Comal County Environmental Health
OSSF Inspection Sheet

Installer Name: THOMAS, ROBERT **OSSF Installer #:** OS0026998

1st Inspection Date: 10/16/25 **2nd Inspection Date:** _____ **3rd Inspection Date:** _____

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

Permit#: 118373 **Address:** 7008 CIRCLE OAK DR

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: 10/16/25 CH:

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		Aqua Aire 600; as per design	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		285.33(c)(3)(A)-(F)				
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)	x	285.33(d)(6) 285.33(c)(4)	Surface spray	x		
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						

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 X	285.33(d)(2)(G) (i)285.33(d)(2) (A)285.33(d)(2)(F)		X 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:	118373
Issued This Date:	03/11/2025
This permit is hereby given to:	ROGELIO IBARRA

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

7008 CIRCLE OAK DR
CITY OF BULVERDE, TX 78163

Subdivision:	OAK VILLAGE NORTH
Unit:	3
Lot:	724
Block:	NA
Acreage:	1.1600

APPROVED MINIMUM SIZES AS PER ATTACHED DESIGN

Type of System:	Aerobic
	Surface 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 3:56 pm, Feb 10, 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 2-5-2025 Permit Number 118373

1. APPLICANT / AGENT INFORMATION

Owner Name	ROGELIO O. IBARRA	Agent Name	Nicholas Kolbe
Mailing Address	5531 RANDOLPH BLVD	Agent Address	1825 FM 2438
City, State, Zip	SAN ANTONIO TX 78233	City, State, Zip	SeguinTX 78155
Phone #	210-884-4615	Phone #	830-708-9065
Email	RIBARRA.ESI@GMAIL.COM	Email	KolbeLandCo@Gmail.com

2. LOCATION

Subdivision Name OAK VILLAGE NORTH Unit 3 Lot 724 Block NA

Survey Name / Abstract Number _____ Acreage 1.16

Address 7008 CIRCLE OAK DR. City BULVERDE State TX Zip 78163

3. TYPE OF DEVELOPMENT

☒ Single Family Residential

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

Number of Bedrooms 3

Indicate Sq Ft of Living Area <3500

☐ 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: $ 250,000.00 (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

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.

Rogelio O. _____ 2/10/2025

Signature of Owner Date

Revised January 2021

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 Nicholas Kolbe

System Description Aerobic Treatment with SPRAY DISTRIBUTION

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

Tank Size(s) (Gallons) 600 GPD ATU Absorption/Application Area (Sq Ft) 5280 SQFT ABS.

Gallons Per Day (As Per TCEQ Table III) 300

(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: BULVERDE

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 Date 2.7.25

Revised March 2024

REVISED
9:18 am, Mar 11, 2025

Maintenance Service Provider
15188 FM 306
Canyon Lake, TX 78133
Office (830)964-2365

AEROBIC SERVICES

SERVICE ADDRESS	*Installer*	*TERM*
7008 Circle Oak Dr. Bulverde, TX 78163	King Septic	2 year

Routine Maintenance and Inspection Agreement

This Work for Hire Agreement (hereinafter referred to as this "Agreement") is entered into by and between King Septic; (referred to as "Client") and Aerobic Services of South Texas (Thomas W. Hampton MP349) (hereinafter referred to as "Contractor") are located at 15188 FM 306 Canyon Lake, Texas 78133 (830) 964-2365. By this Agreement, the Contractor agrees to render professional service, as described herein, and the Client agrees to fulfill the terms of this Agreement as described herein. This contract will provide for all required inspections, testing, and service for your Aerobic Treatment System. The policy will include the following:

1. 3 inspections a year (at least once every 4 months), this includes inspections of the entire aerobic system, adjustment, and servicing of the mechanical, electrical, and other applicable parts to ensure proper function. This includes inspecting the control panel, air pumps, air filters, and diffuser operation. Any alarm situation affecting the proper function of the Aerobic process will be addressed within a 48-hour time frame. Repair work on non-warranty parts will include price for parts & labor. The prices will be quoted before work is performed.

2. An effluent quality inspection consisting of a visual check for color, turbidity, scum overflow, and examination for odors. A test for chlorine residual and pH will be taken and reported as necessary.

3. If any improper operation is observed, that cannot be corrected during the service visit, you will be notified immediately in writing of the conditions and estimated date of correction.

4. If the system is a spray field application the Property Owner will be responsible for the chlorine. The chlorine must be filled before or during the service visit. Aerobic systems with a drip field do not require chlorine.

5. Any additional visits, inspections or sample collection required by specific Municipalities, Water/River Authorities, and County Agencies the TCEQ, or any other authorized regulatory agency in your jurisdiction will be covered by this policy. BOD and TSS testing is covered by this contract.

The Property Owner Manual must be strictly followed or warranties are subject to invalidation. Pumping of sludge build-up is not covered by this policy and will result in additional charges.

ACCESS BY CONTRACTOR

The Contractor or anyone authorized by the Contractor may enter the property at reasonable times without prior notice for the above-described Services. The contractor may access the System components including the tanks through excavation for evaluations if necessary. Soil is to be replaced with the excavated material as best as possible.

Termination of Agreement

Either party may terminate this agreement within ten days with a written notice in the event of substantial failure to perform under its terms by the other party without fault of the terminating party. If this Agreement is so terminated, the Contractor will immediately notify the appropriate health authority of the termination.

REVISED
9:18 am, Mar 11, 2025

Limit of Liability
In no event shall the Contractor be liable for indirect, consequential, incidental, or punitive damages, whether in contract tort or any other theory. In no event shall the Contractor's liability for direct damages exceed the price for the services described in this Agreement.

Dispute Resolution
If a dispute between the Client and the Contractor arises that cannot be settled in good faith negotiations then the parties shall choose a mutually acceptable mediator and shall share the cost of the mediation services equally.

Entire Agreement
This Agreement contains the entire agreement of the parties, and there are no other promises or conditions in any other agreement either oral or written.

Severability
If any provision of this Agreement 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 this 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.

Property Owner
Rogelio O. Ibarra

Name
Rogelio O. Ibarra

Email
ribarra.esi@gmail.com

Service Address
7008 Circle Oak Dr.

Phone
210-884-4615

_____

SIGNATURE

SERVICE PROVIDER

Aerobic Services of South Texas LLC.

15188 FM 306 Canyon Lake, TX 786133

(830) 964-2365

_
Signature of Service Provider and License #
[Thomas Hampton, OS0024597 / MP0000349]

AEROBIC SERVICES

EFFECTIVE DATE _ _license to operate date _____

EXPIRED DATE__2 yrs from license to operate date_____

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

1/c

AFFIDAVIT TO THE PUBLIC

THE COUNTY OF COMAL
STATE OF TEXAS

202506003806 02/10/2025 11:54:25 AM 1/1

CERTIFICATION OF OSSF REQUIRING MAINTENANCE

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

I

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

II

An OSSF requiring a maintenance contract, according to 30 Texas Administrative Code §285.91 (12) will be installed on the property described as (insert legal description):

Lot 724 of the Oak Village North Unit 3 Subdivision

The property is owned by (insert owner's full name): Rogelio O. Ibarra

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 treatment system for a single family residence shall either obtain a maintenance contract within 30 days or maintain the system personally.

Upon sale or transfer of the above-described property, the permit for the OSSF shall be transferred to the buyer or new owner. A copy of the planning materials for the OSSF can be obtained from the Comal County Engineer's Office.

WITNESS BY HAND(S) ON THIS 4th DAY OF February, 20 25

Rogelio Ibarra

Rogelio O Ibarra

Owner(s) signature(s) Rogelio O. Ibarra

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS 4th

February 20 25

E Rivera

Notary Public, State of Texas

ERIKA IBARRA-RIVERA
Notary Public
STATE OF TEXAS
ID# 132132681
My Comm. Exp. August 12, 2027

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
02/10/2025 11:54:25 AM
TAMMY 1 Page(s)
202506003806

Bobbie Koepp

OSSF Soil & Site Evaluation

Page 1 (Soil & Site Evaluation) **Date Performed:** 2/5/2025

Property Owner: Rogelio O. Ibarra

Site Location: 7008 Circle Oak Dr. Bulverde TX 78163 Proposed Excavation Depth: NA

REQUIREMENTS: Property ID: 43013

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area. Locations of soil borings 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 disposal field excavation depth. For surface disposal, the surface horizon must be evaluated. Describe each soil horizon and identify any restrictive features on this form. Indicate depths where features appear.

Soil Boring Number: 1 & 2					
Depth (Feet)	**Texture Class**	**Gravel Analysis (If Applicable)**	**Drainage (Mottles/ Water Table)**	**Restrictive Horizon**	**Observations**
1 FT.	1A	Over 30% at surface	Well Drained	Rock	Aerobic Spray
2 FT.					
3 FT.					
4 FT.					
5 FT.					

Soil Boring Number:					
Depth (Feet)	**Texture Class**	**Gravel Analysis (If Applicable)**	**Drainage (Mottles/ Water Table)**	**Restrictive Horizon**	**Observations**
1 FT.					
2 FT.					
3 FT.					
4 FT.					
5 FT.					

FEATURES OF SITE AREA

Presence of 100 year flood zone	☒ Yes	☐ No
Presence of upper water shed	☐ Yes	☒ No
Presence of adjacent ponds, streams, water impoundments	☒ Yes	☐ No
Existing or proposed water well in nearby area (within 150 feet)	☐ Yes	☒ No
Ground Slope	3-5 %	

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

(Signature of person performing evaluation)	2/5/2025 (Date)	OS0036987 Registration Number and Type

Form # PA3/2-2004-Revised-Final

Page 2 (Soil & Site Evaluation):

Date Performed: 2/5/2025

Site Location: 7008 Circle Oak Dr. Bulverde TX 78163 ☐ Subsurface Disposal ☒ Surface Disposal

Schematic of Lot or Tract

Show:

Compass North, adjacent streets, property lines, property dimensions, location of buildings, easements, swimming pools, water lines, and any other structures where known.
Location of existing or proposed water wells within 150 feet of the property.
Indicate slope or provide contour lines from the structure to the farthest location of the proposed disposal field.
Location of soil boring or excavation pits (show location with respect to a known reference point).
Location of natural, constructed, or proposed drainage ways (ditches, streams, ponds, lakes, rivers, etc.), water impoundment areas, cut or fill bank, sharp slopes and breaks.

Lot Size: _____ or Acreage: 1.16

SITE DRAWING

See Design

Nicholas Kolbe, R.S. 5115
1825 FM 2438
Seguin, Texas 78155
Mobile (830) 708-9065 KolbeLandCo@Gmail.com

OSSF DESIGN

Owner: **Rogelio O. Ibarra**
Location: **7008 Circle Oak Dr. Bulverde TX 78163**
Phone: **210-884-4615 210-760-0371 ribarra.esi@gmail.com**
Date: **2/5/2025**

Development: **Residence with water saving devices** Bedrooms: **3** Sq. Ft living: **<3500**
GPD = 300

Q: **300 gpd** Soil: **Type IA** R_i: **0.064 gall/ft²/day**

System Type: **Aerobic/Surface Application (AA600W-4075)**
Trash Tank: 400 gall Aerobic Tank: 694 gpd Pump Tank: 750 gall
Supply Line: **Sch 40, 1" purple (~126')** Check Valve Required: **YES**
Minimum Application Area (A): **= 4688** ft² ($A = Q/R_i$)

2.7.25
STATE OF TEXAS
Nicholas Kolbe
5115
REGISTERED
PROFESSIONAL SANITARIAN

Sprinklers: **K-Rain Super Pro 10003-RCW**

Number	Nozzle	PSI	Pattern	Radius	Area/head	GPM/head	R_i
S1	**#3**	**30**	**360°**	**29 ft**	**2640 ft²**	**3.0**	**0.064**
S2	**#3**	**30**	**360°**	**29 ft**	**2640 ft²**	**3.0**	**0.064**

Overlap Area: 0sqft Actual Application Area: **5280 ft²** GPM: **6.0 GPM**

Pump Requirements: **6.0 GPM @ 79.69ft TDH** Pump Used: **StaRite, 20 GPM ½ HP**

- **Elevation Head = 5ft**
- **Pressure Head = 30 psi x 2.30 = 69ft**
- **Friction Head of 126ft of 1" Sch 40 = 126ft x 0.0452 = 5.69 ft**
- **Total Dynamic Head (TDH) = 5 + 69 + 5.69 = 79.69 (StaRite 20GPM ½ HP)**
- **Timer set to spray between 12:00 AM & 5:00 AM**
- **Liquid chlorinator required**

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

NOTES

REVISED
11:54 am, Mar 05, 2025

1. The Designed OSSF is meant to accommodate a maximum flow of 300 GPD for a 3 bedroom less than 3500 sqft home. Overuse of 300 GPD may result in system failure.
2. ***The Entirety of septic system shall be installed without the addition of any additional fill material.***
3. ***The septic tank shall be completely filled with water immediately when/once placed into the excavation hole to reduce the risk of floatation.***
4. ***All electronic components to include the control panel and blower/air compressor shall be elevated to 1' above the Base Flood Elevation level. (1015.15ft minimum)***
5. Install a 2-way cleanout in a 3" or 4" tightline between the house and the tank, slope 1/8in/ft. Tightline shall be 3" or 4" SCH 40 PVC. Approx. 10' between tank and home (A).
6. ***Install a backflow prevention valve between the home and the ATU (A).***
7. ATU is a minimum 600 gpd ATU (B).
8. Supply line to sprinklers is purple 1" sch 40, 126' (C).
9. ***Install a backflow prevention Check Valve inside the pump tank where the 1" SCH 40 Purple PVC leaves the pump to prevent treated water from flowing back into the tank.***
10. S1-S2 are K-Rain Proplus low angle sprinklers with #3 nozzles operating @ 30psi, 29' radius. All operating at 360 degree radiuses. All sprinklers have a GPM flow of 3.0. Total GPM flow is 6.0.
11. There shall be no obstructions within 10' of the sprinkler heads.
12. Audible & visual alarms, external disconnect within site of the pump tank, pump & alarms on separate breakers and external wiring in conduit are required.
13. Timer set to spray between 12:00 AM & 5:00 AM.
14. ***The reserve capacity (1/3) of the daily flow for this system is 100 gallons***
15. Liquid chlorinator required.
16. Any excavations and/or exposed rock in the disposal area shall be covered with topsoil and seasonal grasses shall be seeded over the disposal rea in order to minimize run-off & erosion. Erosion cloth is acceptable.
17. No part of the septic system absorption field is within 150' of any sensitive recharge feature. No part of the On Site Sewage Facility treatment tank is within 50' of any sensitive recharge feature.
18. ***Waterline to be sleeved in sch 40 where it is located <10' from any OSSF element or spray area in order to provide the equivalent protection of a 10' separation in compliance with TAC Chapter 290, Subchapter D, Rules for Public Drinking Water Systems.***
19. ***All OSSF elements with the exception of cleanouts, risers, and inspection ports shall be completely covered without adding fill.***
20. ***Should the tank be completely pumped out for servicing/maintenance, the tank shall be complete filled back with water after pumping.***
21. ***Proper installation and adherence to the OSSF installation plan shall insure that the OSSF will not be damaged during a flood event and no contamination of the environment shall occur.***
22. ***The system has been designed and to be installed per design so that it will not be damaged in a flood event resulting in contamination of the environment.***

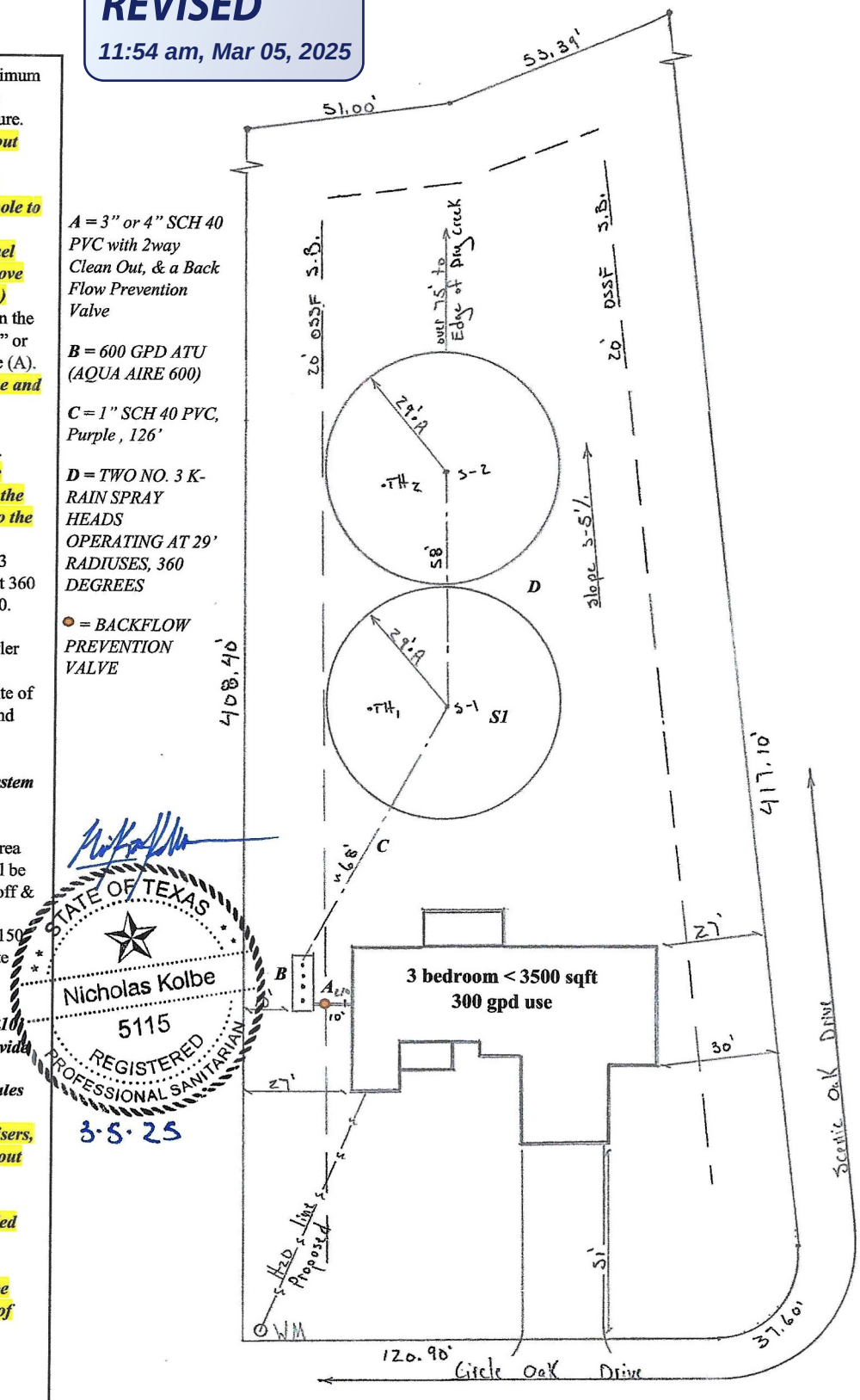
A = 3" or 4" SCH 40 PVC with 2way Clean Out, & a Back Flow Prevention Valve

B = 600 GPD ATU (AQUA AIRE 600)

C = 1" SCH 40 PVC, Purple , 126'

D = TWO NO. 3 K-RAIN SPRAY HEADS OPERATING AT 29' RADIUSES, 360 DEGREES

● = *BACKFLOW PREVENTION VALVE*



STATE OF TEXAS
Nicholas Kolbe
5115
REGISTERED
PROFESSIONAL SANITARIAN
3·5·25

Contributing Zone Plan (CZP) Notes

A CZP is not required for this house location because the home is a single-family dwelling with less than 20% impervious cover.

Legal: Lot 724 of the Oak Village North Unit 3 Subdivision

Pro. ID # 43014

Entirety of Property and Septic ARE located within 100YR Flood Plain.

SITE PLAN & OSSF DESIGN:

Rogelio O. Ibarra **7008 Circle Oak Dr.** **Bulverde TX 78163**	
Nicholas Kolbe, R.S. #5115 1825 FM 2438 Seguin, TX 78155	Date: 2/5/2025 Scale: 1"= 50'

ANTI-FLOTATION CALCULATIONS

Model AA600W-4075 Buoyancy calculations

Dimensions: L162" x W69" x H69" = 771,282 / (1728 in^3/ft^3)

Total Displacement Volume: 447 ft^3

Buoyant Force: (447ft^3)(62.4 lbs/ft^3) = **27,893 lbs**

Pre-treatment Volume in Tank: (L30" x W69" x H59") / (1728 in^3/ft^3) = 71ft^3

Weight of Volume: (71 ft^3)(62.4 lbs/ft^3) = **4430.4 lbs**

Aeration and Clarifying volume in tank: (L74" x W69" x H59") / (1728 in^3/ft^3) = 174.3ft^3

Weight of Volume: (174.3 ft^3)(62.4 lbs/ft^3) = **10878.6 lbs**

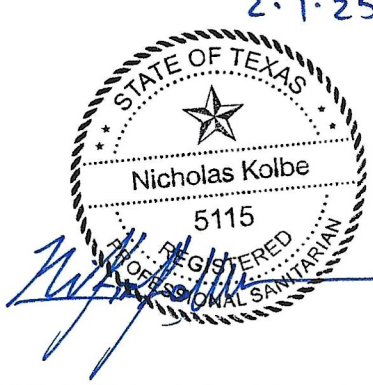
Residual Volume in Pump Tank: H18" x W69" x 54" /(1728 in^3/ft^3) = 38.8 ft^3

Weight of Residual Volume: (38.8 ft^3)(62.4 lbs/ft^3) = **2422 lbs**

Empty Weight of Tank: **12,000 lbs**

Total Weight of Tank: (12,000 lbs) + (17731 lbs) = **29,731 lbs** (Exceeds buoyant force)

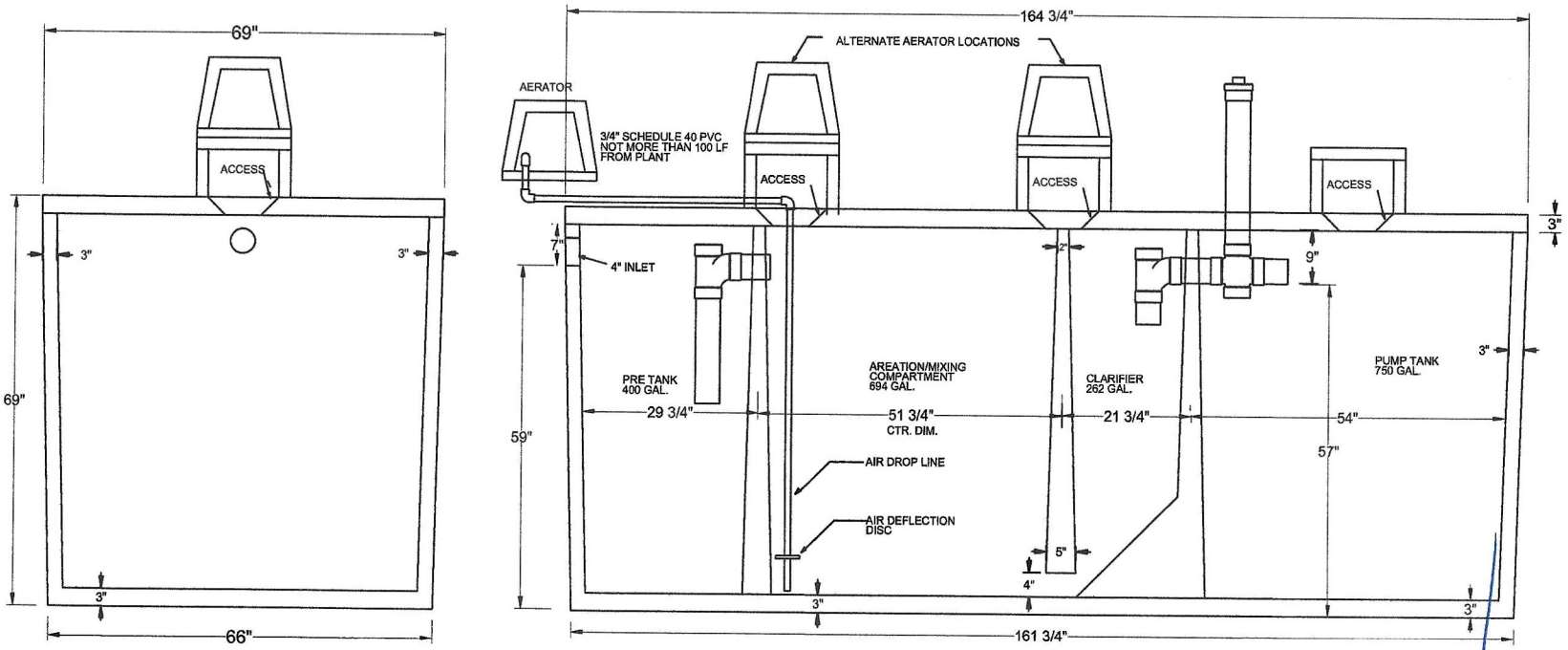
2.7.25



ROGELIO O. IBARRA **7008 CIRCLE OAK DR.** **BULVERDE TX 78163**	
Nicholas Kolbe, R.S. #5115 1825 FM 2438 Seguin, TX 78155	Date: 2/5/2025 Scale: 1"= NA

Q = 300 GPD OR LESS 54" FROM BOTTOM OF TANK TO BOTTOM OF INLET GALLONS PER INCH = 13.88 GPI

PUMP OFF: 8" (111.11 GALLONS)
PUMP ON : 16" (111.11 GALLONS)
HIGH WATER ALARM ON: 38" (305.36 GALLONS)
HIGH WATER ALARM TO BOTTOM OF INLET: 54" - 38" = 16" = 222.08 GALLONS (NEED 100 GALLONS FOR RESERVE)



ALL DIMENSIONS IN INCHES

Reinforcement Notes:

BOTTOM: 6x6 W2.9xW2.9 (6 gage) with 3/8" rods at 12" OC each way turned 12" into sidewalls

TOP: 6x6, W2.9xW2.9 (6 Gage) Welded Wire Fabric with 3/8" at 12" OC each way

SIDEWALLS: 6x6, W1.4xW1.4 (10 gage) Welded Wire Fabric with 3/8" rods at 20" OC horizontally.

INTERIOR WALLS: 6x6, W1.4xW1.4 (10 Gage) Welded Wire Fabric

DESCRIPTION:
MODEL AA600W-4075

Treatment Capacity: 600 GPD

BOD Loading: 1.50 #/DAY

DWG REF: D-TA-xxx	REV: 0	DATE: 10/10/06	SCALE: FULL	ENG: JKC

ECOLOGICAL TANKS, INC
2247 HWY 151 NORTH
DOWNSVILLE, LA 71234
318-644-0397 OFFICE
318-644-7257 FAX

STA-RITE® ST.E.P Plus D Series

4" multi-stage submersible effluent pumps

The ST.E.P Plus D Series 4" submersible pump in 10, 20 and 30 GPM models dominate with superior "draw-down" capability.

The ST.E.P Plus D Series 4" submersible pump dominates with reduced amp draw.

The ST.E.P Plus D Series 4" submersible pump dominates with cooler and quieter operation.

APPLICATIONS

Clean and Gray Water... for residential, commercial, and agricultural use.

SPECIFICATIONS

Motor – Available in 115 or 230 volt versions. Dry-wound, double ball-bearing, double-seal and thermal overload protected, UL and CSA approved.

Shell – Stainless steel (300 grade)

Discharge – 1-1/4" Fiberglass-reinforced thermoplastic

Discharge Bearing – Nylatron®

Impellers – Acetel

Diffusers – Polycarbonate

Suction Caps – Polycarbonate with stainless steel wear ring

Thrust Pads – Proprietary spec.

Shaft and Coupling – Stainless steel 300 grade

Intake – Fiberglass-reinforced thermoplastic

Intake Screen – Stainless steel

Jacketed Cord – 600 Volt "SJOW" jacketed 10' leads, 2-wire with ground

Agency Listing – CSA

FEATURES

ST.E.P. Plus DOMINATES with a...

Proven Stage System – The proven SignaSeal staging system utilizes a patented ceramic wear surface. When incorporated with STA-RITE's "true" independent floating impellers, dominates with 1st-in-class performance, superior sand handling, and a thrust management staging system with industry exclusive "dry-run" capabilities.

Superior "draw-down" capability – The ST.E.P. Plus Dominates in this class with the lowest draw-down of 4-1/2" (a standard 4" NEMA submersible only draws-down to 13-1/2").

Reduced amp draw – The ST.E.P. Plus Dominates in this class with less energy consumption – over 25% less amp draw (9.5 amps vs. 12.7 amps, 115 volt) than a 4" NEMA submersible, reducing operating costs and extending the service life of float switch contacts.

Cooler and quieter operation – The ST.E.P. Plus Dominates by using the pumped liquid to cool the motor as it passes over the motor. The water passing over the motor dampens the motor noise, eliminating expensive "flow-inducer sleeves" required when using a standard 4" NEMA submersible.

Impellers – Precision molded for perfect balance... ultra smooth for the highest performance and efficiency. Allows for .080" solids.

Shaft – Positive drive, hexagonal 7/16" – 300-grade stainless steel shaft offers generous impeller drive surfaces.

Shaft bearing – Exclusive self-lubricating Nylatron® bearing resists wear surface from sand and abrasives.

Shell – Corrosion resistant 300-grade stainless steel.

ORDERING INFORMATION

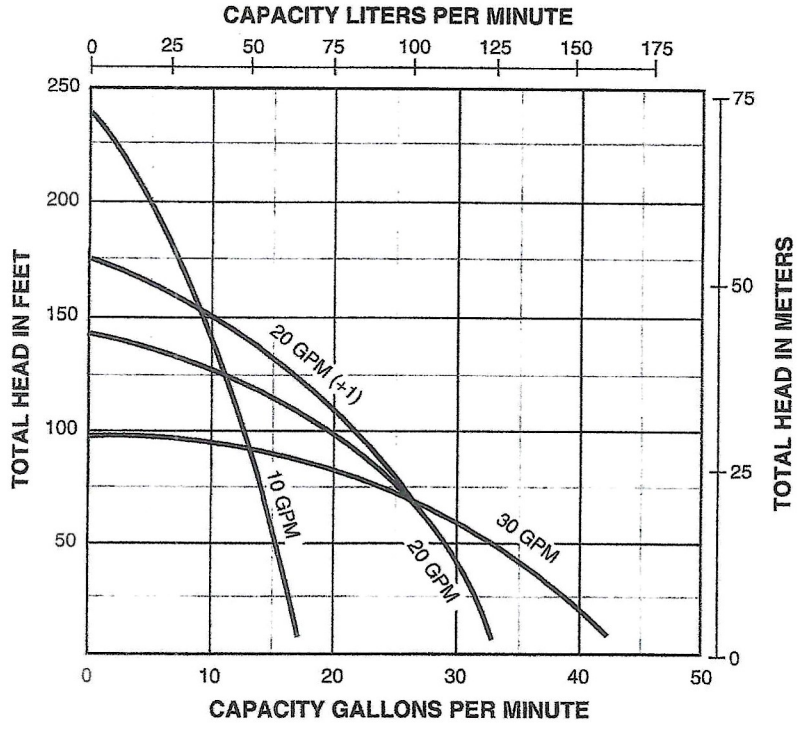
CATALOG NUMBER	HP	MAX. LOAD AMPS	VOLTS	PHASE/ CYCLES	CORD LENGTH	PALLET QUANTITY	WEIGHT (LBS.)
10DOM05221	1/2	5.5	230	1/60	10'	80	16
10DOM05121	1/2	11.0	115	1/60	10'	80	16
20DOM05221	1/2	4.6	230	1/60	10'	80	16
20DOM05121	1/2	9.5	115	1/60	10'	80	16
30DOM05221	1/2	4.6	230	1/60	10'	80	16
30DOM05121	1/2	9.5	115	1/60	10'	80	16
20DOM05221+1	1/2	5.3	230	1/60	10'	80	16
20DOM05121+1	1/2	10.6	115	1/60	10'	80	16

In order to provide the best products possible, specifications are subject to change.

STA-RITE® ST.E.P Plus D Series

4" multi-stage submersible effluent pumps

PUMP PERFORMANCE



PUMP PERFORMANCE (CAPACITY IN GALLONS PER MINUTE)

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

PUMP PERFORMANCE (CAPACITY IN LITERS PER MINUTE)

PUMP MODEL	FLOW RATE (LPM)	BAR											
		.69	1.38	2.07	2.76	3.45	4.13	4.82	5.51	6.20	6.89	7.58	110
10DOM05221	37.85			56.8	51.9	48.1	43.5	38.6	31.8	24.6	16.3	3.8	
10DOM05121	37.85			56.8	51.9	48.1	43.5	38.6	31.8	24.6	16.3	3.8	
20DOM05221	75.7			113.6	98.4	81.4	53.7	16.7					
20DOM05121	75.7			113.6	98.4	81.4	53.7	16.7					
30DOM05221	113.55		145.7	126.0	97.7	60.6							
30DOM05121	113.55		145.7	126.0	97.7	60.6							
20DOM05221+1	75.7 + 1			113.4	103.9	90.7	75.6	51.0	22.6				
20DOM05121+1	75.7 + 1			113.4	103.9	90.7	75.6	51.0	22.6				

ProPlus™ Gear Driven Sprinkler Setting Instructions

NOTE: The ***ProPlus*** is factory preset with a 90° arc setting, and includes a pre-installed #2.5 nozzle.

CHANGING A NOZZLE

1▶ REMOVING THE NOZZLE RETENTION SCREW

Use your K-Key or a small flat blade screwdriver to remove the nozzle retention screw by turning counter-clockwise to remove and clockwise to re-install.

2▶ PULL UP THE RISER

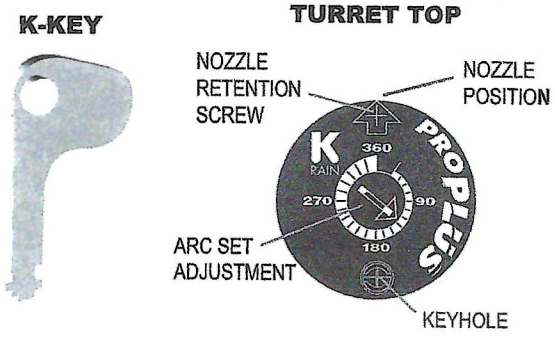
Insert the k-Key in the keyhole on the top of the nozzle turret and turn the key 1/4 turn to insure that the key does not slip out of the keyhole when you pull it up. Firmly pull up the entire spring-loaded riser to access the nozzle socket. Hold the riser assembly with one hand.

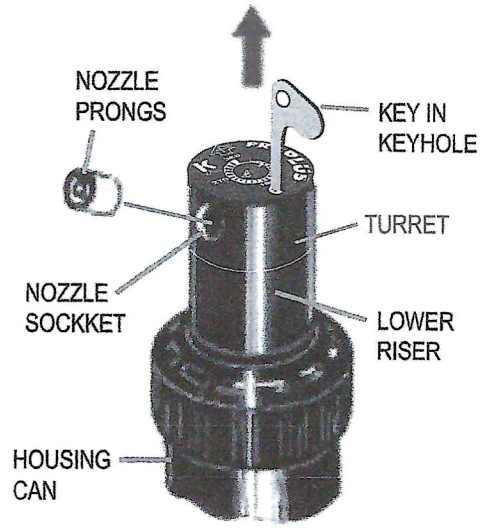
3▶ REMOVING THE NOZZLE

With the nozzle retention screw removed, insert the K-Key into the slot directly under the nozzle "prongs" at the top of the mozzle. Now, turn the key 1/4 turn to "hook" the nozzle and pull the nozzle out.

4▶ INSTALLING A NOZZLE

Press the desired nozzle into the nozzle socket. Make sure the nozzle number is visible and the nozzle "prongs" are up. Then, re-install the nozzle retention screw. **NOTE:** The nozzle retention screw is also a break-up screw and used to adjust the distance of the spray.





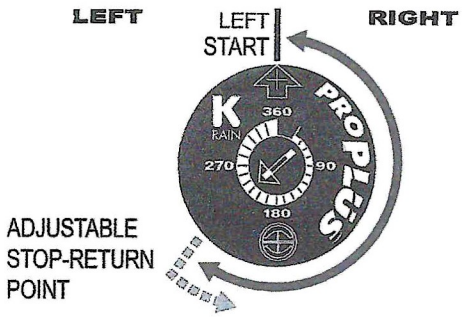
SETTING THE ARC ADJUSTMENT

1▶ FINDING THE LEFT START POSITION

Place your finger on the top center of the nozzle turret. Rotate the turret to the right until it stops and then back to the left until it stops. Notice the position of the nozzle arrow. This is the "Left Start" position. The sprinkler will begin spraying from this position and rotate clockwise until it reaches the right Adjustable Stop-Return Point.

2▶ ORIENTING THE LEFT START POSITION

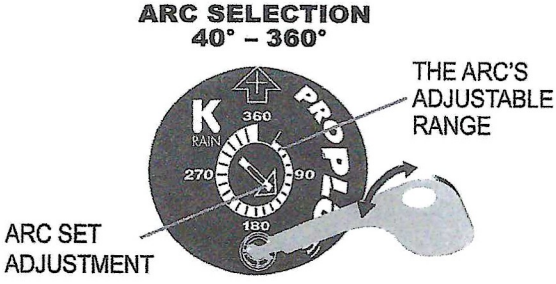
Insert the K-Key in the keyhole on the top of the nozzle turret and turn the key ¼ turn to insure that the key does not slip out of the keyhole when you pull it up. Being careful not to allow the nozzle turret to turn, firmly pull up the entire spring-loaded riser. Hold the lower riser assembly up with one hand. Now turn only the lower riser clockwise or counter-clockwise until the nozzle arrow is pointing where you want the sprinkler to begin spraying.



3▶ CHANGING THE ARC

Insert the K-Key or a small flat blade screwdriver into the Arc Set Adjustment slot. Turn clockwise to increase the arc or counter-clockwise to decrease the arc.

WHEN SET AT 360°, THE *PROPLUS* WILL ROTATE CONTINUOUSLY IN A CLOCKWISE DIRECTION.



ProPlus™ Gear Driven Sprinkler Setting Instructions

SPRINKLER INSTALLATION

1 ▶ INSTALL AND BURY

Do not use pipe dope. Thread the sprinkler on the pipe. Bury the sprinkler flush to grade. **NOTE:** Gear driven sprinklers and pop-up sprays should not be installed on the same watering zone.

2 ▶ INSPECTING THE FILTER

Unscrew the top and lift the complete sprinkler assembly out of the housing can. The filter is located on the bottom of the sprinkler assembly and can be easily pulled out, cleaned and re-installed.

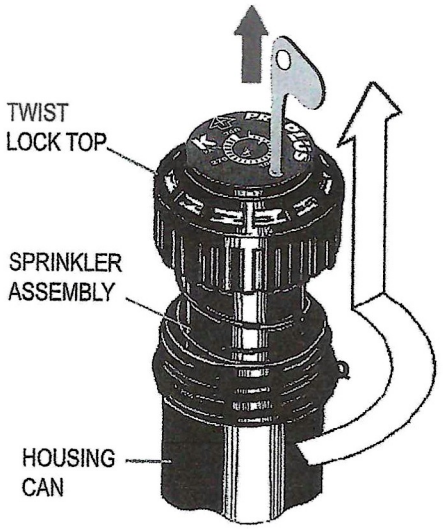
3 ▶ WINTERIZATION TIPS

When using an air compressor to remove water from the system please note the following:

a. Do not exceed 30 PSI.

b. Always introduce air into the system gradually to avoid air pressure surges. Sudden release of compressed air into the sprinkler can cause damage.

c. Each zone should run no longer than 1 minute on air. Sprinklers turn 10 to 12 time faster on air than on water. Over spinning rotors on air can cause damage to the internal components.



PERFORMANCE DATA

NOZZLE	PRESSURE			RADIUS		FLOW RATE			PRECIP in/hr / mm/hr			
	PSI	kPa	Bars	Ft.	M.	GPM	L/M	M³/H	■	▲	■	▲
#0.5	30	207	2.1	28	8.5	0.5	1.9	0.11	0.12	0.14	3	4
	40	276	2.8	29	8.8	0.6	2.3	0.14	0.14	0.16	3	4
	50	345	3.5	29	8.8	0.7	2.7	0.16	0.16	0.19	4	5
	60	414	4.1	30	9.1	0.8	3.0	0.18	0.17	0.20	4	5
#0.75	30	207	2.1	29	8.8	0.7	2.7	0.16	0.16	0.19	4	5
	40	275	2.8	30	9.1	0.8	3.0	0.18	0.17	0.20	4	5
	50	344	3.4	31	9.4	0.9	3.4	0.20	0.18	0.21	5	5
	60	413	4.1	32	9.8	1.0	3.8	0.23	0.19	0.22	5	6
#1.0	30	207	2.1	32	9.8	1.3	4.9	0.30	0.24	0.28	6	7
	40	275	2.8	33	10.1	1.5	5.7	0.34	0.27	0.31	7	8
	50	344	3.4	34	10.4	1.6	6.1	0.36	0.27	0.31	7	8
	60	413	4.1	35	10.7	1.8	6.8	0.41	0.28	0.33	7	8
#2.0	30	207	2.1	37	11.3	2.4	9.1	0.55	0.34	0.39	9	10
	40	275	2.8	40	12.2	2.5	9.5	0.57	0.30	0.35	8	9
	50	344	3.4	42	12.8	3.0	11.4	0.68	0.33	0.38	8	10
	60	413	4.1	43	13.1	3.3	11.4	0.68	0.34	0.36	8	9
2.5 Pre-installed	30	207	2.1	38	11.6	2.5	9.5	0.57	0.33	0.38	8	10
	40	275	2.8	39	11.9	2.8	10.6	0.64	0.35	0.41	9	10
	50	344	3.4	40	12.2	3.2	12.1	0.73	0.39	0.44	10	11
	60	413	4.1	41	12.5	3.5	13.3	0.80	0.40	0.46	10	12
#3.0	30	207	2.1	38	11.6	3.6	13.6	0.82	0.48	0.55	12	14
	40	275	2.8	39	11.9	4.2	15.9	0.96	0.53	0.61	14	16
	50	344	3.4	41	12.5	4.6	17.4	1.05	0.53	0.61	13	15
	60	413	4.1	42	12.8	5.0	19.0	1.14	0.55	0.63	14	16
#4.0	30	207	2.1	43	13.1	4.4	16.7	1.00	0.46	0.53	12	13
	40	275	2.8	44	13.4	5.1	19.3	1.16	0.51	0.59	13	15
	50	344	3.4	46	14.0	5.6	21.2	1.27	0.51	0.59	13	15
	60	413	4.1	49	14.9	5.9	22.4	1.34	0.47	0.55	12	14
#6.0	40	276	2.8	45	13.7	5.9	22.4	1.34	0.56	0.65	14	16
	50	344	3.4	46	14.0	6.0	22.7	1.36	0.55	0.63	14	16
	60	413	4.1	48	14.6	6.3	23.9	1.43	0.53	0.61	13	15
	70	482	4.8	49	14.9	6.7	25.4	1.52	0.54	0.62	14	16
#8.0	40	276	2.8	42	12.8	8.0	30.3	1.82	0.87	1.01	22	26
	50	344	3.4	45	13.7	8.5	32.2	1.93	0.81	0.93	21	24
	60	413	4.1	49	14.9	9.5	36.0	2.16	0.76	0.88	19	22
	70	482	4.8	50	15.2	10.0	37.9	2.27	0.77	0.89	20	23

LOW ANGLE PERFORMANCE DATA

NOZZLE	PRESSURE			RADIUS		FLOW RATE			PRECIP in/hr / mm/hr			
	PSI	kPa	Bars	Ft.	M.	GPM	L/M	M³/H	■	▲	■	▲
#1.0	30	207	2.1	22	6.7	1.2	4.5	.27	0.48	0.55	12	14
	40	276	2.8	24	7.3	1.7	6.4	.39	0.57	0.66	14	17
	50	345	3.4	26	7.9	1.8	6.8	.41	0.51	0.59	13	15
	60	414	4.1	28	8.5	2.0	7.6	.45	0.49	0.57	12	14
#3.0	30	207	2.1	29	8.8	3.0	11.4	.68	0.69	0.79	17	20
	40	276	2.8	32	9.8	3.1	11.7	.70	0.58	0.67	15	17
	50	345	3.4	35	10.7	3.5	13.2	.80	0.55	0.64	14	16
	60	414	4.1	37	11.3	3.8	14.4	.86	0.53	0.62	14	16
#4.0	30	207	2.1	31	9.4	3.4	12.9	.77	0.68	0.79	17	20
	40	276	2.8	34	10.4	3.9	14.8	.89	0.65	0.75	17	19
	50	345	3.4	37	11.3	4.4	16.7	1.00	0.62	0.71	16	18
	60	414	4.1	38	11.6	4.7	17.8	1.07	0.63	0.72	16	18
#6.0	40	275	2.8	38	11.6	6.5	24.6	1.48	0.87	1.00	22	25
	50	344	3.4	40	12.2	7.3	27.7	1.66	0.88	1.01	22	26
	60	413	4.1	42	12.8	8.0	30.3	1.82	0.87	1.01	22	26
	70	482	4.8	44	13.4	8.6	32.6	1.96	0.86	0.99	22	25

**All precipitation rates calculated for 180° operation.*
For the precipitation rate for a 360° sprinkler, divide by 2.

K-RAIN MANUFACTURING CORP.
1640 Australian Avenue
Riviera Beach, FL 33404 USA
PH: 561.844.1002 / 1.800.735.7246
FAX: 561.842.9493
www.krain.com

Part Number: 1100519 Rev. 01

Friction Loss

SCH 40 – PLASTIC PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

GPM	GPH	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"	10"
		ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
1	60	4.25	1.38	.356	.11									
2	120	15.13	4.83	1.21	.38	.10								
3	180	31.97	9.96	2.51	.77	.21	.10							
4	240	54.97	17.07	4.21	1.30	.35	.16							
5	300	84.41	25.76	6.33	1.92	.51	.24							
6	360		36.34	8.83	2.69	.71	.33	.10						
8	480		63.71	15.18	4.58	1.19	.55	.17						
10	600		97.52	25.98	6.88	1.78	.83	.25	.11					
15	900			49.68	14.63	3.75	1.74	.52	.22					
20	1,200			86.94	25.07	6.39	2.94	.86	.36	.13				
25	1,500				38.41	9.71	4.44	1.29	.54	.19				
30	1,800					13.62	6.26	1.81	.75	.26				
35	2,100					18.17	8.37	2.42	1.00	.35	.09			
40	2,400					23.55	10.70	3.11	1.28	.44	.12			
45	2,700					29.44	13.46	3.84	1.54	.55	.15			
50	3,000						16.45	4.67	1.93	.66	.17			
60	3,600						23.48	6.60	2.71	.93	.25			
70	4,200							8.83	3.66	1.24	.33			
80	4,800							11.43	4.67	1.58	.41			
90	5,400							14.26	5.82	1.98	.52			
100	6,000								7.11	2.42	.63	.08		
125	7,500								10.83	3.80	.95	.13		
150	9,000									5.15	1.33	.18		
175	10,500									6.90	1.78	.23		
200	12,000									8.90	2.27	.30		
250	15,000										3.36	.45	.12	
300	18,000										4.85	.63	.17	
350	21,000										6.53	.84	.22	
400	24,000											1.08	.28	
500	30,000											1.66	.42	.14
550	33,000											1.98	.50	.16
600	36,000											2.35	.59	.19
700	42,000												.79	.26
800	48,000												1.02	.33
900	54,000												1.27	.41
950	57,000													.46
1000	60,000													.50

NOTE: See page 5 for website addresses for pipe manufacturers – there are many types of new plastic pipe available now.

Comal CAD Web Map

2/5/2025, 11:10:23 AM

Parcels

Abstracts

Flood Hazard Area

AE - The base floodplain where base flood elevations are provided.

X - Area of minimal flood hazard

1:1,128

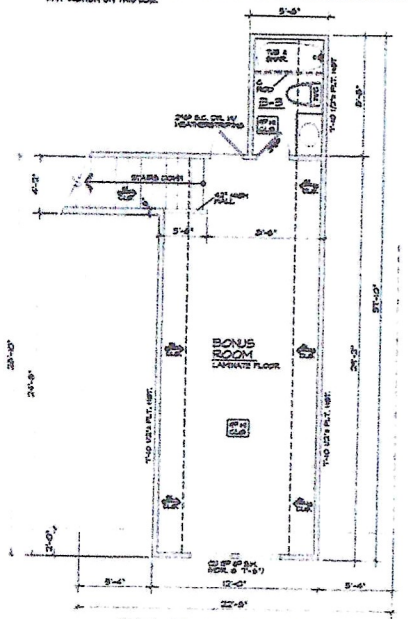
0 0.01 0.01 0.03 mi

0 0.01 0.03 0.05 km

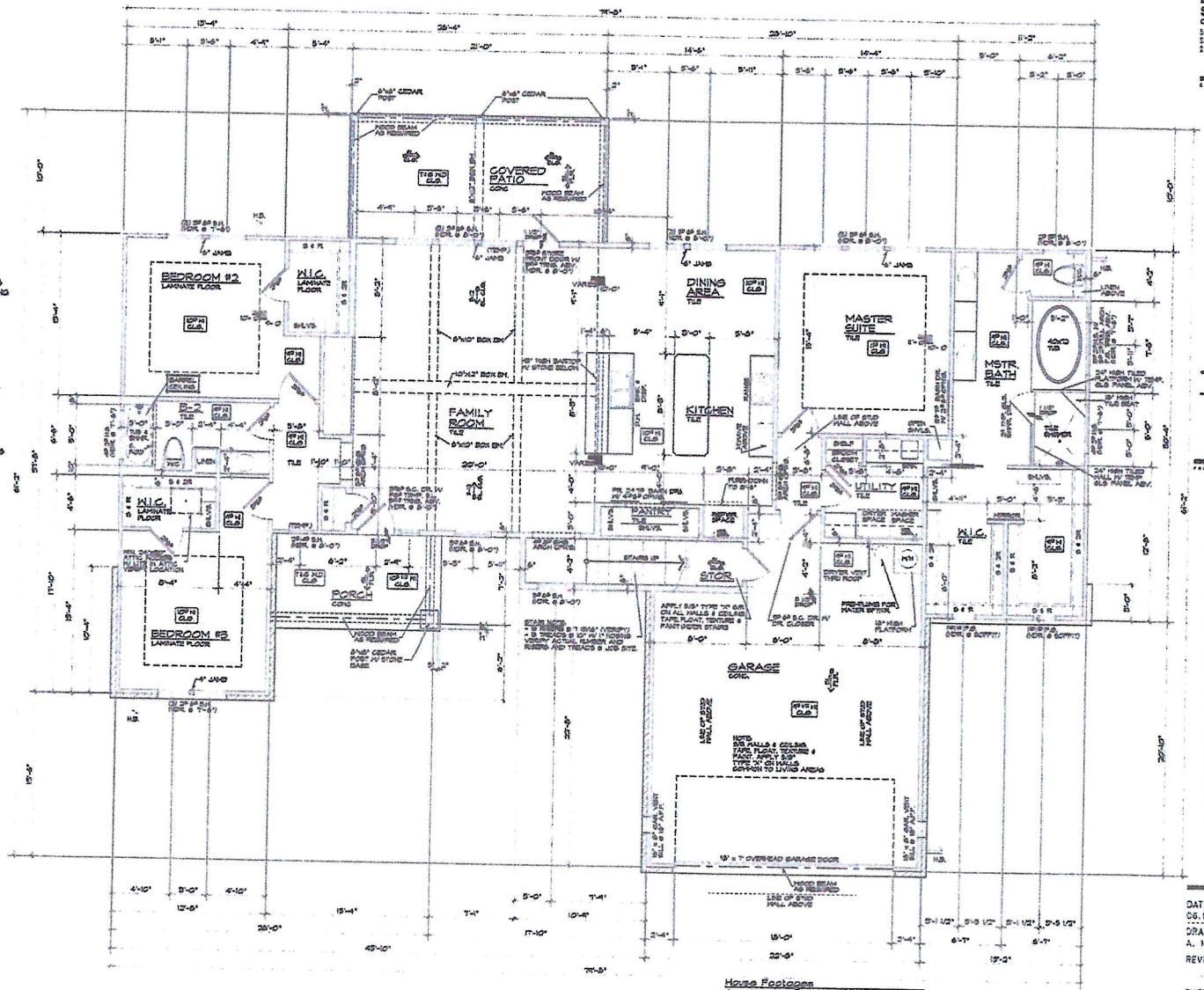
Comal County Appraisal District, BIS Consulting - www.bisconsulting.com

GENERAL NOTES:

1. ALL HELP. WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ITS CORRESPONDENT CODES AND ANY PERTINENT CODES.
2. CONTRACTOR SHALL VERIFY THESE PLANS AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. - ANY DISCREPANCIES SHALL BE COMMUNICATED TO THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.
3. ELECTRICAL CONTRACTOR TO COORDINATE W/ MECH. AND GENERAL CONTRACTOR FOR ALL NECESSARY ELEC. CIRCUITS, PLUGS, ETC. FOR THE JOB.
4. FRAMING BY PRE ENG. TRUSS, JOIST CO. AND GEN. CONTRACTOR SHOULD PROVIDE BEAMS AS SHOWN ON PLANS OR AS NECESSARY.
5. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. AT ALL TIMES.
6. BUILDER TO VERIFY ALL EXISTING GRADES, EASEMENTS, SETBACKS & HOUSE LOCATION PRIOR TO CONSTRUCTION.
7. BUILDER TO VERIFY FIREPLACE ELEVATION W/ OWNER & JOB SITE.
8. MODIFICATIONS TO THE PLANS AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOBSITE CONDITIONS.
9. ALL WINDOWS TO BE LOW "E" GLASS.
10. PROVIDE ALL FRAMING AND STRUCTURAL DESIGN TO 15 m.p.h. WIND CRITERIA AS PER IRC 2018.
11. THIS PLANS CONSTITUTE A "BUILDERS SET" AND THEIR INTENTION IS FOR THE GENERAL CONTRACTOR TO PROVIDE A BUILDING TOTALLY FINISHED WITH NO OMISSIONS AND IN ACCORDANCE W/ THE LATEST EDITION OF ALL PERTINENT BUILDING CODES.
12. ALL FEDERAL, STATE & LOCAL CODES, ORDINANCES, REGULATIONS, ETC., FOR ALL TRADES SHALL BE CONSIDERED AS PART OF THE SPECIFICATIONS & DRAWINGS FOR THIS BUILDING & SHALL TAKE PREFERENCE OVER ANYTHING SHOWN, DESCRIBED OR IMPLIED WHERE VARIANCE OCCUR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING TEMPORARY SAFETY BARRIERS AND RAILS AS REQUIRED DURING CONSTRUCTION BY OSHA, AND LOCAL AUTHORITIES.
14. BUILDER TO PROVIDE FOR ALL NECESSARY CONNECTIONS & PLATFORMS FOR HVAC UNIT IN ATTIC IF NECESSARY. VERIFY LOCATIONS @ JOB SITE.
15. BUILDER TO PROVIDE NECESSARY 24" x30" MIN. ATTIC ACCESS PANEL OR PULL DOWN STAIRS W/ LITES TO ALL ATTIC SP. VERIFY LOCATIONS @ JOB SITE W/ OWNER.
16. BRACE WALLS IN ACCORDANCE W/ THE PRESCRIPTIVE REQUIREMENTS OF SECTION R602.10.3-R602.10.6 AND CHAPTER 23 OF THE IBC.
17. BUILDER/CONTRACTOR AND HIS SURETIES SHALL DEFEND, INDEMNIFY, AND SAVE OR ANY CLAIMS, SUITS, OR ACTIONS FOR INJURY OR DAMAGES OF ANY CHARACTER NAME AND DESCRIPTION INCLUDING ATTORNEYS' FEES EXPENSES BROUGHT BY HARTLEINS ANDRES REDELLIN, CONSULTANTS, ITS OFFICERS, AGENTS, AND EMPLOYEES ANY ACTION ON THIS JOB.



2ND FLOOR PLAN
SCALE: 1/4" = 1'-0"



FLOOR PLAN
SCALE: 1/4" = 1'-0"

House Footages	
A/C Area	2,240ft
Bonus Room	368ft
Total Footage	2,608ft
Garage	650ft
Porch	125ft
Covered Patio	207ft
Total Footage	982ft

CONSTRUCTION GROUP
ENGINEERED SOLUTIONS, INC.
CONSTRUCTION & DESIGN GROUP
5331 Ranchleigh
San Antonio TX, 78233
210-884-4612
REGISTERED PLANNER

DESIGNS

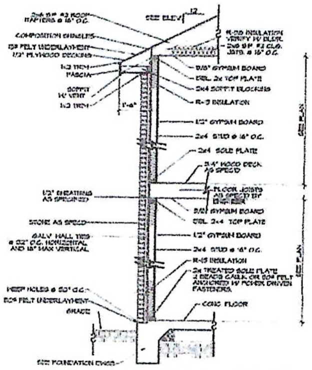
A CUSTOM HOME DESIGN FOR
ENGINEERED SOLUTIONS, INC.
7008 Circle Oak Drive
Bulverde, Texas 78163

DATE: 06.14.2019
DRAWN BY: A. MEDELLIN
REVISION

SHEET: A-2
OF: 5

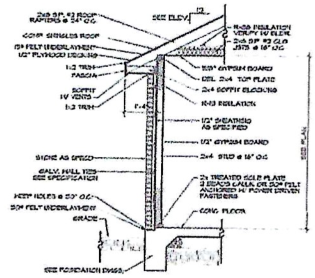
IRC 2018-TABLE R703.8.3.1 — ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

SIZE OF STEEL ANGLE (INCHES)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORY ABOVE	NO. OF 1/2" OR EQUIVALENT REINFORCING BARS
3 X 3 X 1/4	6'-0"	4'-6"	3'-0"	1
4 X 3 X 1/4	8'-0"	6'-0"	4'-6"	1
5 X 3 1/2 X 5/16	10'-0"	8'-0"	6'-0"	2
6 X 3 1/2 X 5/16	14'-0"	9'-6"	7'-0"	2
2-6 X 3 1/2 X 5/16	20'-0"	12'-0"	9'-6"	4



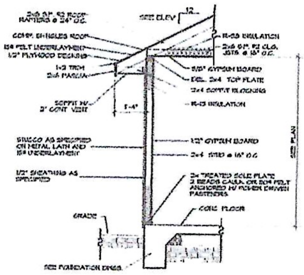
TYP. 2 STORY WALL SECTION

SCALE: 1/2" = 1'-0"



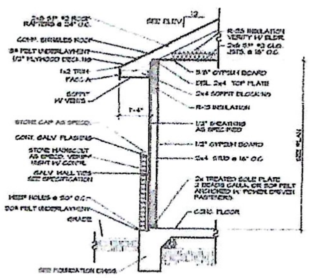
TYP. MASONRY WALL SECTION

SCALE: 1/2" = 1'-0"



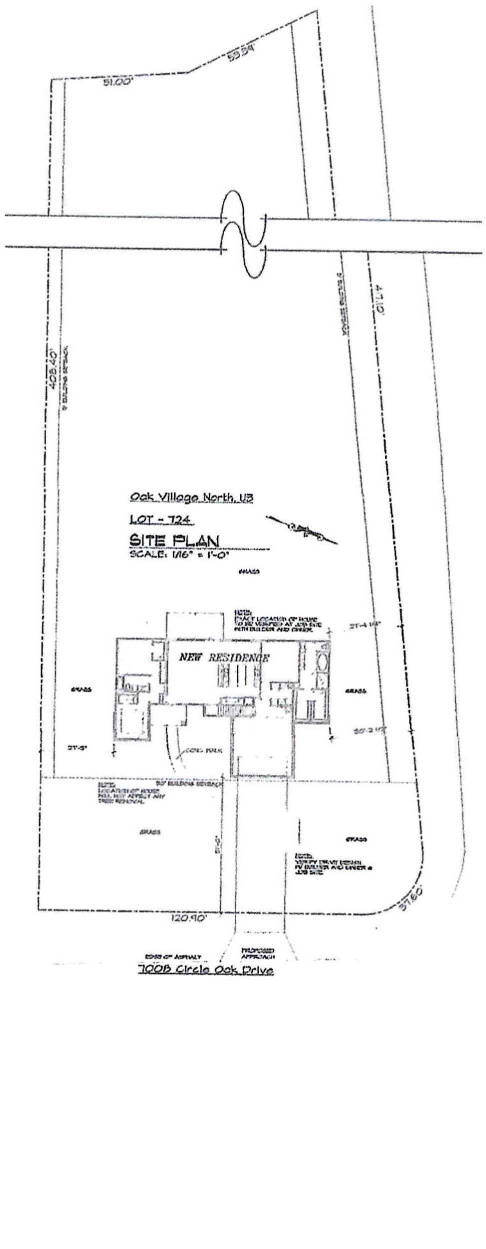
TYP. STUCCO WALL SECTION

SCALE: 1/2" = 1'-0"



TYP. M. WAINSCOT WALL SECTION

SCALE: 1/2" = 1'-0"



Oak Village North, U3

LOT - 724

SITE PLAN

SCALE: 1/16" = 1'-0"

ENGINEERED SOLUTIONS, INC.

CONSTRUCTION & DESIGN GROUP

A DESIGNS

ANDRES A. MEDELLIN

A CUSTOM HOME DESIGN FOR
ENGINEERED SOLUTIONS, INC.
7008 Circle Oak Drive
Bulverde, Texas 78163

DATE: 06.14.2019

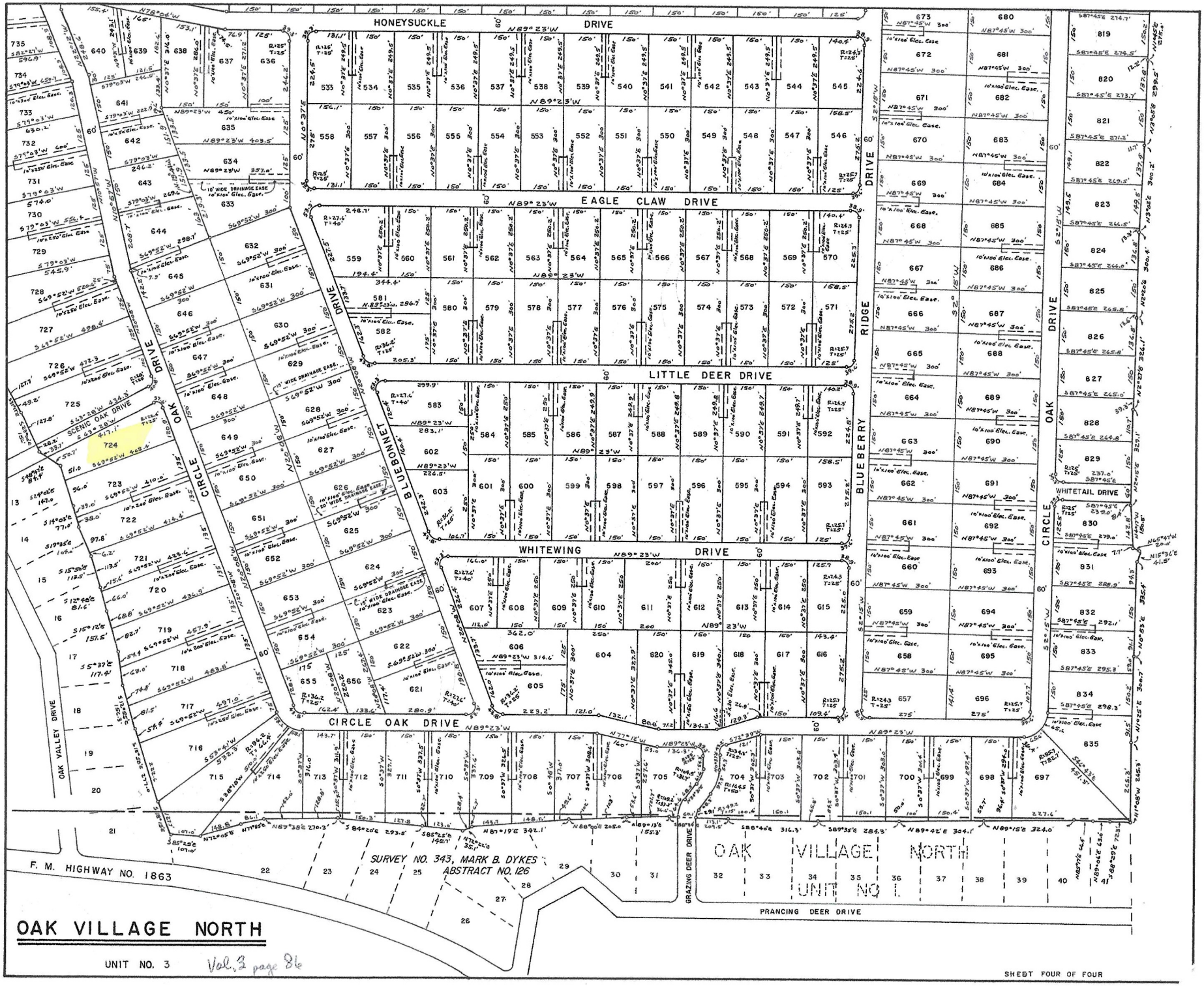
DRAWN BY: A. MEDELLIN

REVISION:

SHEET:

A-1

OF: 5



OAK VILLAGE NORTH

UNIT NO. 3 Vol. 2 page 86

SHEET FOUR OF FOUR

RECEIVED
By Brenda Ritzen at 10:06 am, Mar 05, 2025

PERMIT

PERMIT #: 2024-588

PROJECT ADDRESS: 7008 Circle Oak Drive NSFR

DESIGNATION: Residential

OWNER NAME: Roger Ibarra

PERMIT TYPE: New Single Family (Residential)

ISSUED TO (CONTRACTOR): ESI - Jorge Rivera
5531 Randolph Blvd (210) 760-0371
jrivera.esi@gmail.com

Issued Date: February 18, 2025
Expiration Date: August 17, 2025

STIPULATIONS IF ANY:

THIS PERMIT MUST BE POSTED IN A CONSPICUOUS PLACE ON CONSTRUCTION SITE

From: Ritzen,Brenda
To: Kolbe Land Company
Cc: ribarra.esi@gmail.com
Subject: RE: Permit 118373
Date: Wednesday, March 5, 2025 11:56:00 AM
Attachments: image001.png

Nicholas,

I will await the owner signature on the maintenance contract before further processing of the permit submittal.

Thank you,

COMAL COUNTY TEXAS

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

From: Kolbe Land Company <kolbelandco@gmail.com>
Sent: Wednesday, March 5, 2025 10:27 AM
To: Ritzen,Brenda <rabbjr@co.comal.tx.us>
Cc: ribarra.esi@gmail.com
Subject: Re: Permit 118373

See attached the revision of refilling the tank once/if a pump out occurs for routine maintenance. No. 20

Respectfully,

Nicholas Kolbe
P: (830) 708-9065
E: KolbeLandCo@Gmail.com

TCEQ LIC#: OS0036987, OS0038595 **R.S.#: 5115**

From: Ritzen,Brenda
To: Kolbe Land Company
Cc: ribarra.esi@gmail.com
Subject: RE: Permit 118373
Date: Wednesday, March 5, 2025 10:11:00 AM
Attachments: image001.png

Nicholas,

You have indicated that the tanks must be filled with water to reduce risk of tank flotation, what happens when a tank is pumped as part of servicing?

Thank you,

COMAL COUNTY TEXAS

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

From: Kolbe Land Company <kolbelandco@gmail.com>
Sent: Wednesday, March 5, 2025 7:37 AM
To: Ritzen,Brenda <rabbjr@co.comal.tx.us>
Cc: ribarra.esi@gmail.com
Subject: Re: Permit 118373

See attached here the building permit from the city of Bulverde.

Respectfully,

Nicholas Kolbe
P: (830) 708-9065
E: KolbeLandCo@Gmail.com

TCEQ LIC#: OS0036987, OS0038595 **R.S.#: 5115**

From: Ritzen,Brenda
To: ribarra.esi@gmail.com; Kolbe Land Company
Subject: Permit 118373
Date: Tuesday, March 4, 2025 4:30:00 PM
Attachments: image001.png

Re: Rogelio O. Ibarra
Oak Village North Unit 3 Lot 724
Application for Permit for Authorization to Construct an On-Site Sewage Facility (OSSF)

Owner / Agent :

The following information is needed before I can continue processing the referenced permit submittal:

1. **Submit a copy of the approved building permit from the City of Bulverde, or a letter from the city indicating that a building permit is not required.**
2. **Owner signature needed on the maintenance contract.**
3. **There appears to be a typo on the reserve capacity noted on the design page. 80 gallons indicated, design requires 100 gallons.**
4. **It appears that this property is located within the flood plain. The site evaluation must include this information and the flood plain must be identified on the design. Planning materials must indicate that the system has been placed so that it will not be damaged in a flood event, resulting in contamination of the environment. Clarify if any additional provisions are required for the septic tank.**
5. **Revise as needed and resubmit.**

Thank you,

COMAL COUNTY
TEXAS

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

Maintenance Service Provider
15188 FM 306
Canyon Lake, TX 78133
Office (830)964-2365

AEROBIC SERVICES

SERVICE ADDRESS	***Installer***	***TERM***
7008 Circle Oak Dr. Bulverde, TX 78163	King Septic	2 year

Routine Maintenance and Inspection Agreement

This Work for Hire Agreement (hereinafter referred to as this "Agreement") is entered into by and between King Septic; (referred to as "Client") and Aerobic Services of South Texas (Thomas W. Hampton MP349) (hereinafter referred to as "Contractor") are located at 15188 FM 306 Canyon Lake, Texas 78133 (830) 964-2365. By this Agreement, the Contractor agrees to render professional service, as described herein, and the Client agrees to fulfill the terms of this Agreement as described herein. This contract will provide for all required inspections, testing, and service for your Aerobic Treatment System. The policy will include the following:

1. 3 inspections a year (at least once every 4 months), this includes inspections of the entire aerobic system, adjustment, and servicing of the mechanical, electrical, and other applicable parts to ensure proper function. This includes inspecting the control panel, air pumps, air filters, and diffuser operation. Any alarm situation affecting the proper function of the Aerobic process will be addressed within a 48-hour time frame. Repair work on non-warranty parts will include price for parts & labor. The prices will be quoted before work is performed.

2. An effluent quality inspection consisting of a visual check for color, turbidity, scum overflow, and examination for odors. A test for chlorine residual and pH will be taken and reported as necessary.

3. If any improper operation is observed, that cannot be corrected during the service visit, you will be notified immediately in writing of the conditions and estimated cost of correction.

4. If the system is a spray field application the Property Owner will be responsible for the chlorine. The chlorine must be filled before or during the service visit. Aerobic systems with a drip field do not require chlorine.

5. Any additional visits, inspections or sample collection required by specific Municipalities, Water/River Authorities, and County Agencies the TCEQ, or any other authorized regulatory agency in your jurisdiction will be covered by this policy. BOD and TSS testing is covered by this contract.

The Property Owner Manual must be strictly followed or warranties are subject to invalidation. Pumping of sludge build-up is not covered by this policy and will result in additional charges.

ACCESS BY CONTRACTOR

The Contractor or anyone authorized by the Contractor may enter the property at reasonable times without prior notice for the above-described Services. The contractor may access the System components including the tanks through excavation for evaluations if necessary. Soil is to be replaced with the excavated material as best as possible.

Termination of Agreement

Either party may terminate this agreement within ten days with a written notice in the event of substantial failure to perform under its terms by the other party without fault of the terminating party. If this Agreement is so terminated, the Contractor will immediately notify the appropriate health authority of the termination.

VOID

Limit of Liability

In no event shall the Contractor be liable for indirect, consequential, incidental, or punitive damages, whether in contract tort or any other theory. In no event shall the Contractor's liability for direct damages exceed the price for the services described in this Agreement.

Dispute Resolution

If a dispute between the Client and the Contractor arises that cannot be settled in good faith negotiations then the parties shall choose a mutually acceptable mediator and shall share the cost of the mediation services equally.

Entire Agreement

This Agreement contains the entire agreement of the parties, and there are no other promises or conditions in any other agreement either oral or written.

Severability

If any provision of this Agreement 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 this 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.

Property Owner

Rogelio O. Ibarra

Name

Rogelio O. Ibarra

Email

ribarra.esi@gmail.com

Service Address

7008 Circle Oak Dr.

Phone

210-884-4615

DocuSigned by:

JORGE RIVERA JORGE RIVERA

781F0902589A4A3...

SIGNATURE

2/6/2025

EFFECTIVE DATE LiCENSE TO OPERATE DATE

EXPIRED DATE________

2 YEARS FROM LICENSE TO OPERATE DATE

SERVICE PROVIDER

Aerobic Services of South Texas LLC.

15188 FM 306 Canyon Lake, TX 786133

VOID

(830) 964-2365

Signature of Service Provider and License #

[Thomas Hampton, OS0024597 / MP0000349]

AEROBIC SERVICES

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

REVISED
10:02 am, Mar 05, 2025

VOID

NOTES

1. The Designed OSSF is meant to accommodate a maximum flow of 300 GPD for a 3 bedroom less than 3500 sqft home. Overuse of 300 GPD may result in system failure.
2. ***The Entirety of septic system shall be installed without the addition of any additional fill material.***
3. ***The septic tank shall be completely filled with water immediately when/once placed into the excavation hole to reduce the risk of floatation.***
4. ***All electronic components to include the control panel and blower/air compressor shall be elevated to 1' above the Base Flood Elevation level. (1015.15ft minimum)***
5. Install a 2-way cleanout in a 3" or 4" tightline between the house and the tank, slope 1/8in/ft. Tightline shall be 3" or 4" SCH 40 PVC. Approx. 10' between tank and home (A).
6. ***Install a backflow prevention valve between the home and the ATU (A).***
7. ATU is a minimum 600 gpd ATU (B).
8. Supply line to sprinklers is purple 1" sch 40, 126' (C).
9. ***Install a backflow prevention Check Valve inside the pump tank where the 1" SCH 40 Purple PVC leaves the pump to prevent treated water from flowing back into the tank.***
10. S1-S2 are K-Rain Proplus low angle sprinklers with #3 nozzles operating @ 30psi, 29' radius. All operating at 360 degree radiuses. All sprinklers have a GPM flow of 3.0. Total GPM flow is 6.0.
11. There shall be no obstructions within 10' of the sprinkler heads.
12. Audible & visual alarms, external disconnect within site of the pump tank, pump & alarms on separate breakers and external wiring in conduit are required.
13. Timer set to spray between 12:00 AM & 5:00 AM.
14. ***The reserve capacity (1/3) of the daily flow for this system is 100 gallons***
15. Liquid chlorinator required.
16. Any excavations and/or exposed rock in the disposal area shall be covered with topsoil and seasonal grasses shall be seeded over the disposal rea in order to minimize run-off & erosion. Erosion cloth is acceptable.
17. No part of the septic system absorption field is within 150' of any sensitive recharge feature. No part of the On Site Sewage Facility treatment tank is within 50' of any sensitive recharge feature.
18. ***Waterline to be sleeved in sch 40 where it is located <10' from any OSSF element or spray area in order to provide the equivalent protection of a 10' separation in compliance with TAC Chapter 290, Subchapter D, Rules for Public Drinking Water Systems.***
19. ***All OSSF elements with the exception of cleanouts, risers, and inspection ports shall be completely covered without adding fill.***
20. ***Proper installation and adherence to the OSSF installation plan shall insure that the OSSF will not be damaged during a flood event and no contamination of the environment shall occur.***
21. ***The system has been designed and to be installed per design so that it will not be damaged in a flood event resulting in contamination of the environment.***

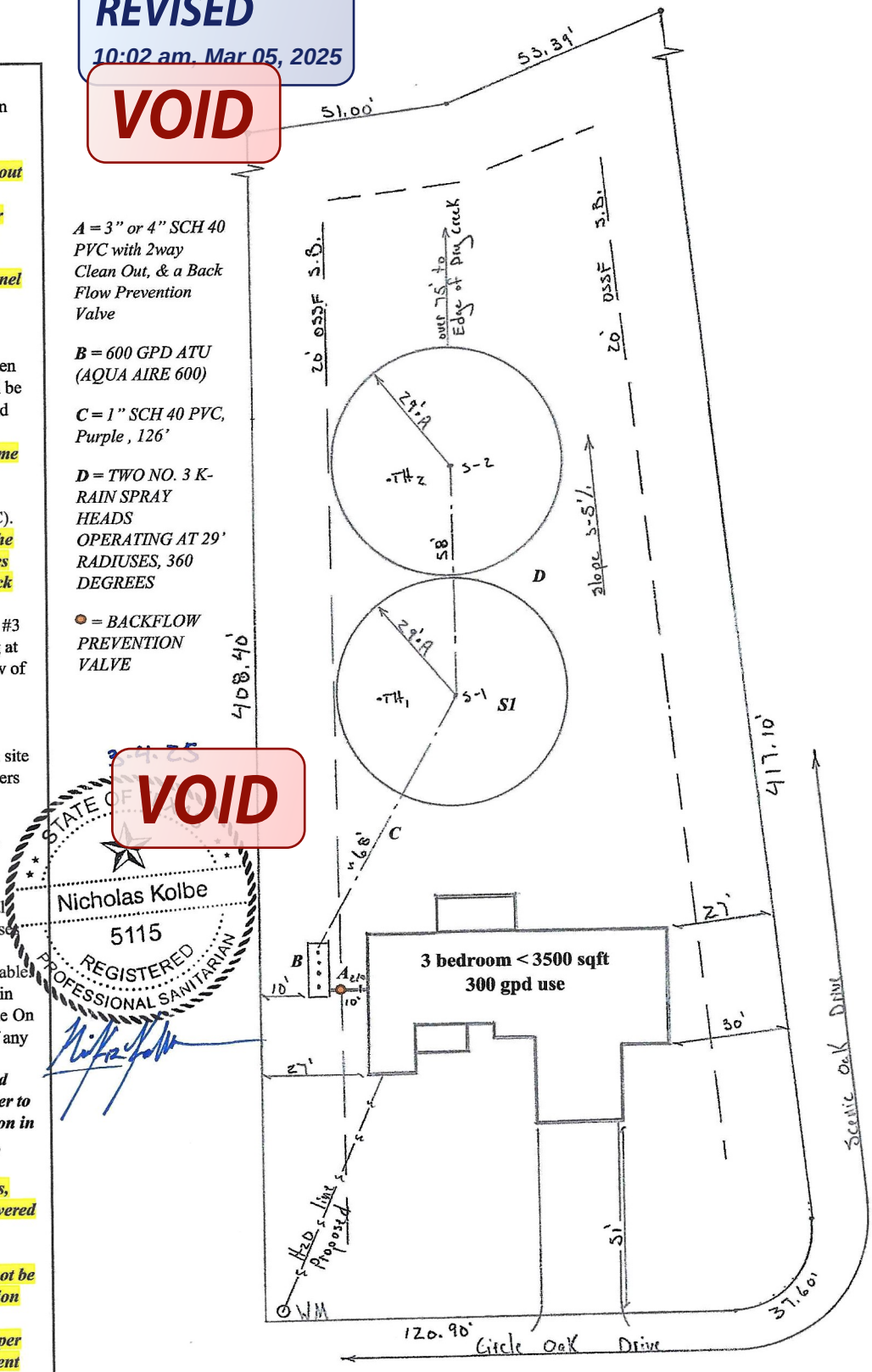
A = 3" or 4" SCH 40 PVC with 2way Clean Out, & a Back Flow Prevention Valve

B = 600 GPD ATU (AQUA AIRE 600)

C = 1" SCH 40 PVC, Purple , 126'

D = TWO NO. 3 K-RAIN SPRAY HEADS OPERATING AT 29' RADIUSES, 360 DEGREES

● = *BACKFLOW PREVENTION VALVE*



VOID

STATE OF TEXAS
Nicholas Kolbe
5115
REGISTERED
PROFESSIONAL SANITARIAN

Contributing Zone Plan (CZP) Notes

A CZP is not required for this house location because the home is a single-family dwelling with less than 20% impervious cover.

Legal: Lot 724 of the Oak Village North Unit 3 Subdivision

Pro. ID # 43014

Entirety of Property and Septic ARE located within 100YR Flood Plain.

SITE PLAN & OSSF DESIGN:

Rogelio O. Ibarra **7008 Circle Oak Dr.** **Bulverde TX 78163**	
Nicholas Kolbe, R.S. #5115 1825 FM 2438 Seguin, TX 78155	Date: 2/5/2025 Scale: 1"= 50'

NOTES

1. The Designed OSSF is meant to accommodate a maximum flow of 300 GPD for a 3 bedroom less than 3500 sqft home. Overuse of 300 GPD may result in system failure.
2. ***The Entirety of septic system shall be installed without the addition of any additional fill material.***
3. ***The septic tank shall be completely filled with water immediately when/once placed into the excavation hole to reduce the risk of floatation.***
4. ***All electronic components to include the control panel and blower/air compressor shall be elevated to 1' above the Base Flood Elevation level. (1015.15ft minimum)***
5. Install a 2-way cleanout in a 3" or 4" tightline between the house and the tank, slope 1/8in/ft. Tightline shall be 3" or 4" SCH 40 PVC. Approx. 10' between tank and home (A).
6. ***Install a backflow prevention valve between the home and the ATU (A).***
7. ATU is a minimum 600 gpd ATU (B).
8. Supply line to sprinklers is purple 1" sch 40, 126' (C).
9. ***Install a backflow prevention Check Valve inside the pump tank where the 1" SCH 40 Purple PVC leaves the pump to prevent treated water from flowing back into the tank.***
10. S1-S2 are K-Rain Proplus low angle sprinklers with #3 nozzles operating @ 30psi, 29' radius. All operating at 360 degree radiuses. All sprinklers have a GPM flow of 3.0. Total GPM flow is 6.0.
11. There shall be no obstructions within 10' of the sprinkler heads.
12. Audible & visual alarms, external disconnect within site of the pump tank, pump & alarms on separate breakers and external wiring in conduit are required.
13. Timer set to spray between 12:00 AM & 5:00 AM.
14. ***The reserve capacity (1/3) of the daily flow for this system is 80 gallons***
15. Liquid chlorinator required.
16. Any excavations and/or exposed rock in the disposal area shall be covered with topsoil and seasonal grasses shall be seeded over the disposal rea in order to minimize run-off & erosion. Erosion cloth is acceptable.
17. No part of the septic system absorption field is within 150' of any sensitive recharge feature. No part of the On Site Sewage Facility treatment tank is within 50' of any sensitive recharge feature.
18. ***Waterline to be sleeved in sch 40 where it is located <10' from any OSSF element or spray area in order to provide the equivalent protection of a 10' separation in compliance with TAC Chapter 290, Subchapter D, Rules for Public Drinking Water Systems.***
19. ***All OSSF elements with the exception of cleanouts, risers, and inspection ports shall be completely covered without adding fill.***
20. ***Property installation and adherence to the OSSF installation plan shall insure that the OSSF will not be damaged during a flood event and no contamination of the environment shall occur.***

VOID

VOID

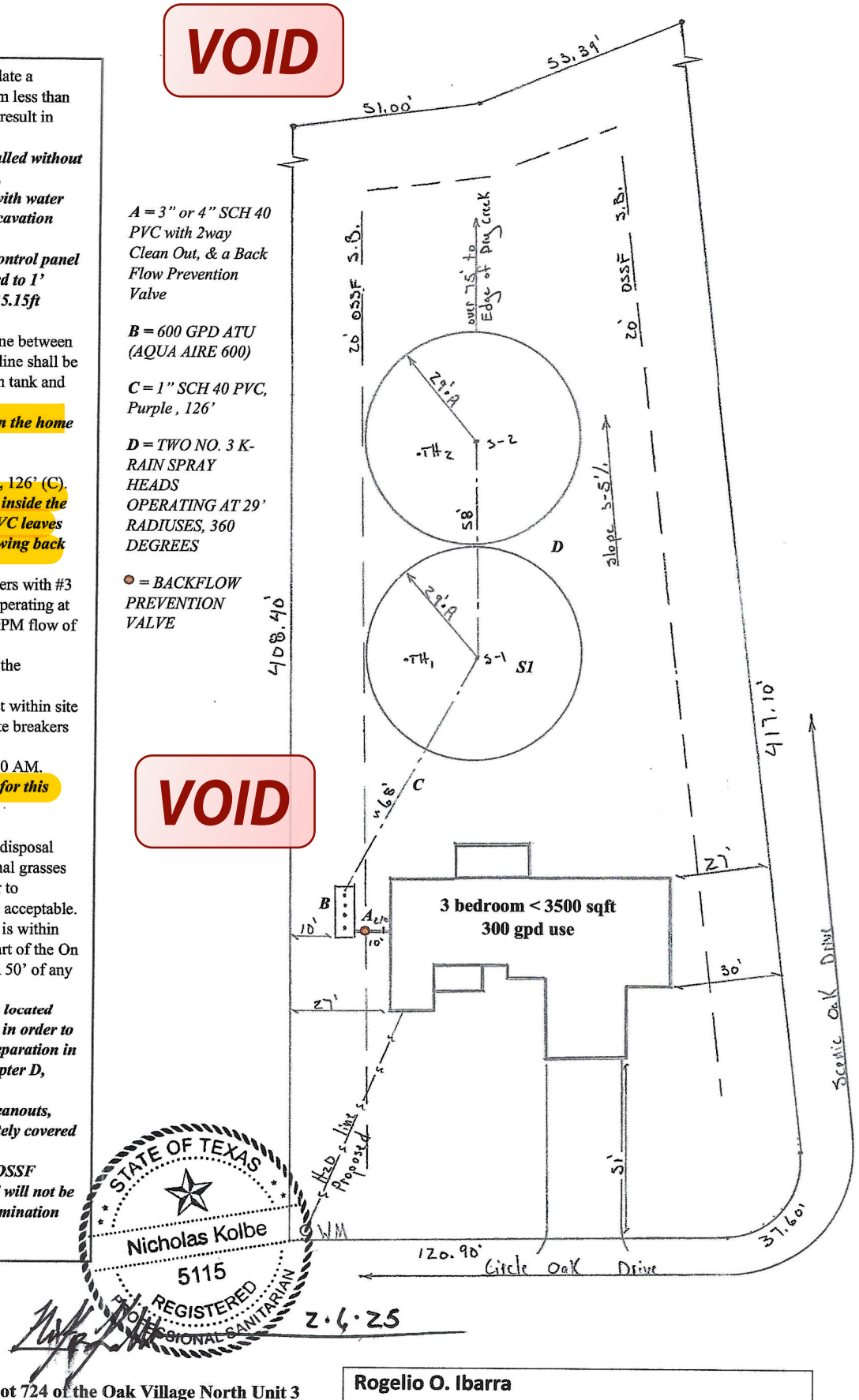
A = 3" or 4" SCH 40 PVC with 2way Clean Out, & a Back Flow Prevention Valve

B = 600 GPD ATU (AQUA AIRE 600)

C = 1" SCH 40 PVC, Purple , 126'

D = TWO NO. 3 K-RAIN SPRAY HEADS OPERATING AT 29' RADIUSES, 360 DEGREES

● = *BACKFLOW PREVENTION VALVE*



STATE OF TEXAS
Nicholas Kolbe
5115
REGISTERED
PROFESSIONAL SANITARIAN

2·6·25

Contributing Zone Plan (CZP) Notes

A CZP is not required for this house location because the home is a single-family dwelling with less than 20% impervious cover.

Legal: Lot 724 of the Oak Village North Unit 3 Subdivision

Pro. ID # 43013

Entirety of Property and Septic ARE located within 100YR Flood Plain.

SITE PLAN & OSSF DESIGN:

Rogelio O. Ibarra **7008 Circle Oak Dr.** **Bulverde TX 78163**	
Nicholas Kolbe, R.S. #5115 1825 FM 2438 Seguin, TX 78155	Date: 2/5/2025 Scale: 1"= 50'

3/CB

201906017518 05/23/2019 08:14:01 AM 1/3

ORIGINAL

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLI RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

SPECIAL WARRANTY DEED

Date: May 20, 2019

Grantor: Jose L. Romero

Grantor's Mailing Address:

Jose L. Romero

24245 Wilderness Oak #1111

San Antonio, Texas 78258

Grantee: Rogelio O. Ibarra

5531 Randolph Blvd.

San Antonio, Texas 78233

Consideration:

Ten and no /100 (10.00) dollars and other valuable consideration to the undersigned paid by the grantee herin named, the receipt of which is hereby acknowledged, and for which consideration no lien expressed or implied, does or shall exist.

Property (including any improvements)

Lot 724, Oak Village North 3, City of Bulverde, Comal County, Texas, according to map or plat recorded in Volume 3, Page 83, Map and Plat records of Comal County, Texas.

Commonly Known as: Circle Oak Drive, Bulverde, Texas 78163

Exceptions to Conveyance and Warranty: Liens described as part of the Consideration and any other Liens described in this deed as being either assumed by Grantee or subject to which title is taken by Grantee; validly existing restrictive covenants common to the platted subdivision in which the property is located; standby fees, taxes, and assessments by any taxing authority for the current year and subsequent years, and subsequent taxes and assessments by any taxing authority for prior years due to change in land usage or ownership; validly existing utilities easements created by the dedication deed or plat of the subdivision in which the Property is located; and discrepancies, conflicts, or shortages in area or boundary lines, or any encroachments or protrusion, or any overlapping of improvements; homestead or community property or survivorship rights, if any, of any spouse or Grantee; and any validly existing titles or rights asserted by anyone, including but no limited to persons, the public, corporations, governments, or other entities, to (a) tidelands or lands comprising the shores or beds of navigable or perennial rivers and streams, lakes base, gulfs, or oceans, (b) lands beyond the line of the harbor or bulkhead lines as established or changed by any government, (c) filled-in lands or artificial islands, (d) statutory water rights, including riparian rights or (e) the area extending from the line of mean low tide to the line of vegetation or the right of access to that area or easement along and across that area.

Grantor, for the Consideration and the subject to 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'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 Exceptions to Conveyance and Warranty.

The grantor is not warranting the habitability of the premises on said property. Grantee is accepting Property in as AS-IS condition and will have no recourse in the courts against the grantor for any property Conditions,

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

Jose L. Romero

STATE OF TEXAS)

COUNTY OF BEXAR)

This instrument was acknowledged before me on May 21, 2019, by Jose L. Romero.

CECILIA SOSA
Notary Public
State of Texas
ID # 10532113
Comm. Expires 08/15/2020

Notary Public, State of Texas

My commission Expires: _____

AFTER RECORDING RETURN TO:

Rogelio O. Ibarra

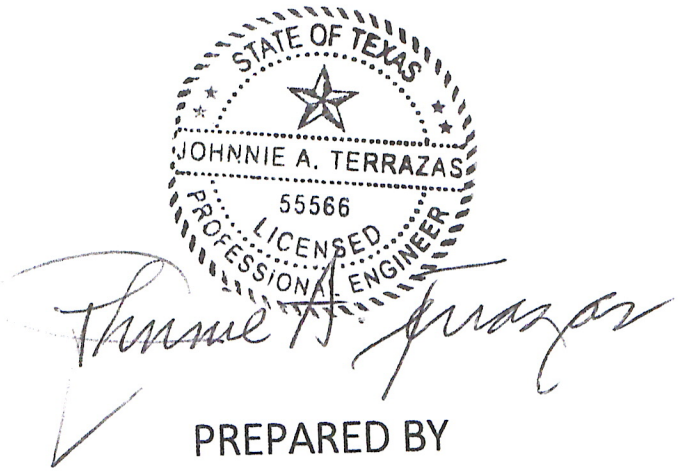
5531 Randolph Blvd.

San Antonio, Texas 78233

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
05/23/2019 08:14:01 AM
LAURA 3 Page(s)
201906017518

Bobbie Koepp

Drainage Report
For
7008 & 7022 Circle Oak Drive
(Lot 724 & 725)



PREPARED BY

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johnaterrazas@gmail.com
Firm # F – 11217

September 8, 2019

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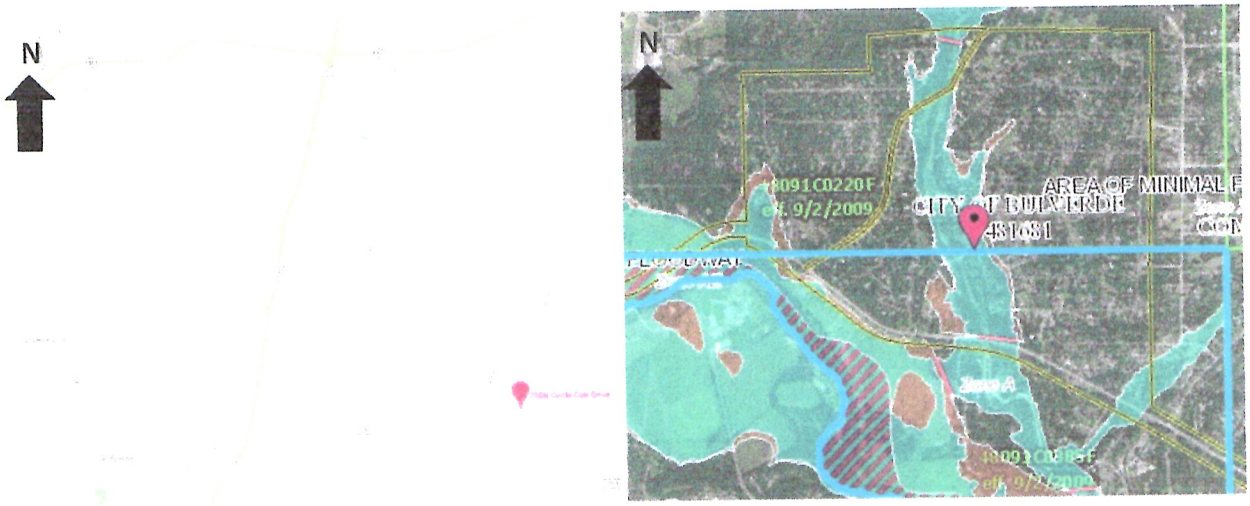

FIGURE 1 – Project Location and FEMA FIRM Panel

Existing Conditions: The existing sites, Lot 724 and Lot 725, slope from front to back and drain to Lewis Creek. Lewis Creek is a large channel that drains approximately 23 mi^2 upstream of the site. Adjacent properties are approximately 1-2 acres and most are still undeveloped. The property has some trees, but is mostly unmaintained grass (**See Figure 2**).

FIGURE 2 – Lot Existing Conditions

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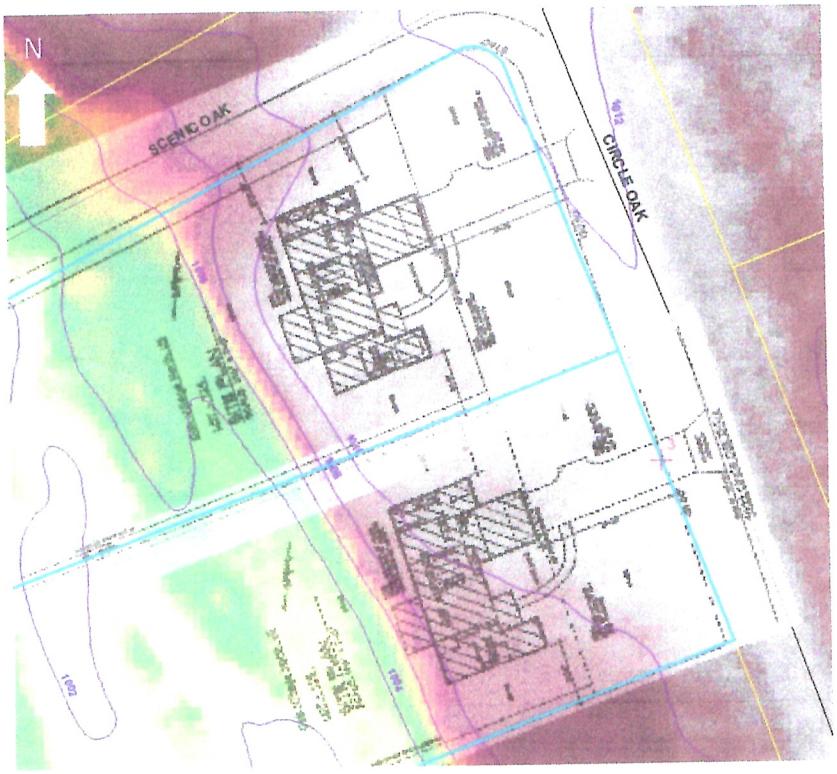

FIGURE 3 – Proposed Conditions

Hydrology & Hydraulics

Methodology: Existing HEC-RAS and HEC-HMS models, for Lewis Creek, were provided by the COB and these models were developed by Halff Associates. The corresponding report, *City of Bulverde Mapping Improvements - Lewis Creek Watershed Drainage Report* (dated March 31, 2015), was provided as well. Since the proposed lots are in the existing FEMA floodplain, the new developments are required to be elevated 2 feet above the 100-year floodplain, per COB requirements. It was also requested by the COB, that the hydrology model be updated to use the new Atlas 14 rainfall depths.

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Table 1 - Rainfall Depths

Rainfall	100-year, 24 hr (in)	500-year, 24 hr (in)
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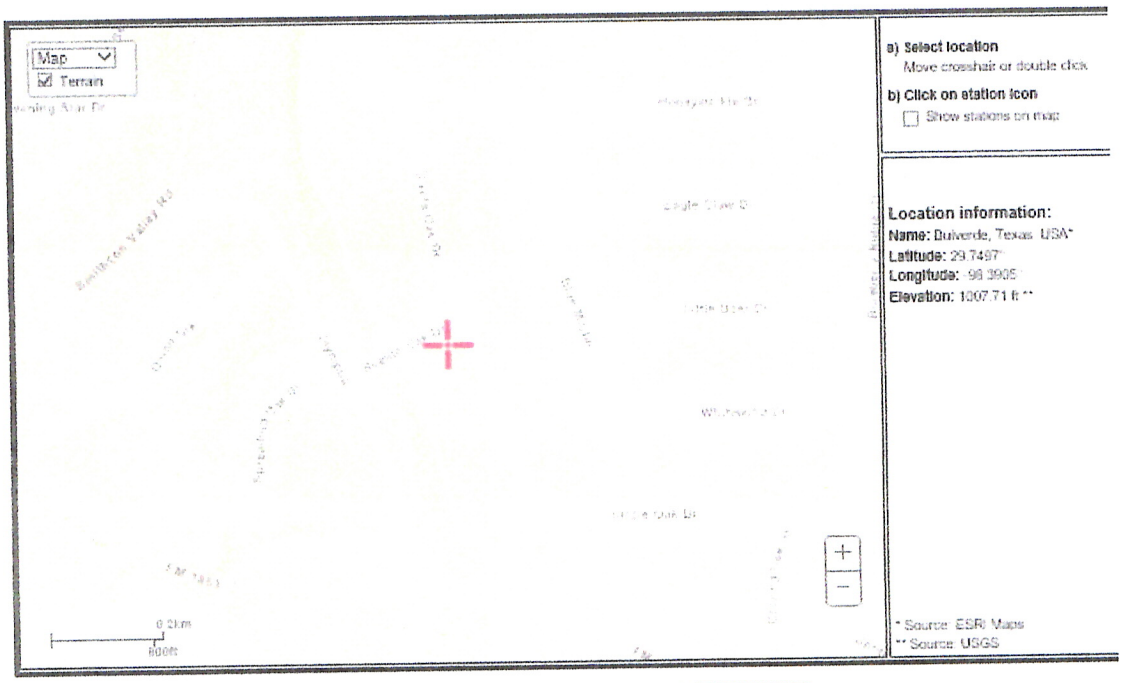
Proposed Atlas 14	12.9	19.5



POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 11, Version 2

PF tabular | PF graphical | Supplementary information | Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5 min	0.443 (0.335-0.585)	0.527 (0.401-0.687)	0.660 (0.502-0.866)	0.774 (0.584-1.03)	0.935 (0.681-1.29)	1.06 (0.773-1.50)	1.19 (0.824-1.73)	1.33 (0.890-1.98)	1.52 (0.989-2.35)	1.67 (1.06-2.64)
10 min	0.704 (0.533-0.930)	0.839 (0.638-1.09)	1.05 (0.801-1.38)	1.24 (0.928-1.65)	1.50 (1.09-2.06)	1.70 (1.23-2.41)	1.91 (1.32-2.78)	2.13 (1.43-3.16)	2.41 (1.56-3.71)	2.62 (1.66-4.14)
15 min	0.892 (0.675-1.18)	1.06 (0.803-1.38)	1.32 (1.00-1.73)	1.55 (1.16-2.06)	1.86 (1.36-2.56)	2.11 (1.50-2.98)	2.37 (1.64-3.44)	2.64 (1.76-3.93)	3.01 (1.96-4.64)	3.30 (2.09-5.22)
30 min	1.27 (0.959-1.67)	1.50 (1.14-1.95)	1.86 (1.42-2.44)	2.17 (1.63-2.89)	2.60 (1.90-3.57)	2.94 (2.08-4.14)	3.29 (2.27-4.77)	3.68 (2.47-5.47)	4.22 (2.74-6.50)	4.65 (2.95-7.35)
60 min	1.65 (1.25-2.17)	1.96 (1.49-2.55)	2.45 (1.87-3.22)	2.88 (2.16-3.83)	3.47 (2.52-4.76)	3.94 (2.79-5.55)	4.44 (3.06-6.43)	5.00 (3.36-7.44)	5.80 (3.77-8.85)	6.46 (4.09-10.2)
2 hr	1.97 (1.50-2.58)	2.41 (1.83-3.08)	3.09 (2.35-4.02)	3.69 (2.78-4.90)	4.58 (3.34-6.25)	5.30 (3.77-7.45)	6.10 (4.22-8.79)	7.01 (4.73-10.4)	8.36 (5.45-13.8)	9.45 (6.02-14.9)
3 hr	2.14 (1.63-2.80)	2.65 (2.02-3.38)	3.48 (2.65-4.50)	4.21 (3.18-5.57)	5.31 (3.90-7.20)	6.24 (4.45-8.74)	7.28 (5.05-10.4)	8.47 (5.72-12.5)	10.3 (6.69-15.6)	11.7 (7.48-18.3)
6 hr	2.44 (1.87-3.18)	3.14 (2.40-3.99)	4.15 (3.17-5.33)	5.10 (3.87-6.71)	6.57 (4.84-8.92)	7.83 (5.62-10.9)	9.28 (6.49-13.2)	11.0 (7.42-16.6)	13.5 (8.83-20.4)	15.6 (9.99-24.2)
12 hr	2.75 (2.11-3.57)	3.60 (2.75-4.42)	4.79 (3.68-6.12)	5.94 (4.53-7.77)	7.72 (5.72-10.4)	9.28 (6.66-12.9)	11.1 (7.75-16.7)	13.2 (8.93-19.2)	16.5 (10.9-24.5)	19.4 (12.4-29.6)
24 hr	3.10 (2.43-4.05)	4.10 (3.07-4.99)	5.49 (4.23-6.97)	6.84 (5.21-8.90)	8.94 (6.67-12.0)	10.8 (7.80-14.8)	12.9 (8.98-18.2)	15.5 (10.5-22.3)	19.5 (12.8-28.6)	22.9 (14.7-34.5)

FIGURE 4 – Atlas 14 Rainfall Depth

After review of the rainfall depth, it was decided to err on the side of conservatism and use the 500-year existing conditions flows and not update the HEC-HMS model. This higher WSEL will more closely resemble the 100-year Atlas 14 flows once the models have been updated. Both structures will be raised to a finished floor elevation of 2 feet above the 500-year WSEL. This will provide a more conservative approach since the exact location of the house has not been determined and the existing ground surface is from LIDAR (provided by the COB). This method is also supported by Halff Associates as seen in their Atlas 14 one-pager for Comal County, TX (**Attachment A**) suggesting the use of larger storm events until communities adopt models with higher standards.

The exising HEC-RAS model work map is shown in **Figure 5**. Lot 724 is just down stream of cross section 7315 and LOT 725 is at cross section 7059. This model was use to determine the water surface elevations that the proposed developments must elevate above.

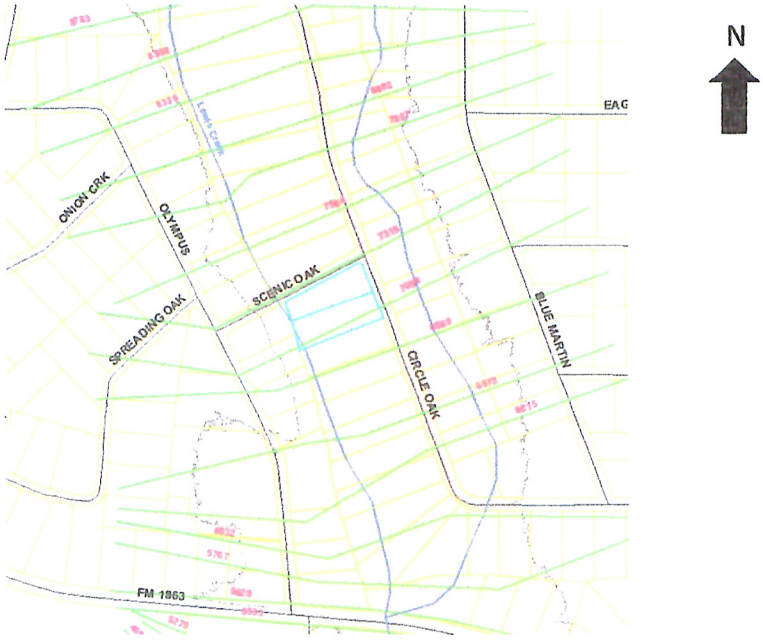


FIGURE 5 – Hydraulic Workmap

Local Drainage: The overall drainage area at cross section 7315 is approximately 23 mi^2 with peak flow times occurring several hours from the onset of the storm. When compared to the size of each of the lots (~2 acres) the peaking time for the development is close to the TR-55 minimum of 6-10 minutes. Both lots outfall to Lewis Creek and therefore, the increase in impervious cover will not have an impact to the peak flows of the watershed due to differences in the peak timing. This is further supported in the *HEC-22 Urban Drainage Design Manual* (on page 7-8) which provides a coincidental occurrence table. This table shows with an area ratio of 10,000 to 1 the main stem flows would be at approximately 2-year return levels when the tributary is at its 100-year peak. The ratio of each lot to the overall watershed is 7,360:1.

Results

From the HEC-RAS model provided, the water surface elevations (WSEL) for cross section 7315 and 7059 can be seen in **Table 2**. This table was developed using the WSELs in the cross sections which can be seen in **Figures 6&7** on the next page.

Table 2 - Water Surface Elevations		
	100-Yr WSEL	500-Yr WSEL
XS	(ft)	(ft)
7315	1014.15	1016.55
7059	1012.77	1015.02

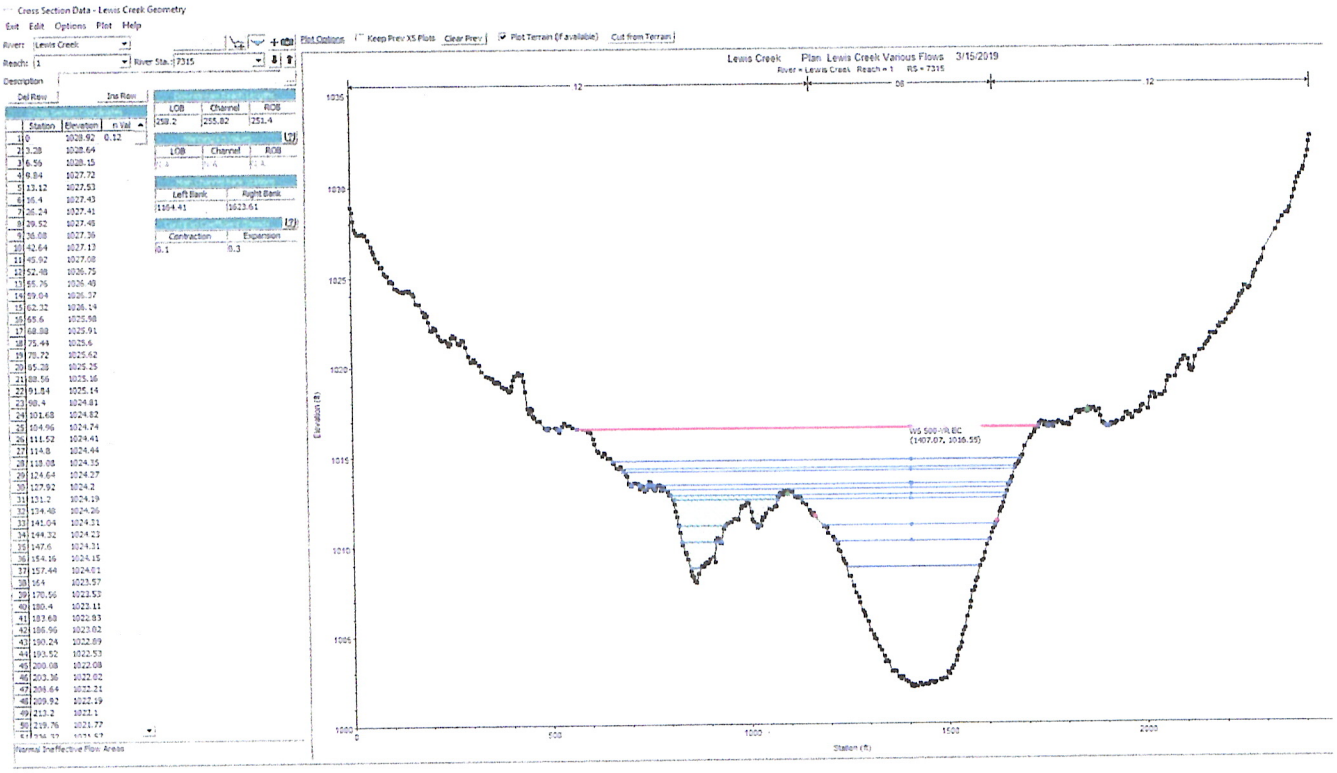


FIGURE 6 – Cross Section 7059

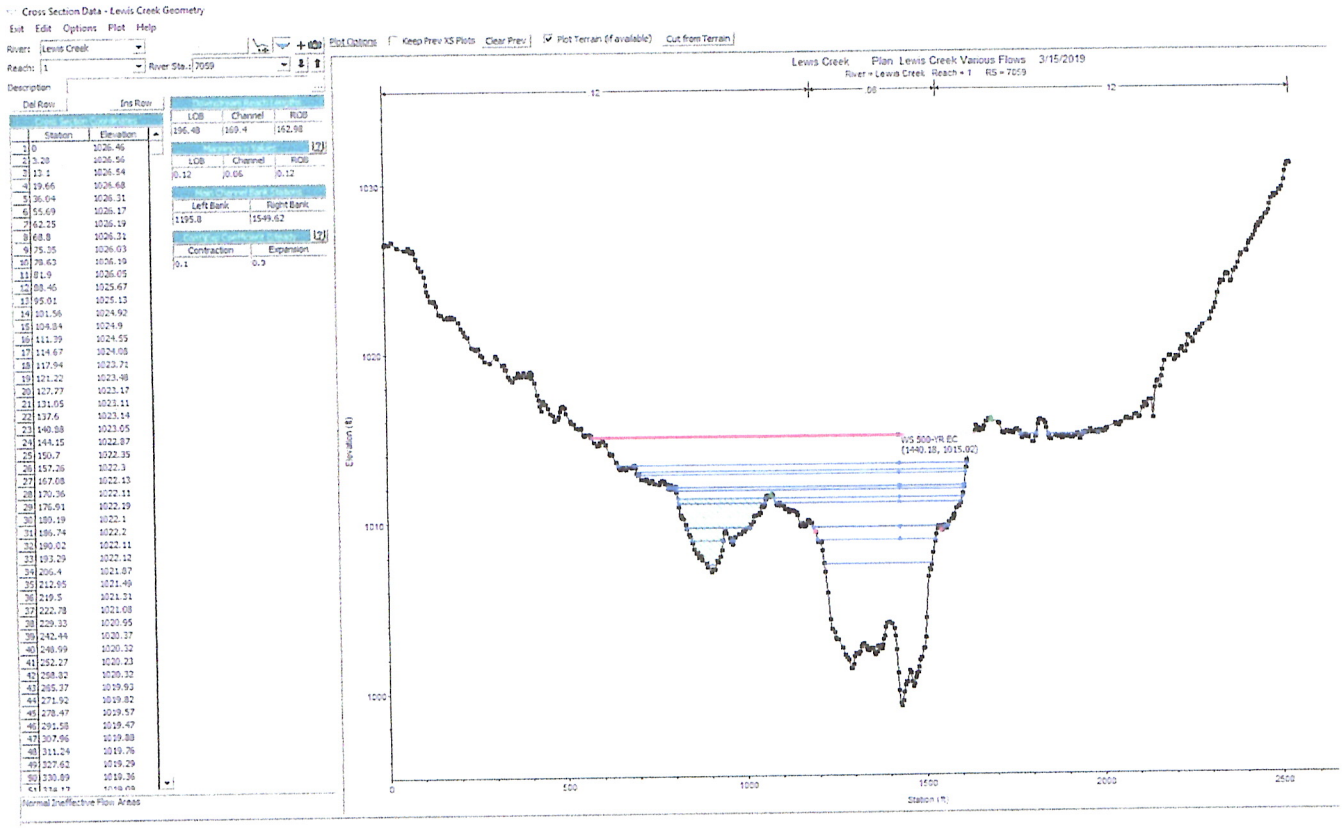


FIGURE 7 – Cross Section 7059

Lot 724 is approximately 100 feet down stream of cross section 7315, so the WSEL at the lot was interpolated (1016 ft). Since we are using the 500 year event (and have to be elevated 2' higher), Lot 724 will require a lowest finished floor elevation of 1018.00 ft (1016.00 ft + 2 feet). Lot 725 will require a slightly lower finished floor elevation of 1017.02 ft (1015.02 ft + 2 feet). This will provide a level of safety above what is required by FEMA and the COB.

Due to the homes being placed in the floodplain, there is a corresponding volume of storage that will be removed from the floodplain. In order to mitigate this loss of storage, excavation on the lots will be required. The average existing ground elevation in the area of the proposed building footprint, for Lot 724, is approximately 1010.5 feet (seen in **Figure 3**). Since the WSEL on this lot is 1016 feet, the depth of water impacted will be 5.5 feet. As mentioned previously, the residential development on this lot will be 3,212 ft^2, and thus will have a displacement volume of 17,700 ft^3. In the same manner, Lot 725 has an existing ground surface of approximately 1010 ft (seen in **Figure 3**) and a corresponding WSEL of 1015.02 ft. The depth of water impacted will be 5.02 feet and with a building footprint of 3,078 ft^2, the volume displaced will be 15,500 ft^3.

From these calculations it can be seen that a total volume of 33,200 ft^3 is need to be removed from the lots in order to mitigate the impact to the loss of valley storage that will occur with the building of the homes in the floodplain. From **Figure 8**, you can see the suggested area of excavation which has a total area of 16,960 ft^2 and runs the length of both lots, on the west end. If 2 feet of soil is removed for this proposed area, a volume of 33,920 ft^3 will be removed which is greater than the 33,200 ft^3 required.

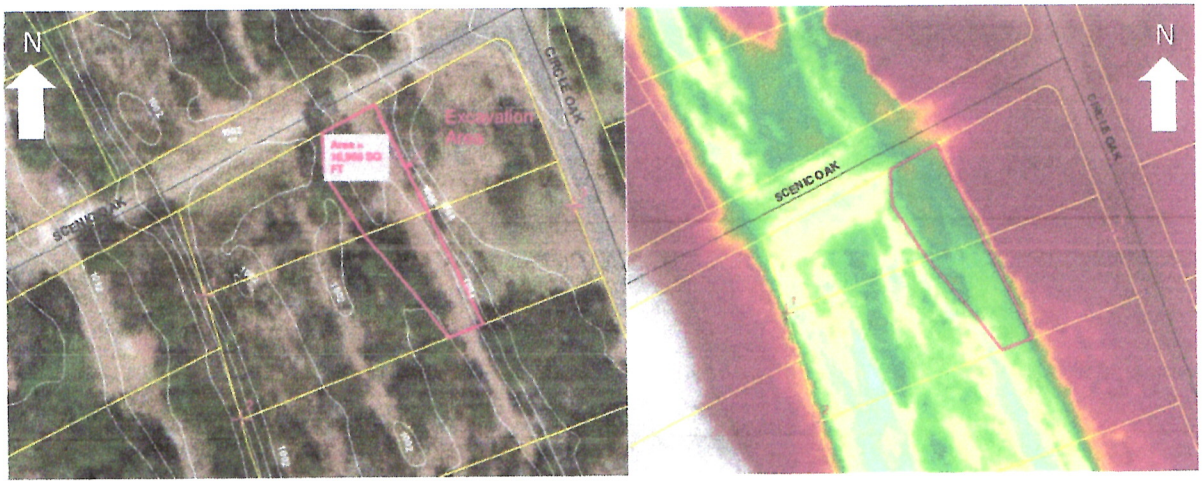
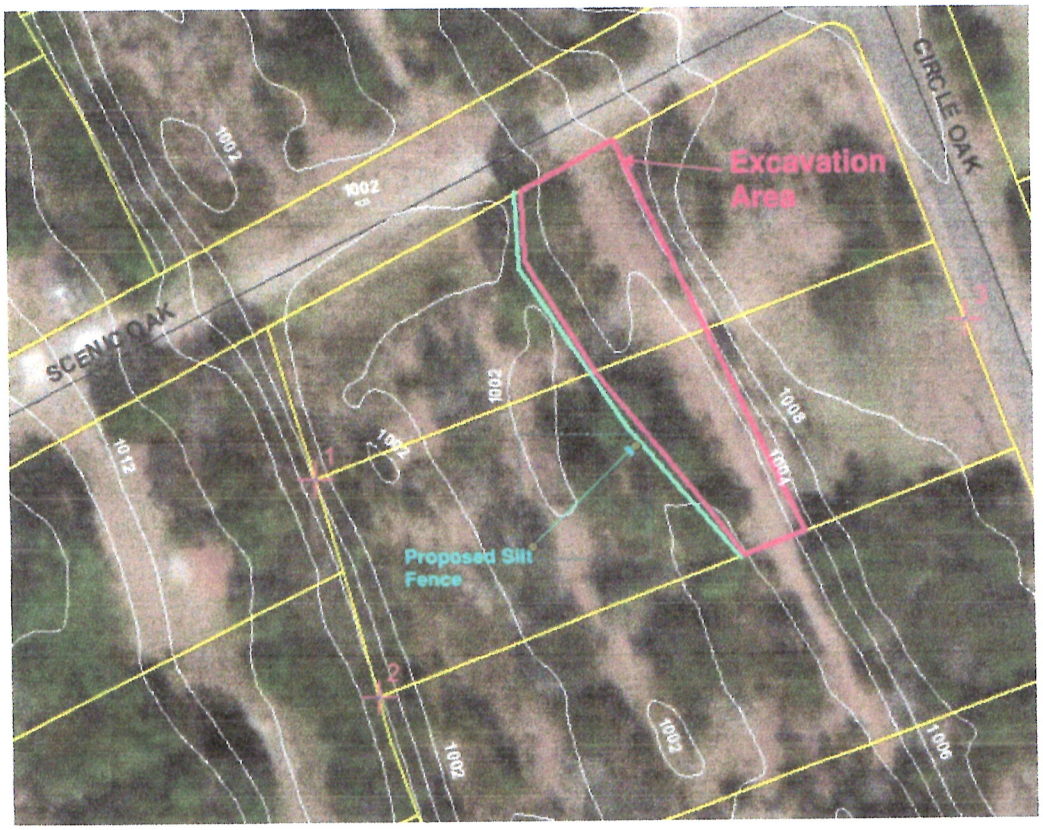


FIGURE 8 – Proposed Area of Excavation

SW3P

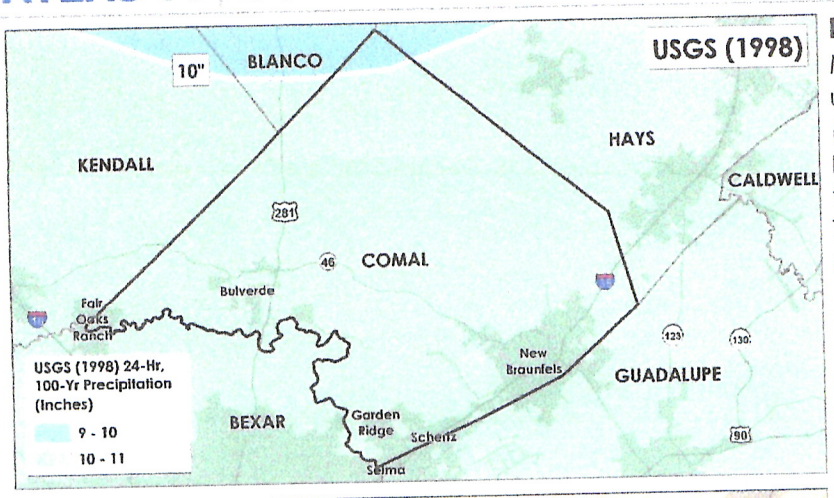
For this development, the suggested proposed Storm Water Pollution Prevention Plan (SW3P) is to place a silt fence at the downstream boundary of the proposed excavation area (**Figure 9**). All local flows are from front to back and any sediment caused by disturbance to the lots will be captured by this silt fence.

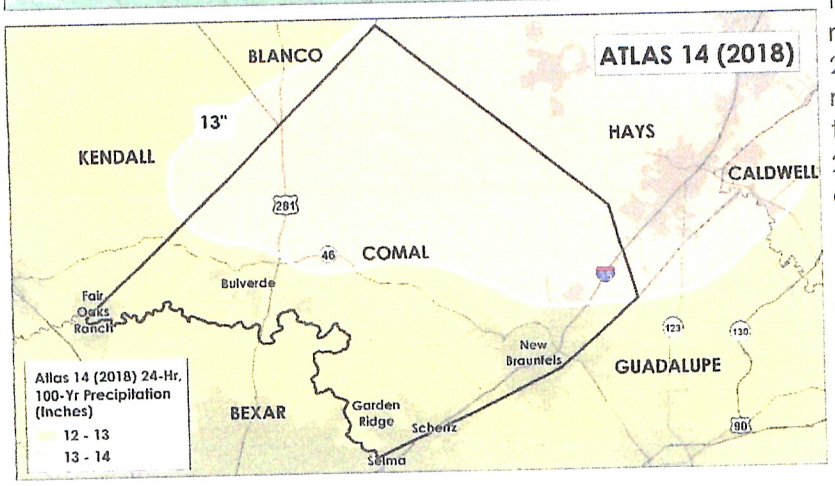


ATLAS 14 COMAL COUNTY

ATTACHMENT A

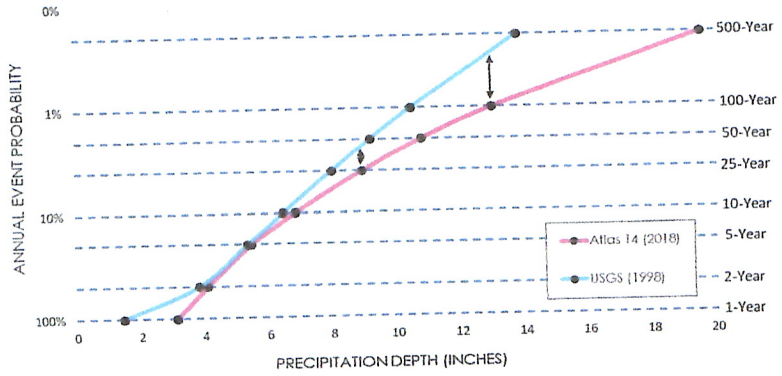
HALFF





Frequency Event	Annual Chance Probability	Countywide Average 24-hour Precipitation Depths (inches)	
		USGS (1998)	ATLAS 14 (2018)
500-year	0.2%	13.8	19.6
100-year	1%	10.5	13.0
50-year	2%	9.2	10.8
25-year	4%	8.0	8.9
10-year	10%	6.5	6.8
5-year	20%	5.3	5.5
2-year	50%	3.8	4.1
1-year	100%	1.4	3.1

COMAL COUNTY: AVERAGE 24-HOUR PRECIPITATION



Rainfall Changes in Texas

Many Central Texas communities currently utilize the 1998 United States Geological Survey (USGS) Depth-Duration Frequency of Precipitation for Texas report to define rainfall totals for floodplain and stormwater analysis. This publication utilized historical rainfall data up to 1994.

-USGS Water Resources Investigations Report 98-4044

On September 27, 2018, the National Oceanic and Atmospheric Administration (NOAA) published new precipitation-frequency values for Texas. This new publication, Atlas 14, is a reassessment of historical rainfall data up to 2017, adding an additional twenty years of record to the analysis. Major events during this time period include Tropical Storm Hermine in 2010, Blanco River Memorial Day Flood in 2015, and Hurricane Harvey in 2017.

- NOAA Atlas 14, Volume 11 Precipitation-Frequency Atlas of the United States, Texas

Many communities utilize a 24-hour storm duration to define floodplains. The maps to the left display the 24-hour, 1% (100-year) annual chance event rainfall depths for the county.

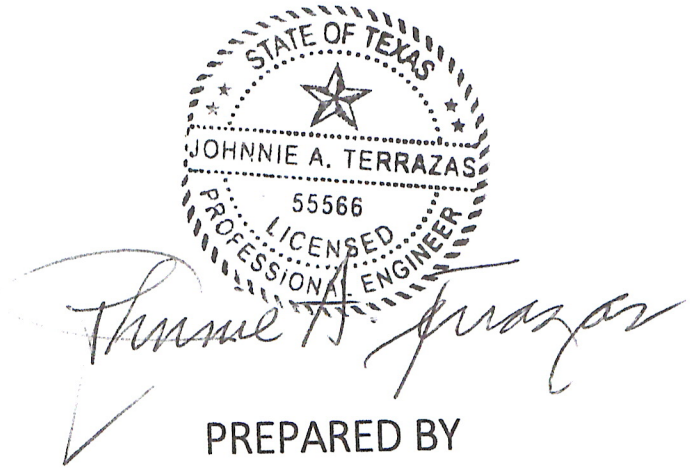
What is the effect?

Rainfall data is commonly used to define flood risk and to analyze and design stormwater infrastructure such as bridges, culverts, channels, storm drainage systems, and detention facilities. Atlas 14 indicates that the 1% (100-year) annual chance event may be greater than what we previously considered. The greatest rainfall changes occur in central Texas and along the Texas coast.

1. On average in Comal County, Atlas 14 indicates that the 1% (100-year) annual chance event is actually closer to the rainfall previously considered the 0.2% (500-year) annual chance event utilizing the 1998 USGS rainfall data.
2. It also indicates that the new 4% (25-year) annual chance event is closer to the previous 2% (50-year) annual chance event. These differences vary slightly across the county.

Until analyses are updated with Atlas 14 rainfall data, communities may consider utilizing a larger storm event for floodplain regulations to support future flood resiliency.

Drainage Report
For
7008 & 7022 Circle Oak Drive
(Lot 724 & 725)



PREPARED BY

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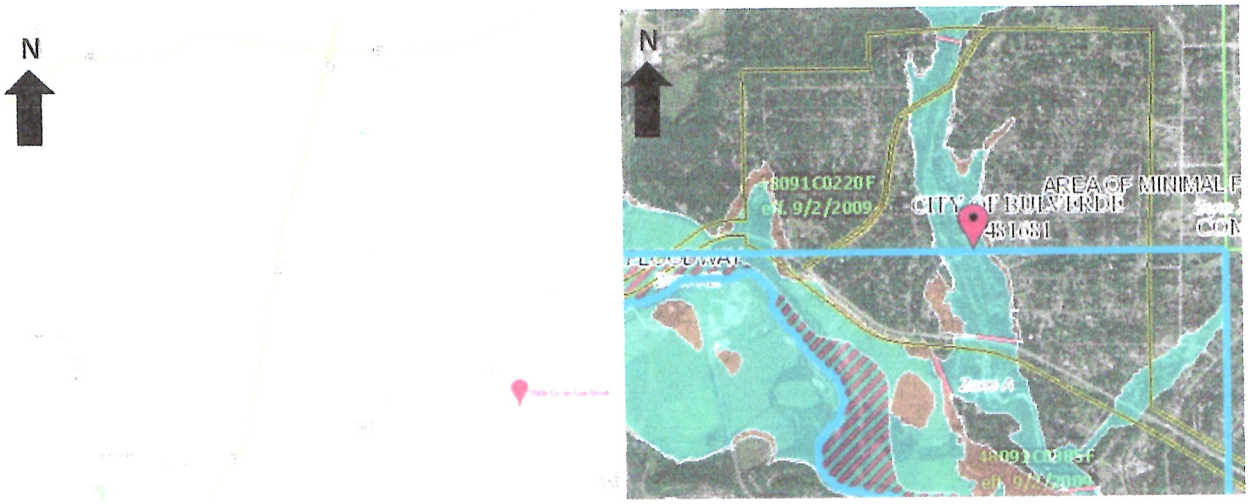

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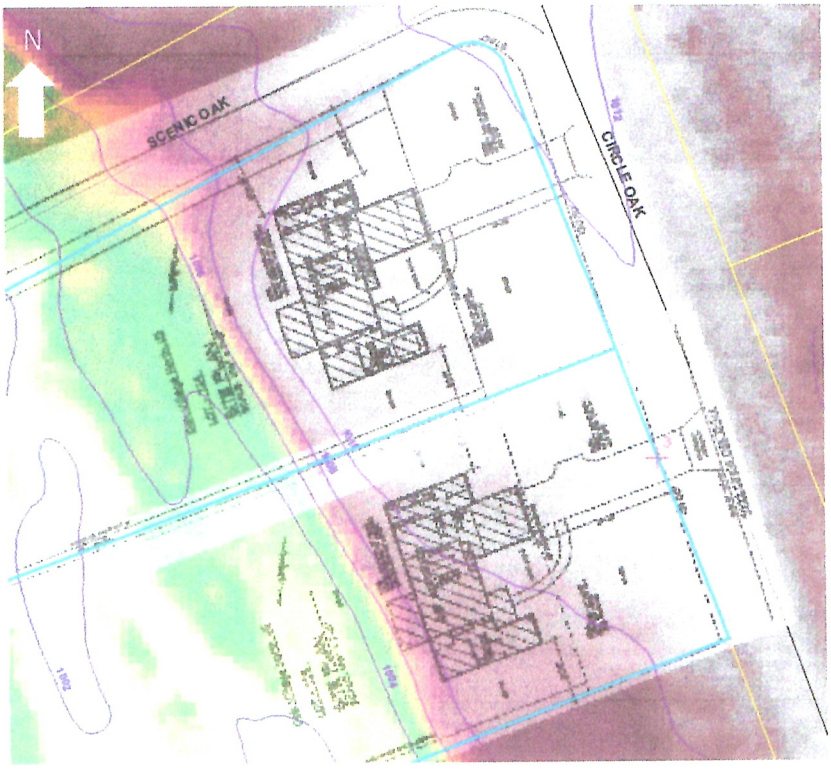

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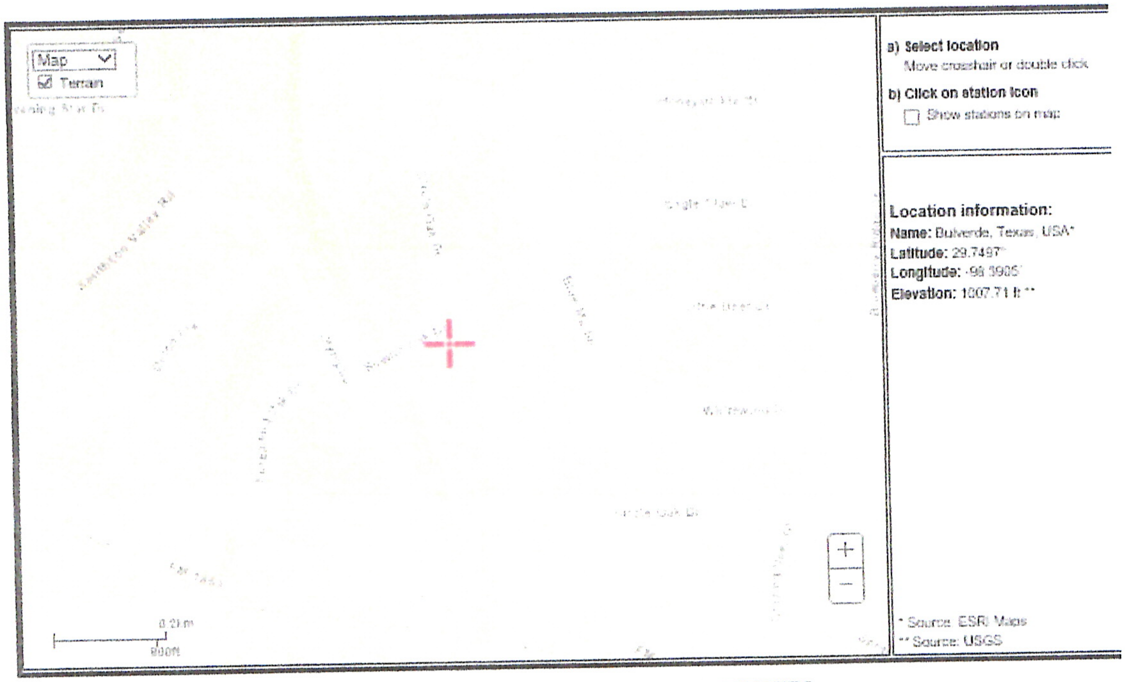


POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION

NOAA Atlas 14, Volume 11, Version 2

PF tabular | PF graphical | Supplementary information | Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.443	0.527	0.660	0.774	0.935	1.06	1.19	1.33	1.52	1.67
10-min	0.704	0.839	1.05	1.24	1.50	1.70	1.91	2.13	2.41	2.62
15-min	0.892	1.06	1.32	1.55	1.86	2.11	2.37	2.64	3.01	3.30
30-min	1.27	1.50	1.86	2.17	2.60	2.94	3.29	3.68	4.22	4.65
60-min	1.65	1.96	2.45	2.88	3.47	3.94	4.44	5.00	5.80	6.46
2-hr	1.97	2.41	3.09	3.69	4.58	5.30	6.10	7.01	8.36	9.48
3-hr	2.14	2.68	3.48	4.21	5.31	6.24	7.28	8.47	10.3	11.7
6-hr	2.44	3.14	4.15	5.10	6.57	7.83	9.28	11.0	13.5	15.6
12-hr	2.75	3.60	4.79	5.94	7.72	9.28	11.1	13.2	16.5	19.4
24-hr	3.10	4.10	5.49	6.84	8.94	10.8	12.9	15.5	19.5	22.9

FIGURE 4 – Atlas 14 Rainfall Depth

After review of the rainfall depth, it was decided to err on the side of conservatism and use the 500-year existing conditions flows and not update the HEC-HMS model. This higher WSEL will more closely resemble the 100-year Atlas 14 flows once the models have been updated. Both structures will be raised to a finished floor elevation of 2 feet above the 500-year WSEL. This will provide a more conservative approach since the exact location of the house has not been determined and the existing ground surface is from LIDAR (provided by the COB). This method is also supported by Halff Associates as seen in their Atlas 14 one-pager for Comal County, TX (**Attachment A**) suggesting the use of larger storm events until communities adopt models with higher standards.

The exising HEC-RAS model work map is shown in **Figure 5.** Lot 724 is just down stream of cross section 7315 and LOT 725 is at cross section 7059. This model was use to determine the water surface elevations that the proposed developments must elevate above.

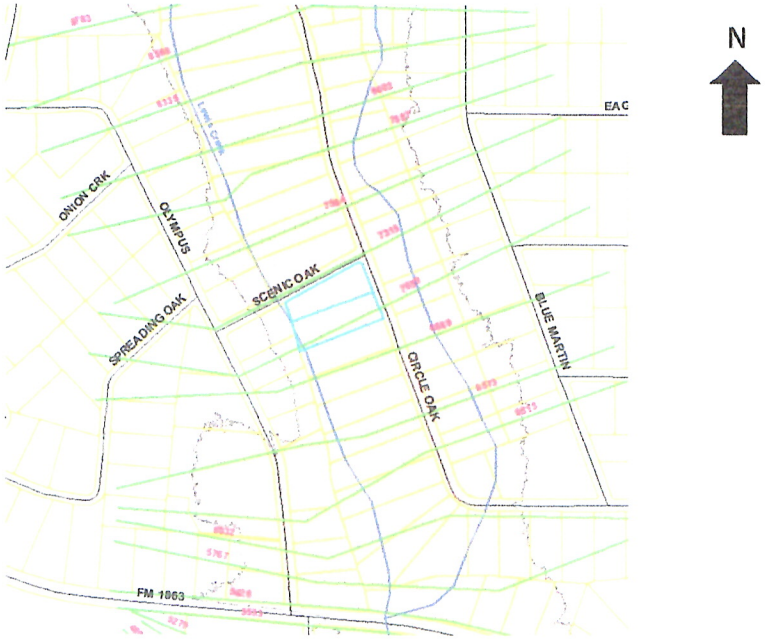


FIGURE 5 – Hydraulic Workmap

Local Drainage: The overall drainage area at cross section 7315 is approximately 23 mi^2 with peak flow times occurring several hours from the onset of the storm. When compared to the size of each of the lots (~2 acres) the peaking time for the development is close to the TR-55 minimum of 6-10 minutes. Both lots outfall to Lewis Creek and therefore, the increase in impervious cover will not have an impact to the peak flows of the watershed due to differences in the peak timing. This is further supported in the *HEC-22 Urban Drainage Design Manual* (on page 7-8) which provides a coincidental occurrence table. This table shows with an area ratio of 10,000 to 1 the main stem flows would be at approximately 2-year return levels when the tributary is at its 100-year peak. The ratio of each lot to the overall watershed is 7,360:1.

Results

From the HEC-RAS model provided, the water surface elevations (WSEL) for cross section 7315 and 7059 can be seen in **Table 2**. This table was developed using the WSELs in the cross sections which can be seen in **Figures 6&7** on the next page.

Table 2 - Water Surface Elevations		
	100-Yr WSEL	500-Yr WSEL
XS	(ft)	(ft)
7315	1014.15	1016.55
7059	1012.77	1015.02

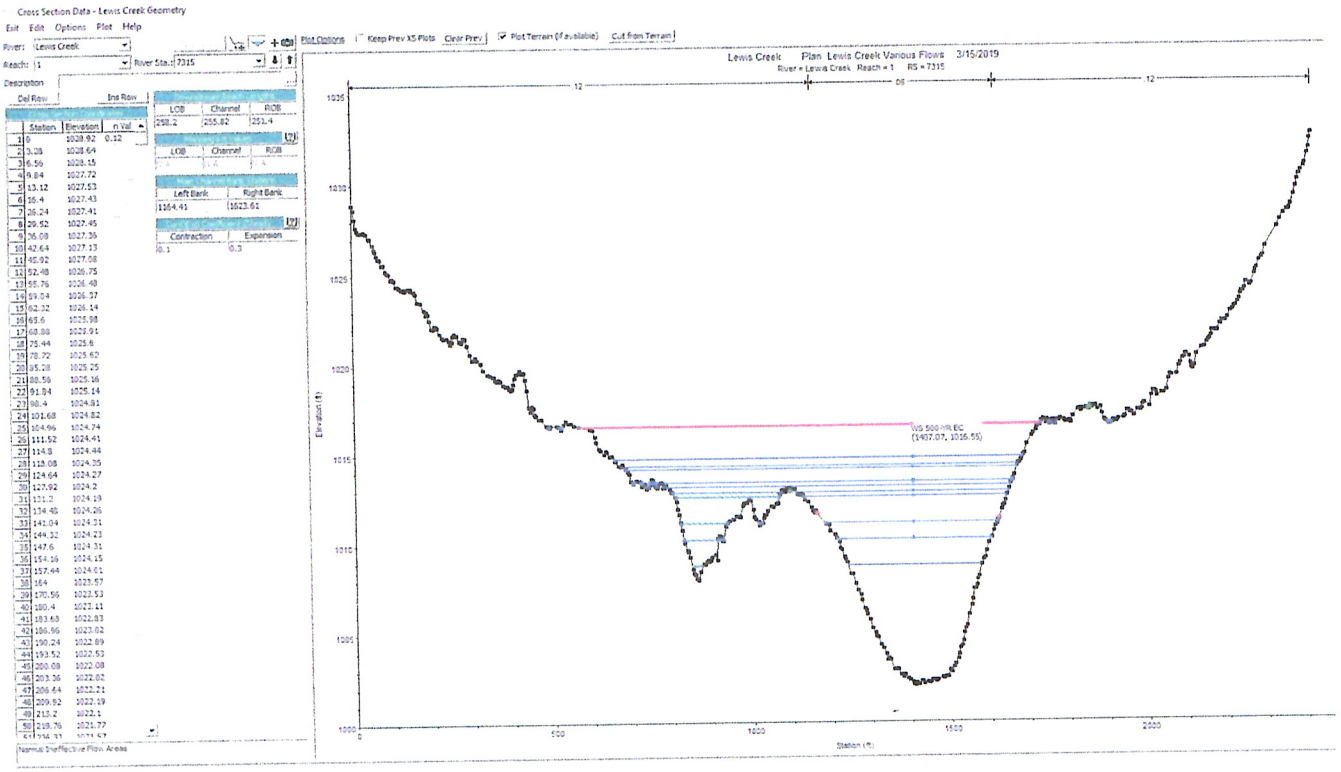


FIGURE 6 – Cross Section 7059

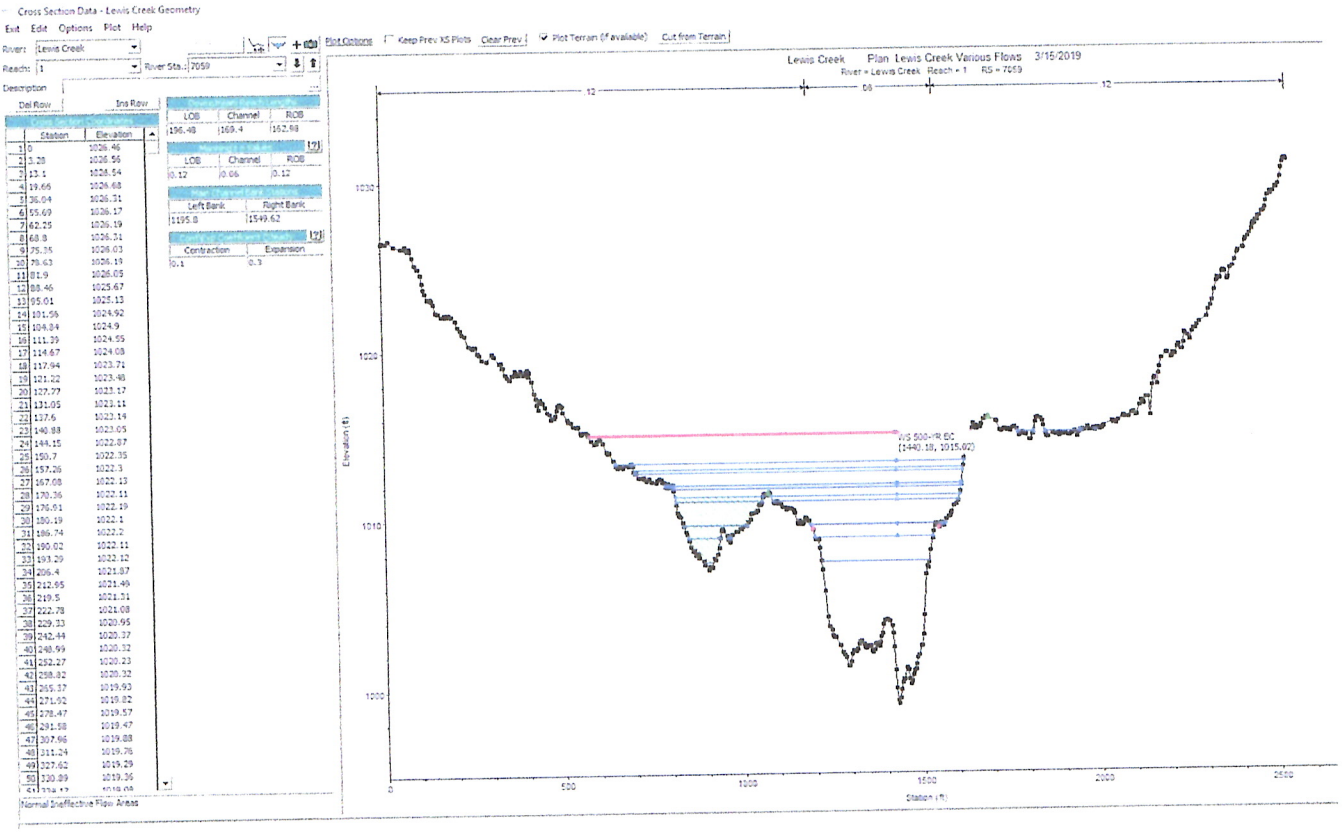


FIGURE 7 – Cross Section 7059

Lot 724 is approximately 100 feet down stream of cross section 7315, so the WSEL at the lot was interpolated (1016 ft). Since we are using the 500 year event (and have to be elevated 2' higher), Lot 724 will require a lowest finished floor elevation of 1018.00 ft (1016.00 ft + 2 feet). Lot 725 will require a slightly lower finished floor elevation of 1017.02 ft (1015.02 ft + 2 feet). This will provide a level of safety above what is required by FEMA and the COB.

Due to the homes being placed in the floodplain, there is a corresponding volume of storage that will be removed from the floodplain. In order to mitigate this loss of storage, excavation on the lots will be required. The average existing ground elevation in the area of the proposed building footprint, for Lot 724, is approximately 1010.5 feet (seen in **Figure 3**). Since the WSEL on this lot is 1016 feet, the depth of water impacted will be 5.5 feet. As mentioned previously, the residential development on this lot will be 3,212 ft^2, and thus will have a displacement volume of 17,700 ft^3. In the same manner, Lot 725 has an existing ground surface of approximately 1010 ft (seen in **Figure 3**) and a corresponding WSEL of 1015.02 ft. The depth of water impacted will be 5.02 feet and with a building footprint of 3,078 ft^2, the volume displaced will be 15,500 ft^3.

From these calculations it can be seen that a total volume of 33,200 ft^3 is need to be removed from the lots in order to mitigate the impact to the loss of valley storage that will occur with the building of the homes in the floodplain. From **Figure 8**, you can see the suggested area of excavation which has a total area of 16,960 ft^2 and runs the length of both lots, on the west end. If 2 feet of soil is removed for this proposed area, a volume of 33,920 ft^3 will be removed which is greater than the 33,200 ft^3 required.

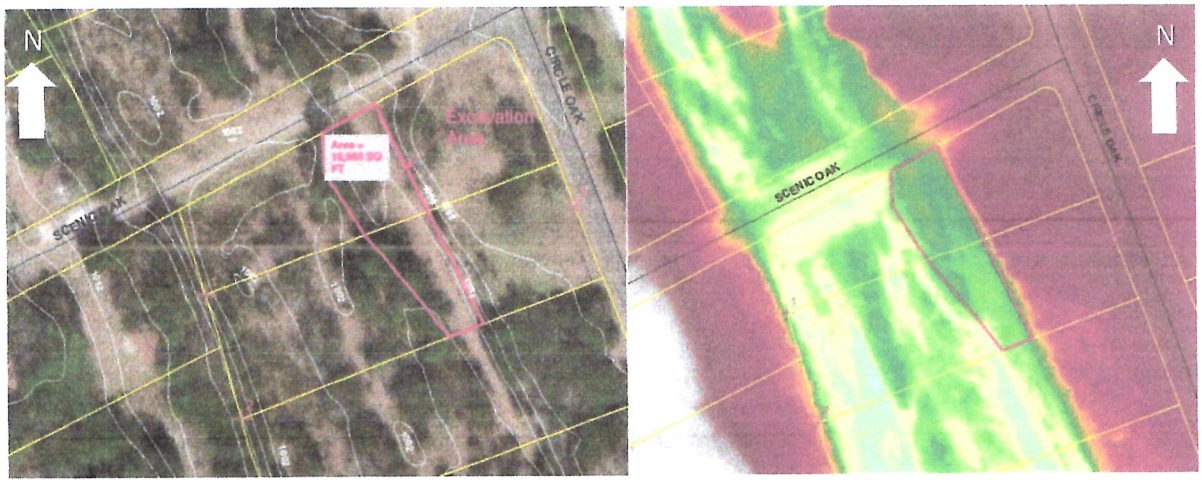
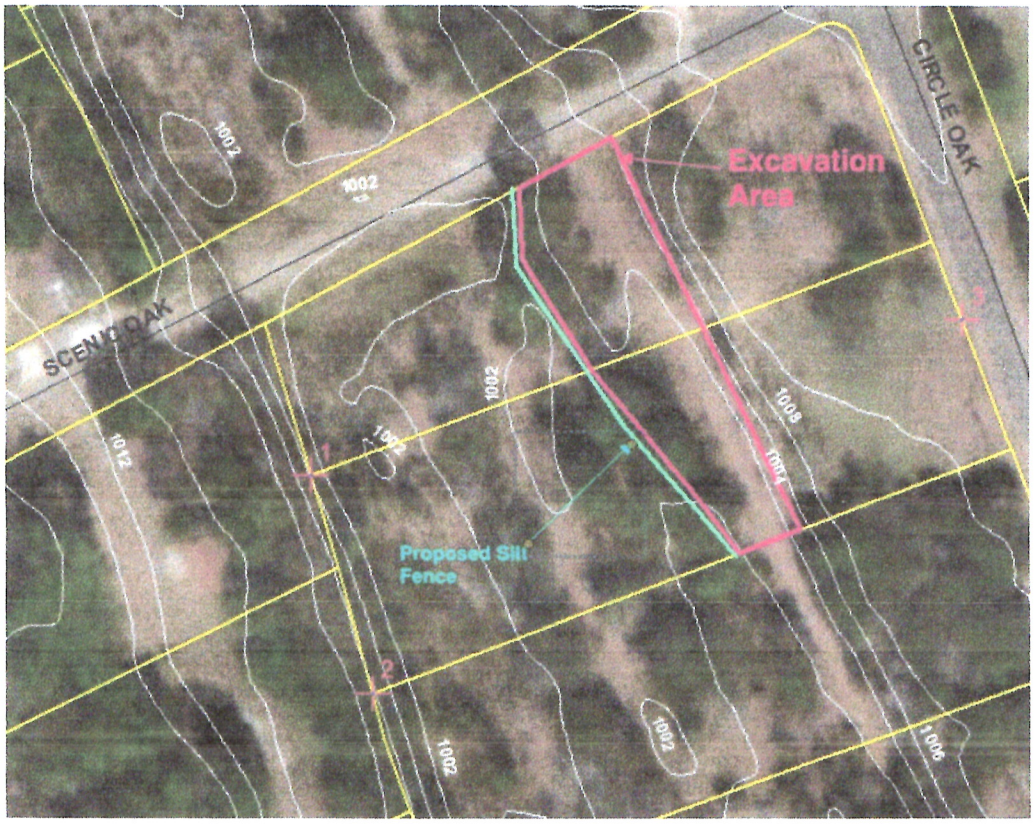


FIGURE 8 – Proposed Area of Excavation

SW3P

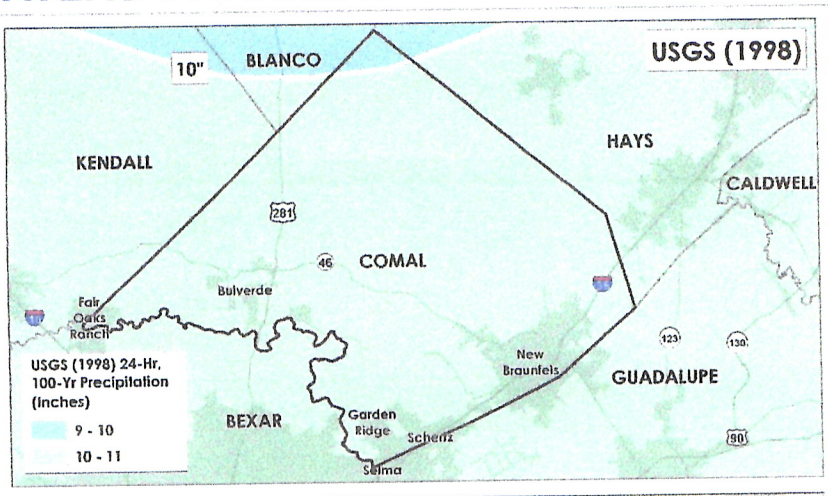
For this development, the suggested proposed Storm Water Pollution Prevention Plan (SW3P) is to place a silt fence at the downstream boundary of the proposed excavation area (**Figure 9**). All local flows are from front to back and any sediment caused by disturbance to the lots will be captured by this silt fence.

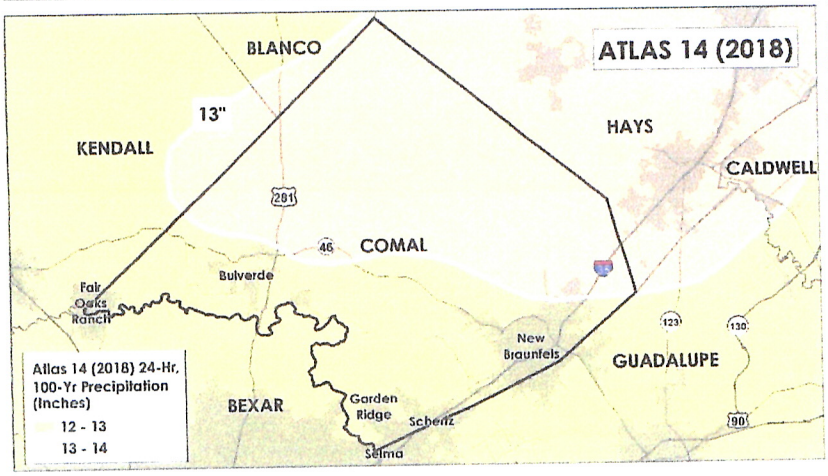


ATLAS 14 COMAL COUNTY

ATTACHMENT A

HALFF





Rainfall Changes in Texas

Many Central Texas communities currently utilize the 1998 United States Geological Survey (USGS) Depth-Duration Frequency of Precipitation for Texas report to define rainfall totals for floodplain and stormwater analysis. This publication utilized historical rainfall data up to 1994.

-USGS Water Resources Investigations Report 98-4044

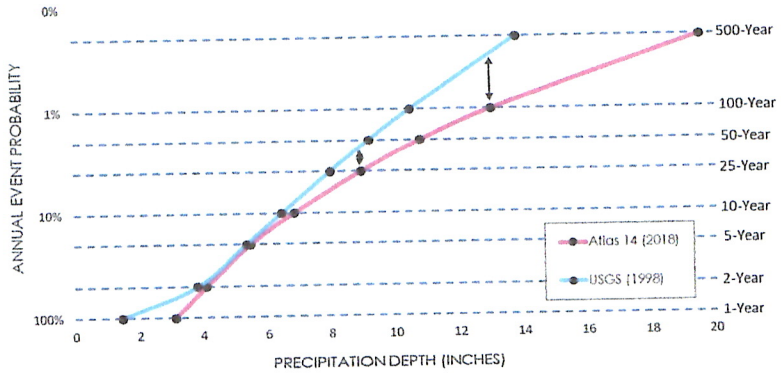
On September 27, 2018, the National Oceanic and Atmospheric Administration (NOAA) published new precipitation-frequency values for Texas. This new publication, Atlas 14, is a reassessment of historical rainfall data up to 2017, adding an additional twenty years of record to the analysis. Major events during this time period include Tropical Storm Hermine in 2010, Blanco River Memorial Day Flood in 2015, and Hurricane Harvey in 2017.

- NOAA Atlas 14, Volume 11 Precipitation-Frequency Atlas of the United States, Texas

Many communities utilize a 24-hour storm duration to define floodplains. The maps to the left display the 24-hour, 1% (100-year) annual chance event rainfall depths for the county.

Frequency Event	Annual Chance Probability	Countywide Average 24-hour Precipitation Depths (inches)	
		USGS (1998)	ATLAS 14 (2018)
500-year	0.2%	13.8	19.6
100-year	1%	10.5	13.0
50-year	2%	9.2	10.8
25-year	4%	8.0	8.9
10-year	10%	6.5	6.8
5-year	20%	5.3	5.5
2-year	50%	3.8	4.1
1-year	100%	1.4	3.1

COMAL COUNTY: AVERAGE 24-HOUR PRECIPITATION



What is the effect?

Rainfall data is commonly used to define flood risk and to analyze and design stormwater infrastructure such as bridges, culverts, channels, storm drainage systems, and detention facilities. Atlas 14 indicates that the 1% (100-year) annual chance event may be greater than what we previously considered. The greatest rainfall changes occur in central Texas and along the Texas coast.

1. On average in Comal County, Atlas 14 indicates that the 1% (100-year) annual chance event is actually closer to the rainfall previously considered the 0.2% (500-year) annual chance event utilizing the 1998 USGS rainfall data.
2. It also indicates that the new 4% (25-year) annual chance event is closer to the previous 2% (50-year) annual chance event. These differences vary slightly across the county.

Until analyses are updated with Atlas 14 rainfall data, communities may consider utilizing a larger storm event for floodplain regulations to support future flood resiliency.

COMAL COUNTY
ENGINEER'S OFFICE

OSSF DEVELOPMENT APPLICATION CHECKLIST

Staff will complete shaded items

		118373
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.

DocuSigned by:
JORGE RIVERA
781F69CC569A4A3... Signature of Applicant

2/6/2025
Date

___ COMPLETE APPLICATION

Check No. _____ Receipt No._____

INCOMPLETE APPLICATION
—— (Missing Items Circled, Application Refeused)

Revised: September 2019