ESPLANADE
City: CANYON LAKE State: TEXAS
Zip Code: 78133 Phone: (210) 843-3720

Site Evaluator Information:

Name: Greg W. Johnson, P.E., R.S, S.E. 11561
Address: 170 Hollow Oak
City: New Braunfels State: Texas
Zip Code: 78132 Phone & Fax (830)905-2778

Property Location:

Lot 5A Unit ___ Blk ___ Subd. The OAKS
Street Address: 169 SPANISH OAK ESPLANADE
City: CANYON LAKE Zip Code: 78133
Additional Info.: _____

Installer Information:

Name: _____
Company: _____
Address: _____
City: _____ State: _____
Zip Code: _____ Phone _____

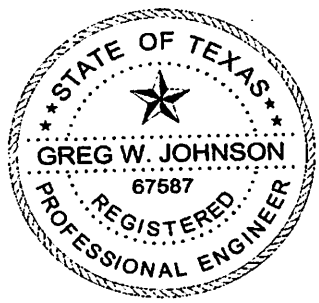
Topography: Slope within proposed disposal area: 5 %

Presence of 100 yr. Flood Zone:	YES X NO ___
Existing or proposed water well in nearby area.	YES ___ NO X
Presence of adjacent ponds, streams, water impoundments	YES ___ NO X
Presence of upper water shed	YES ___ NO X
Organized sewage service available to lot	YES ___ NO X

I HAVE PERFORMED A THOROUGH INVESTIGATION BEING A REGISTERED PROFESSIONAL ENGINEER AND SITE EVALUATOR IN ACCORDANCE WITH CHAPTER 285, SUBCHAPTER D, §285.30, & §285.40 (REGARDING RECHARGE FEATURES), TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (EFFECTIVE DECEMBER 29, 2016).

GREG W. JOHNSON, P.E. 67587 - S.E. 11561

05/07/25
DATE



FIRM #2585

DRIP TUBING SYSTEM
DESIGNED FOR:
EMILY STAATS
169 SPANISH OAK ESPLANADE
CANYON LAKE, TEXAS 78133

SITE DESCRIPTION:
Located in The Oaks Unit 1, Lot 5A, at 169 Spanish Oak Esplanade the proposed system will serve an existing three bedroom residence (2399 sf.) situated in an area with Type-III soil as described in the Soil 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-inch SCH-40 pipe discharges from the residence into an existing Solar Air SA500 500 gpd aerobic plant, containing a 353-gallon pretreatment tank, an aerobic treatment plant, and a 768-gallon pump chamber containing a submersible (0.5 HP FPS E-Series or equivalent) well pump. The well pump is activated by a time controller allowing the distribution eight times per day with an 8 minute run time with floats set to 240 gallons. A high level audible and visual alarm will activate should the pump fail. Distribution is through a self flushing 100 mesh Arkal disc filter then through a 1" SCH-40 manifold to a 1508sf. drip tubing field, with ***Netifim Bioline*** drip lines set approximately two feet apart with ***0.61 gph*** emitters set every two feet, as per the attached schematic. A pressure regulator Model PMR30MF installed in the pump tank on the manifold to the field will maintain pressure at 30 psi. A 1" SCH-40 return line is installed to continuously flush the system by throttling a 1" ball valve to the pump tank. Solids caught in the disc filter are continuously flushed each cycle back to the pump tank. Vacuum breakers installed at the highest point on each manifold will prevent siphoning of effluent from higher to lower parts of the field. ***Prior to installing drip the soils must be scarified.*** The drip tubing will be laid and capped with 6" of Type II or Type III soil ***(NOT SAND)***. The field area will be covered in Curlex erosion control blankets and heavily seeded or just sodded with grass prior to system startup. **Risers are required on tank inspection ports as per 30 TAC 285.38 (9/1/2023). This includes access limitation (<65lbs lid or hardware secured lid), inspection and cleanout ports shall have risers over the port openings which extend to a minimum of 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.**

DESIGN SPECIFICATIONS:
Daily waste flow: 3 Br. Res Q=(3+1)*75 = 240 GPD
Pretreatment tank size: 353 Gal
Plant Size: Solar Air SA-N500(TCEQ Approved) (#88242)
Pump tank size: 768 Gal
Reserve capacity after High Level: 80 Gal (1/3 day Req'd)

Application Rate: Ra = 0.2 gal/sf
Total absorption area: Q/Ra = 240 GPD/0.20 = 1200 sf (1508 sf. Actual)
Total linear feet drip tubing: 754' ***Netifim Bioline*** drip tubing .61 GPH
Pump requirement: 377 emitters @ .61 gph @ 20 psi = 3.83 gpm
Pump Requirement (cont.): (0.5 HP FPS E-Series well pump or equiv.)
Dosing volume: 115 gal.
Pump Tank: 760 Gal

Volume below working level = 15" = 218 gal
Working level = 240gal =17"
Reserve = >1/3 day = 80 gal. = 6"

MINIMUM SCOUR VELOCITY (**MSV**) > 2 FPS

IN DRIP TUBING W/ NOM. DIA. 0.55" ID

MSV = 2 FPS (Πd↑2)/4*7.48 gal/cf*60 sec/min
MSV = 2(3.14159((.55/12)↑2)/4)*7.48*60
MSV = 1.5 GPM MIN FLOW RATE x 2 = 3 GPM

IN RETURN MANIFOLD W/ NOM. DIA 1.049" ID

MSV = 2 FPS (Πd↑2)/4*7.48 gal/cf*60 sec/min
MSV = 2(3.14159((1.049/12)↑2)/4)*7.48*60
MSV = 5.4 GPM

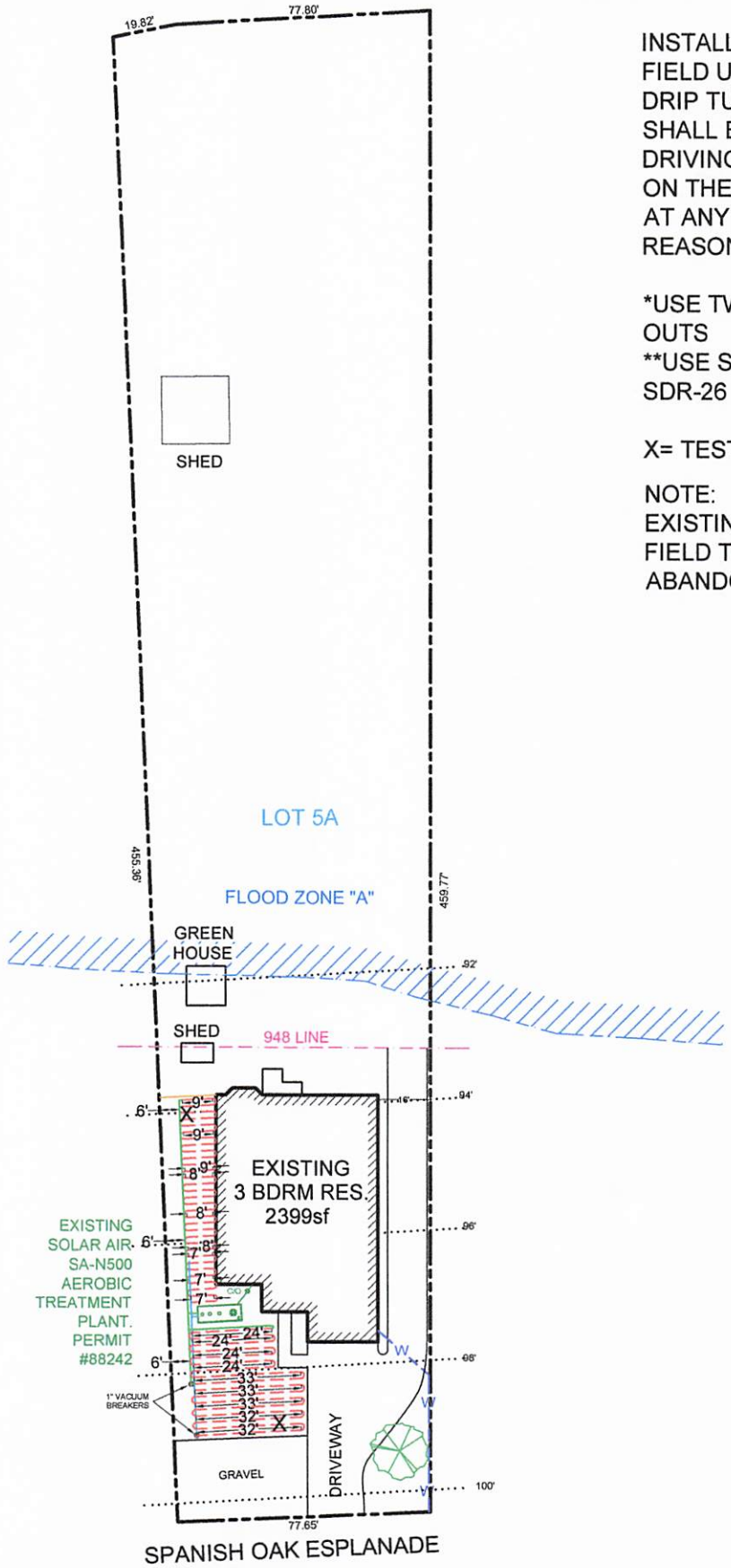
PIPE AND FITTINGS:

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. Drip tubing 0.61 gph drip tubing to be used in field. The manifold trench should be kept shallow to prevent interconnection of the trenches.

Designed in accordance with Chapter 285, Subchapter D, §285.30 and §285.40 Texas Commission On Environmental Quality. (Effective December 29, 2016)

05/07/25

Greg W. Johnson, P.E. No. 67587 S.E. 11561
170 Hollow Oak
New Braunfels, Texas 78132
830/905-2778



INSTALL 1508sf OF FIELD USING 754' OF DRIP TUBING. THERE SHALL BE NO PARKING, DRIVING OR STORAGE ON THE SEPTIC FIELD AT ANY TIME FOR ANY REASON.

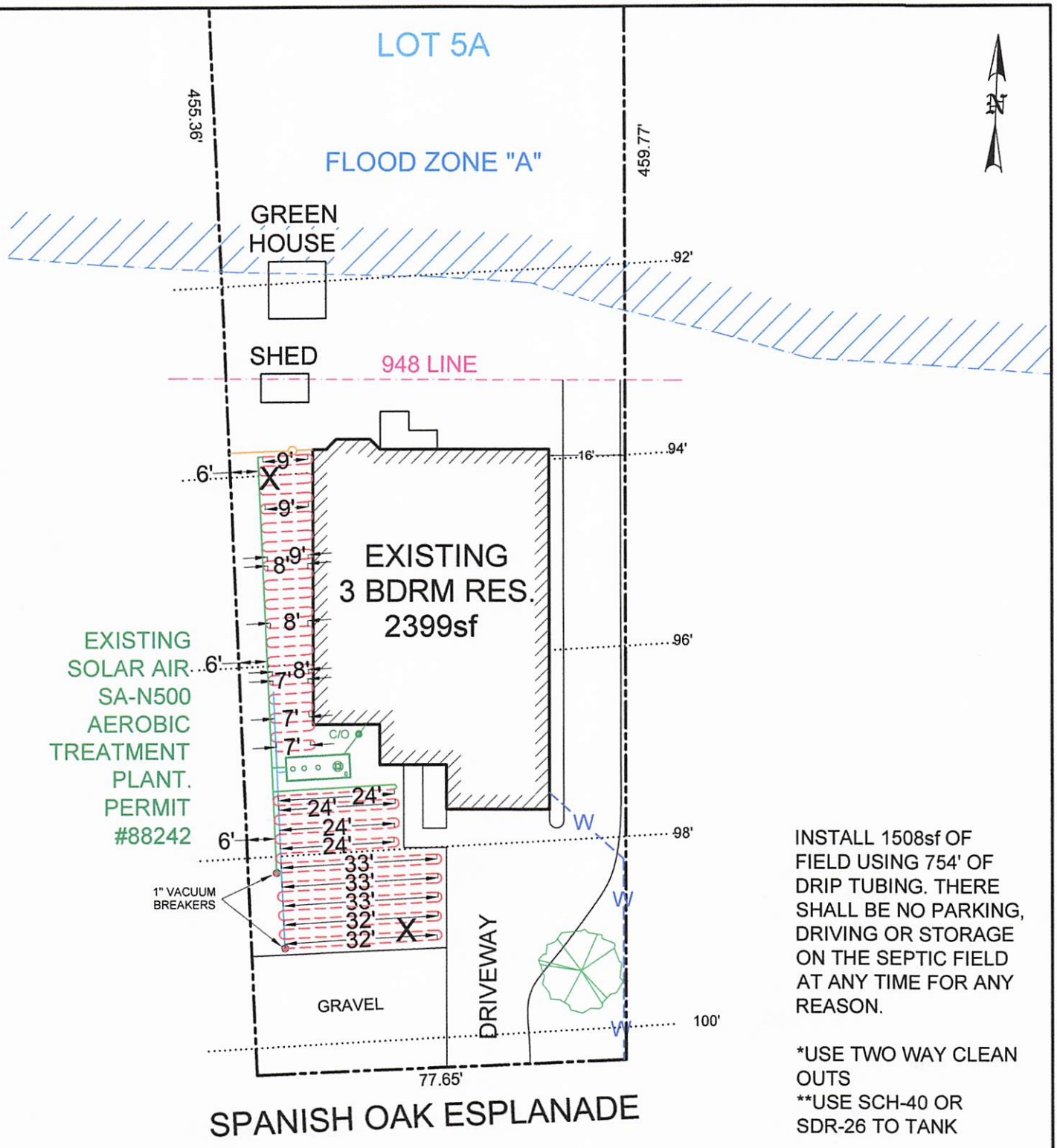
*USE TWO WAY CLEAN OUTS
**USE SCH-40 OR SDR-26 TO TANK

X= TEST HOLE

NOTE:
EXISTING SEPTIC FIELD TO BE ABANDONED.

STATE OF TEXAS
GREG W. JOHNSON
87587
REGISTERED
PROFESSIONAL ENGINEER

OWNER: EMILY H. STAATS					DRAWN BY: EJS III
STREET ADDRESS: 169 SPANISH OAK ESPLANADE					
LEGAL DESC: The OAKS		UNIT/SECTION/PHASE:		BLOCK:	LOT: 5A
PREPARED BY: GREG W. JOHNSON, P.E. F#002585	SCALE: N.T.S.	DATE: 5/7/2025	REVISED:		



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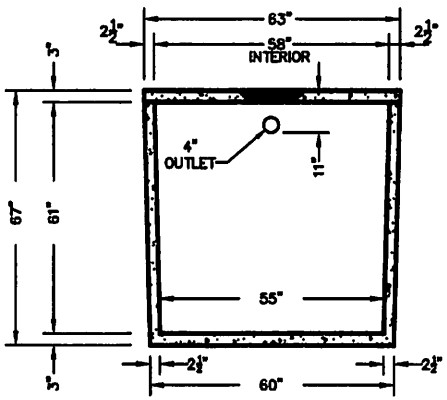
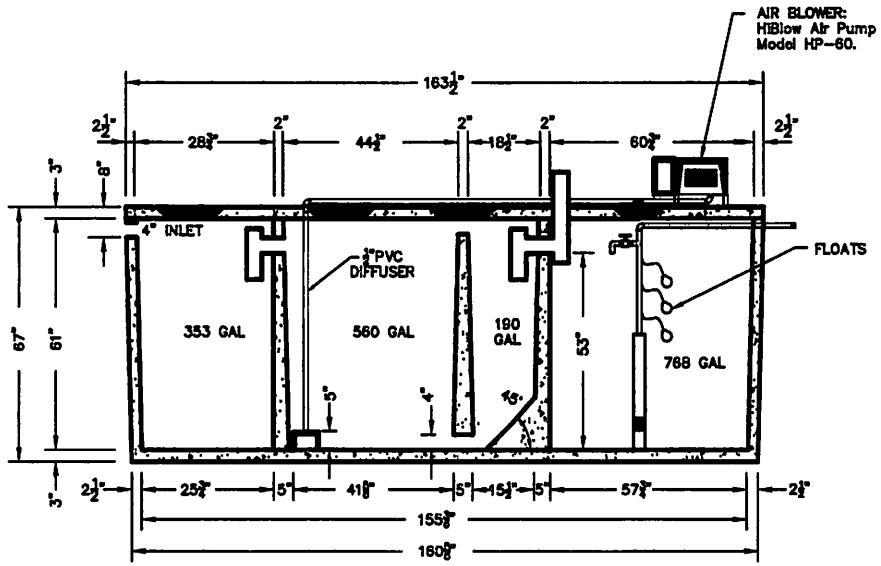
STATE OF TEXAS
GREG W. JOHNSON
67587
REGISTERED
PROFESSIONAL ENGINEER

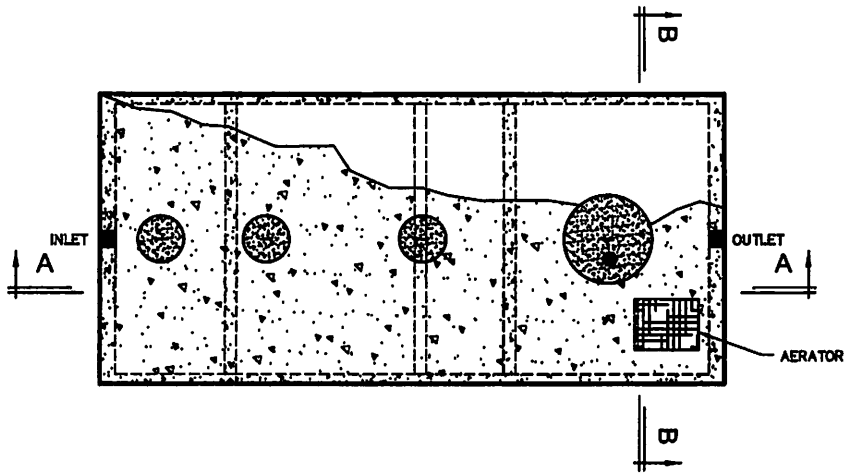
OWNER: EMILY H. STAATS				DRAWN BY: EJS III	
STREET ADDRESS: 169 SPANISH OAK ESPLANADE					
LEGAL DESC: The OAKS		UNIT/SECTION/PHASE:	BLOCK:	LOT: 5A	
PREPARED BY: GREG W. JOHNSON, P.E. F#002585	SCALE: 1"=30'	DATE: 5/7/2025	REVISED:		



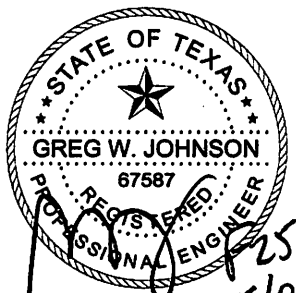
SECTION B-B



SECTION A-A



PLAN VIEW



05/07/25

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

MODEL SA500-768PT
SEWER TREATMENT SYSTEM

TREATMENT PLANT

SHEET
SA-2

JULY 2011

SCALE
NONE

TANK NOTES:

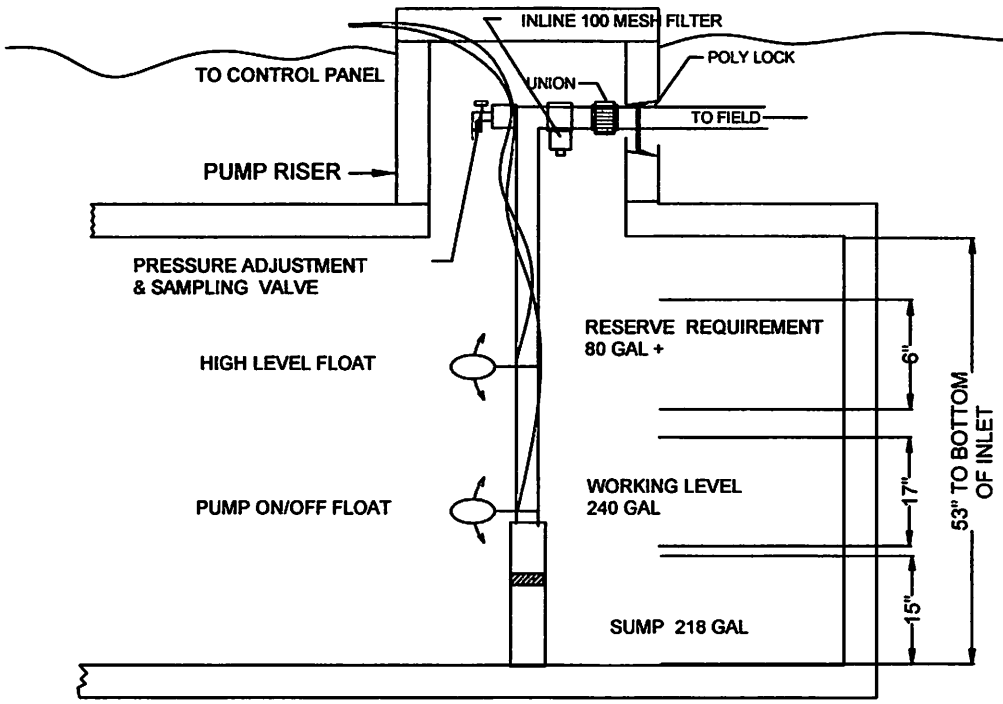
Tanks must be set to allow a minimum of 1/4" per foot fall from the residence.

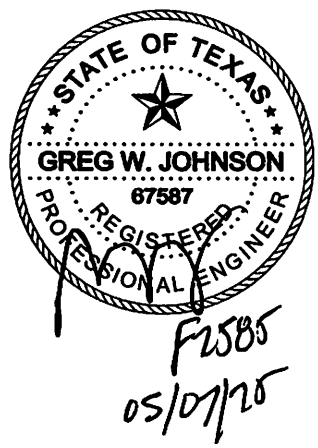
Tightlines to the tank shall be SCH-40 PVC.

A two way sanitary tee is required between residence and tank.

A minimum of 4" of sand, sandy loam, clay loam free of rock shall be placed under and around tanks

ALL WIRING MUST BE IN COMPLIANCE WITH
THE MOST RECENT NATIONAL ELECTRIC CODE





TYPICAL PUMP TANK CONFIGURATION
SOLAR-AIR SA-N500 768 GAL PUMP TANK

Arkal 1" Super Filter

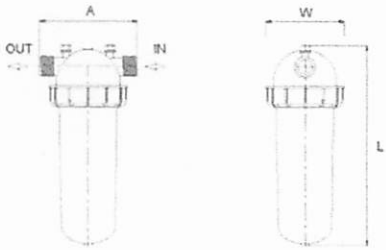
Catalog No. 1102 0_ _ _

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

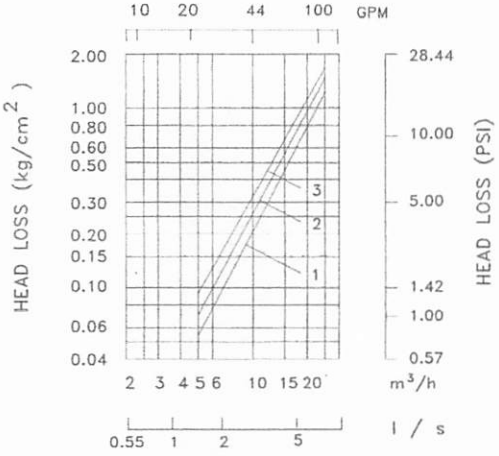
Inlet/outlet diameter	1" BSPT (male) 25.0 mm – nominal diameter 33.6 mm – pipe diameter (O. D.)	1" NPT (male)
Maximum pressure	10 atm	145 psi
Maximum flow rate	8 m^3/h (1.7 l/sec)	35 gpm
General filtration area	500 cm^2	77.5 in^2
Filtration volume	600 cm^3	37 in^3
Filter length L	340 mm	13 13/32"
Filter 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



PMR-MF

PRESSURE-MASTER REGULATOR - MEDIUM FLOW

Specifications

The pressure regulator shall be capable of operating at a constant, factory preset, non-adjustable outlet pressure of 6, 10, 12, 15, 20, 25, 30, 35, 40, 50, or 60 PSI (0.41, 0.69, 0.83, 1.03, 1.38, 1.72, 2.07, 2.41, 2.76, 3.45, or 4.14 bar) with a flow range between:

4 - 16 GPM (909 - 3634 L/hr) for 6 - 10 PSI models or
2 - 20 GPM (454 - 4542 L/hr) for 12 - 60 PSI models.

The pressure regulator shall maintain the nominal pressure at a minimum of 5 PSI (0.34 bar) above model inlet pressure and a maximum of 80 PSI (5.52 bar) above nominal model pressure*. Refer to the PRU performance curve to establish specific outlet pressures based on relative inlet pressure and flow rate. Always install downstream from all shut off valves. Recommended for outdoor use only. Not NSF certified.

All pressure regulator models shall be equipped with one of these inlet-x-outlet configurations:

Inlet	Outlet
¾-inch Female National Pipe Thread (FNPT)	¾-inch Female National Pipe Thread (FNPT)
1-inch Female National Pipe Thread (FNPT)	1-inch Female National Pipe Thread (FNPT)
1-inch Female British Standard Pipe Thread (FBSPT)	1-inch Female British Standard Pipe Thread (FBSPT)

The upper housing, lower housing, and internal molded parts shall be of engineering-grade thermoplastics with internal elastomeric seals and a reinforced elastomeric diaphragm. Regulation shall be accomplished by a fixed stainless steel compression spring, which shall be enclosed in a chamber isolated from the normal water passage.

Outlet pressure and flow shall be clearly marked on each regulator.

The pressure regulator shall carry a two-year manufacturer's warranty on materials, workmanship, and performance. Each pressure regulator shall be water tested for accuracy before departing the manufacturing facility.

The pressure regulator shall be manufactured by Senninger Irrigation in Clermont, Florida. Senninger is a Hunter Industries Company.

Physical

3/4" FNPT x 3/4" FNPT model *(shown on right)*

Overall Length 5.2 inches (13.1 cm)

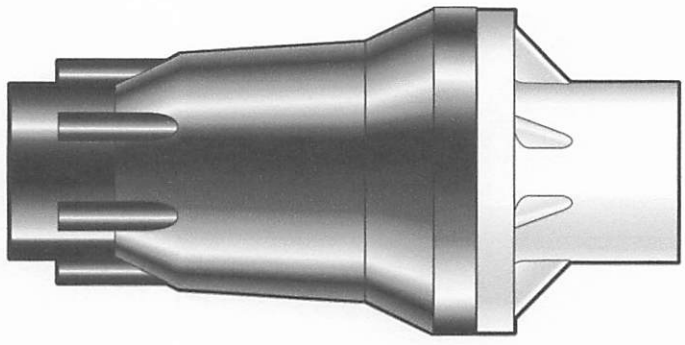
Overall Width 2.5 inches (6.4 cm)

1" FNPT x 1" FNPT model

1" FBSPT x 1" FBSPT model

Overall Length 5.8 inches (14.6 cm)

Overall Width 2.5 inches (6.4 cm)



* Please consult factory for applications outside of recommended guidelines.

PMR-MF

PRESSURE-MASTER REGULATOR - MEDIUM FLOW

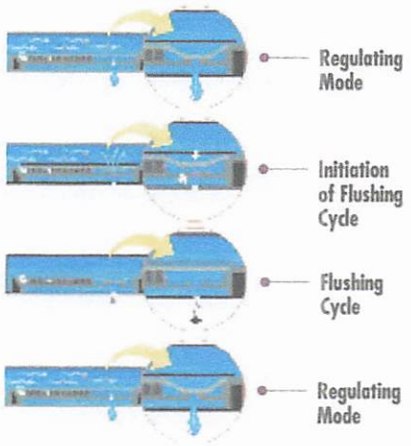
Model Numbers

Model #	Flow Range	Preset Operating Pressure	Maximum Inlet Pressure
PMR-6 MF	4 - 16 GPM (909 - 3634 L/hr)	6 PSI (0.41 bar)	80 psi (5.51 bar)
PMR-10 MF	4 - 16 GPM (909 - 3634 L/hr)	10 PSI (0.69 bar)	90 psi (6.20 bar)
PMR-12 MF	2 - 20 GPM (454 - 4542 L/hr)	12 PSI (0.83 bar)	90 psi (6.20 bar)
PMR-15 MF	2 - 20 GPM (454 - 4542 L/hr)	15 PSI (1.03 bar)	95 psi (6.55 bar)
PMR-20 MF	2 - 20 GPM (454 - 4542 L/hr)	20 PSI (1.38 bar)	100 psi (6.89 bar)
PMR-25 MF	2 - 20 GPM (454 - 4542 L/hr)	25 PSI (1.72 bar)	105 psi (7.24 bar)
PMR-30 MF	2 - 20 GPM (454 - 4542 L/hr)	30 PSI (2.07 bar)	110 psi (7.58 bar)
PMR-35 MF	2 - 20 GPM (454 - 4542 L/hr)	35 PSI (2.41 bar)	115 psi (7.93 bar)
PMR-40 MF	2 - 20 GPM (454 - 4542 L/hr)	40 PSI (2.76 bar)	120 psi (8.27 bar)
PMR-50 MF	2 - 20 GPM (454 - 4542 L/hr)	50 PSI (3.45 bar)	130 psi (8.96 bar)
PMR-60 MF	2 - 20 GPM (454 - 4542 L/hr)	60 PSI (4.14 bar)	140 psi (9.65 bar)

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.

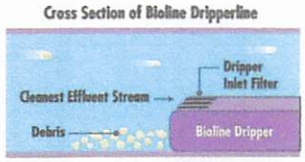
Quality Manufacturing with Specifications Designed to Meet Your Needs

- 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"*

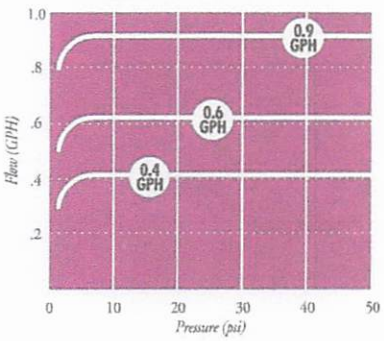
Recommended filtration: 120 mesh

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™

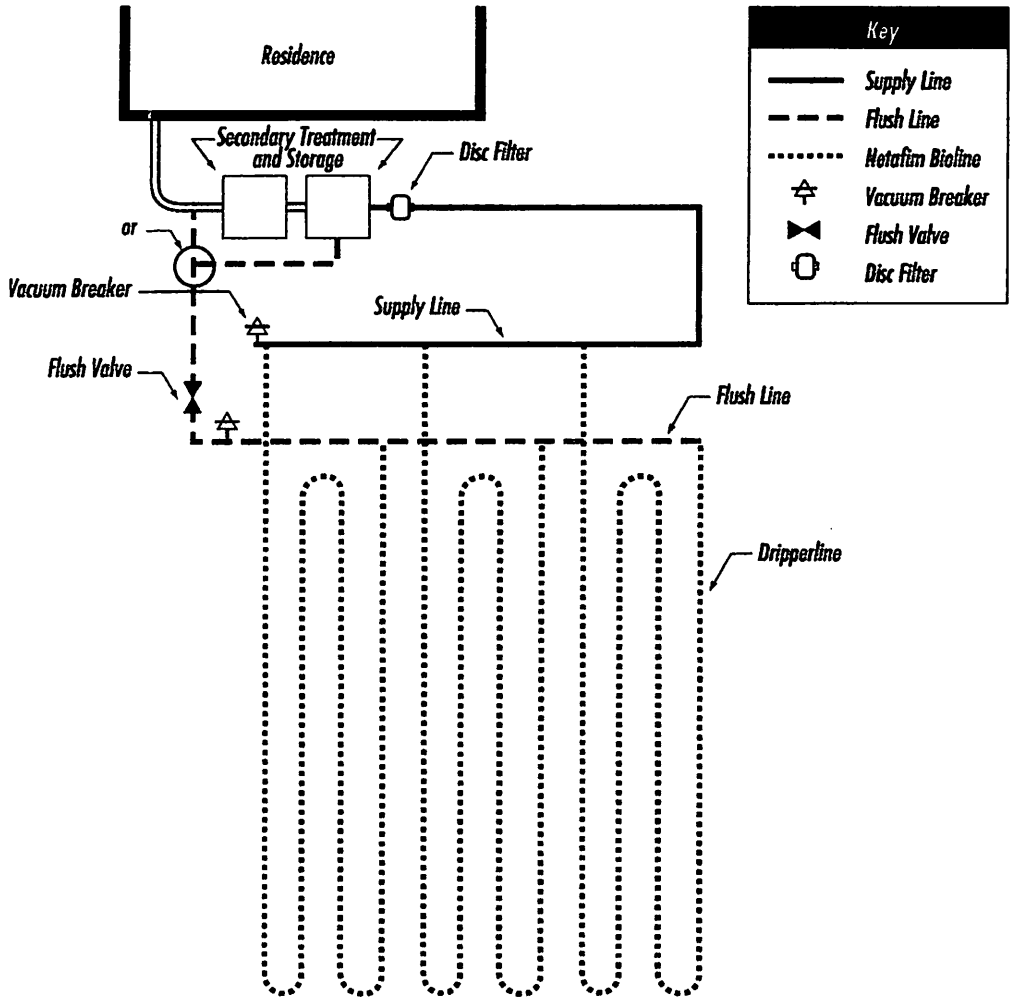
NETAFIM USA
5470 E. Home Ave. • Fresno, CA 93727
888.638.2346 • 559.453.6800
FAX 800.695.4753
www.netafimusa.com

SAMPLE DESIGNS

SINGLE TRENCH LAYOUT

Rectangular field with supply and flush manifold on same side and in same trench;

- Locate supply and flush manifold in same trench
- Dripperlines are looped at the end opposite the supply and flush manifolds
- The longest Bioline length should not exceed 400 ft. Drip fields 200 ft. in length might loop the Bioline once; drip dispersal fields under 100 ft. might be looped twice, as illustrated



June 25, 2025

118704

COMAL COUNTY
ENGINEER'S OFFICE

RE: ***169 Spanish Oak Esplanade***
The Oaks
Lot 5A

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:

✔ Permit 88242 soil evaluation report states 4" of Class III.
   a. New permit stated 14".
   b. Our office will be conducting a site visit on 06-26-2025.
2. 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 |

195 David Jonas Dr, New Braunfels, Texas 78132 - Phone (830) 608-2090

GF# 09-13010033 BJ B 20.00
Bulverde

200906014005 04/28/2009 10:11:03 AM DEED 1/2

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: MARCH 17, 2009

Grantor: STACEY JO PIRO

Grantor's Mailing Address:

Grantee: EMILY H. STAATS

Grantee's Mailing Address: 169 SPANISH OAK/ESPLANADE, CANYON LAKE, TEXAS 78133

Consideration: TEN AND NO/100——($10.00)——DOLLARS and other good and valuable consideration, the receipt of which is hereby acknowledged and confessed;

Property (including any improvements):

ALL OF MY UNDIVIDED INTEREST IN AND TO LOT 5A, THE OAKS SUBDIVISION SITUATED IN COMAL COUNTY, TEXAS ACCORDING TO PLAT THEREOF RECORDED IN VOLUME 1, PAGE 39, MAP AND PLAT RECORDS OF COMAL COUNTY, TEXAS.

Reservations from and Exceptions to Conveyance and Warranty:

THIS CONVEYANCE IS EXECUTED, DELIVERED AND ACCEPTED SUBJECT TO AD VALOREM TAXES FOR THE CURRENT YEAR, ROLLBACK TAXES DUE TO THIS CONVEYANCE OR GRANTEE'S USE OF THE SUBJECT PROPERTY, MAINTENANCE FUND LIENS, ZONING ORDINANCES, UTILITY DISTRICT ASSESSMENTS AND STANDBY FEES, IF ANY, ANY AND ALL VALID UTILITY EASEMENTS CREATED BY THE DEDICATION DEED OR PLAT OF THE SUBDIVISION IN WHICH SAID REAL PROPERTY IS LOCATED, RECORDED EASEMENTS, MINERAL RESERVATIONS AND LEASES, RESTRICTIONS, COVENANTS, CONDITIONS, RIGHTS OF WAY EASEMENTS, IF ANY, AFFECTING THE HEREIN DESCRIBED PROPERTY BUT ONLY TO THE EXTENT THE SAME ARE VALID AND SUBSISTING.

Grantor, for the consideration and subject to the reservations from and 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 wise belonging, to have and hold it to Grantee, Grantee's heirs, executors, administrators, successors, or assigns forever. Grantor hereby binds Grantor and Grantor's heirs, executors, administrators, and successors to warrant and forever defend all and singular the property to Grantee and Grantee's heirs, executors, administrators, 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.

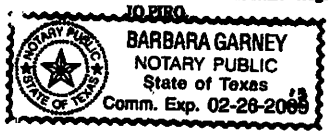
Stacey Jo Piro

STACEY JO PIRO

(Acknowledgment)

THE STATE OF TEXAS
COUNTY OF Texas

This instrument was acknowledged before me on the 30th day of March, 2009, by STACEY JO PIRO.



Barbara Garney
Notary Public, State of Texas
Notary's Name (printed): Barbara Garney
Notary's commission expires: 2/26/2013

NOTICE: This document affects your legal rights. Read it carefully before signing.

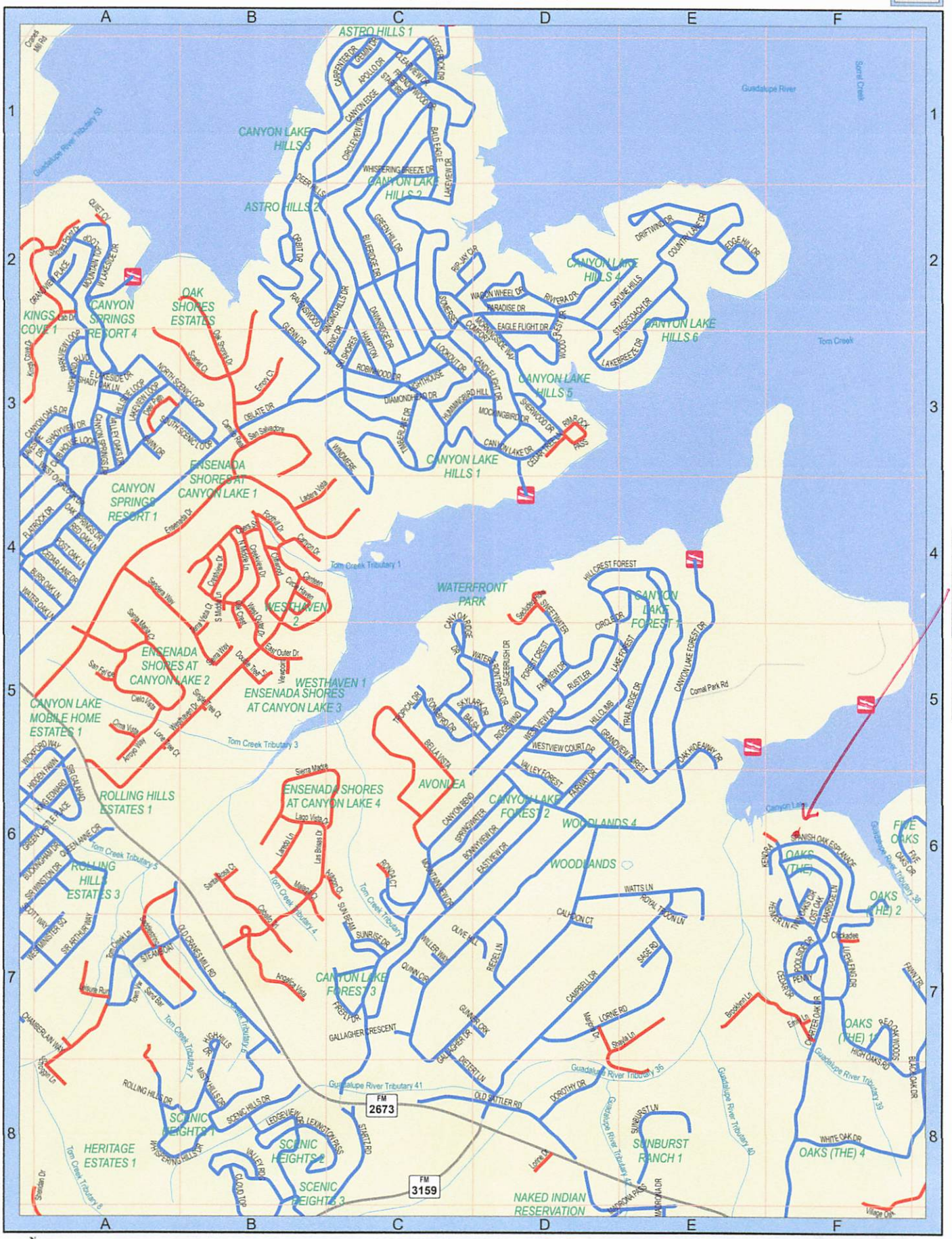
AFTER RECORDING RETURN TO:
EMILY H. STAATS
169 SPANISH OAKS ESPLANADE, CANYON LAKE,
COMAL COUNTY, TEXAS 78133

PREPARED IN THE LAW OFFICE OF:
BEADLES, NEWMAN & LAWLER
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
3500 HULEN STREET
FORT WORTH, TEXAS 76107

Filed and Recorded
Official Public Records
Joy Streater, County Clerk
Comal County, Texas
04/28/2009 10:11:03 AM
CASHTHREE
200906014005

Joy Streater

↑ SEE PAGE 28 ↑



N W E S

0 1,250 2,500 Feet

0 0.25 0.5 Miles

Produced by the Comal County Engineer's Office - 7/17/2023