BEARING BASIS
N30° 14' 29" E 831. 99'

CURLEX SHALL BE USED FOR STABILIZING OVER THE IMPORTED SOILS FOR THE ENTIRE FIELD OR A VEGETATIVE COVER IS TO BE ESTABLISHED ON ALL DRAIN FIELDS PRIOR TO FINAL INSPECTION BEING PASSED.

ANY FUTURE POTABLE WATER LINE, (SWIMMING POOL, IRRIGATION ETC) MUST MAINTAIN 10' SEPARATION FROM ANY OSSF COMPONENT.

ANY AND ALL DRAINAGE ON THIS SITE SHALL BE DIVERTED AWAY FROM ALL OSSF COMPONENTS.

LOT 12

THE RANCHES

AT

HAMILTON POOL

DOCUMENT 200500132

10' P.U.E. per plat

N52° 19' 09" W 1142. 66'

785. 77'

10' P.U.E. per plat

S52° 19' 09" E 1334. 00'

548. 23'

1035
1040
1045
1050
1055
1057
1046
1050

S42°15'17"W C=606.94' A=631.49' R=650.00'

S14° 25' 22" W106. 76'

edge of pavement

Private Street, Drainage Easement and P.U.E. per plat

GRAND SUMMIT BOULEVARD (100' R.O.W.)

S70° 05' 12" W 144. 31'

gravel drive

pool

guy wire

INFILTRATOR® systems inc.

Q= 360 / (RA) .2 = 1800 SF
REDUCTION
1800 X .75 = 1350 SF
MIN REQUIRED
Q4-STANDARD
LEACHING CHAMBERS
TOTAL PROPOSED
1360 SQUARE FEET
272 LINEAR FEET
68 CHAMBERS
TRENCH DEPTH
12" TO 36"

811 Know what's below. Call before you dig.

STATE OF TEXAS
JONATHAN MAASS
4263
REGISTERED
PROFESSIONAL SANITARIAN

PRELIMINARY

02-21-15

SCALE: 1" : 120'
0 24' 60' 120' 300'

DESIGNED BY:

JON MAASS, RS 4263
2303 RR 620 SOUTH
#135-243
LAKEWAY, TEXAS 78734

PAGE # 1

9412 GRAND SUMMIT BLVD
DRIPPING SPRINGS, TEXAS 78620

Location of Installation:

LOT 12 BLOCK A
THE RANCHES AT
HAMILTON POOL

9412 Grand Summit Blvd

Page # 2

SCALE: 1" : 20'

1050

1-1/2"
SCH-40

1000 GALLON
1 COMPARTMENT
PUMP TANK

1250 GALLON
2 COMPARTMENT
SEPTIC TANK

HOME
HVAC <4500
5 ROOMS OR LESS

DRIVEWAY

5' SETBACK

3" or 4" SCH 40
W/ 2 WAY CLEANOUT
& SCREW PLUG
EVERY 100" MIN,
MIN $\frac{1}{8}$" FALL PER FOOT

driveway

10' SETBACK

10' SETBACK

WATER LINE

100'

ELEC. POLE

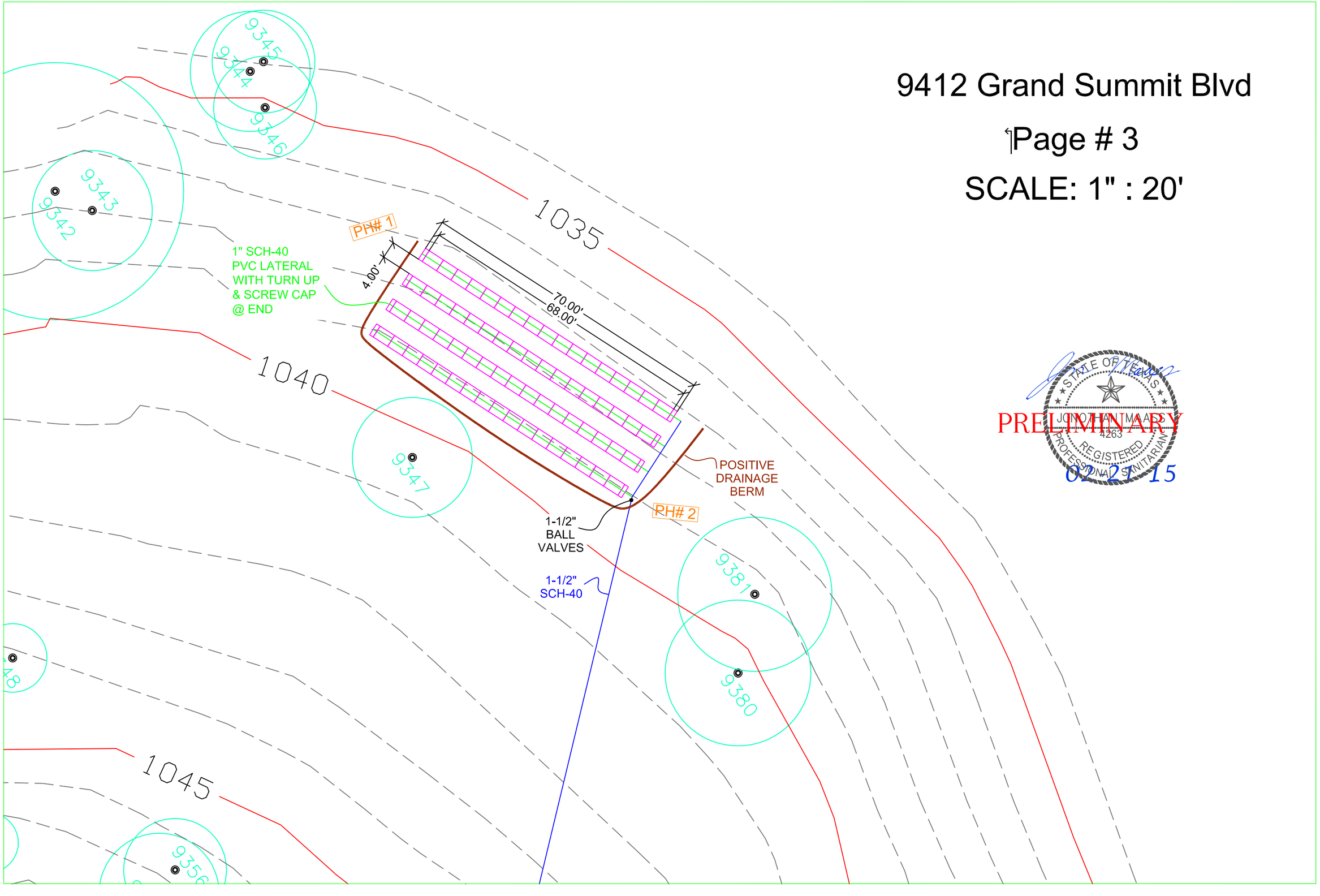
STATE OF TEXAS
JONOTHAN MAASS
4263
REGISTERED
PROFESSIONAL ENGINEER

PRELIMINARY
02-25-15

9412 Grand Summit Blvd

Page # 3

SCALE: 1" : 20'



STATE OF TEXAS
JONATHAN MAARS
4263
REGISTERED
PROFESSIONAL SANITARIAN

PRELIMINARY

02 27 15

On-Site Sewage Facility
Soil Evaluation Report Information

Date Soil Survey Performed: 02-18-15
County: Travis **Proposed Excavation Depth:** 18" TO 36"
Name of Site Evaluator: Jon Maass **Registration Number:** SE 0028165

Requirements:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area. Soil boring locations or dug pits must be shown on the site drawing.
For subsurface disposal, soil evaluations must be performed to depth of at least two feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.
Describe each soil horizon. Identify any restrictive features and indicate depths where features appear

Soil Boring Number 1

	Depth (Feet)	Texture Class	Soil Texture	Structure (For Class III blocky,platy or massive)	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0	0" to 60"	III	Silty Clay Loam	Blocky	No evidence of groundwater.	None	Gravel < 30%
1							
2							
3							
4							
5							

Soil Boring Number 2

	Depth (Feet)	Texture Class	Soil Texture	Structure (For Class III blocky,platy or massive)	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0	0" to 60"	III	Silty Clay Loam	Blocky			Gravel < 30%
1					No evidence of groundwater.	None	
2							
3							
4							
5							

Features of Site Area

Presence of 100 year flood zone	Yes	No X
Presence of adjacent ponds, streams, water impoundments	Yes	No X
Existing or proposed water well in nearby area	Yes	No X
Organized sewage service available to lot or tract	Yes	No X

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

Jon Maass — **Signature of Site Evaluator**

02-21-15 — **Date**

System Use:
Design capacity for a <4500 Sq Ft, 5-bedroom or less home with water-saving devices estimated daily flow 360 GPD

Proposed System:
Install an anaerobic pre-treatment system (septic tank) with a Low Pressure Dosed drainfield on this site. The anaerobic unit must meet all state and local requirements.

Soil Analysis
Class III see site evaluation. A class II or III soil may have to be added to achieve a 6" minimum of soil above the drain field.

Drain Field Calculations:
The designed load for this system is 360 GPD
Low Pressure Dose 360 /.2 or 1800 sq. ft. minimum field area.
1800 x .75 = 1350 sq. ft. minimum field area (25% reduction for leaching chambers)

a) Field area	1360 sq ft
b) 1" Laterals	272 linear feet, of 1" Sch-40 PVC
c) Trench coverage	5 sq. ft. / per linear ft.
d) Total Daily Dose	360 GPD / minimum dose 72.60 Gallons.
f) Chlrination	no chlorination required

Installation Note: Tanks are to be installed with, a minimum separation of five feet from the foundation. The tank is to be level (+/- 1") and is to be set on a minimum of four inches of washed sand. One two way clean out shall be installed between the foundation and septic tank every 50' of influent sewer lines.

Alarm System:
An audio/visual high water alarm (red light) will be installed on this system (RJR-LPD-B1 or equivalent). The alarm/light will be installed in a highly visible location as near the pump tank as possible. Alarm and pump on separate circuits. Use of disinfection alarm encouraged if system is to be chlorinated

Disposal Field Finish:
1. The Low Pressure Dose system area shall be located in a relatively open area at least 100' away from any well and 5' from any property lines.
2. The field area must be seeded, hydro mulched, or soded immediately after installation to prevent erosion and promote transpiration.
3. The field shall be maintained at all times (mowed).

NOTE: I AM A SEPTIC DESIGNER ONLY, NOT A SURVEYOR.
ALL PROPERTY LINES AND PROPERTY PINS MUST BE VERIFIED PRIOR TO SEPTIC / OSSF INSTALLATION.

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4263
REGISTERED
PROFESSIONAL SANITARIAN
02-21-15

Construction Notes:
A. Installer shall be responsible to comply with TCEQ and local codes for proper 0SSF installation.
B. The owner or contractor is to be responsible for identifying all property lines, easements, wells and other related improvements either actual or proposed and verify that the septic system installation does not violate any regulation or law. **Water lines shall be a minimum of 10' and wells a minimum 100' from any OSSF drain field.**
C. All roof and surface drainage shall be diverted from fields by guttering, berms, swales, etc.
D. It is required that water conserving methods be used with this system, including low flush toilets (1.6 gallons), pressure reducing faucet aerators and showerheads to reduce overloading the field areas.
E. Should seepage or other underground water be found, stop all construction and notify the design engineer and/or the environmental permitting agency.
F. Homeowner/contractor is hereby aware that it is illegal to allow water softeners to discharge into this treatment unit. It will cause corrosion of the electrical components, will shorten the life of the pumps and floats, and will void equipment warranties. Softener discharge should not be routed to any part of the OSSF system.
G. Liquid input into this septic system shall not exceed 360 gallons per day.

Note: This design in no way constitutes a warranty, extension of warranty, and/or guarantee of system operation or function. Owner is ultimately responsible for the system upkeep (retaining maintenance, reporting problems, Monitoring flow, etc.). While the designer has made diligent effort to preserve vegetation and the landscape, the designer is not responsible for any losses (trees landscaping. etc.) due to installation, operation, and/or system failure.

Design Maintenance and Limitations:
This OSSF design is intended to meet minimum state requirements for OSSF as of 12/5/2012. The owner should be aware that a septic system is a system of "limited" capacity and will not stand up to prolonged abuse. Any of the guidelines below which are not followed amount to abuse of the septic system compromises agreement by the homeowner to regulate use of this system so as to maintain its integrity.
A. The owner is to be responsible for properly maintaining this anaerobic system.
To keep your anaerobic sewage system in peak condition the following steps should be taken:
1. Keep the field areas mowed and in good condition in order to encourage peak transpiration.
2. Do not allow excess water to enter your drainfield (sprinkler systems, run-off etc). Leaky faucets and toilets must be repaired immediately.
3. Avoid the use of garbage disposals to dispose of kitchen waste.
4. Do not let harsh chemicals, grease, high sudsing detergents, discharge from water softeners, disinfectants or any other bactericides enter the system.
5. Avoid flushing paper products or items not intended for septic use (i.e. toilet paper only) recommended Scott brand pure cellulose.
6. Be sure to pump out your trash tank (see schematic drawing) every 2 to 3 years to avoid excessive sludge build-up. Excessive build up reduces storage volume in your tank and can damage your drainfield.
7. Do not allow vehicles or heavy equipment to drive over the irrigation fields or tanks.
8. If any problem persists, such as frequent high water alarms or surfacing of septic water in your yard, call your OSSF service maintenance company for consultation or repair service immediately.

Inspection Schedule:
Inspection schedule must be adhered to in order to demonstrate compliance. This schedule is independent of the local health authority's inspection & requirements.
Pre-construction Meeting: Meet with designer prior to construction with any questions.
Plumbing Inspection: Plumbing, pump, controls, and alarm are in place, operational and exposed.
Final: When system is complete and landscaping is finished.

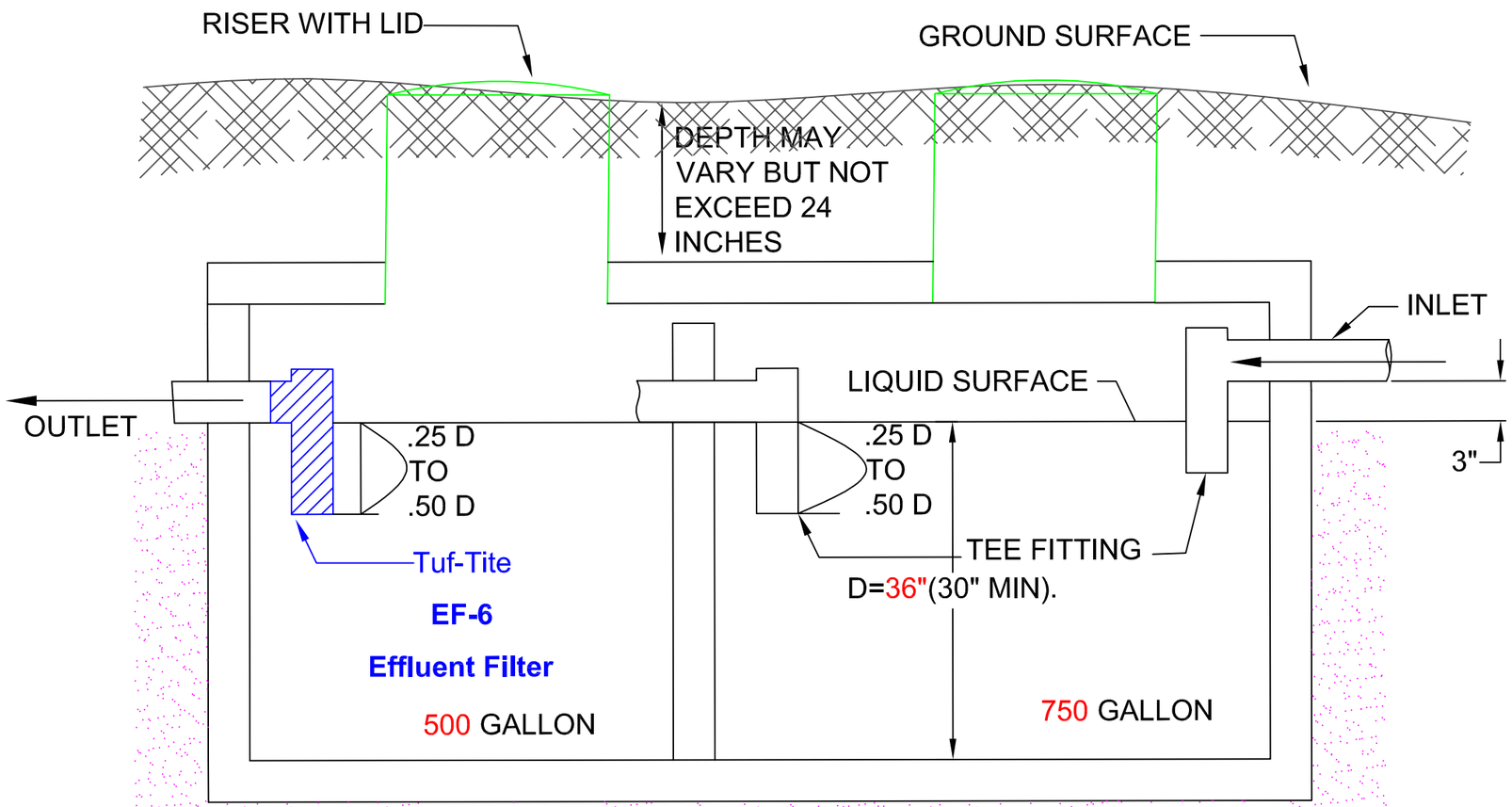
JON MAASS
2303 RR 620 SOUTH
SUITE 135-243
LAKEWAY, TX 78734
512.638.1326

SITE:
9412 GRAND SUMMIT BLVD
DRIPPING SPRINGS, TEXAS 78620

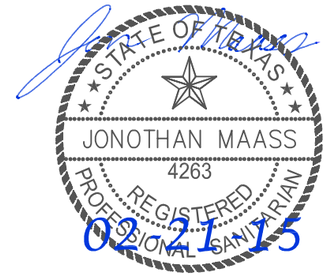
LEGAL:
LOT 12 BLOCK A
THE RANCHES AT
HAMILTON POOL

SCALE NOT TO SCALE
PAGE # 4
PERMITTING AUTHORITY:
TRAVIS COUNTY
PROPERTY ID # 711545

1250 GALLON SINGLE COMPARTMENT SEPTIC TANK NTS



BEDDING AND BACKFILL SPECIFICATION FOR THE TANKS 4 INCH MINIMUM OF EITHER SAND, SANDY LOAM, OR PEA GRAVEL, FREE OF ROCK LARGER THAN PEA GRAVEL THE TANK IS TO BE LEVEL (+/- 1")



JON MAASS
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SUITE 135-243
LAKEWAY, TX 78734
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SITE:
9412 GRAND SUMMIT BLVD
DRIPPING SPRINGS, TEXAS 78620

LEGAL:
LOT 12 BLOCK A
THE RANCHES AT
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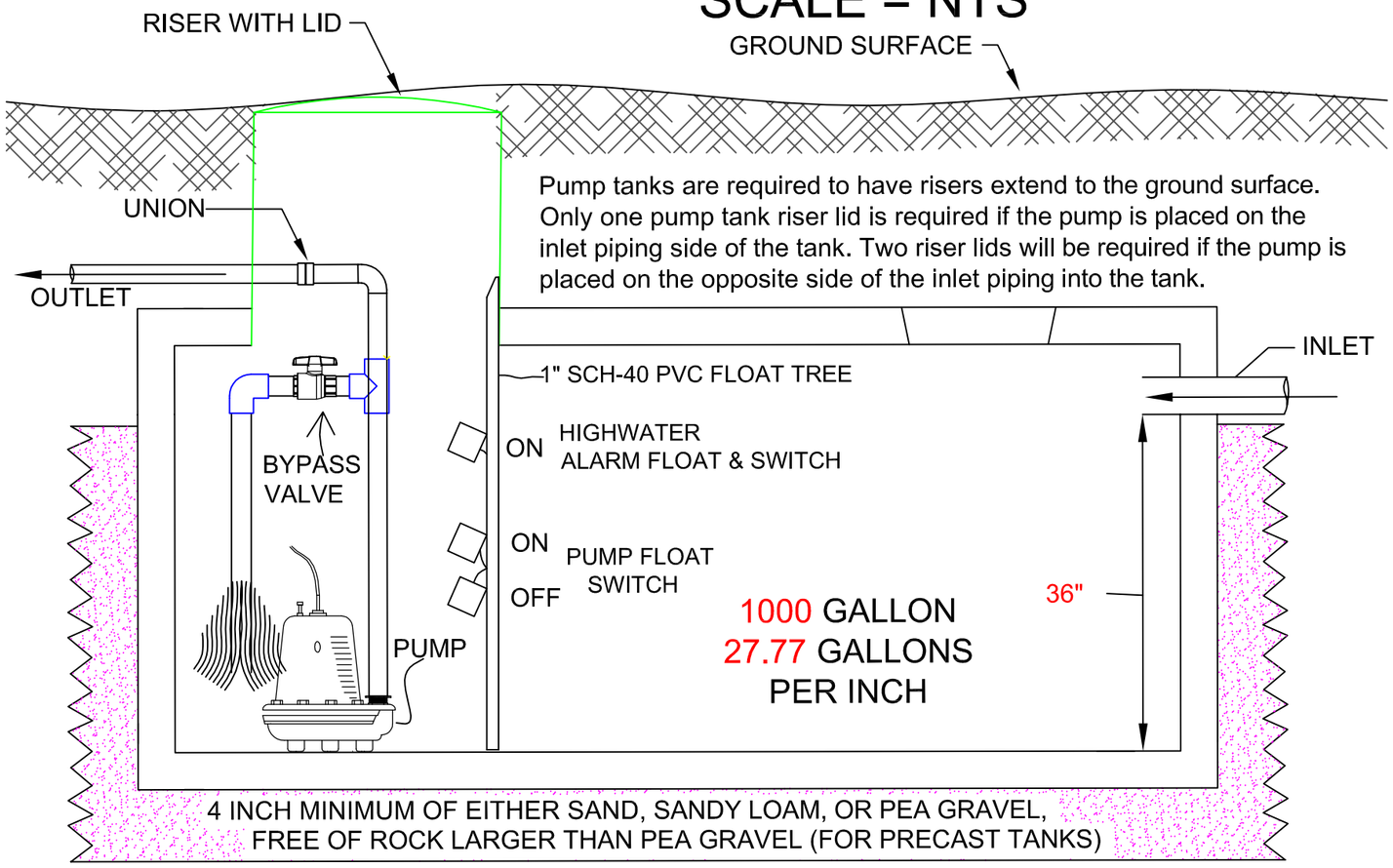
SCALE NOT TO SCALE	
PAGE # 5	
PERMITTING AUTHORITY:	
TRAVIS COUNTY	PROPERTY ID # 711545

PUMP TANK
SCALE = NTS



Pump tanks are required to have risers extend to the ground surface. Only one pump tank riser lid is required if the pump is placed on the inlet piping side of the tank. Two riser lids will be required if the pump is placed on the opposite side of the inlet piping into the tank.

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02-21-15

1000 Gallon pump tank 36" liquid depth, 27.77 GPI
Alarm on @ 23” inches above the floor (leaving 13” or 361.01 gallons for alarm volume)
Start Pump @ 19” inches above the floor (222.16 gallons between pump stop and alarm on)
Stop Pump @ 15” inches above the floor (416.55 residual)

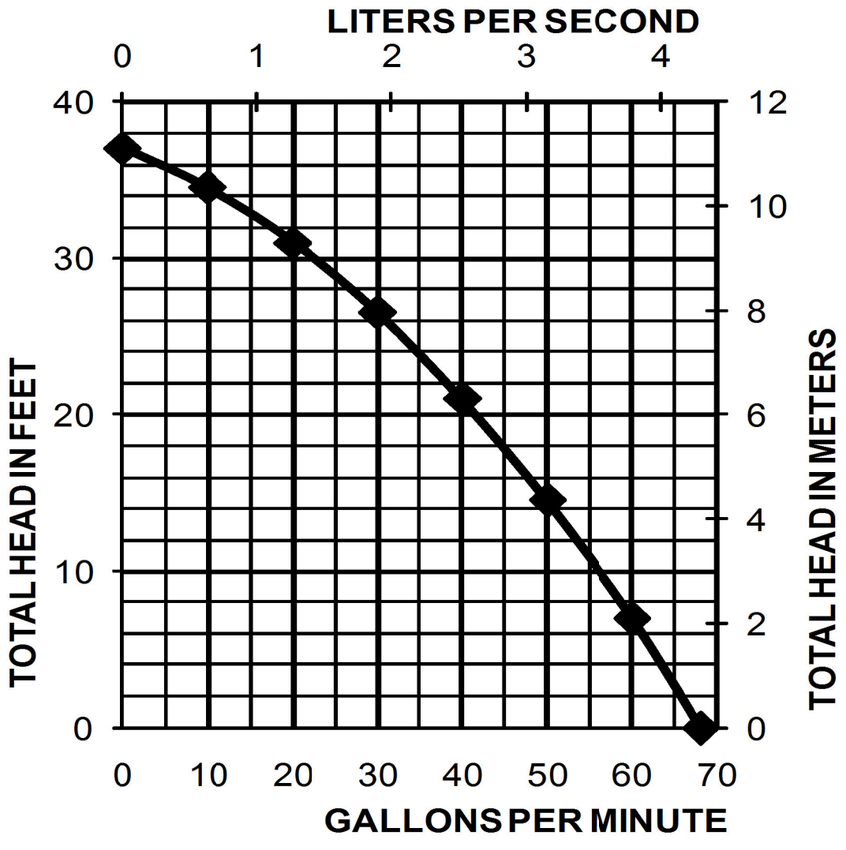
BEDDING AND BACKFILL SPECIFICATION FOR THE TANKS 4 INCH MINIMUM OF EITHER SAND, SANDY LOAM, OR PEA GRAVEL, FREE OF ROCK LARGER THAN PEA GRAVEL THE TANK IS TO BE LEVEL (+/- 1")

JON MAASS
2303 RR 620 SOUTH
SUITE 135-243
LAKEWAY, TX 78734
512.638.1326

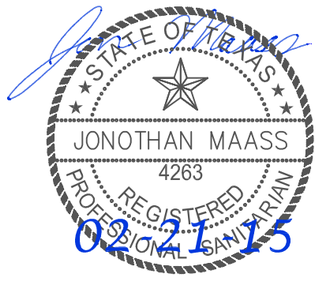
SCALE NOT TO SCALE	**SITE:** 9412 GRAND SUMMIT BLVD DRIPPING SPRINGS, TEXAS 78620
PAGE # 6	**LEGAL:** LOT 12 BLOCK A THE RANCHES AT HAMILTON POOL
PERMITTING AUTHORITY:	
TRAVIS COUNTY	PROPERTY ID # 711545

EFFLUENT PUMP

Liberty Pumps280-SERIES
1/2 hp 115V 10 amps
PERFORMANCE CURVE



Pump Data - Design Goals
Provide 33.0 GPM at 14.8 Ft or 6.4 PSI.
Pump Selection: LIBERTY 280 Series



811®

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JON MAASS 2303 RR 620 SOUTH SUITE 135-243 LAKEWAY, TX 78734 512.638.1326	**SITE:** 9412 GRAND SUMMIT BLVD DRIPPING SPRINGS, TEXAS 78620
SCALE NOT TO SCALE	**LEGAL:** LOT 12 BLOCK A THE RANCHES AT HAMILTON POOL
PAGE # 7	
PERMITTING AUTHORITY:	
TRAVIS COUNTY	PROPERTY ID # 711545

Minimum Dosing Calculator (based on Schedule 40 PVC)

Pipe Section	Pipe Length (in feet)	Size in inches (pick one)	Storage Volume (gallons) using Sea Grnt Vol	Storage Volume (gallons) using ID vol calc	
SUPPLY:					
1	186	1.5	17.1	19.2	
Total Supply Line Volume:			17.1	19.2	Gallons
LATERALS:					
1	272	1	11.1	11.8	
Total Lateral Line Volume:			11.1	11.8	gallons
Minimum Dosing Volume:			**72.6**	**78.4**	**gallons**

Schedule 40 Pipe Supply Line Loss Calculator

Pipe Section	Pipe Length (in feet)	Size in inches	Flow Rate (Gallons per minute)	Loss (feet)		
1	186	1.5	**33.0**	12.4		
Total Pipe Loss				12.4	feet	5.3 PSI
With 20% for fittings				14.8	feet	6.4 PSI
With Elevation in feet:			**-2**	12.8	feet	5.6 PSI
With Operating Head in feet:			**2**	14.8	feet	6.4 PSI
Additional Loss **in feet** (List):						
			TOTAL LOSS:	**14.8**	**FEET OR**	**6.4 PSI**

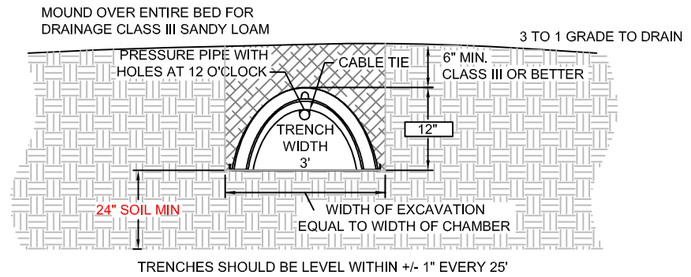
Disposal Field Info

2	Static Head (ft)	1.5	Supply Line Size	0.121	average flow/ft (gpm/ft)
33	Prop Flow (gpm)	1	Lateral Size		
186	ft supply (longest)	145	Pipe Roughness Constant		
272	ft laterals (largest zone)	2	Hole start from distal ends (ft)		

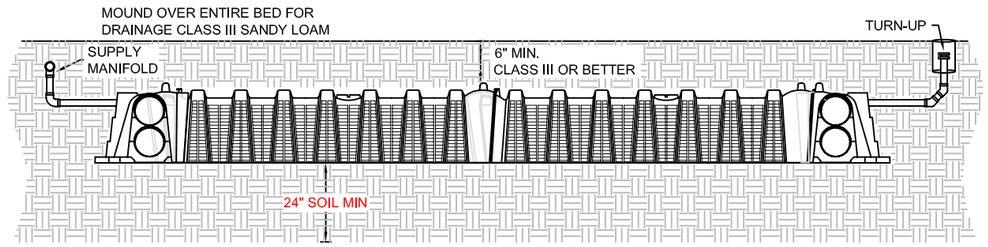
FIELD A

lateral #	lateral length (ft)	design flow rate (gpm/lateral)	hole size diameter (in)	head pressure (ft)	flow rate per hole (gpm)	number of holes	actual flow (gpm/lateral)	Bypass Flow (gpm)	Δ elevation to next lateral (ft)	manifold distance to next lateral (ft)	manifold size to next lateral (in)	manifold average I.D. (in)	friction loss in manifold (ft) + 0.5' pipe	flow rate per foot (gpm)	Hole spacing (in)
1	**68**	8.25	5/32	2.00	0.407	**20**	8.14	24.86	0.09	4	1-1/2"	1.61	0.178	**0.120**	**40 2/4**
2	**68**	8.25	5/32	1.91	0.398	**21**	8.36	16.50	0.09	4	1-1/2"	1.61	0.083	**0.123**	**38 2/4**
3	**68**	8.25	5/32	1.92	0.399	**21**	8.37	8.13	0.09	4	1-1/2"	1.61	0.022	**0.123**	**38 2/4**
4	**68**	8.25	5/32	1.99	0.406	**20**	8.11	0.02	0.09			0		**0.119**	**40 2/4**
totals	**272**					**82**	**32.98**								

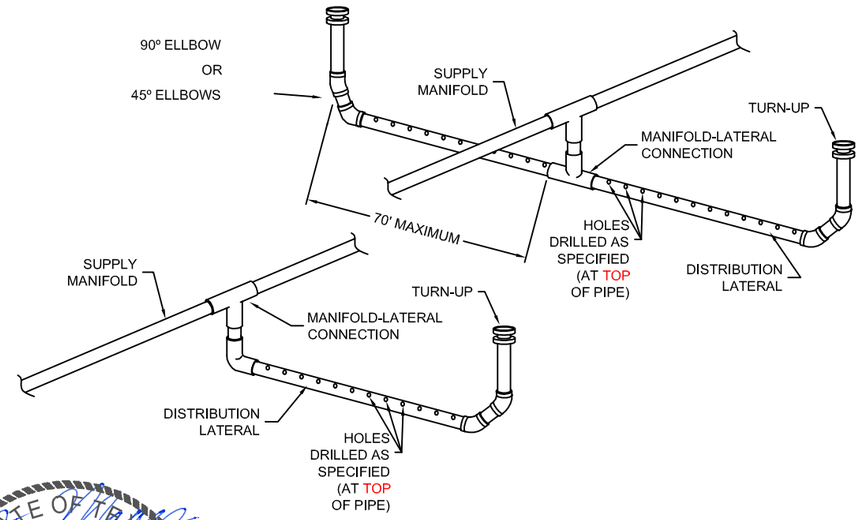
LOW-PRESSURE DISTRIBUTION SYSTEM
INTO LEACHING CHAMBER WITH 25% REDUCTION



END VIEW



SIDE VIEW



STATE OF TEXAS
JONOTHAN MAASS
4263
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PROFESSIONAL SANITARIAN
02.21.15

Zone #1

JON MAASS
2303 RR 620 SOUTH
SUITE 135-243
LAKEWAY, TX 78734
512.638.1326

SCALE NOT TO SCALE

PAGE # 8

PERMITTING AUTHORITY:

TRAVIS COUNTY

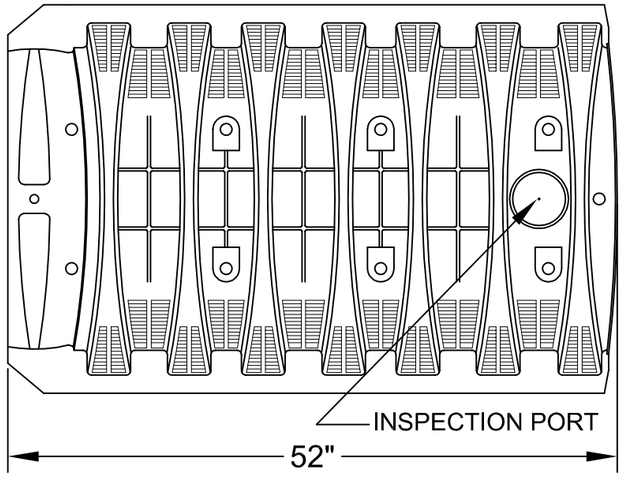
SITE:
9412 GRAND SUMMIT BLVD
DRIPPING SPRINGS, TEXAS 78620

LEGAL:
LOT 12 BLOCK A
THE RANCHES AT
HAMILTON POOL

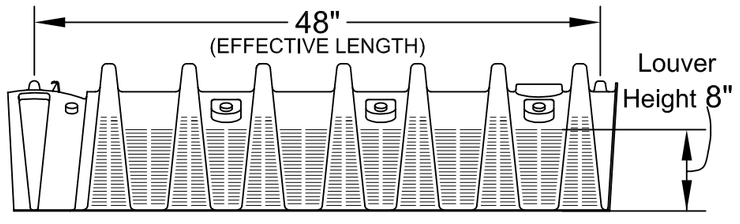
PROPERTY ID # 711545

INFILTRATOR SYSTEMS INC.
QUICK4 STANDARD CHAMBER AND MULTIPORT END CAP PRODUCT SPECIFICATION

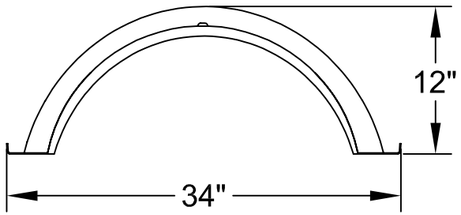
TOP VIEW

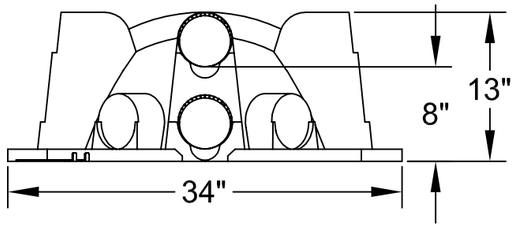


SIDE VIEW



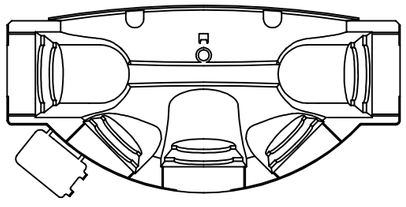
FRONT VIEW

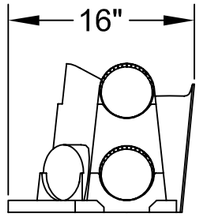




8" INVERT END CAP

MULTIPORT END CAP





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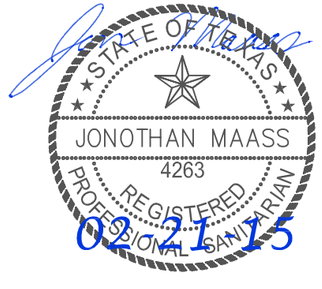
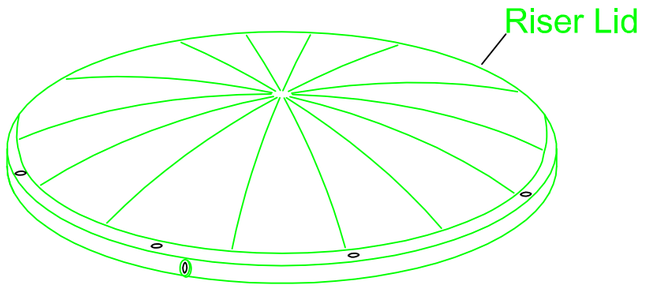
systems inc.

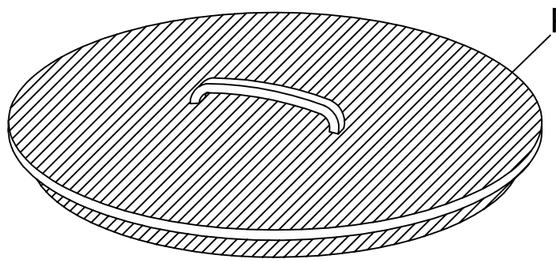


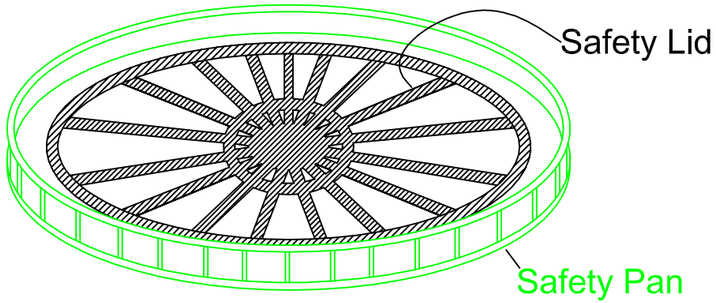
JON MAASS
2303 RR 620 SOUTH
SUITE 135-243
LAKEWAY, TX 78734
512.638.1326

SCALE NOT TO SCALE	**SITE:** 9412 GRAND SUMMIT BLVD, DRIPPING SPRINGS, TEXAS 78620
PAGE # 9	**LEGAL:** LOT 12 BLOCK A, THE RANCHES AT HAMILTON POOL
PERMITTING AUTHORITY: TRAVIS COUNTY	PROPERTY ID # 711545

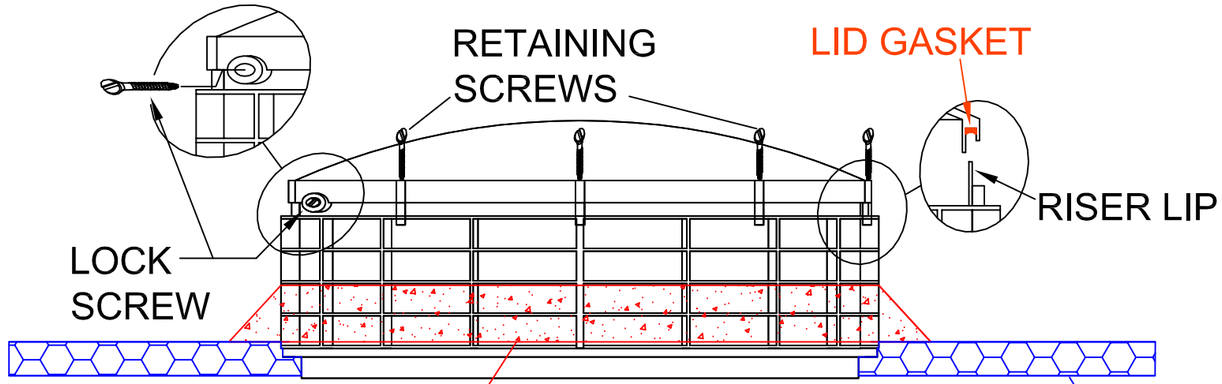
RISER DETAIL







Secondary lid / safety component options



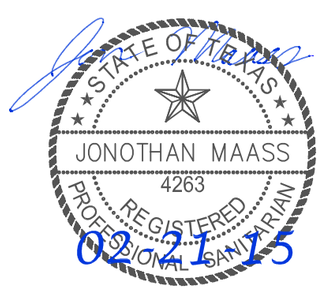
Risers must be permanently fastened to the tank lid or cast into the tank. The connection between the riser and the tank lid must be watertight.

Risers must be fitted with removable watertight caps and protected against unauthorized intrusions. Acceptable protective measures required:

- a cover that can be removed with tools
- a cover having a minimum net weight of (65 pounds)

Only septic tanks are allowed to have a riser extend to within 6" of the ground surface,or extend to grade if tank lid is over 12" deep. Risers on all other tanks must extend to the ground surface.

Risers and tank inspection ports will be required to have access safety provisions per 30 TAC 285.38 (12/5/2012).



JON MAASS
2303 RR 620 SOUTH
SUITE 135-243
LAKEWAY, TX 78734
512.638.1326

SCALE NOT TO SCALE

PAGE #10

PERMITTING AUTHORITY:

TRAVIS COUNTY

SITE:
9412 GRAND SUMMIT BLVD
DRIPPING SPRINGS, TEXAS 78620

LEGAL:
LOT 12 BLOCK A
THE RANCHES AT
HAMILTON POOL

PROPERTY ID # 711545