



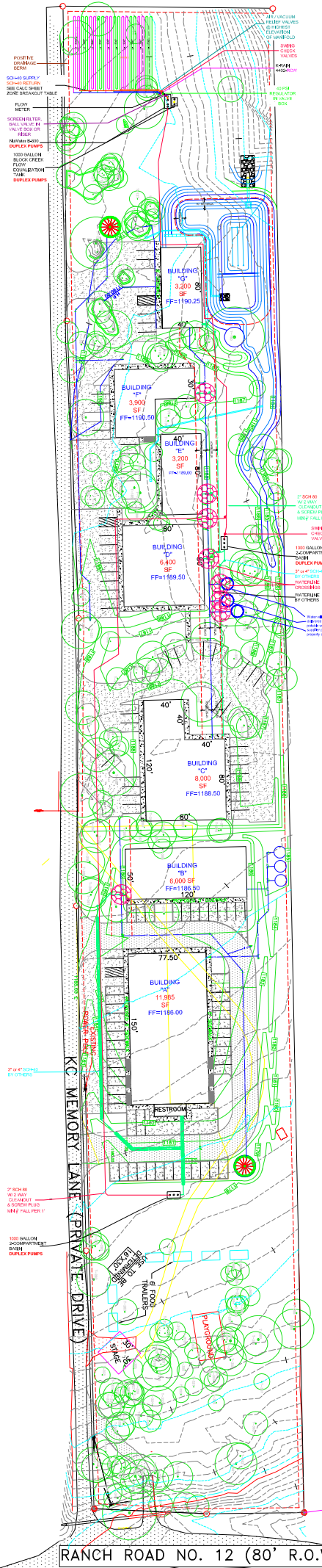
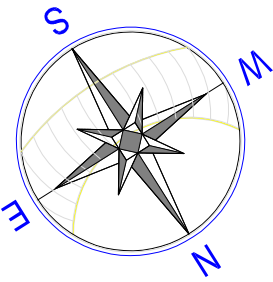
WATERLINE CROSSING

1-1/4" - SCH-40 SUPPLY
 1" - SCH-40 RETURN
 SEE CALC SHEET
 ZONE BREAKOUT TABLE
 1" BETWEEN PUMP & KRAIN
 VALVE

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, IF
 FIELD AREA IS GREATER THAN
 10% SLOPE .

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.



NETAFIM BIOLINE

.61 GPH @ 24"

$$Q = 600 / .1 =$$

6000 SF MIN

$$6000 / 2 =$$

3000LF MIN

L1 300'

L2 300'

L3 300'

L4 300'

L5 300'

L6 300'

L7 300'

L8 300'

L9 300'

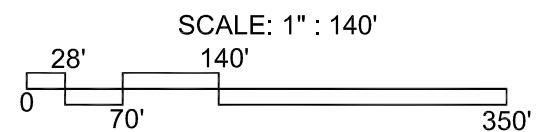
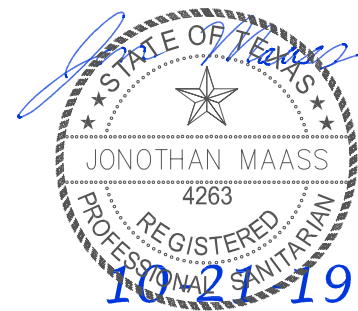
L10 300'

TOTAL

3000'



Know what's below.
 Call before you dig.



DRAWN BY:

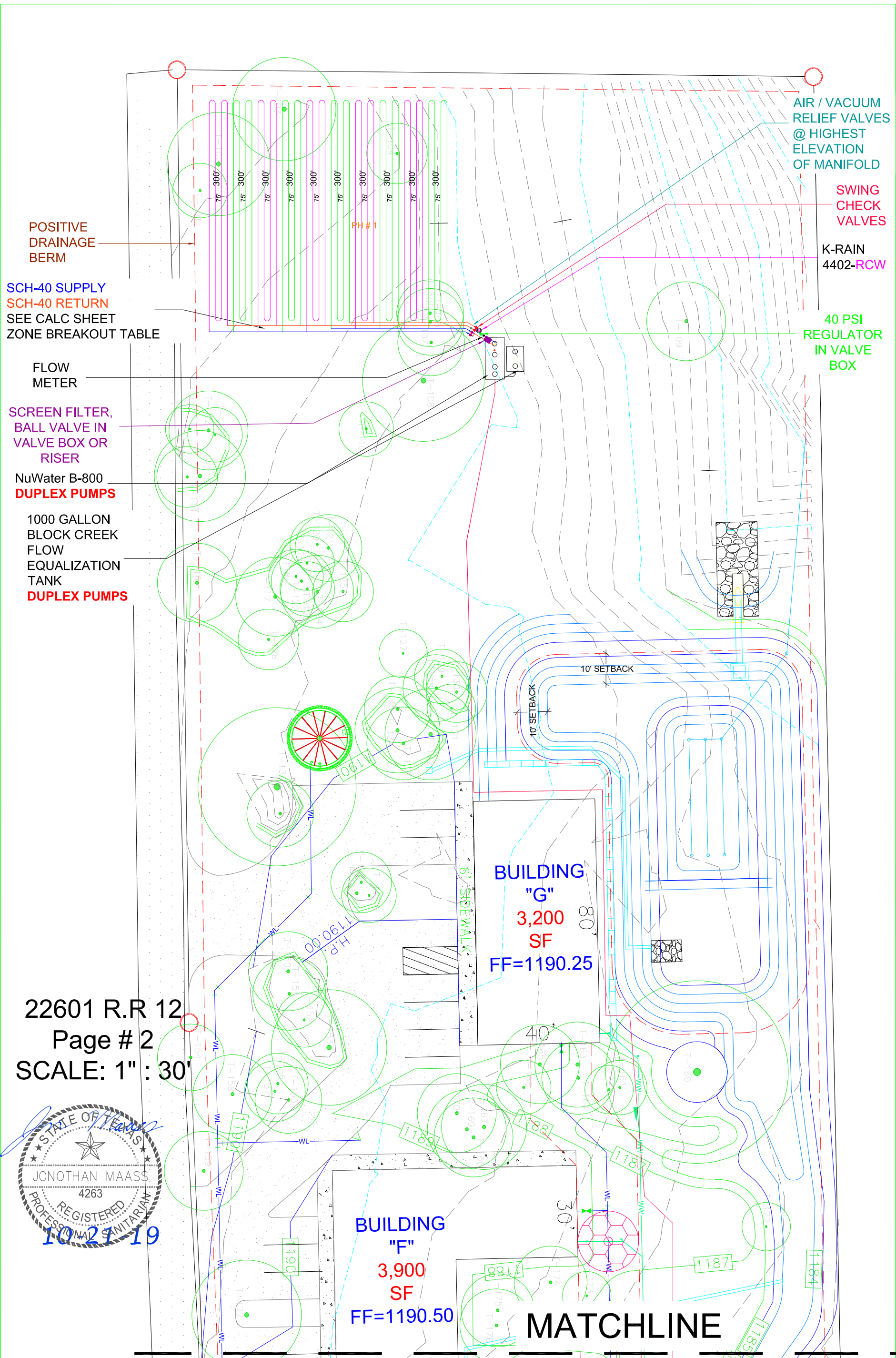
PAGE #1 of 18

JON MAASS, RS 4263
 6513 THOMAS SPRINGS ROAD
 AUSTIN, TEXAS 78736
 512-297-2346

22601 RANCH ROAD 12
 DRIPPING SPRINGS, TX 78620

Legal Description:

A0551 A0551 - J N HALFORD
 SURVEY SERIAL# 12308746,
 ACRES 7.16



AIR / VACUUM
RELIEF VALVES
@ HIGHEST
ELEVATION
OF MANIFOLD

SWING
CHECK
VALVES

K-RAIN
4402-RCW

40 PSI
REGULATOR
IN VALVE
BOX

POSITIVE
DRAINAGE
BERM

SCH-40 SUPPLY
SCH-40 RETURN
SEE CALC SHEET
ZONE BREAKOUT TABLE

FLOW
METER

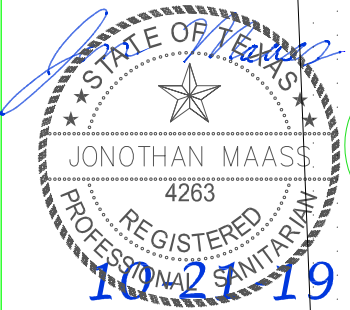
SCREEN FILTER,
BALL VALVE IN
VALVE BOX OR
RISER

NuWater B-800
DUPLEX PUMPS

1000 GALLON
BLOCK CREEK
FLOW
EQUALIZATION
TANK
DUPLEX PUMPS

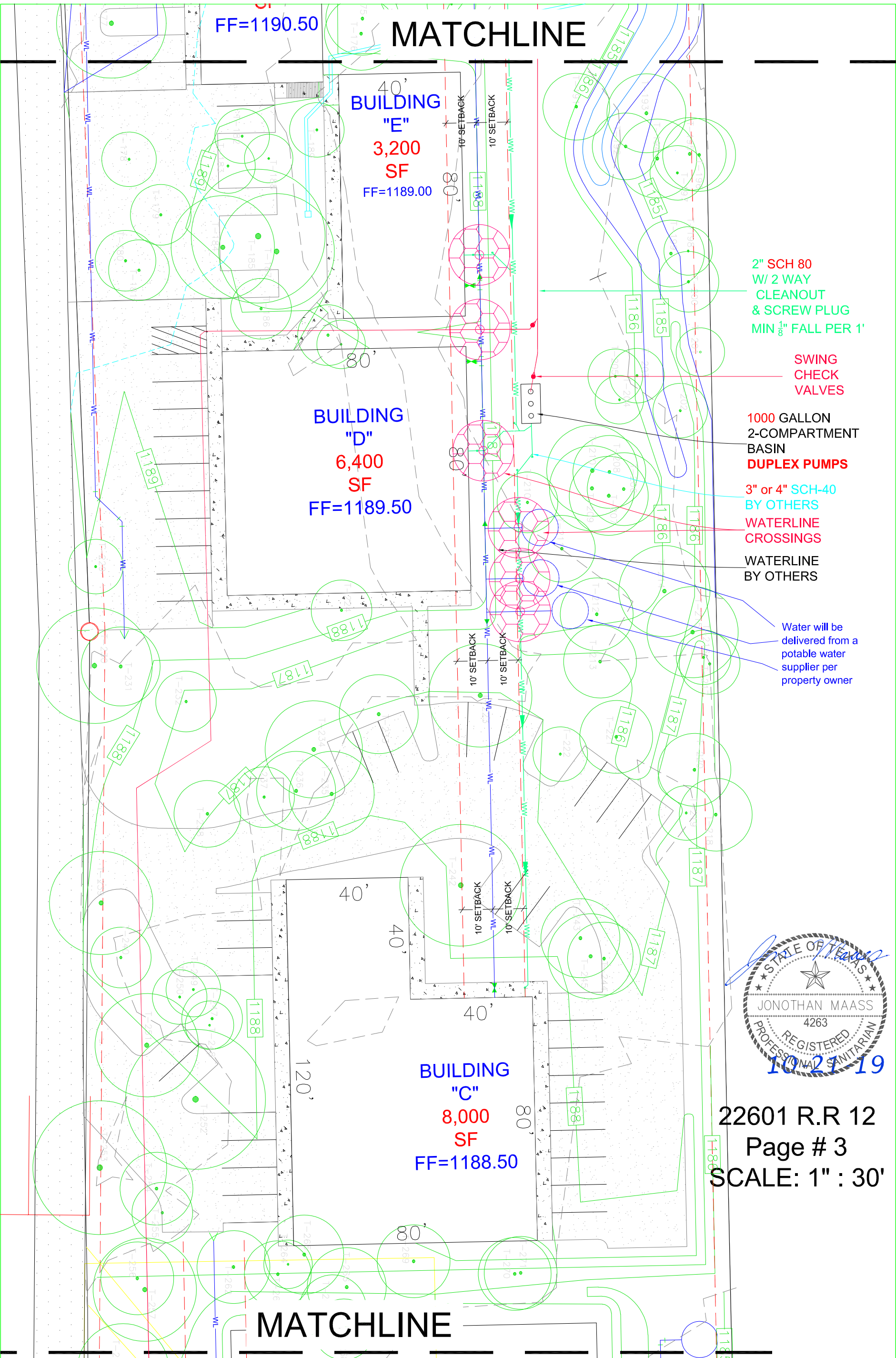
**BUILDING
"G"**
3,200
SF
FF=1190.25

22601 R.R 12
Page # 2
SCALE: 1" : 30'



**BUILDING
"F"**
3,900
SF
FF=1190.50

MATCHLINE



FF=1190.50

MATCHLINE

BUILDING "E"
 3,200 SF
 FF=1189.00

BUILDING "D"
 6,400 SF
 FF=1189.50

BUILDING "C"
 8,000 SF
 FF=1188.50

2" SCH 80
 W/ 2 WAY
 CLEANOUT
 & SCREW PLUG
 MIN 1/8" FALL PER 1'

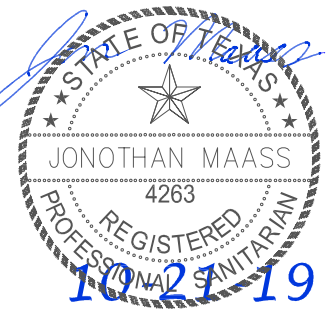
SWING
 CHECK
 VALVES

1000 GALLON
 2-COMPARTMENT
 BASIN
DUPLEX PUMPS

3" or 4" SCH-40
 BY OTHERS
 WATERLINE
 CROSSINGS

WATERLINE
 BY OTHERS

Water will be
 delivered from a
 potable water
 supplier per
 property owner



22601 R.R 12
 Page # 3
 SCALE: 1" : 30'

MATCHLINE

MATCHLINE

BUILDING
"B"
6,000 SF
FF=1186.50

PROPOSED 5' SIDEWALK

BUILDING
"A"
11,985 SF
FF=1186.00

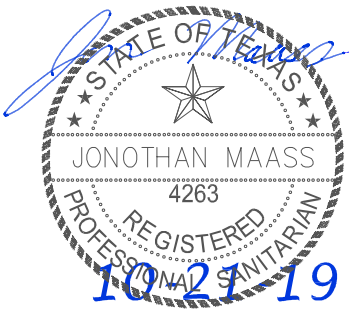
PROPOSED 5' SIDEWALK

5' SIDEWALK

RESTROOM

KC MEMORY LANE (PRIVATE)

MATCHLINE



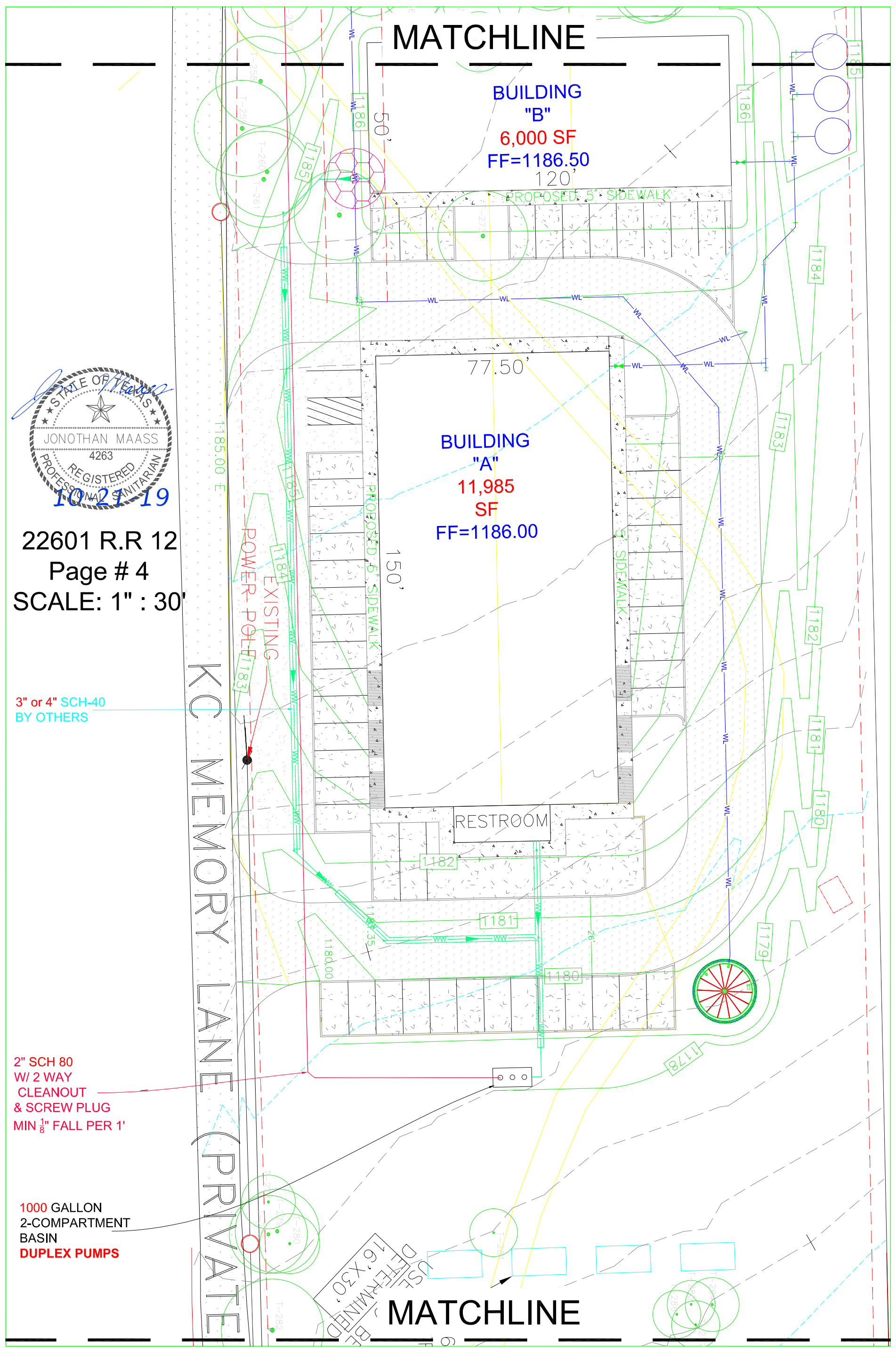
22601 R.R 12
Page # 4
SCALE: 1" : 30'

3" or 4" SCH-40
BY OTHERS

2" SCH 80
W/ 2 WAY
CLEANOUT
& SCREW PLUG
MIN 1/8" FALL PER 1'

1000 GALLON
2-COMPARTMENT
BASIN
DUPLEX PUMPS

USE
DETERMINED
BY
16' X 30'



MATCHLINE

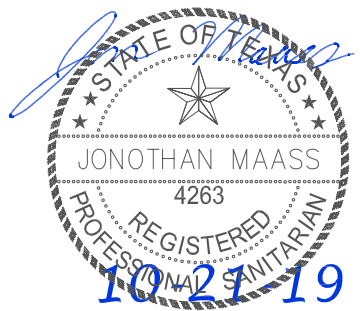
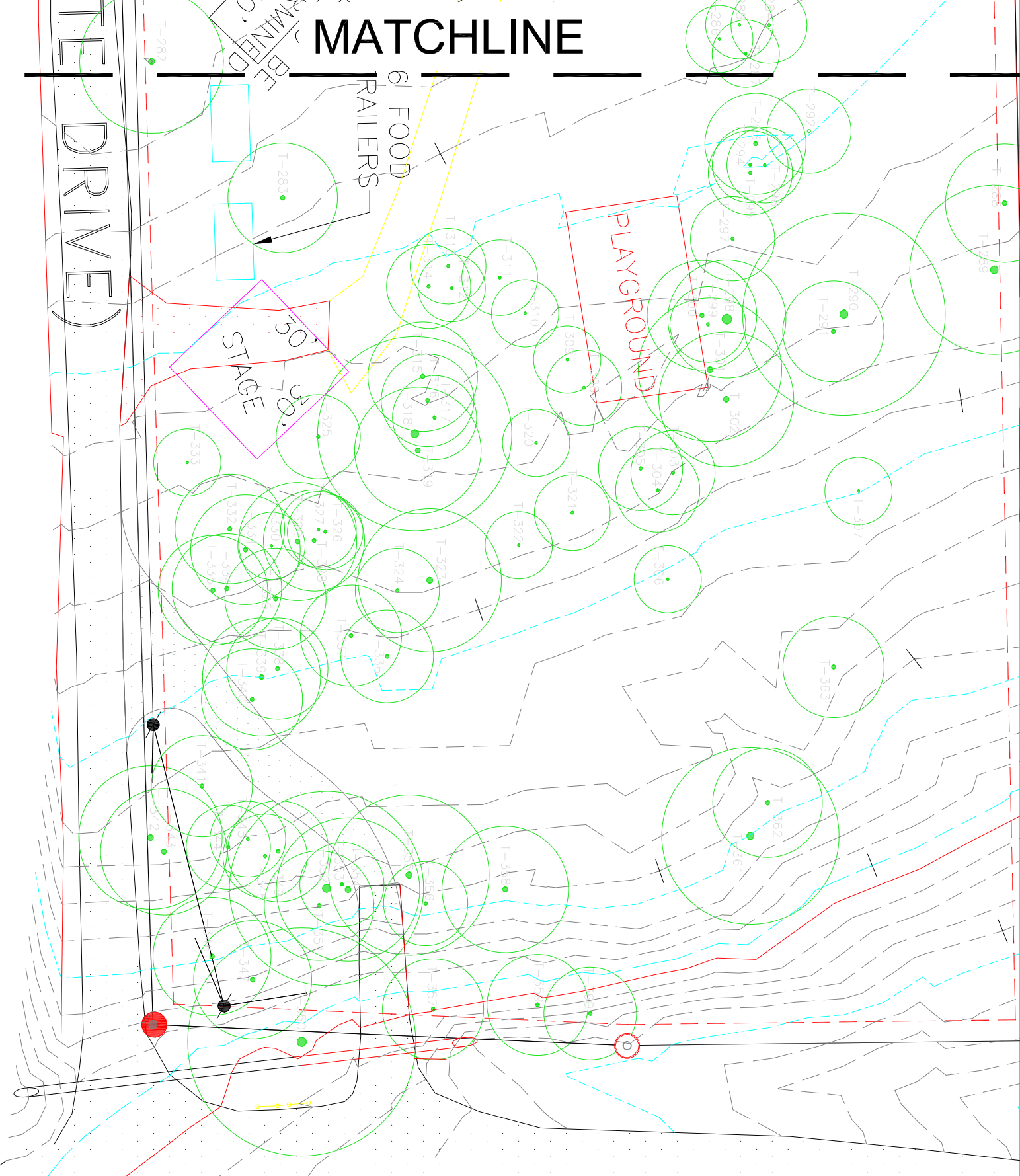
TRAIL DRIVE

6 FOOD
RAILERS

STAGE

PLAYGROUND

RANCH ROAD NO. 12 (80' R.



22601 R.R 12
 Page # 5
 SCALE: 1" : 30'

HAYS COUNTY, TEXAS ON-SITE SEWAGE FACILITY (OSSF) SITE EVALUATION FORM (FORM OSSF-300)

1. OWNER INFORMATION:
Property Owner's Full Legal Name: **See App**

2. PROPERTY INFORMATION (the property or tract for which an Application has been submitted under the Hays County Development Regulations):
911 street address for the Subject Property (if established)1: **See Title Block**
City: **See Title Block** Zip Code: **See Title Block**
Legal description: **See Title Block**
Lot: Block: Subdivision: Sec: Phase:
If not located in a subdivision: Survey: FANNIE A D DARDEN SURVEY
Abstract: Recorded (Vol/Page):

1If a 911 street address has not yet been assigned to the Subject Property, the Applicant must contact the 911 Coordinator at (512) 393-2160 to obtain an address.

3. SITE EVALUATION INFORMATION:
Name of Site Evaluator: **Jon Maass** OS#: **SE 0028165**
Date Performed: **09-08-18** Proposed Excavation Depth: **Drip**

4. REQUIREMENTS:

- At least two soil evaluations must be performed on the site at opposite ends of the proposed disposal area. Locations of soil evaluations must be shown on the application site drawing or designer's site drawing.
- For subsurface disposal, soil evaluations must be performed to a depth of at least 2 feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.
- Please describe each soil horizon and identify any restrictive features in the space provided below. Draw lines at the appropriate depths.

Soil Profile Hole Number:					
Depth (ft)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0	III	< 30 %	No Evidence of groundwater	18" Rock	0" to 17" Clay Loam
1					
2					
3					
4					

Soil Profile Hole Number:					
Depth (ft)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0	III	< 30 %	No Evidence of groundwater	15" Rock	0" to 14" Clay Loam
1					
2					
3					
4					

5. FEATURES OF SITE AREA:

- Presence of 100 year flood zone Yes No
- Presence of adjacent ponds, streams, water impoundments Yes No
- Existing or proposed water well in nearby area Yes No
- Organized sewage available to lot or tract Yes No
- Recharge features within 150 feet Yes No
- This site is suitable for a standard On-Site Sewage Facility Yes No

6. I certify that the above statements are true and correct and are based on my own field observations.
Signature of Site Evaluator: X *Jon Maass*
Print Name: **Jon Maass**
Date: **04-13-15**

System Use:

Design capacity for **office warehouse, no food preparation** with water-saving devices estimated daily flow **600 GPD**.

Proposed System:

Install an aerobic pre-treatment system with a drip irrigation type drainfield on this site. The aerobic unit must be NSF approved and meet all state and local requirements for effluent quality.

Design Principles:

Primary treatment of effluent will be accomplished using a NSF approved aerobic treatment unit. Treated effluent will then be distributed evenly over the disposal field area. Drip irrigation will be the method of effluent dispersal and disposal. The surface soil conditions for this site will have to be amended and increased to support the system.

Soil Analysis

Class III, see site evaluation, a class III soil may have to be added to achieve a minimum of 6" to 8" of soil above the dripperline. Any existing soil surface where soil is added should be scarified before additional soil is added.

Drain Field Calculations:

- The designed load for this system is **600 GPD**
Drip irrigation requires **600 (Q) / .1 (Ra) = 6000 sq. ft. min field area 6000 / 2 = 3000 LF tubing min.**
a) ripperline Flushing **Minimum field flushing, open flushing valve partially to establish continuous flushing during normal use (dosing), field should be flushed during each maintenance visit, at a minimum of 2 feet per second at the distal end of the flushing manifold, weekly flushing is recommended to assure dripper operation.**
b) Aerobic treatment system **NuWater B800** (Aerobic treatment system including: aerobic unit, aerator mechanism, and electronic controls in a weatherproof box)
c) Filter **Inline 100 micron / 150 mesh, API screen filter model(4E-1AN-150)**
d) Chlorination **no chlorination required**
e) Pressure Regulator **1" 40 -psi each zone**
f) Air Relief **1" air relief shall be installed at the highest points of both the supply and flushing manifolds, air relief valves shall be covered by a 6" round valve box with a purple cover.**

Pump Timer:

RJR-ALTD-1ATU-2A controller with **Omron H3CR-F8** or equal. A NFS approved, control panel is also acceptable. See calculation outputs

Tank Data:

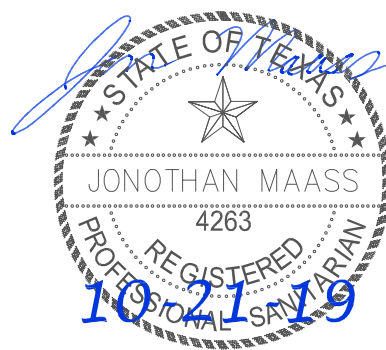
- Pre treatment tank: **431** gallon (included in **NuWater B800**)
Flow Equalization tank: **1000** gallon (stand alone)
ATU-treatment tank: **NuWater B800** aerobic unit(capacity **800 gpd**).
Pump tank: **854**-gallon single compartment pump tank.
Installation Note: Tanks are to be installed with, 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 clean out shall be installed between the foundation and septic tank every 50' of influent sewer line.

Alarm System:

An audio/visual high water alarm (red light) will be installed on this system. **RJR-ALTD-1ATU-2A** controller or equal. The alarm/light will be installed in a highly visible location as near the pump tank as possible. The alarm will shut down the pump in case of aerator or failure.

Disposal Field Finish:

- The drip irrigation system area shall be located in a relatively open area at least 100' away from any well and 5' from any property lines (manifolds should be 1' away from any PUE).
- The field area must be seeded, mulched, or soded immediately after installation.
- The field shall be maintained at all times (mowed).
- The field surface may have to be amended (scarified) plus have soil added to meet minimum depths for tubing, and separations to a restrictive horizon and/or groundwater (**see detail**).



Construction Notes:

- Installer shall be responsible to comply with TCEQ and local codes for proper OSSF installation.
- 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' from any OSSF drainfield.**
- All roof and surface drainage shall be diverted from fields by guttering, berms, swales, etc.
- 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.
- Should seepage or other underground water be found, stop all construction and notify the design engineer and/or the environmental permitting agency.
- 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.
- Liquid input into this septic system shall not exceed **600** 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 12/05/2012. 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.

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.

A. The owner is to be responsible for properly maintaining this aerobic system.

- To keep your anaerobic sewage system in peak condition the following steps should be taken:
- Keep the field areas mowed and in good condition in order to encourage peak transpiration.
 - Do not allow excess water to enter your drainfield (sprinkler systems, run-off etc). Leaky faucets and toilets must be repaired immediately.
 - Avoid the use of garbage disposals to dispose of kitchen waste.
 - Do not let harsh chemicals, grease, high sudsing detergents, discharge from water softeners, disinfectants or any other bactericides enter the system. This is an aerobic "living" system, and additives can upset the natural bacterial balance.
 - Avoid flushing paper products or items not intended for septic use (i.e. toilet paper only) recommended Scott brand pure cellulose.
 - 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.
 - Do not allow vehicles or heavy equipment to drive over the irrigation fields or tanks.
 - 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.

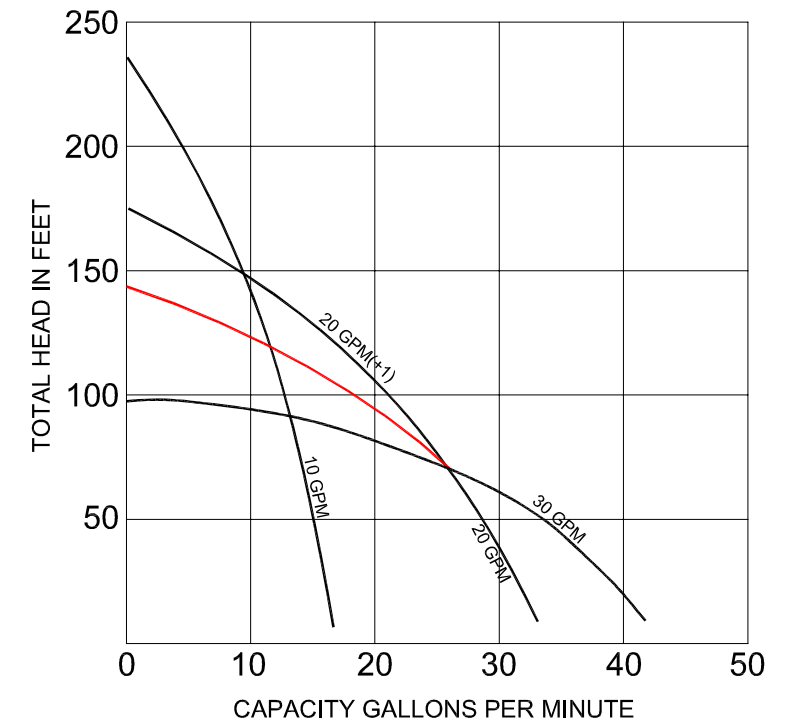
NOTE: I AM A SEPTIC DESIGNER ONLY, NOT A SURVEYOR. ALL PROPERTY LINES AND PROPERTY PINS MUST BE VERIFIED PRIOR TO SEPTIC INSTALLATION.

JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE	
PAGE # 6	
PERMITTING AUTHORITY:	
HAYS COUNTY	Property ID # R19395

TOTAL RUN = 80 MIN
 TOTAL REST = 1360 MIN
 2 ZONES
 4 DOSES PER ZONE PER DAY
 EACH DOSE 10 MIN
 EACH REST 170 MIN

CONTROLLER MODEL
 SPI-50B109-BIO-CAV
 TIMER MODEL NUMBER
 Grasslin FM1D20-120

Pentair
 PUMP MODEL 20DOM05121



Location: Armadillo South 12
 Netafim Bioline: 17mm .6gph 24in spacing @ 2fps Flush

- Maximum Recommended Bioline Lateral Length: 300
- Soil Texture or Perc Time: 0
 - Soil Structure Shape: 0
 - Soil Structure Grade: 0
 - Infiltration Loading Rate(ILR): 0.1 gal/day/ft²
 - Slope: 0 %
 - Infiltration Depth: 0 in.
 - Hydraulic Linear Loading Rate: 4 gal/day/ft
 - Maximum Contour Length (MCL): 150 ft

- Headworks Head Loss: 18 ft
- Miscellaneous Head Loss: 10 ft
- Design Total Dynamic Head: 99.3 ft

8. Daily Flow
 1.00 X 600.00 = 600.00
 No. of Bedrooms Flow / Bedroom GPD

9. Dosing Area
 600.00 / 0.10 = 6000.00
 Daily Flow ILR sqft

10. Dosing A. Length
 600.00 / 4.00 = 150.00
 Daily Flow HLLR ft

11. Dosing A. Width
 6000.00 / 150.00 = 40.00
 Dosing Area Dosing A. Length ft

11a. Dosing Design Width & Length Adjustment
 Design Width 40.00 ft Adjusted Dosing Length 150.00 ft

12. Required Dripper Line
 6000.00 / 24 = 3000.00
 Dosing Area Drip line Spacing ft

13. Required Zones
 150.00 / 150.00 = 1.00 = 2
 Dosing A. Length MCL+ Theoretical Design Zones

14. Zone Breakout Table

Zone No.	Zone Dosing Area (sqft)	Linear Ft. of Tubing (ft)	Longest Lateral (ft)	Dosing Flow Rate (gpm)	Number of Distal Ends	Field Flush Rate (gpm)	Required Total Flow (RTF) (gpm)	Field Flushing Head (ft)	Force Main Supply Line			Return Flush Line			Static Lift (ft)	Total Field Head Loss (TFHL)
									Pipe Nom. Dia. (in)	Len. of Run (ft.)	Head Loss (ft)	Pipe Nom. Dia. (in)	Len. of Run (ft.)	Head Loss (ft)		
Zone 1	3000.0	1500.0	300.0	7.6	5.0	8.0	15.6	51.5	1 1/4	60.0	2.0	1	54.0	2.0	8.0	63.5
Zone 2	3000.0	1500.0	300.0	7.6	5.0	8.0	15.6	51.5	1 1/4	100.0	3.3	1	94.0	3.4	13.0	71.3
Zone 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0	0.0	0.0	0	0.0	0.0	0.0	0.1
Zone 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0	0.0	0.0	0	0.0	0.0	0.0	0.1
Zone 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0	0.0	0.0	0	0.0	0.0	0.0	0.1
Zone 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0	0.0	0.0	0	0.0	0.0	0.0	0.1

Note: (14c) Longest lateral may be looped one or more times and is a function of: (7) contour length, Bioline lateral length, #of distal ends, #of zones and (10) dosing area length.

Notes:

15. Max Required Total Flow: 15.6
 (Largest RTF Based on 14g.)

16. Max Total Field Head Loss: 71.3
 (Largest TFHL Based on 14p.)

20. Pump Data: MINIMUM Pump Specifications

Pentair 20DOM05121+1 Pump Model Selected
 0.5 HP 1 Phase 115 Volts 15.6 GPM @ 99.3 FT.

Note: Selected pump must produce 115 ft @ 12gpm or 35 gpm for filter flush depending on filter model. (auto-flush units only)

21. Dosing Schedule

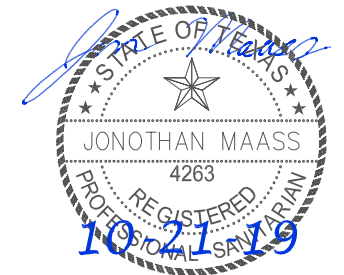
Peak Flow Adjustment 4.00 Minutes

Peak		Average	
Total Run Time:	78.9 Minutes	Total Run Time	#DIV/0! Minutes
Total Rest Time:	1361.1 Minutes	Total Rest Time	#DIV/0! Minutes
Peak		Average	
Zone 1	7.6 GPM 0.0 Min/Dose 0.0 Gal/Dose #DIV/0! Cycles/Day	Zone 2	7.6 GPM 0.0 Min/Dose 0.0 Gal/Dose #DIV/0! Cycles/Day
Zone 3	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day	Zone 4	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day
Zone 5	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day	Zone 6	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day
Avg		Average	
Zone 1	7.6 GPM 0.0 Min/Dose 0.0 Gal/Dose #DIV/0! Cycles/Day	Zone 2	7.6 GPM 0.0 Min/Dose 0.0 Gal/Dose #DIV/0! Cycles/Day
Zone 3	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day	Zone 4	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day
Zone 5	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day	Zone 6	0.0 GPM 0.0 Min/Dose 0.0 Gal/Dose 0.0 Cycles/Day

Portion of Peak Daily Flow #DIV/0!

MINIMUM PSI SETTING FOR THIS SYSTEM AT THE ENTRY TO THE EMITTER LINES IS DETERMINED INCLUDING RECOMMENDED REQUIREMENTS FOR TUBING LATERAL FLUSHING AT 2' PER SECOND AND RETURN LINE FLUSHING REQUIREMENTS

COLUMN H 51.50
 COLUMN N + 3.40
 / 2.31
 ===== 23.76 PSI



JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE	Property ID # R19395
PAGE # 7	
PERMITTING AUTHORITY: HAYS COUNTY	

SYSTEM

- 1 EMPLOYEE PER 200 SQUARE FEET OF OFFICE SPACE @ 6 GALLONS PER PERSON
- 1 EMPLOYEE PER 1,000 SQUARE FEET OF WAREHOUSE SPACE @ 6 GALLONS PER PERSON

Building A	11,985 SF	
Building B	6,000 SF	17,985
Building C	8,000 SF	
Building D	6,400 SF	
Building E	3,200 SF	
Building F	3,900 SF	
Building G	3,200 SF	24,700

Buildings A-G	office warehouse	42,685 SF
	office space	8,537 SF
	warehouse space	34,148 SF

TOTALS
 OFFICE SPACE 8,537 SF / 200 = 42
 WAREHOUSE SPACE 34,148 SF / 1000 = 35
 42 + 35 = 77 x 6 = 462 GPD

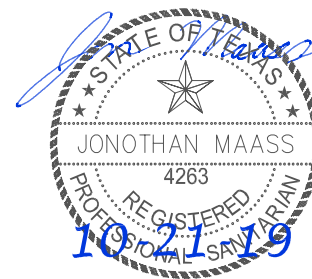
FLOW WILL BE ROUNDED TO **600** GPD TO ACCOUNT FOR CUSTOMER TRAFFIC

Office warehouse spaces will be used for different trades; carpenters, plumbers, electricians and minimal space use. There will be no kitchens, no food service and no businesses that would dispose of chemicals in the OSSF (salons, etc) allowed. There is one building that could be used for office space solely, with a break area.

As 6 gallons was assigned per employee, which is higher than min required, some customer traffic possibilities have been factored in. The 36 gallons is simply to round up the final Q which increases the flow to allow for customer traffic.

Waste water strength calculations:

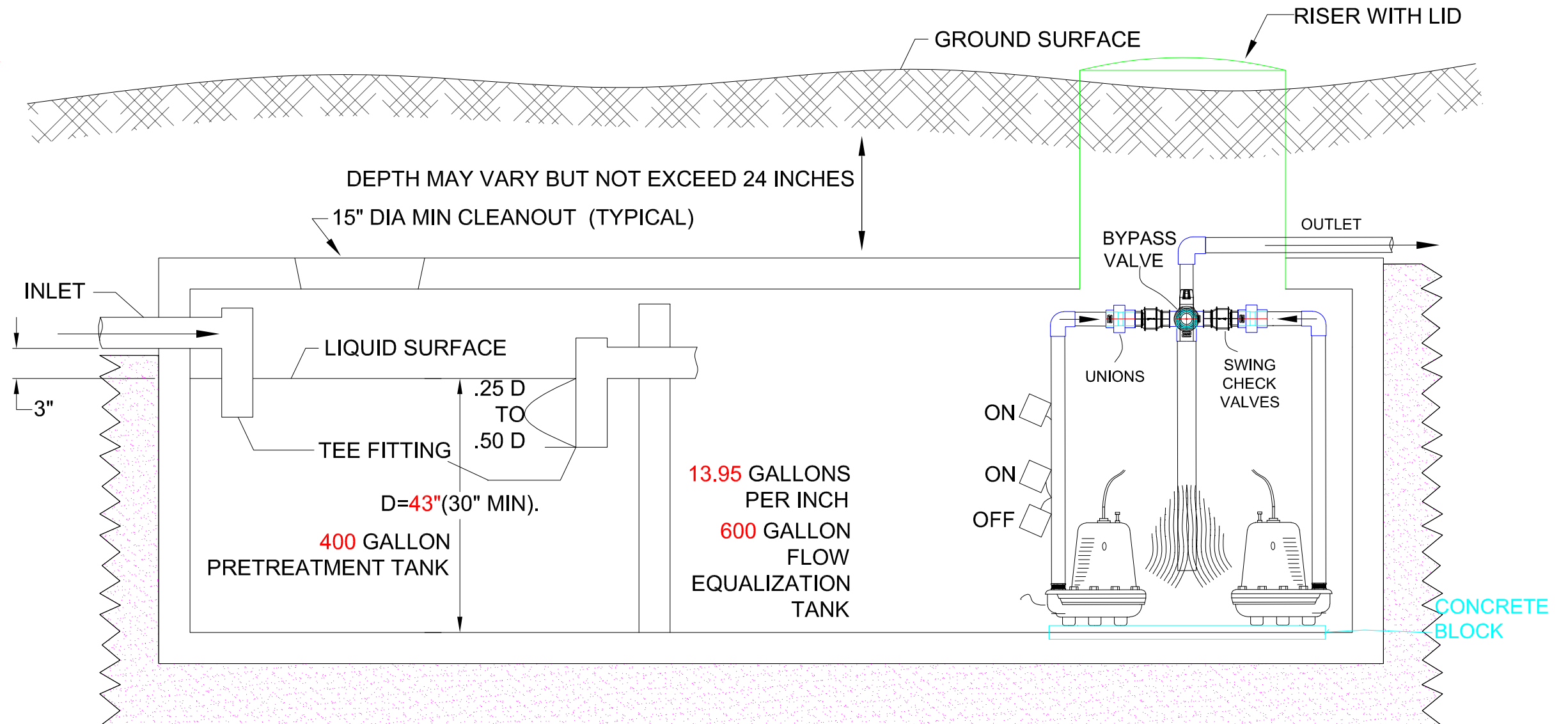
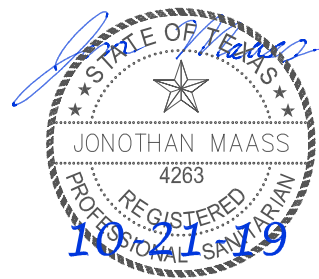
£BOD5 = Q × BOD5 × 8.34 £/gal ÷ 1,000,000
 Q = gallons per day waste flow BOD5 = waste strength mg/ltr
 £ BOD5 = the total waste to be processed in pounds per day
 Q = 600 gpd @ 300 mg/ltr BOD5
 £BOD5 = 600 gpd × 300 mg/ltr × 8.34 £/gal ÷ 1,000,000
 £BOD5 = 1.50 £BOD5



JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE	
PAGE # 8	
PERMITTING AUTHORITY:	
HAYS COUNTY	Property ID # R19395

1000 GALLON TWO COMPARTMENT TANK

DUPLEX PUMPS



4 INCH MINIMUM OF EITHER SAND, SANDY LOAM, OR PEA GRAVEL, FREE OF ROCK LARGER THAN PEA GRAVEL (FOR PRECAST TANKS)

600 Gallon pump tank 43" liquid depth, 13.95 GPI

Alarm on @ 30" inches above the floor (leaving 13" or 181.35 gallons for alarm volume)

Start Pump @ 13" inches above the floor (251.10 gallons between pump stop and alarm on)

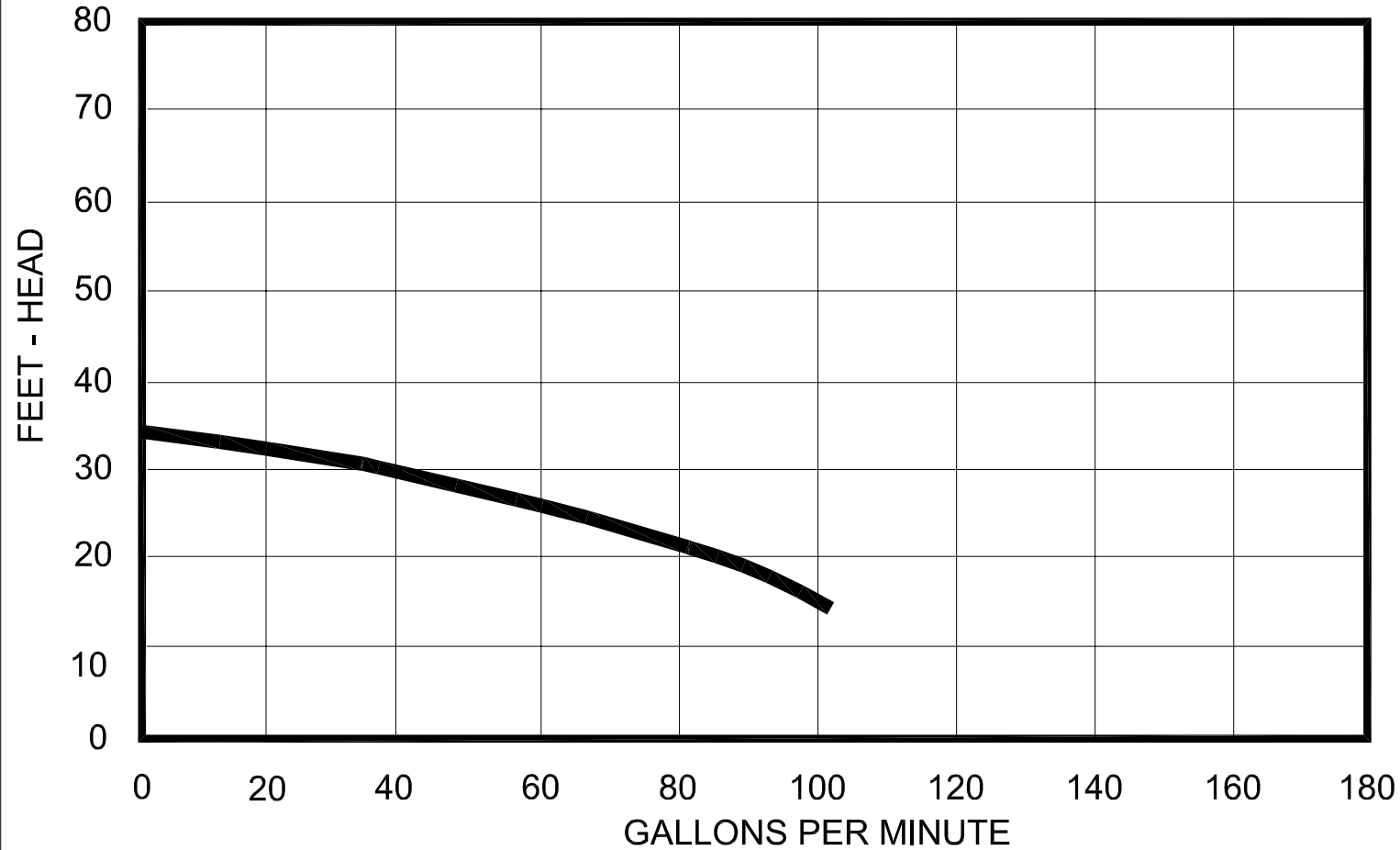
Stop Pump @ 12" inches above the floor (167.40 residual)

Min 4 hours reserve requirement required $600 / 24$
 $= 25 \times 4 = 100$ gallons reserve above alarm

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, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com		SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620
SCALE NOT TO SCALE		LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
PAGE # 9		
PERMITTING AUTHORITY: HAYS COUNTY		Property ID # R19395

ASHLAND SWH50
PERFORMANCE CURVE



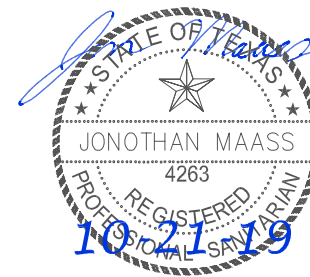
Pump Controller: (Effluent)
RJR-ALT-DMD
Demand with HWA and
Breakers -- 120 VAC Pumps

Pump Data Design Goals:
Provide **20.00** GPM at **32.10** Ft
BRAND Ashland
MODEL SWH50
HP 1/2
Voltage 115
Phase 1
Full Load Amps 12.0
Locked Rotor Amps NA
Min Circuit Breaker NA
Discharge 2" NPT
Solids Handling 2"

Duplex operation functions are required for the system per TAC 30 Ch. 285.34(b)(3). The alarm will lock on and require manual reset and the pumps will be set to alternate.

Schedule 40 Pipe Supply Line Loss Calculator

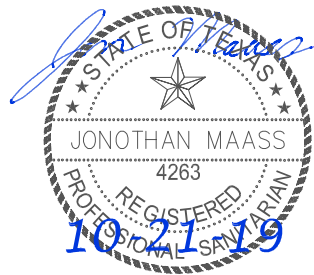
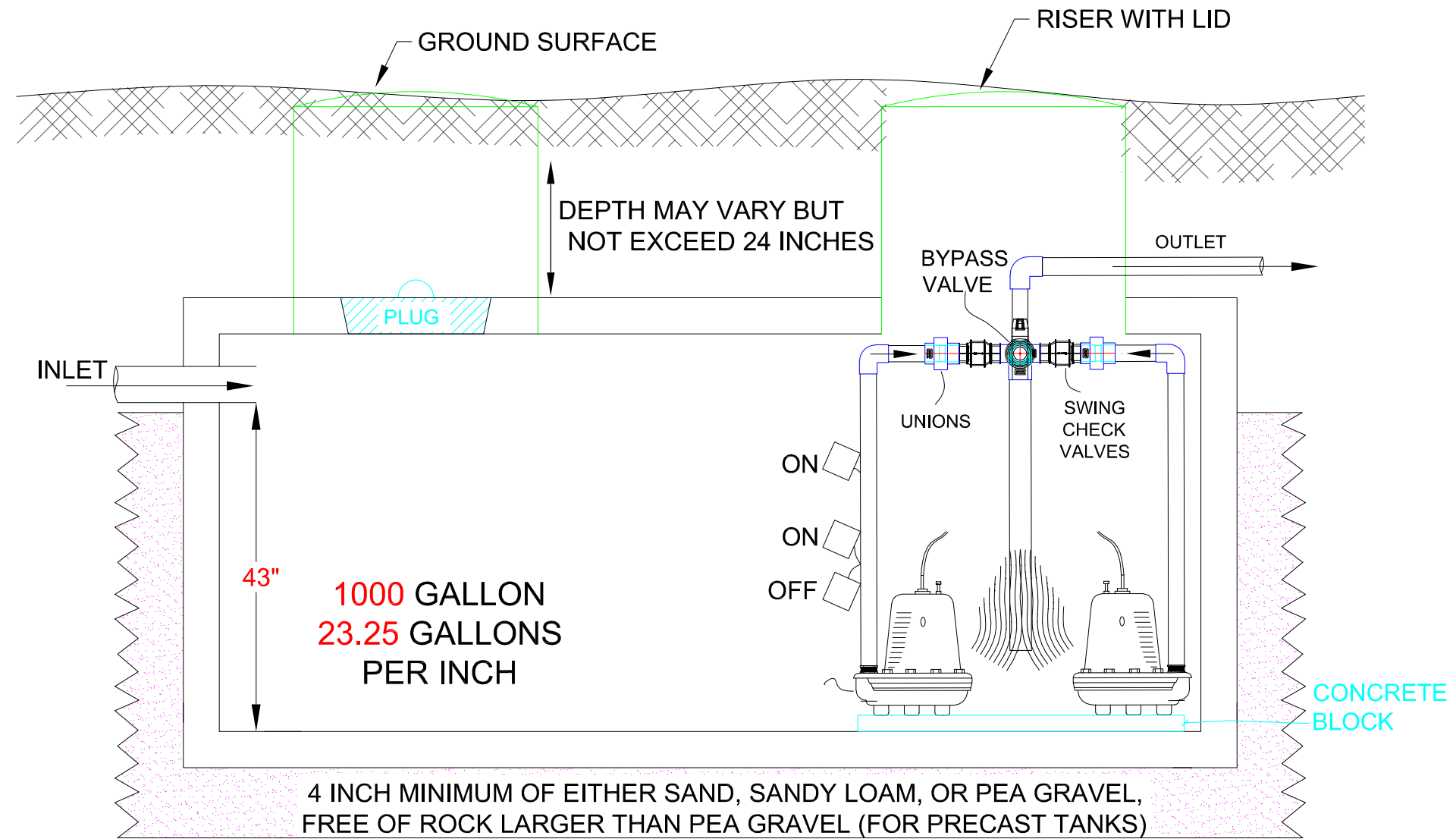
Pipe Section	Pipe Length (in feet)	Size in inches	Flow Rate (Gallons per minute)	Loss (feet)	
1	1236	2	20.0	12.6	
Total Pipe Loss				12.6 feet	5.4 PSI
With 20% for fittings				15.1 feet	6.5 PSI
With Elevation in feet:			17	32.1 feet	13.9 PSI
With Operating Head in feet:			0	32.1 feet	13.9 PSI
TOTAL LOSS:				32.1 FEET	OF 13.9 PSI



JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com		SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE		Property ID # R19395
PAGE # 10		
PERMITTING AUTHORITY: HAYS COUNTY		

DUPLEX PUMPS

1000 GALLON FLOW EQUALIZATION TANK



1000 Gallon pump tank 43" liquid depth, 23.25 GPI

Alarm on @ 22" inches above the floor (leaving 21" or 488.25 gallons for alarm volume)

Start Pump @ 11" inches above the floor (279.00 gallons between pump stop and alarm on)

Stop Pump @ 10" inches above the floor (232.50 residual)

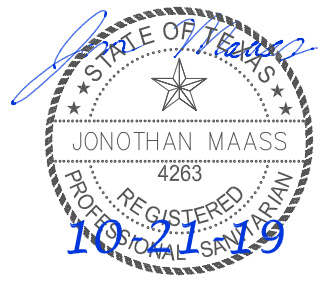
Min 4 hours reserve requirement required 600 / 24
= 25 x 4 = 100 gallons reserve above alarm

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, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com		SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620
SCALE NOT TO SCALE		LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
PAGE # 11		
PERMITTING AUTHORITY: HAYS COUNTY		Property ID # R19395

EQ Pump Controller:
RJR-ALT-LPD-DT-LA
 Time Dose with HWA and
 Breakers -- 120 VAC Pumps

Pump Data Design Goals:
 Provide **12.50** GPM at **6.00** Ft
BRAND *Ashland*
MODEL *SW50*
HP *1/2*
Voltage *115*
Phase *1*
Full Load Amps *12.0*
Locked Rotor Amps *NA*
Min Circuit Breaker *NA*
Discharge *2" NPT*
Solids Handling *2"*

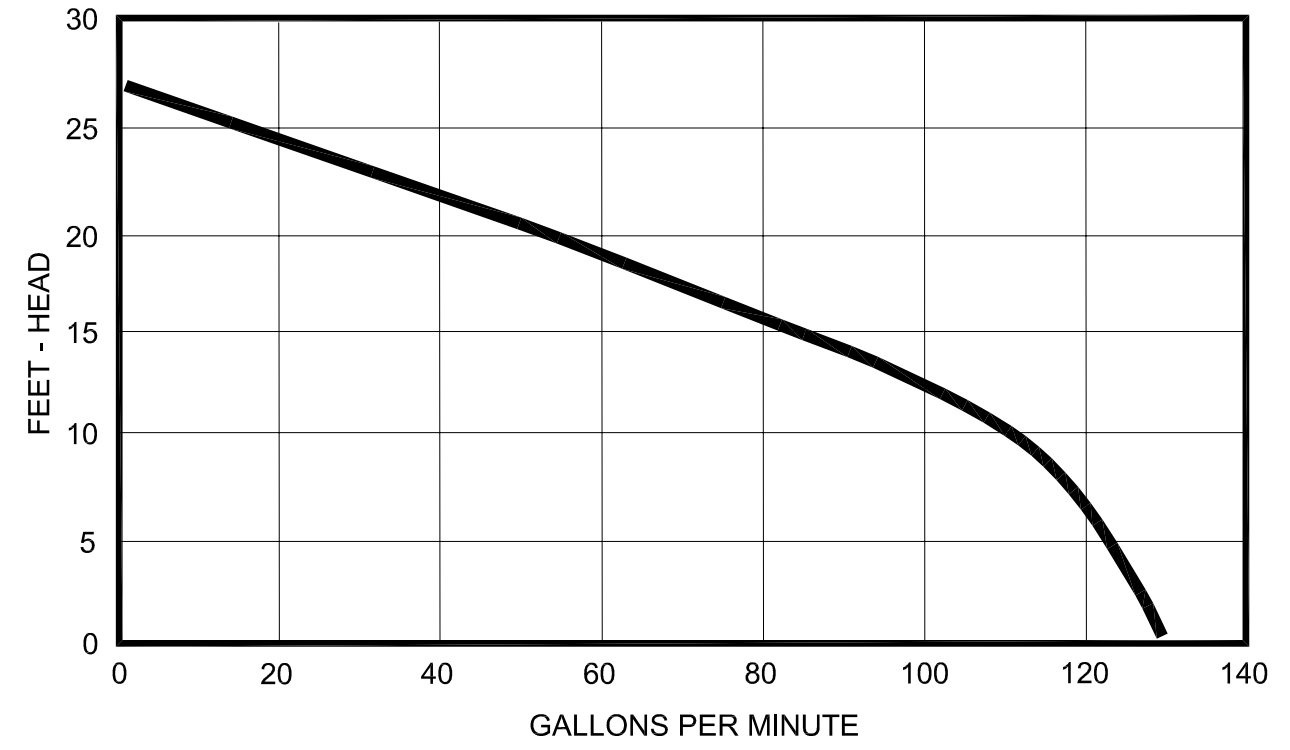


FLOW EQUALIZATION TIMER SETTINGS

Set timer to run
1 minute every **1/2** hour or
48, 12.50 gallon doses per day.
 Adjust bypass valve to reach desired flow.

Duplex operation functions are required for
 the system per TAC 30 Ch. 285.34(b)(3).
 The alarm will lock on and require manual
 reset and the pumps will be set to alternate.

ASHLAND SW50
 PERFORMANCE CURVE



Schedule 40 Pipe Supply Line Loss Calculator

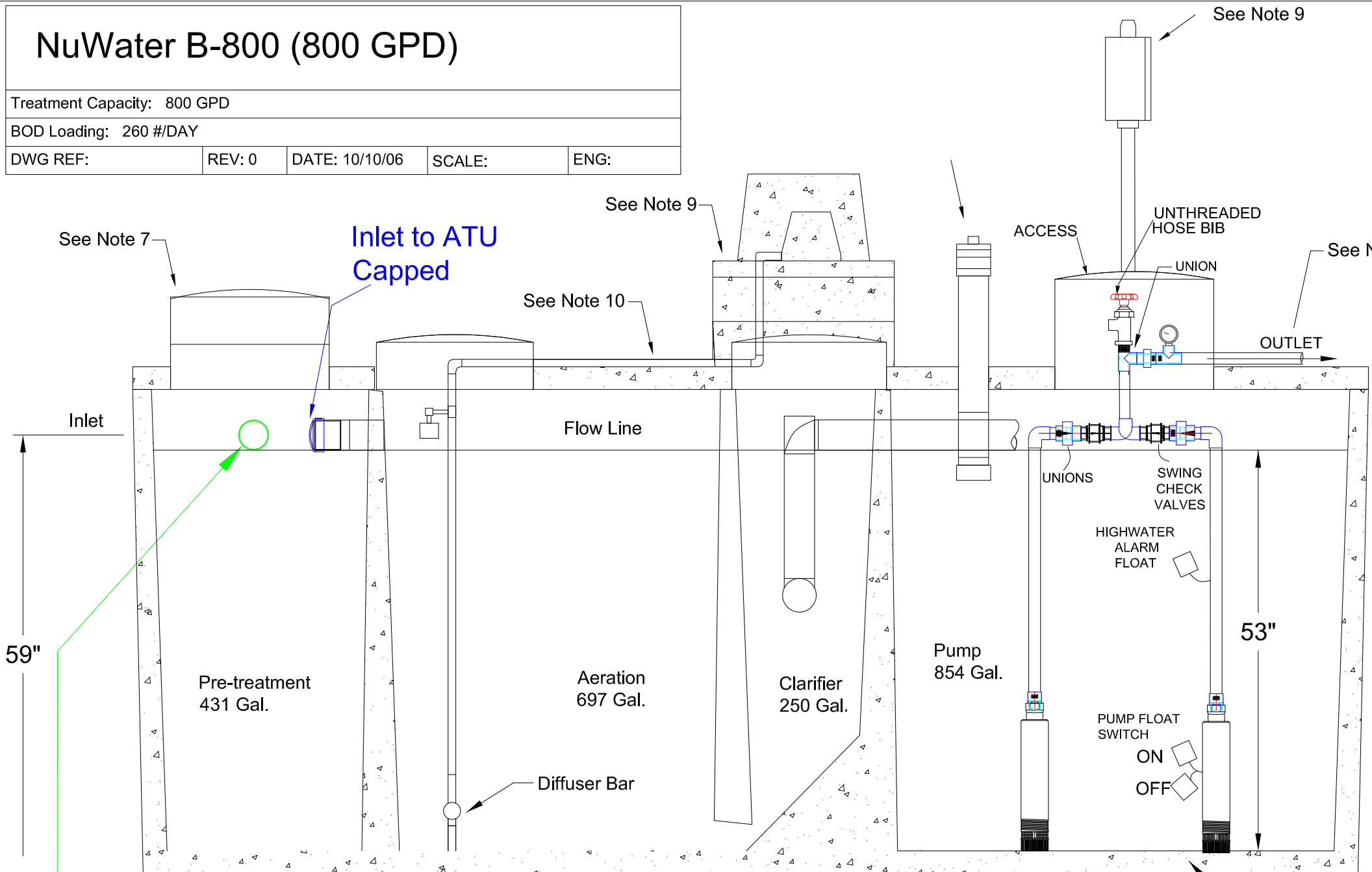
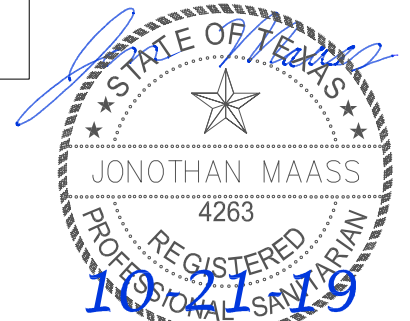
Pipe Section	Pipe Length (in feet)	Size in inches	Flow Rate (Gallons per minute)	Loss (feet)	
1	10	2	10.0	0.0	
Total Pipe Loss				0.0 feet	0.0 PSI
With 20% for fittings				0.0 feet	0.0 PSI
With Elevation in feet:				6	6.0 feet 2.6 PSI
With Operating Head in feet:				0	6.0 feet 2.6 PSI
TOTAL LOSS:				6.0 FEET OF	2.6 PSI

JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com		SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620
SCALE NOT TO SCALE PAGE # 12 PERMITTING AUTHORITY: HAYS COUNTY		LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
		Property ID # R19395

NuWater B-800 (800 GPD)

Treatment Capacity: 800 GPD				
BOD Loading: 260 #/DAY				
DWG REF:	REV: 0	DATE: 10/10/06	SCALE:	ENG:

DIMENSIONS:	
Outside Height:	67"
Outside Width:	75"
Outside Length:	164.5"
MINIMUM EXCAVATION DIMENSIONS:	
Width:	87"
Length:	177"



GENERAL NOTES:

1. Plant structure material to be precast concrete and steel.
2. Maximum burial depth is 30" from slab top to grade.
3. Weight = 16,700 lbs.
4. Treatment capacity is 800 GPD. BOD Loading = 2.60 lbs. per day.
5. Chlorination not required for drip dispersal.
6. RJR-ALTD-1ATU-2A Electrical Requirements to be 115 Volts, 60 Hz, Single Phase, 30 AMP, Grounded Receptacle.
7. 20" Ø access riser w / lid (Typical 4) Optional extension risers available.
8. 20 GPM 1/2 HP, high head effluent pump.
9. HIBLOW Air Compressor w/ concrete housing.
10. 1/2" Schedule 40 PVC Air Line (Max. 50 Lft from Plant).
11. 1" Schedule 40 PVC pipe to distribution system provided by contractor.
12. 4" min. compacted sand or gravel pad by Contractor.

Duplex operation functions are required for the system per TAC 30 Ch. 285.34(b)(3). The alarm will lock on and require manual reset and the pumps will be set to alternate.

Pump tank volume 854 gallons, flow line 53" volume per inch = 16.11 gallons/inch.
 Minimum 480 gallons of pump flow above alarm = $480 / 16.11 = 29.79$ " volume
 Alarm on @ 23 inches above the floor (leaving 30 inches to outlet or 483.30 gallons for alarm volume)
 Start Pump @ 9 inches above the floor (241.65 between start pump & alarm on).
 Stop Pump @ 8 inches above the floor (128.88 residual).

Min 4 hours reserve requirement required $600 / 24 = 25 \times 4 = 100$ gallons reserve above alarm

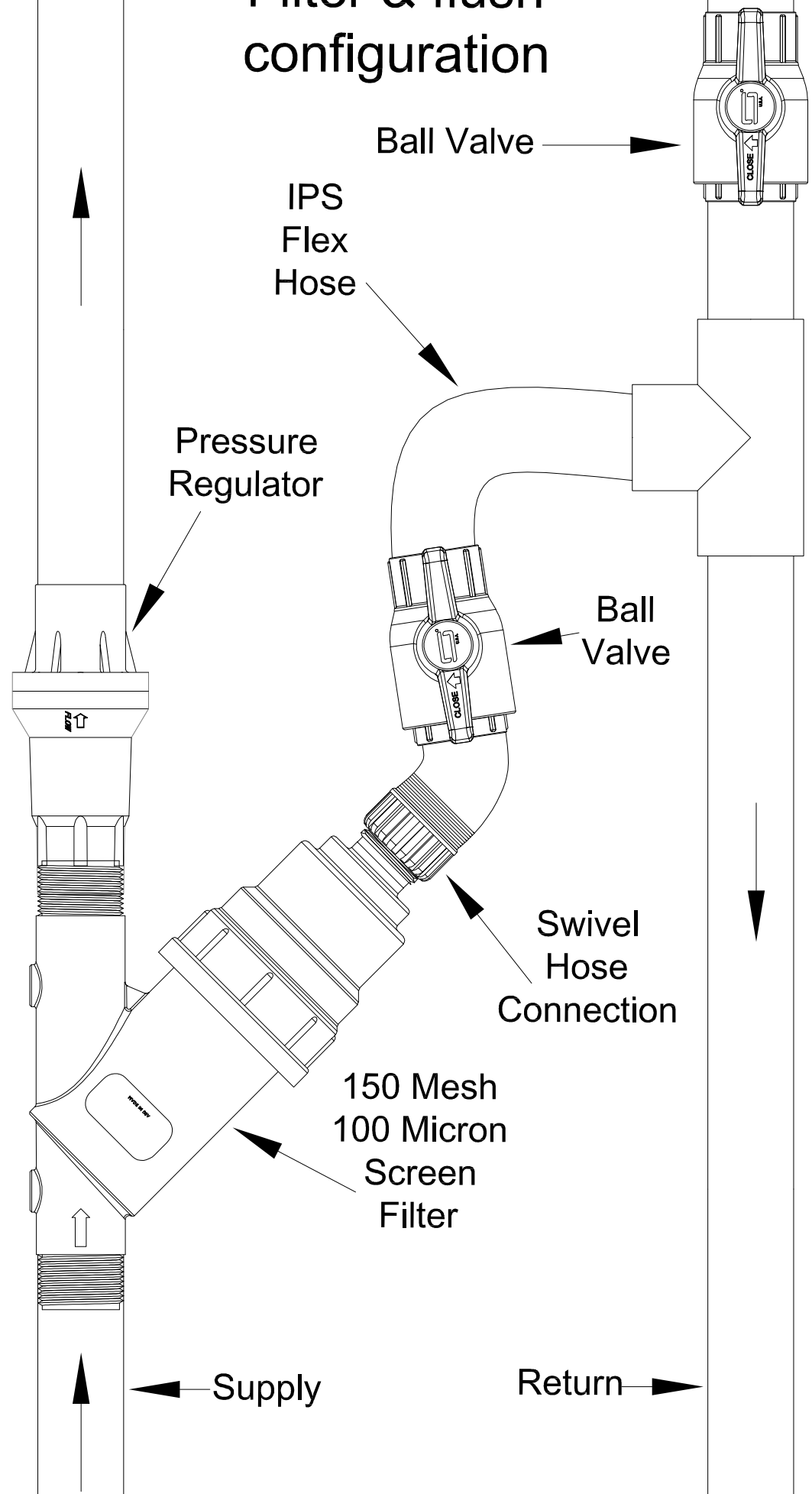
Bedding and backfill specification for the tanks
 4 INCH MINIMUM OF EITHER SAND, SANDY LOAM, OR PEA GRAVEL,
 FREE OF ROCK LARGER THAN PEA GRAVEL
 The tank is to be level (+/- 1")

Alternate outlet to be placed between pretreatment and gravity flow into EQ tank, outlet of pretreatment must be 3" lower than inlet.

DUPLIX PUMPS

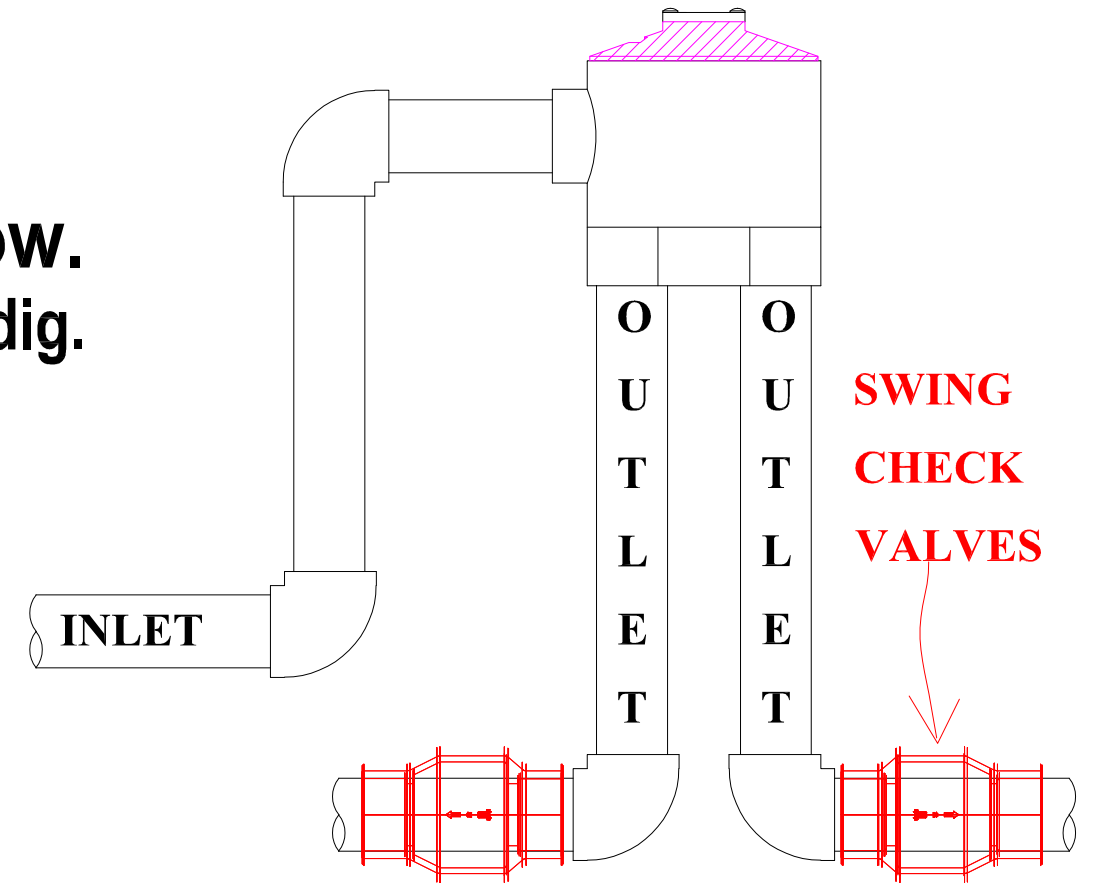
JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620
SCALE NOT TO SCALE PAGE # 13	LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
PERMITTING AUTHORITY: HAYS COUNTY	Property ID # R19395

Filter & flush configuration

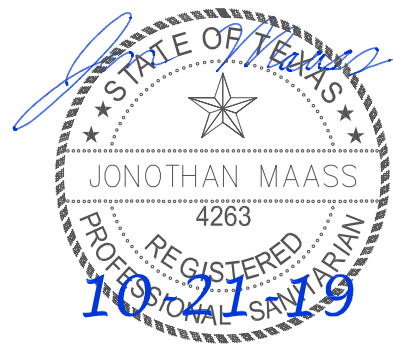


**Know what's below.
Call before you dig.**

K-RAIN 4402-RCW



K-RAIN / FIELD SWITCHING VALVE IS TO BE LOCATED AS CLOSE AS POSSIBLE TO PUMP TO PREVENT SWITCHING FAILURES. SEE SITE PLAN FOR K-RAIN / FIELD SWITCHING VALVE LOCATION.

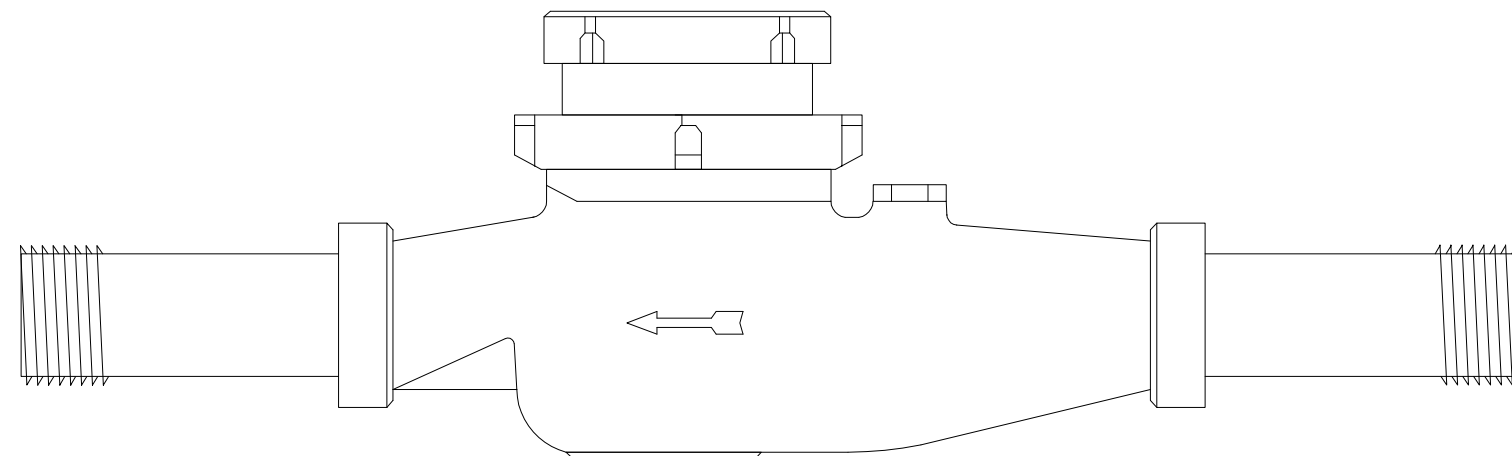
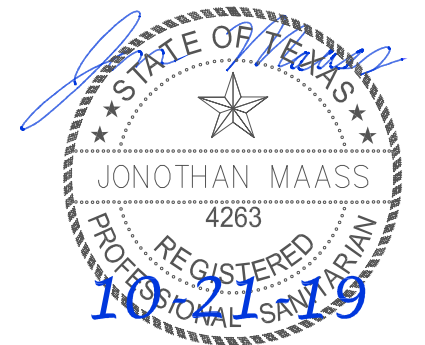
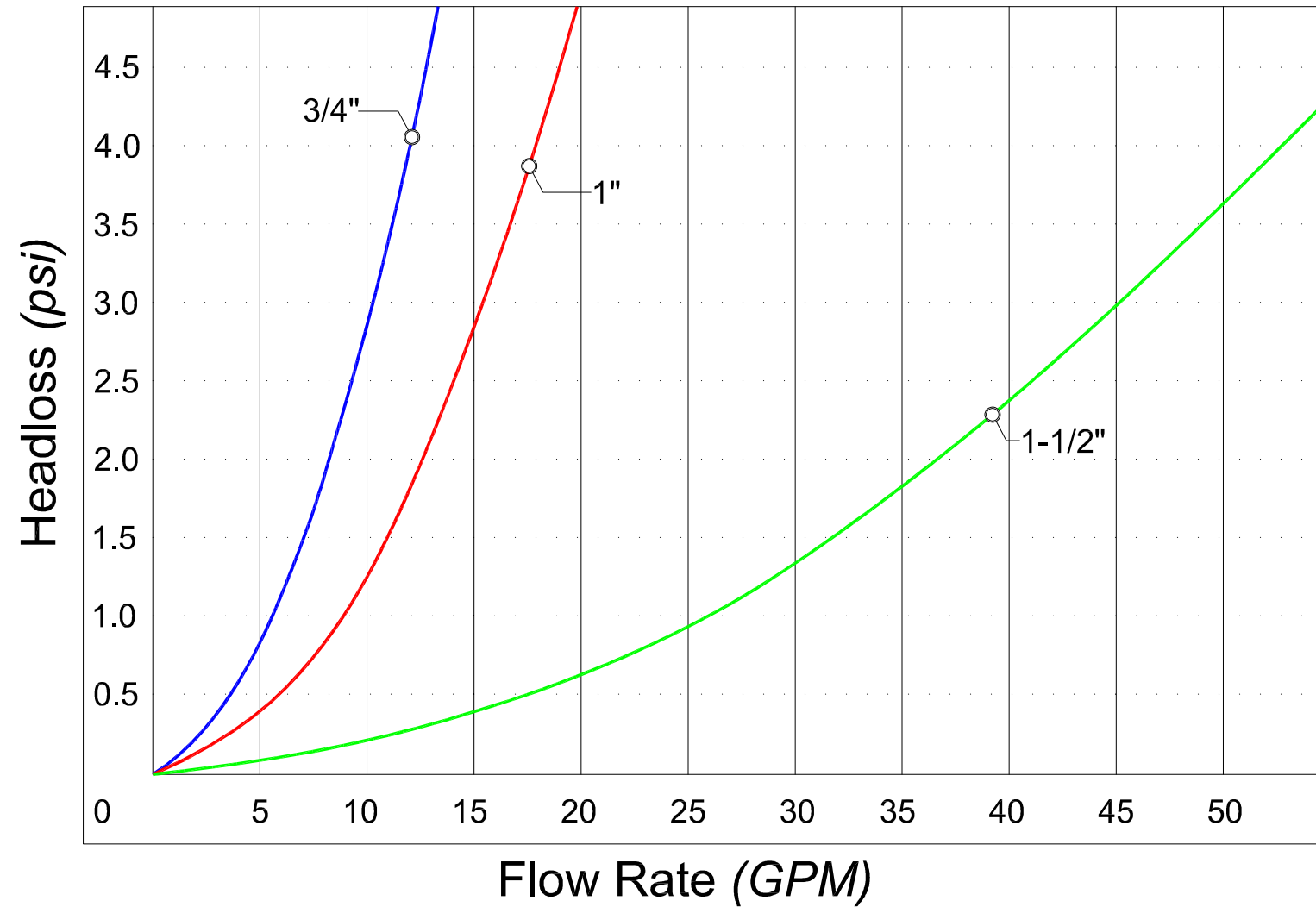


<p>JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346</p> <p>jon@jmiossf.com</p>	<p>SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620</p> <p>LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16</p>
<p>SCALE NOT TO SCALE</p>	<p>Property ID # R19395</p>
<p>PAGE # 14</p>	
<p>PERMITTING AUTHORITY:</p>	
<p>HAYS COUNTY</p>	

Netafim.USA.Water.Meter

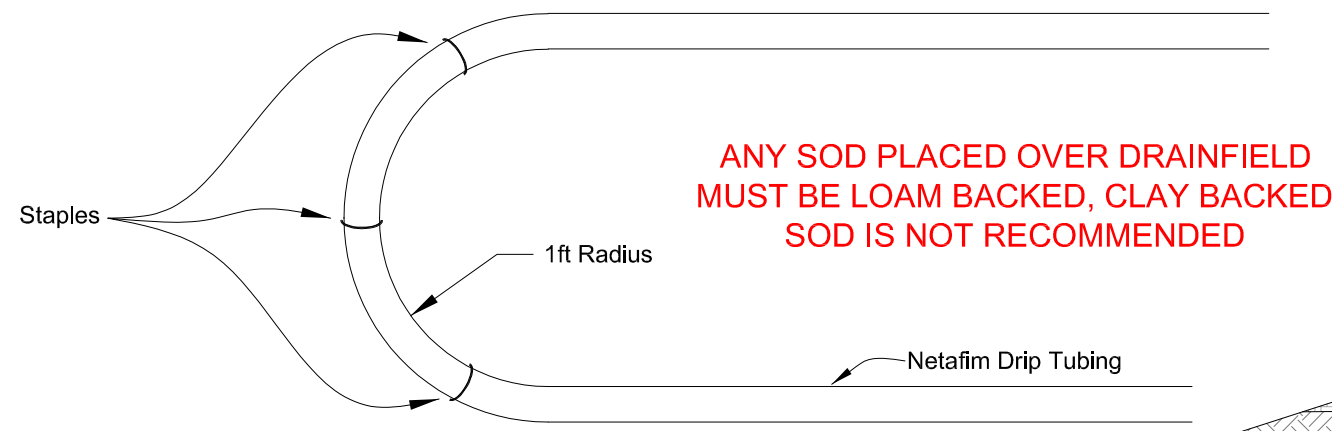
"M" Water Meters Flow Meter 1"

Headloss Chart



JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE	Property ID # R19395
PAGE # 15	
PERMITTING AUTHORITY: HAYS COUNTY	

Detail of Drip Tubing Loops On 2' Centers

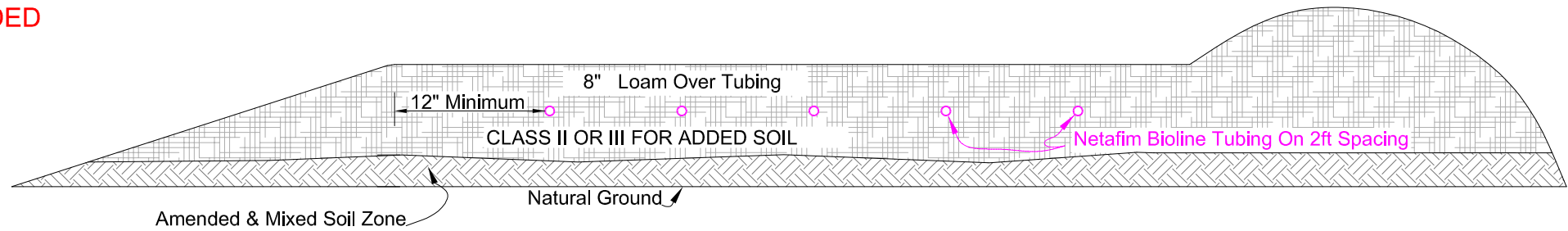


**ANY SOD PLACED OVER DRAINFIELD
MUST BE LOAM BACKED, CLAY BACKED
SOD IS NOT RECOMMENDED**

Cross Section Detail of Drainfield

Each line of tubing is to be installed as close as possible to level.

It is recommended the sandy loam covering the drainfield and the surrounding disturbed area be covered with erosion control mat and seeded with Bermuda or Rye in winter (1lb per 400 sq.ft.), or sod may be sprigged over the area or arranged in a tight checkerboard pattern, or the area may be hydromulched.



Minimum 6" soil below tubing existing or added
0" soil to added below tubing as needed
8" soil to added above tubing

Longitudinal Cross Section Detail of Drainfield along peaked or varying slope

**SIDE BERM
AS NEEDED
SEE
SITE PLAN**

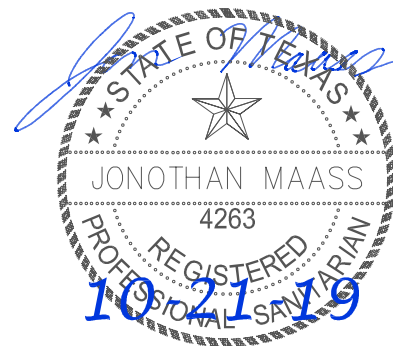
It is recommended the sandy loam covering the drainfield and the surrounding disturbed area be covered with erosion control mat and seeded with Bermuda or Rye in winter (1lb per 400 sq.ft.), or sod may be sprigged over the area or arranged in a tight checkerboard pattern, or the area may be hydromulched.

CLASS II OR III FOR ADDED SOIL, 8" MIN ABOVE TUBING



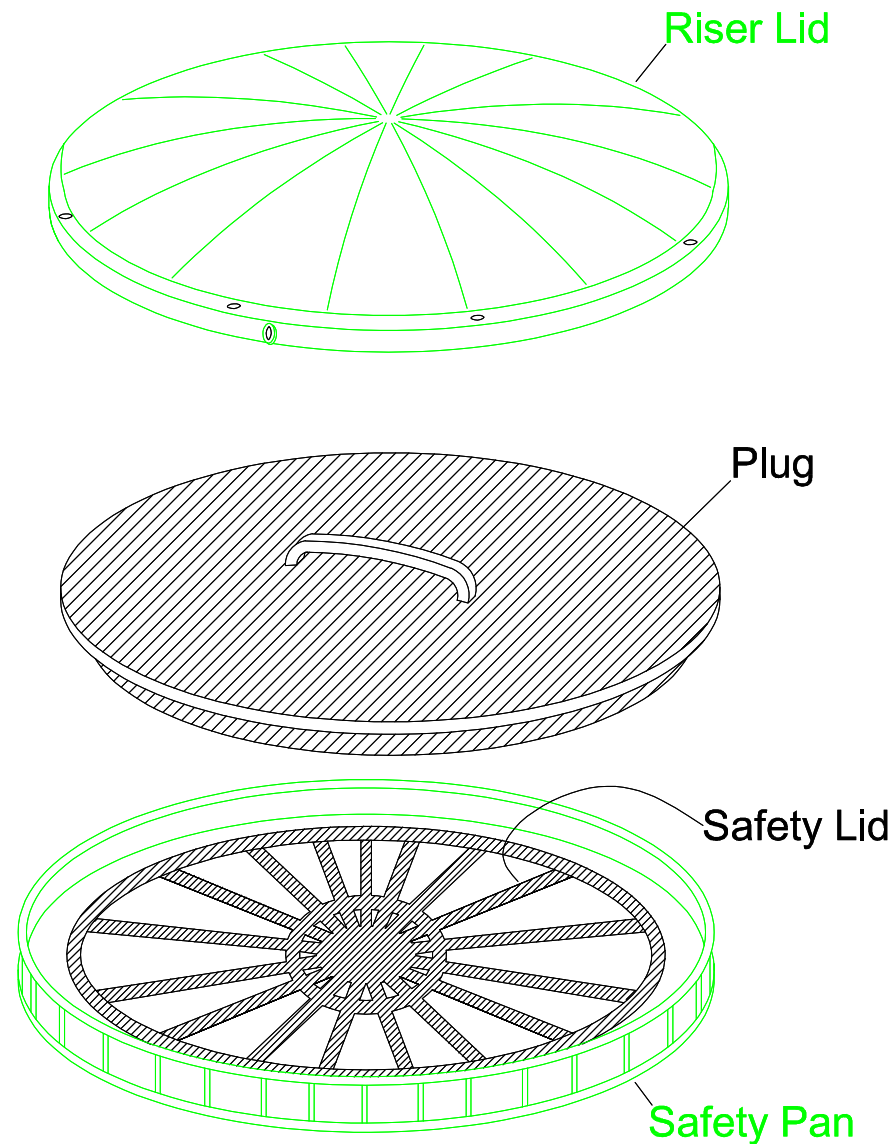
Minimum 6" soil below tubing

Netafim Biorline Tubing On 2-ft Spacing

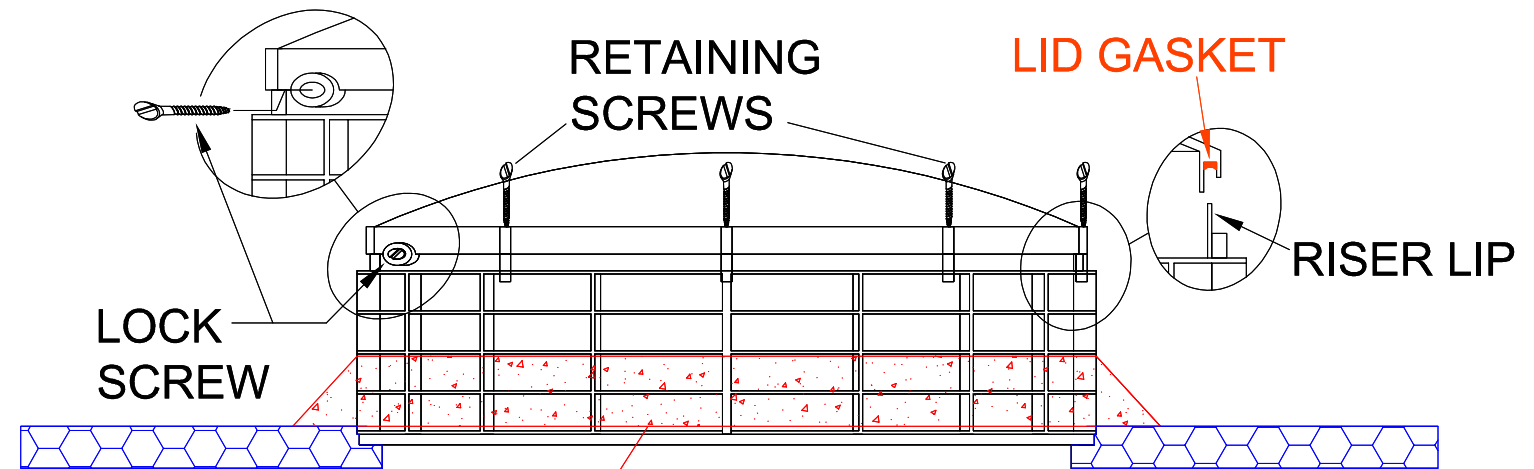


JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE PAGE # 16 PERMITTING AUTHORITY: HAYS COUNTY	Property ID # R19395

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.

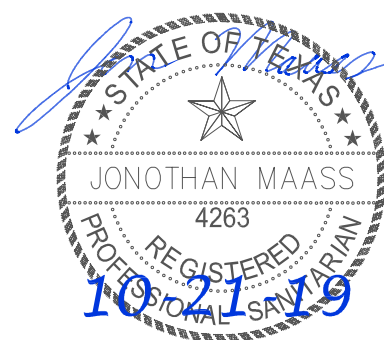
Risers must be fitted with removable watertight caps and protected against unauthorized intrusions. Acceptable protective measures required:

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

HAYS COUNTY

Risers on all 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, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620 LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16
SCALE NOT TO SCALE	Property ID # R19395
PAGE # 17	
PERMITTING AUTHORITY: HAYS COUNTY	

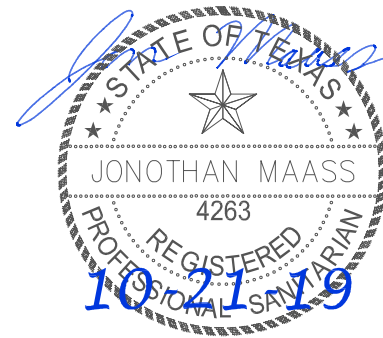
TANK ABANDONMENT PROCEDURE

- a) Locate any existing septic tanks, pump tanks, grease traps or cesspools present on the property.
- b) All of the above components present must be pumped to remove any sewage and or waste. Pumping must be performed by a licensed waste hauler, and the “trip ticket” shall be posted on site or made available for verification during the abandonment inspection.
- c) The top cover or arch over the cesspool, septic tank, grease trap, or pump tank shall be crushed into the empty tank or removed.
- d) The septic tank, grease trap, cesspool, or pump tank shall be back filled no higher than the top vertical edges of the tank with fill material less than 3 inches in diameter and free of organic and construction debris.

Examples: sand, sandy loam, pea gravel, crushed limestone base, clean class III soils. Clay soils should be avoided due to their high shrink/swell characteristics.

IF ANY PORTION OF THE EXISTING DRAINFIELD IS EXCAVATED, THE MATERIAL REMOVED MUST BE TRANSPORTED TO A LICENSES SANITARY LANDFILL BY A LICENSED WASTE HAULER.

**EXISTING TANK MUST BE PUMPED,
COLLAPSED & REMOVED OR BACKFILLED
TO COMPLY WITH TAC 30 CH. 285.36**



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

JON MAASS, RS 4263 6513 THOMAS SPRINGS ROAD AUSTIN, TEXAS 78736 512-297-2346 jon@jmiossf.com	<p>SITE: 22601 RANCH ROAD 12 DRIPPING SPRINGS, TX 78620</p> <p>LEGAL: A0551 A0551 - J N HALFORD SURVEY SERIAL# 12308746, ACRES 7.16</p> <p>Property ID # R19395</p>
SCALE NOT TO SCALE	
PAGE # 18	
PERMITTING AUTHORITY:	
HAYS COUNTY	