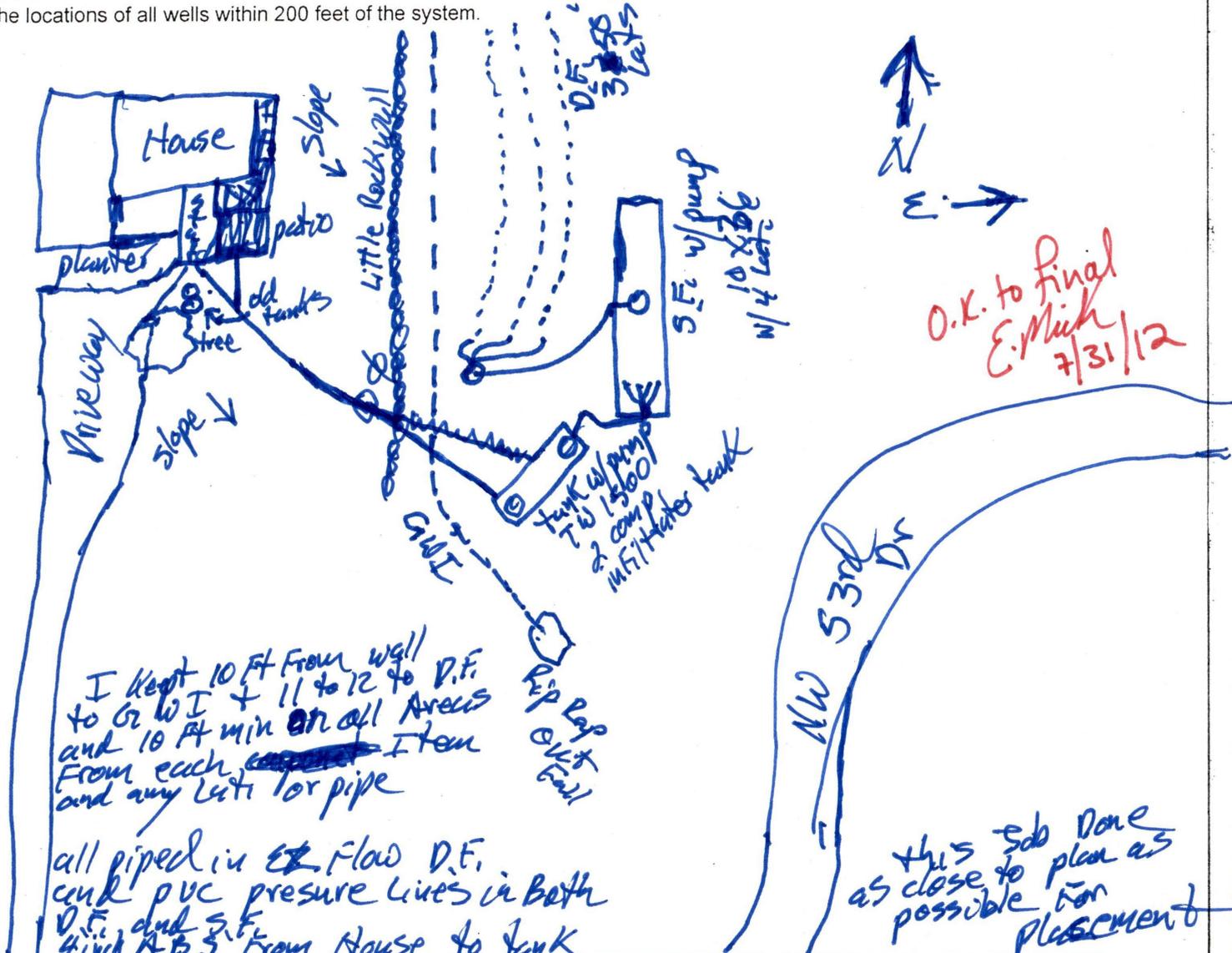


Address 2922 NW 53rd Dr. PRX Permit Number 12-135846-000-00-SP

IVR 3174105

Section 3: As-Built Plan of the Constructed System - Indicate the direction of North and show the locations of all wells within 200 feet of the system.



Section 4: Construction was performed by:

- Property Owner (Permittee) Dennis Brooks + contractor
- Sewage Disposal Service Name River city Environmental Russ Johnson DEQ Licence # I 1653 exp. 10/13/2019

I certify the information provided in this notice is correct, and that the construction of this system was in accordance with the permit and the rules regulating the construction of on-site sewage disposal systems (OAR Chapter 340, Divisions 71 and 73).

System Installer's Signature [Signature]
 Title supervisor/installer Date 7/20/12

City of Portland, Oregon - Bureau of Development Services, Site Services Sanitation Section
 Phone: 503-823-6892 • FAX: 503-823-5433 • TTY: 503-823-6868

Address 2922 NW 53rd Dr PDX Permit Number 12-135846-000-00SP



City of Portland, Oregon - Bureau of Development Services



1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandonline.com/bds

Sanitation Final Inspection Request and Notice IUR 3174105

Pursuant to the requirements within ORS 454.665, OAR 340-71-170 and OAR 340-71-175, the system installer and/or the permittee must notify the Department of Environmental Quality (or its authorized Agent) when the construction, alteration or repair of a system for which a permit was issued is completed (except for the backfilling or covering of the installation). The Department (or Agent) has 7 days to perform an inspection of the completed construction after the official notice date, unless the Department (or Agent) elects to waive the inspection and authorizes the system to be backfilled earlier. Receipt and acceptance of this completed form by the Department (or Agent) establishes the official notice date of your request for the pre-cover inspection. Please complete all four sections of the form and return it to the office that issued the permit. Forms that are determined to be incomplete will be returned.

Date Received 7/31/12 Erin Mick

Section 1: Basic Information

Property Owner Dennis Brooks

Permit Number 12-135846-000-00SP County Mult Township NE

Range _____ Section _____ Tax Lot _____ Tax Acct _____

Job Location 2922 NW 53rd Dr in PDX

Date System Construction Completed 7/20/12 Date Submitted to DEQ or Agent 7/20/12

Section 2: Materials List - Identify and list all materials used in the system's construction.

- 1- TW 1500 infiltrator sep tank all piping for
- 1- sand filter 10x36 S.F. and D.F.
- pressure treated wood came in a kit
- and a 0 red 10 S.F. from willamette
- Kit (Wilkins Rock) gray stone
- Drain Rock + pea gravel all PVC 1 inch +
- pea sand imported by ~~conuser~~ truck 1/2 inch
- 1- D.F. EZ Flow 12 inch all parts used out
- w/ 1 inch feeder pipes side kit were same
- 3- 50 Ft Runs but supplied by
- 1- GWT w/ 3- 12 inch tubes Ferguson's
- 4 8 inch Deep per code

continued on back

2922 NW 53RD DR
12-135846-000-00-SP

3174105

On-Site Sewage Disposal/Alt Permit
Issued: 6/4/12

City of Portland BDS

INSPECTION REPORT

Single Family Dwelling/Major Repair
Occupancy: Const. Type:

IVR Number: 3174105

Inspection Code: 999

Inspection:

999 Final Permit

(503) 969-4483

Call Date/Time: 7/30/2012 19:09:01

Requested Date/Time: 7/31/12 AM

Repair--New 1500gal 2 comp
Willamete tank with
anti bouyancy to 360sf SFilter to
3 x 50' of equal pressure with
Ez-flow. Max and min 12".
Notched GWI 10' upslope of
DF, 36" min depth. PT and ET
from COP and SF spec rec't to
final.

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
DENNIS W BROOKS

Decommissioning Subsurface
Sewage Sys Zoning
Enforcement Agency: Portland
Zoning - Property (1):
OScNHFP,RFcNH,RFNH Water
Source: Well Land Feasibility
Study Number: 02-12 # of
Bedrooms: 4 Septic Tank: 1
Sand Filtration: 1

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
DENNIS W BROOKS

Most Recent Inspections:

07/19/12 836 1 EM
07/10/12 830 1 EM

<input checked="" type="checkbox"/>	1	Approved
<input type="checkbox"/>	2	Partially Approved
<input type="checkbox"/>	3	Approved with Corrections
<input type="checkbox"/>	4	Rollover/Missed
<input type="checkbox"/>	5	Not Approved
<input type="checkbox"/>	6	Consultation Completed

No Access	1
Stop Work Order Issued	2
Not Ready	3
Could Not Locate	4
See Correction Notice on Job Site	5
No Plans on Job	6
No Permit Card on Job	7
Fees Owed	8
Subcontractor Information Missing	9
Cancelled by Customer	0

Confirmation: #243223 Inspector/Date/Time/Phone: *Sam Mick 823-5271*

*Sand Filter squirt 5' - 2line from
house side low - check to make sure
open + even.*

*Drainfield squirt ≈ 8' to middle also had
a block causing low. Unplug + recheck.*

*Asbuilt rec'd, pump rec't, sand filter spec
ET + PT has been approved. Will confirm for
in office.*

*Anti bouyancy cone all way around was used but
backfilled before ins last inspection.*

Old tanks filled w/ concrete.

*O.K. to final Need to get grass/seed
down before it rains
Erosion Control*

DEQ Surcharge	Fees Paid
\$60.00	



2922 NW 53RD DR
12-135846-000-00-SP

3174105

On-Site Sewage Disposal/Alt Permit
Issued: 6/4/12

City of Portland BDS

INSPECTION REPORT

IVR Number: 3174105

Inspection Code: 836

<input checked="" type="checkbox"/>	1	Approved
<input type="checkbox"/>	2	Partially Approved
<input type="checkbox"/>	3	Approved with Corrections
<input type="checkbox"/>	4	Rollover/Missed
<input type="checkbox"/>	5	Not Approved
<input type="checkbox"/>	6	Consultation Completed

No Access	1
Stop Work Order Issued	2
Not Ready	3
Could Not Locate	4
See Correction Notice on Job Site	5
No Plans on Job	6
No Permit Card on Job	7
Fees Owed	8
Subcontractor Information Missing	9
Cancelled by Customer	0

Single Family Dwelling/Major Repair

Occupancy: Const. Type:

Inspection:

836 Septic Tank (503) 969-4483

Call Date/Time: 7/18/2012 09:00:42 Requested Date/Time: 7/19/12 AM

Repair--New 1500gal 2 comp
Willamete tank with
antibouyancy to 360sf SFilter to
3 x 50' of equal pressure with
Ez-flow. Max and min 12".
V-notched GWI 10' upslope of
DF, 36" min depth. PT and ET
from COP and SF spec rec't to
final.

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
DENNIS W BROOKS

Owner:
DENNIS W BROOKS

Decommissioning Subsurface
Sewage Sys Zoning
Enforcement Agency: Portland
Zoning - Property (1):
OScNHFP,RFcNH,RFNH Water
Source: Well Land Feasibility
Study Number: 02-12 # of
Bedrooms: 4 Septic Tank: 1
Sand Filtration: 1

Most Recent Inspections:
07/10/12 830 1 EM

Confirmation: #238896 Inspector/Date/Time/Phone
Jim [Signature] 823-5471 7/19/12

- New 1500 gal 2-comp tank, in filter poly, under test & good.
- GWI deepened & rip rap removed
→ need to bentonite sand & electrical lines as they cross GWI.
- Sand Filter already back filled w/o squirt. A misunderstanding about seeing
→ labrabs vs. ends. O.K. once I see 5' squirt at end
- Need squirt on P.F. laterals too
- PT + ET approval, as built & mat list
Sand spec w/ squirt to final. Pump unit + pic of filled old tank.
- Nothing other than grass permitted on top of S-Filter. Can plant around edge base.

Fees Paid	
DEQ Surcharge	\$60.00

2922 NW 53RD DR
12-135846-000-00-SP

3174105

On-Site Sewage Disposal/Alt Permit
Issued: 6/4/12

City of Portland BDS

INSPECTION REPORT

IVR Number: 3174105

Inspection Code: 830

Single Family Dwelling/Major Repair
Occupancy: Const. Type:

Inspection:

830 Initial Sand Filter (503) 252-6144

Call Date/Time: 7/9/2012 07:59:17 Requested Date/Time: 7/9/12

Repair--New 1500gal 2 comp
Willamete tank with
antibouyancy to 360sf SFilter to
3 x 50' of equal pressure with
Ez-flow. Max and min 12".
V-notched GWI 10' upslope of
DF, 36" min depth. PT and ET
from COP and SF spec rec't to
final.

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
DENNIS W BROOKS

Decommissioning Subsurface
Sewage Sys Zoning
Enforcement Agency: Portland
Zoning - Property (1):
OScNHFP,RFcNH,RFNH Water
Source: Well Land Feasibility
Study Number: 02-12 # of
Bedrooms: 4 Septic Tank: 1
Sand Filtration: 1

Applicant:
PAT SPEER
RIVER CITY ENVIRONMENTAL
Work: (503) 252-6144
Cellular: (503) 710-2489

Owner:
JOYCE TSONGAS
Home: (503) 297-5151
Fax: (530) 297-4141

Owner:
DENNIS W BROOKS

Most Recent Inspections:

<input checked="" type="checkbox"/>	1	Approved
<input type="checkbox"/>	2	Partially Approved
<input type="checkbox"/>	3	Approved with Corrections
<input type="checkbox"/>	4	Rollover/Missed
<input type="checkbox"/>	5	Not Approved
<input type="checkbox"/>	6	Consultation Completed

No Access	1
Stop Work Order Issued	2
Not Ready	3
Could Not Locate	4
See Correction Notice on Job Site	5
No Plans on Job	6
No Permit Card on Job	7
Fees Owed	8
Subcontractor Information Missing	9
Cancelled by Customer	0

Confirmation: NONE Inspector/Date/Time/Phone: *Jim Hill 823-5471 7/9/12*

*S. Filter lined in + base layer of drain
rock + underdrain in. Good
Continue loadings + check sand specs
prior to loadings. Will need spec at final
inspection.*

*Drain lines in @ 18" - as LFS states not
permitted. O.K. as now no cap as plans
called for. Can backfill line except for beginning
+ end.*

*→ GWI had 11" of standing water on deep
end. We do need to dig to 48" deep
to add another layer of Ez Flow to
better protect DF.*

*Call when ready for squirt on sand filter
+ lines, + altered GWI.*

DEQ Surcharge Fees Paid \$60.00

Scheduled

Date

Work Order #

River City Environmental, Inc. 503-252-6144

P.O. Box 30087
Portland, OR 97294

OR CCB# 147355 • WA CCB# RIVERCE981BT

Complete Industrial
Waste Removal
Septic Tank Cleaning
Sump
Line Cleaning

Site Information	
DENNIS BEOOKS	
2922 NW 53 DR	
PORT OR.	

Description	Units	Amount
<hr/>	@	<hr/>
<hr/>	@	<hr/>
<hr/>	@	<hr/>

Instructions:

Driver Notes

PUMP 2 SMALL TANKS
FOR DISCOMMISSION
TOTAL 300 GAL.

**River City Environmental, Inc. is in no way responsible for damage to the septic tank or lids on the system.
Terms: Net 10 days. 1.5% per month will be charged on past due accounts. (18% per annum).**

Terms and Conditions

The customer agrees to pay all invoices arising out of pumping services, and any other special services herein within 10 days.

The customer agrees to pay such extra and overtime charges as may be invoiced from time to time for services rendered, over and above the normal servicing schedule, on behalf of the customer.

The customer agrees to assume responsibility damage to customer's real or personal property arising from pumping services which take place on customer's premises, where the drivers and vehicles of River City Environmental have been instructed to enter. This includes, but is not limited to driveways, trees, power lines or poles and building structures.

If River City Environmental, Inc. finds it necessary to add liquid to the tank on jobsite, customer will be charged for the additional gallonage resulting from these conditions.

Customer agrees to reimburse River City Environmental, Inc. for all reasonable attorney's fees court costs and other expense incurred by said company to enforce collection or to serve their rights under this agreement.

Customer agrees to the above conditions.

Redeemable in Multnomah County

Work Authorized by X Oscar Lopez

Date 7/18/12

Driver Signature Felipe Hernandez

Date 7/18/12 Time 13:10 pm



WATER
ENVIRONMENT
SERVICES

Beyond clean water

Water Quality Protection
Surface Water Management
Waste Water Collection & Treatment
Michael S. Kuenzi, P.E.
Director

April 9, 2012

Via Email: LRingheim@calportland.com

Glacier Northwest
CalPortland Company
Attention: Lynn Marquardt
PO BOX 1225
Scappoose, OR 97056

RE: SAND FILTER MEDIA APPROVAL

Dear Mrs. Marquardt:

The sieve analysis of material from Columbia River Sand & Gravel submitted by Glacier Northwest, Inc. dated April 6, 2012, is found to meet minimum DEQ specifications (OAR: ch.340, div. 071, sec.0100 par. 127) for "Sand Filter Media." Based on this sieve analysis, material approval is granted for a period of 90 days.

Your cooperation in this matter is greatly appreciated. If you have questions or need further information, please feel free to contact our office at 503-742-4740.

Sincerely,

Edgar Diaz- REHS
Soils Scientist

C: Soils Staff

COPY

COPY

CLACKAMAS COUNTY FILTER SAND

4/6/2012

"MEDIUM SAND"

SIEVE	IND. WT. RETAINED	IND. % RETAINED	ACC. % RETAINED	ACC. % PASSING
3/8	0.0	0.00%	0.00%	100.00%
#4	41.7	3.68%	3.68%	96.32%
#8	164.8	14.53%	18.20%	81.80%
#16	305.9	26.96%	45.17%	54.83%
#30	304.1	26.80%	71.97%	28.03%
#50	159.7	14.08%	86.05%	13.95%
#100	137.6	12.13%	98.18%	1.82%
#200	15.8	1.39%	99.57%	0.43%
PAN	1.6			
	1134.5	F.M.	3.23	

DRY WEIGHT BEFORE WASH - 1134.5

DRY WEIGHT AFTER WASH - 1129.6

ASTM TEST MEHTODS #C-117 AND #C-136 IN USE FOR ANALYSIS.

COMPANY NAME: GLACIER NORTHWEST, INC.
CALPORTLAND COMPANY
COLMUMBIA RIVER SAND

CERTIFIED TECH: LYNN RINGHEIM (MARQUARDT) ODOT# 41361



503-296-1055

No. 9129

Delivery Receipt

Date 7-9-12

Sold To River City Environmental

Company Rep

Job Name Dennis Brooks

P.O. #

Conveyor Truck Service

Hourly Service

Per-Load Service

Material Sold

Quantity	Type
10 yards	Pea Rock
Dennis Brooks 147392	
TOTAL:	

Job Description:

Sand Filter

CONDITIONS OF THIS SALE ARE LISTED ON BACK PLEASE READ AND UNDERSTAND BEFORE SIGNING!

I UNDERSTAND AND AGREE TO THE CONDITIONS LISTED ON THE BACK OF THIS DELIVERY RECEIPT. I AM AN AGENT OF THE COMPANY LISTED ABOVE ON THE "SOLD TO" LINE AND HEREBY AUTHORIZE FULL PAYMENT FOR PRODUCTS AND SERVICES LISTED ABOVE.

Signature [Handwritten Signature]



503-296-1055

No. 8918

Delivery Receipt

Date 7-10-12

Sold To River City Environmental

Company Rep Russ

Job Name 2922 NW 53RD

P.O. #

Conveyor Truck Service

Hourly Service

Per-Load Service

Material Sold

Quantity	Type
18 y	DEQ SAND
1st load of sand for S.F.	
TOTAL:	

Job Description:

Backfill Sand Filter

CONDITIONS OF THIS SALE ARE LISTED ON BACK PLEASE READ AND UNDERSTAND BEFORE SIGNING!

I UNDERSTAND AND AGREE TO THE CONDITIONS LISTED ON THE BACK OF THIS DELIVERY RECEIPT. I AM AN AGENT OF THE COMPANY LISTED ABOVE ON THE "SOLD TO" LINE AND HEREBY AUTHORIZE FULL PAYMENT FOR PRODUCTS AND SERVICES LISTED ABOVE.

Signature [Handwritten Signature]



503-296-1055

No. 9104

Delivery Receipt

Date 7-10-12

Sold To RIVER CITY ENVIRONMENTAL

Company Rep Russ

Job Name 2922 NW 53RD

P.O. #

Conveyor Truck Service

Hourly Service

Per-Load Service

Material Sold

Quantity	Type
18 YARDS	DEQ SAND
Dennis Brooks	
TOTAL:	

Job Description:

SAND FILTER

CONDITIONS OF THIS SALE ARE LISTED ON BACK PLEASE READ AND UNDERSTAND BEFORE SIGNING!

I UNDERSTAND AND AGREE TO THE CONDITIONS LISTED ON THE BACK OF THIS DELIVERY RECEIPT. I AM AN AGENT OF THE COMPANY LISTED ABOVE ON THE "SOLD TO" LINE AND HEREBY AUTHORIZE FULL PAYMENT FOR PRODUCTS AND SERVICES LISTED ABOVE.

Signature [Handwritten Signature]

COPY



CITY OF
PORTLAND, OREGON
 BUREAU OF DEVELOPMENT SERVICES
 1900 SW 4th Ave., Suite 5000
 Portland, OR 97201



ON-SITE SEWAGE DISPOSAL/ALT PERMIT

12-135846-000-00-SP

Site Address: 2922 NW 53RD DR

Issued: 6/4/12

PROJECT INFORMATION		Occ. Group	Const. Type
Single Family Dwelling	Major Repair		
Project Description: Repair--New 1500gal 2 comp Willamete tank with antibouyancy to 360sf SFilter to 3 x 50' of equal pressure with Ez-flow. Max and min 12". V-notched GWI 10' upslope of DF, 36" min depth. PT and ET from COP and SF spec rec't to final.			

APPLICANT	RIVER CITY ENVIRONMENTAL *PAT SPEER*	Phone (503) 252-6144
PROPERTY OWNER	JOYCE TSONGAS & DENNIS W BROOKS	Phone (503) 297-5151
CONTRACTOR	RIVER CITY ENVIRONMENTAL *PAT SPEER*	Phone

<p align="center">Project Details</p> <p># of Bedrooms 4</p> <p>Land Feasibility Study Number 02-12</p> <p>Septic Tank 1</p> <p>Zoning Enforcement Agency Portland</p>		<p align="center">Project Details</p> <p>Decommissioning Subsurface Sewage Yes</p> <p>Sand Filtration 1</p> <p>Zoning - Property (1) OScNHFP,RFcNH,F</p>	
---	--	---	--

Roll \$224 balance from 12-117124 SE into 12-135846 SP. Balance of fees (\$224) roll into permit 12-135846 SP. DAult 3/1/12.

All work to conform to requirements of Oregon Administrative Rules 340.71 and 340.73 governing on-site sewage disposal. All work shall be performed by the property owner or by a licensed installer. Permits are only transferrable by reapplication. Post permit on site until work is completed.

BEFORE YOU DIG ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-2344).

CITY CONTACT E-Mail: Phone: Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS Sanitation Inspections - Call Before 6:00 AM: (503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request Number: 3174105

On-Site Wastewater System Design

12-135846 SP
approved to
issue
E. Mick
6/4/12

Owner: Brooks, Dennis

Applicant: River City Environmental

Site Address: 2922 NW 53rd DR, Portland, OR

Parcel: 1N1W25A-00500 (Property ID- R324497)

Date: March 20, 2012

Project Description: System repair/replacement with 1500 gallon septic/dose tank followed by a 360 sf sand filter and 150 lf of pressure distribution drainfield

Flow: 450 gallons/day maximum

Site and Soils: Refer to report by Erin Mick, REHS with Multnomah County Site Development, BDS



7503 NE 219th STREET · Battle Ground, WA 98604
PH: (360)687-9919 · FAX: (360)687-9929
WEB: www.EGSD.com · EMAIL: info@EGSD.com

12-135846 SP

GENERAL

- There is no warranty expressed or implied in the plans, including the fitness of any equipment and materials for a particular purpose
- All work shall conform with OAR 340, Divisions 71 and 73, the approved design and other regulations as appropriate
- If Installer notes any conflicts, consult with designer and regulatory agency immediately and prior to ordering or installing any materials
- Other permits including electrical, plumbing, grading, etc may be required and shall be obtained by Installer as appropriate
- Installer to ensure all survey monuments and utilities are located and protected prior to commencing work
- Installer to call for all inspections required by regulatory authority prior to backfilling or covering any item requiring inspection
- At the end of construction, Installer to prepare detailed "as-built" and provide owner with current operating data for all components installed

TANK(S)

- Verify the surface below tank(s) is stable and level prior to installation. Bed tank per manufacturer. Ensure subgrade is stable.
- Seal and/or grout all seams, lids, riser connections, etc to ensure a water and air tight (odor proof) joint
- Riser(s) must be 18" minimum diameter and include gasketed cover which is securely fastened or weighted to prevent unauthorized access
- Inlet fitting shall be a sanitary tee extending 6" above and 12" below the normal high and low liquid levels
- Outlet fitting or port shall be positioned to withdraw effluent from the clear zone at 65-75" of the lowest operating depth. If a tee is utilized, it shall extend 6" above the operating level.
- Perform 24 hr watertightness test prior to inspection. Fill 2" into riser. Mark water level, initial and date mark inside riser.
- Anti-buoyancy measures shall be implemented based on the tank manufacturer's recommendations

PIPING

- Bed all pipes to prevent settling. Lay pipe with stamped ID markings in the up position to allow inspection
- All pipe materials shall be in accordance with OAR 340-073-0060

PUMP(S), FLOATS and CONTROLS

- Provide a quick disconnect and shut-off valve of non-corrosive materials on pump discharge
- Provide non-corrosive, non-biodegradable lifting device for pump removal - ensure no interference with pump and floats
- Flush entire piping network prior to pressurizing
- Floats shall be mounted on float tree and easily removable for service including handle extended within 12" of the riser lid.
- Wiring shall be done by a licensed electrician and per all applicable codes. See manufacturer's instruction and diagrams.
- Pump and alarm shall be on separate circuits
- Control panel shall record number of pump run events, include an audible and visual alarm, watertight enclosure and be mounted on a 4x4 post (not on a living space wall). See tank cross-section for specified make/model.
- Provide an electrical disconnect adjacent to electrical panel

SAND FILTER

- Use non-galvanized nails for construction of the plywood box with points of nails to the outside to decrease chance of puncturing liner after decomposition of the wood
- Verify the surface below filter is stable and level prior to construction of the filter box. Use 15# felt on imperfect box surfaces before liner.
- Underdrain pipe shall be installed at a 1% (or less) slope towards the pump basin. Orient perforation up.
- Liner shall be 30mil unreinforced PVC with the properties and installation requirements found in OAR 340-073-0085
- Filter container and all pipe penetrations shall be watertight. Boots to be factory fabricated and sealed water-tight.
- Pump vault shall be constructed of 18" riser material with a durable, affixed floor
- Sand media shall be damp at the time of installation. Provide sieve analysis meeting medium sand spec per OAR 340-071-0100(127).
- Drain media (drainrock) and underdrain media (pea gravel) shall washed, clean and sieve tested to show conformance with OAR 340-071-0100(53) and OAR 340-071-0100(173). Provide sieve analysis.
- Ensure on/off settings deliver a maximum of 10% of the daily flow to the sand filter during each cycle
- Set alarm float to ensure 1/3 of the daily volume is available between tank inlet invert and the alarm
- Set operating and alarm levels in basin to prevent effluent from ponding within 2" of the bottom of the sand media
- Set pump off level no lower than the midpoint of the underdrain pipe perforations
- Control panel shall prevent dosing of sandfilter if the sandfilter basin pump fails/alarms
- Orifices - drill at 12 o'clock (top of pipe) with a new bit and de-burr holes after drilling. Ensure 5' head at distal end and <10% variation.
- Pressure test prior to inspection to ensure minimum 5' squirt ht and maximum 10% height variation
- Capping soil shall be 6-12" deep, free of rocks, vegetation and waste materials, and have a texture of no less than loam

PRESSURIZED DRAINFIELD

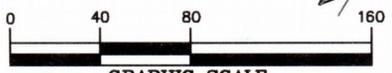
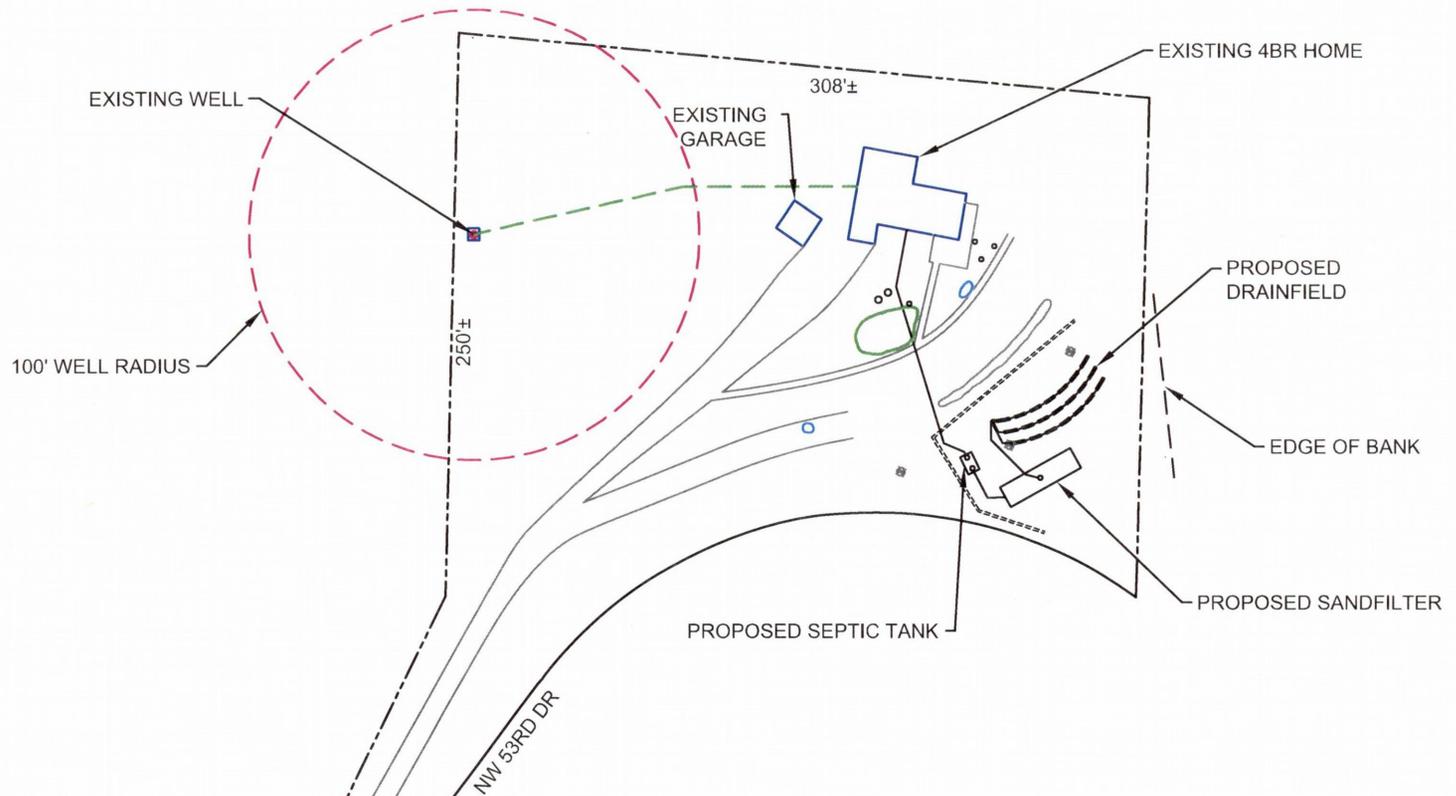
- Ensure on/off settings deliver a maximum of 20% of the daily flow to the drainfield during each cycle
- Capping fill (if required) - shall be the same or one class finer than the local topsoil. Place fill between June 1 - Oct 1 unless otherwise allowed by the local regulator. Fill material shall be inspected by regulator prior to installation.
- Orifices - drill at 12 o'clock (top of pipe) with a new bit and de-burr holes after drilling. Ensure 5' head at distal end and <10% variation.
- Trenches - shall be level within 1" and raked as needed to ensure permeability. Ensure no soil smearing!
- Installer to verify staking with laser level before excavating trenches

MISC

- Tank abandonment (if required) - pump tank(s) and fill with crushed rock or remove tank. Submit pump receipt and cert. of abandonment.
- Provide 18-gauge (min) green jacketed tracer wire or green color-coded metallic tape above all effluent sewer pipes and transport pipes
- Road or driveway crossing (if any) - encase pipe in SCH 40 (min) pipe and ensure 18" burial depth
- Fill/backfill material shall be inspected by the regulator prior to placing
- Filter fabric shall meet the requirements of OAR 340-073-0041 and be overlapped by 6" at seams. Use Cerex 25, Typar 3201 or equal.

EVER GREEN SEPTIC DESIGN INC. 7503 NE 219th STREET · Battle Ground, WA 98604 PH: (360)687-9919 · FAX: (360)687-9929 WEB: www.EGSD.com · EMAIL: info@EGSD.com			Sheet:	
			GENERAL NOTES	
Location:		Proj:		
2922 NW 53RD DR		11097		
DATE:	REVISION:	BY:	Date:	Client:
			3/20/2012	BROOKS, DENNIS

12-135846 SP



GRAPHIC SCALE
SCALE IS APPROXIMATE

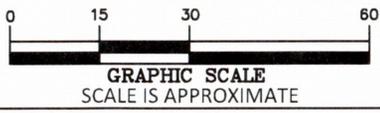
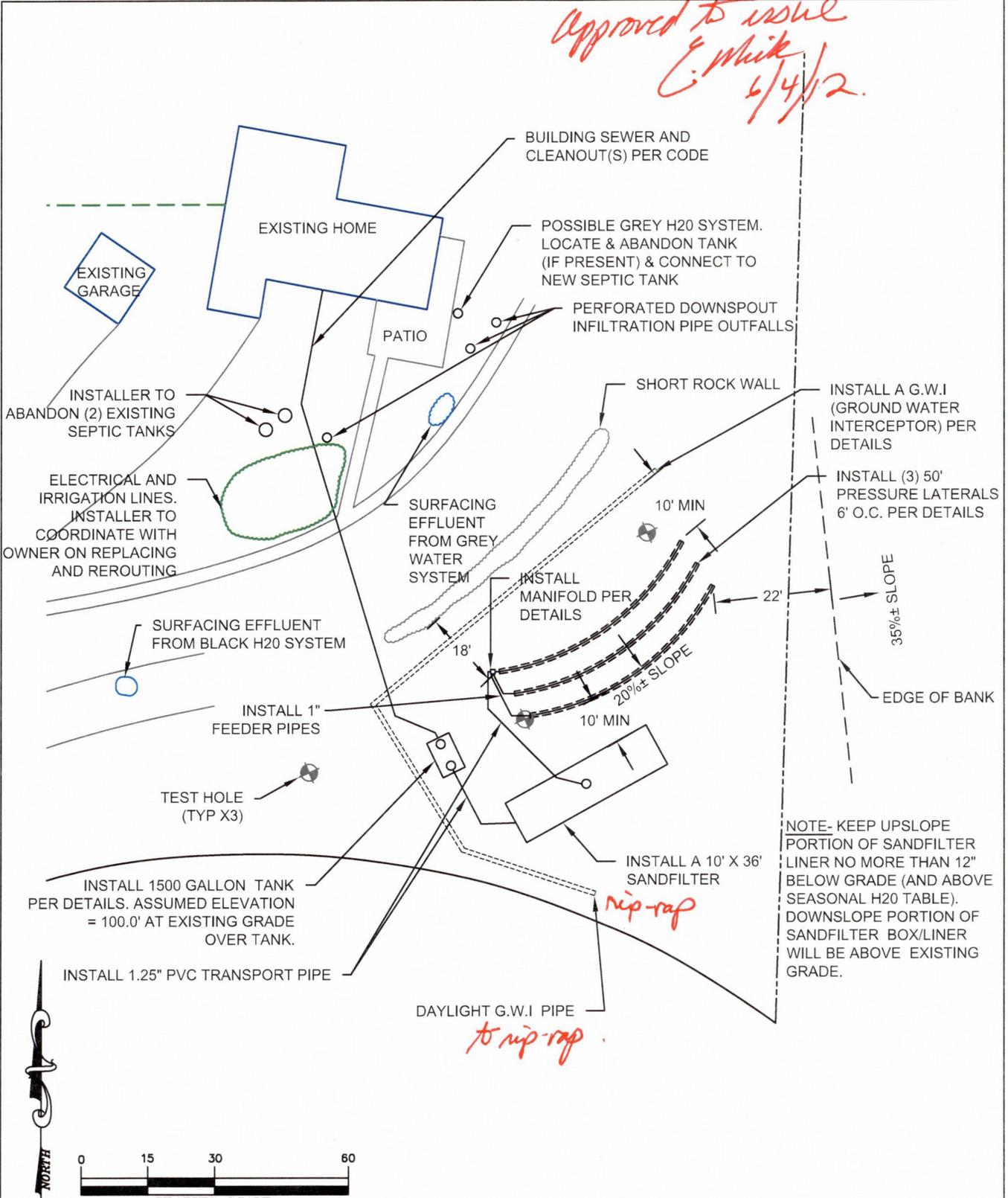
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EVER GREEN SEPTIC DESIGN INC. 7503 NE 219th STREET · Battle Ground, WA 98604 PH: (360)687-9919 · FAX: (360)687-9929 WEB: www.EGSD.com · EMAIL: info@EGSD.com			Sheet: PLOT PLAN	
			Location: 2922 NW 53RD DR	Proj: 11097
DATE: 4-4-2011	REVISION: ADDED ENVIRONMENTAL IMPACT AREA	BY: MRW	Date: 3/20/2012	Client: BROOKS, DENNIS

5-28-12 REVISED SF LOCATION, SHOW
DOWNSPOUT PIPE OUTFALLS

12-135846 SP.

Approved to issue
E. White
4/4/12.



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 PH: (360)687-9919 · FAX: (360)687-9929
 WEB: www.EGSD.com · EMAIL: info@EGSD.com

Sheet: **DETAILED PLOT PLAN**

Location: 2922 NW 53RD DR Proj: 11097

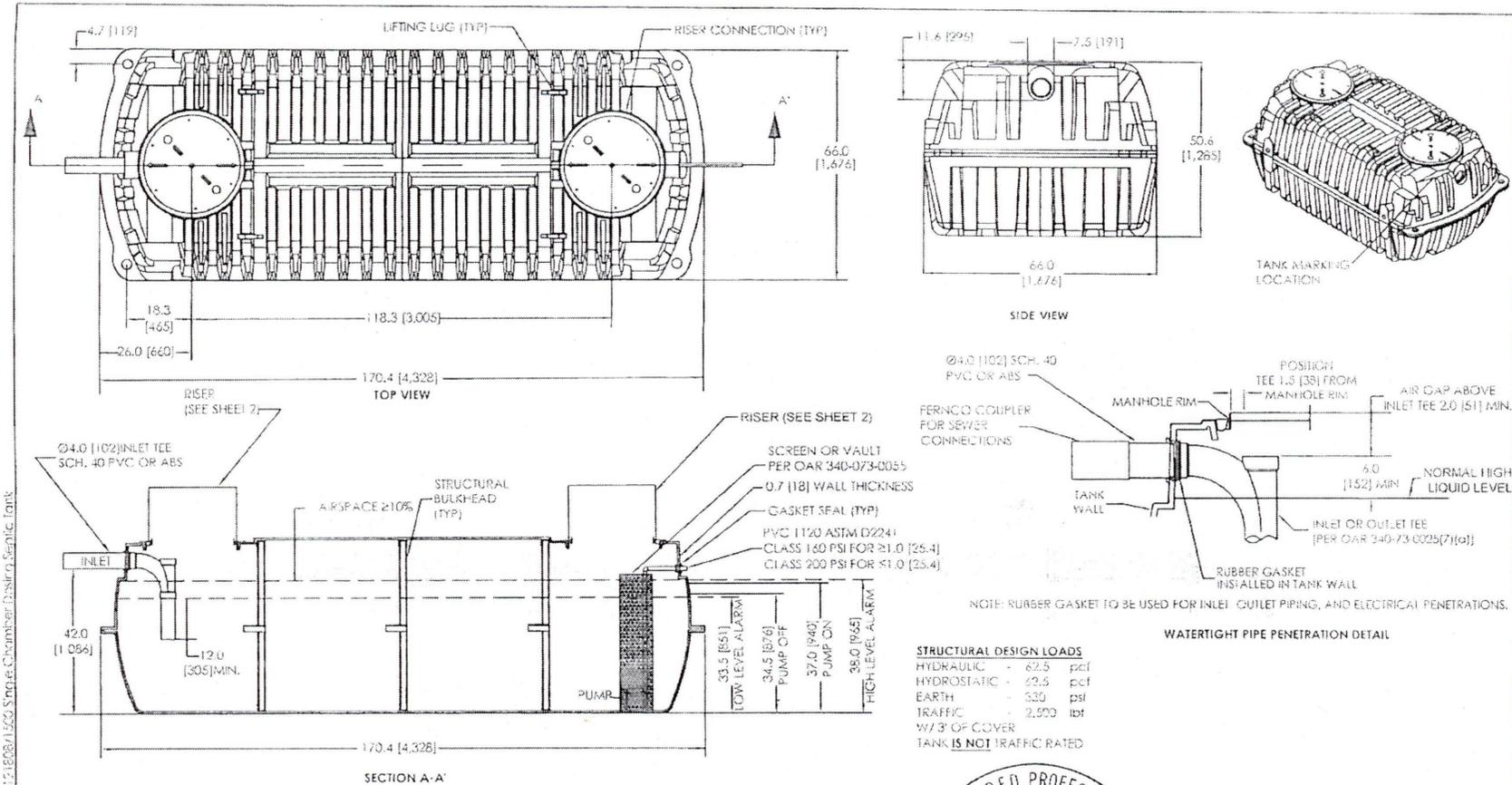
Date: 3/20/2012 Client: BROOKS, DENNIS

5-28-12 REVISED SF LOCATION, SHOW DOWNSPOUT PIPE OUTFALLS

DATE:	REVISION:	BY:
4-4-2011	ADDED ENVIRONMENTAL IMPACT ZONE	MRW

changed to Infiltrator
7/13/12.

12-135846SP

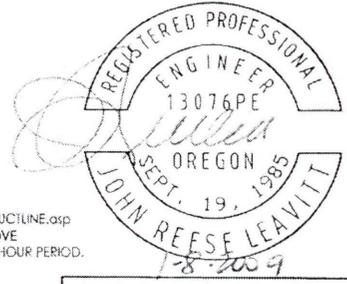


STRUCTURAL DESIGN LOADS

HYDRAULIC	- 62.5 pcf
HYDROSTATIC	- 62.5 pcf
EARTH	- 520 pcf
TRAFFIC	- 2,500 lbf
W/ 3" OF COVER	
TANK IS NOT TRAFFIC RATED	

WATERTIGHT PIPE PENETRATION DETAIL

- GENERAL NOTES:**
- TANK IS NOT RATED FOR VEHICULAR TRAFFIC LOADING. A 2,500 LB WHEEL LOAD IS THE MAXIMUM CAPACITY.
 - ALL RESIN USED IS COMPLIANT WITH IAPMO STANDARDS. THE TANK IS IAPMO CERTIFIED.
 - TANK MARKINGS INCLUDE: MANUFACTURER NAME, LIQUID CAPACITY, MANUFACTURE DATE AND MAXIMUM BURIAL DEPTH.
 - EXTERIOR OF MANHOLE COVER INCLUDES THE FOLLOWING WARNING: "DANGER DO NOT ENTER POISON GASES" WRITTEN IN ENGLISH, FRENCH AND SPANISH.
 - MAXIMUM BURIAL DEPTH IS 36 IN (914 MM). MINIMUM BURIAL DEPTH IS 6 IN (152 MM).
 - DIMENSIONS ON DRAWINGS SHOWN IN INCHES (MILLIMETERS).
 - TANK WALL THICKNESS IS 0.7 IN (18 MM).
 - SEE INSTALLATION PROCEDURES AND DETAILS FOR TANK INSTALLATION PROVIDED AT WWW.INFILTRATORSYSTEMS.COM/PRODUCTSLINE/SEPTIC_PRODUCTLINE.asp
 - A WATER TIGHTNESS TEST IS REQUIRED OAR 340-073-0025(3). TESTING SHALL BE CONDUCTED BY FILLING THE TANK TO A POINT AT LEAST 2 INCHES ABOVE THE POINT OF RISER CONNECTION TO THE TOP OF THE TANK. DURING THE TEST THERE MAY BE NO MORE THAN A ONE GALLON LEAKAGE OVER A 24-HOUR PERIOD.
 - INLET AND OUTLET FITTINGS MUST BE INSTALLED PER OAR 340-073-0025(7).
 - DOSING ASSEMBLY MUST BE SET UP PER OAR 340-073-0055.
 - INSTALLERS TO INSTALL ELECTRICAL WIRING AND PIPE ACCORDING TO PIPE PENETRATION DETAIL SHOWN IN DRAWINGS.
 - INLET TEE FITTINGS MUST EXTEND BELOW THE LOWEST OPERATING LEVEL OF THE PUMP PER OAR 340-073-0055(7).
 - THE TANK IS NOT DESIGNED FOR ABOVE-GRADE APPLICATIONS.
 - THE RISER COVER IS LESS THAN 75 POUNDS.
 - FOR TANK BEDDING INSTALLATION, THE TANK SHOULD BE INSTALLED IN SUITABLE NATIVE SOIL OR A MINIMUM 4.0 (102) LAYER OF PEA STONE, SAND GRAVEL, OR OTHER GRANULAR MATERIAL IF NATIVE MATERIAL IS UNSUITABLE. SUITABLE SOIL SHALL BE FREE-FLOWING AND SHOULD NOT HAVE STONES GREATER THAN 3 IN (76 mm) IN DIAMETER OR CLODS THAT DO NOT BREAK APART DURING COMPACTION.



EXPIRATION DATE: 12-31-2009

LA LEAVITT & ASSOCIATES ENGINEERS, INC.
STRUCTURAL * CIVIL SURVEYING

1324 FIRST STREET SOUTH, Nampa, IDAHO 83651
PHONE (208)463-0333/463-7670 FAX (208)463-9040

PARAMETER	UNITS U.S.(Metric)	TW-1500
TOTAL VOLUME	gal [L]	1,767 [6,669]
WORKING VOLUME	gal [L]	1,573 [5,765]
LENGTH	in [mm]	170.4 [4,328]
WIDTH	in [mm]	66.0 [1,676]
HEIGHT	in [mm]	50.6 [1,285]
INCREMENTAL VOLUME	gal/in [L/cm]	36.0 [54]
WEIGHT	lbs [kg]	574.0 [261]



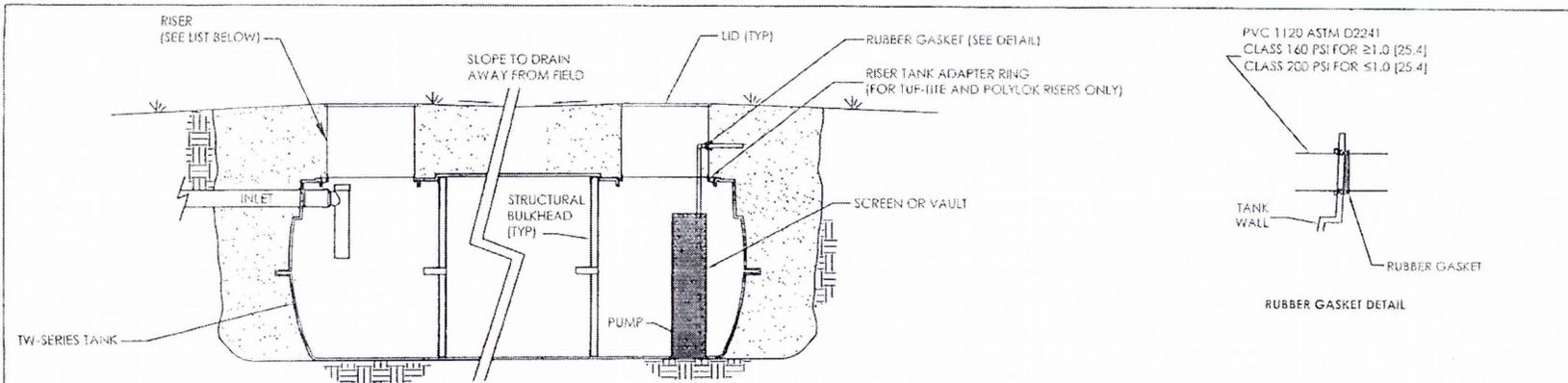
INFILTRATOR SYSTEMS, INC.
c/o Business Park, P.O. Box 59900, Overland Park, KS 66209

OREGON TW-1500 SINGLE CHAMBER COMBINATION DOSING SEPTIC TANK

Drawn by: R.C.	DWG NO.:	Date: 9-18-09
Scale: Not to Scale	Project: 51P	Sheet: 1 of 2

PLAN APPROVED BY D.E.O. DATE 5/29/09

GITCH-RES-NEW-PRODUCTS/TANK/DWG/CR-Drawn by: R.C. (12-1808) 1500 Single Chamber Dosing Septic Tank



RISER AND LID CONNECTION

DETAILED, PRODUCT-SPECIFIC RISER AND LID CONNECTION GUIDANCE IS AVAILABLE FROM INFILTRATOR SYSTEMS INC. AT [HTTP://WWW.INFILTRATORSYSTEMS.COM/PRODUCTLINE/TWSERIES_INFILTRATOR.ASP](http://www.infiltratorsystems.com/productline/twseries_infiltrator.asp). THE RISER CONNECTION GUIDANCE DOCUMENT PROVIDES A FULL DESCRIPTION OF THE CONNECTION TYPE AND METHOD FOR EACH COMPATIBLE RISER.

COMPATIBLE RISER AND LID PRODUCTS

THE TW-SERIES TANK IS COMPATIBLE WITH 24-INCH (600-MM) DIAMETER RISER AND LID PRODUCTS FROM THE FOLLOWING MANUFACTURERS:

- POLYLOK, INC. - COMPATIBLE POLYLOK PART IS #3009-RTR24 (RISER-TO-RISER ADAPTER)
- TUF-TITE CORPORATION
- E-Z SET COMPANY

THE FOLLOWING 24-INCH (600-MM) DIAMETER PIPE PRODUCTS ARE ALSO COMPATIBLE WITH THE TW-SERIES TANK:

- IPEX ULTRA-RIB POLYVINYL CHLORIDE PIPE - USE THE POLYLOK 24-INCH (600 MM) HEAVY DUTY COVER, 24-INCH (600 MM) JACKEL SEPTIC TANK RISER COVER, OR EQUIVALENT PRODUCT AS A LID FOR THE IPEX PVC PIPE
- CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE - USE THE POLYLOK 24-INCH (600 MM X 9.5 MM) HEAVY DUTY COVER, ROTOSOLUTIONS 24-INCH (600 MM) SEPTIC LID, 24-INCH (600 MM) JACKEL SEPTIC TANK RISER OR EQUIVALENT PRODUCT AS A LID FOR THE HDPE PIPE

RISER CONNECTION AT TANK - GENERAL PROCEDURES

1. APPLY BUTYL ROPE SEALANT BETWEEN RISER PARTS AND TANK AS SHOWN IN INFILTRATOR SYSTEMS INC.'S TW-SERIES SEPTIC TANK RISER CONNECTION GUIDANCE DOCUMENT.
2. ENSURE THAT ALL CONNECTION SURFACES ARE CLEAN AND DRY.
3. BUTYL ROPE SEALANT SHALL MEET ASTM C990-91 REQUIREMENTS
4. BUTYL ROPE SEALANT DIMENSIONS VARY BETWEEN MANUFACTURERS. THE INSTALLER MUST USE DISCRETION IN DETERMINING THE SIZE AND AMOUNT OF BUTYL ROPE SEALANT NEEDED TO CRAFT AND MAINTAIN A WATERTIGHT SEAL.
5. KEEP BUTYL ROPE SEALANT AT A TEMPERATURE THAT MAINTAINS ITS WORKABILITY. KEEP IT FREE FROM DIRT AND DEBRIS THAT MAY COMPROMISE A WATERTIGHT SEAL.
6. WHEN APPLYING BUTYL ROPE SEALANT TO A PART, ENSURE CONTINUOUS APPLICATION TO AVOID GAPS THAT MAY CAUSE LEAKS. APPLY AN ADEQUATE QUANTITY TO ENSURE A SEALED CONNECTION.
7. PHYSICALLY PRESS THE BUTYL ROPE SEALANT ONTO THE PART TO ENSURE THAT IT STAYS PROPERLY POSITIONED DURING ASSEMBLY.
8. ENSURE THAT ALL SCREWS SUPPLIED WITH RISER PRODUCTS ARE INSTALLED FOR CONNECTION OF ADAPTER RINGS, RISERS, AND LIDS.
9. DO NOT OVER TIGHTEN SCREWS. THIS MAY DAMAGE THE PLASTIC PARTS BEING CONNECTED, CAUSING THE SCREW CONNECTION TO FAIL. THIS MAY ALSO STRIP THE SCREW HEAD. USE TYPE 304 STAINLESS STEEL SCREWS.

WATERTIGHTNESS TESTING

1. CONDUCT WATERTIGHTNESS TESTING PER OAR 340-073-0025(3)
2. THE INSTALLER MUST TEST EACH TANK FOR WATERTIGHTNESS BY FILLING THE TANK TO A POINT AT LEAST 2 INCHES ABOVE THE POINT OF RISER CONNECTION TO THE TOP OF TANK.
3. DURING THE TEST, THERE MAY BE NO MORE THAN ONE GALLON OF LEAKAGE OVER A 24-HOUR PERIOD

O.I.C.H. RES. NEW PRODUCTS/TANK/OREGON DORSING TANK RISER INSTALLATION CONFIGURATION

5/29/09 [Signature]



EXPIRATION DATE: 12-31-2009

LA LEAVITT & ASSOCIATES ENGINEERS, INC.
STRUCTURAL * CIVIL SURVEYING
 1324 FIRST STREET SOUTH, NAMPA, IDAHO 83651
 PHONE (208)463-0333/463-7670 FAX (208)463-9040

INFILTRATOR[®] septic tanks			
INFILTRATOR SYSTEMS INC. 6 Business Park Rd. Old Saybrook, CT 06475 (800) 721-4436			
OREGON RISER INSTALLATION CONFIGURATION			
Drawn: R.D.	DWG NO: 2	Scale: 1/8"=1'-0"	Sheet: 2 of 2
Scale: Not to Scale	Checked: EPK	Disc:	

LEAVITT & ASSOCIATES ENGINEERS
 1324 First Street South
 Nampa, ID 83651
 (208) 463-7670 Phone
 (208) 463-9040 Fax
www.leavittengineers.com

CLIENT: Infiltrator Systems Inc.
 JOB: TW-Series Tanks
 DESCRIPTION: Buoyancy Calculations
 DESIGNER:
 DATE:
 FILE:

Buoyancy Calculations: ISI Tank Model TW-1500 Tank

Model TW-1500 Gallon Septic Tank

LENGTH = 14.20 Feet
 WIDTH = 5.50 Feet
 HEIGHT = 4.25 Feet
 TOTAL CAPACITY = 1762 Gallons
 WEIGHT = 581 Pounds
 2 RISERS - VOLUME = 25 Gallons
 1 RISER - AREA = 3.14 Square feet

Soil and Ground Water Conditions:

Minimum Height of Fill over Tank = 0.50 Feet
 Ground Water Depth = Tank submersed in water

Concrete collar:

LENGTH = 16.20 Feet
 WIDTH = 7.50 Feet
 THICKNESS = 1.00 Feet

Tank Buoyancy:

1762.00 Gallons x 8.34 Pounds / Gallon = 14695 Pounds
 25.00 Gallons x 8.34 Pounds / Gallon = 209 Pounds

Weight of soil over tank:

5.50 Feet x 14.20 Feet x 0.50 Feet x 110 Pounds per Cubic Foot = 4296 Pounds
 3.14 Sq Ft x 0.50 Feet x 2 Risers x 110 Pounds per Cubic Foot = -345 Pounds

Weight of soil over concrete collar:

(16.20 Feet x 7.50 Feet) - (14.20 Feet x 5.50 Feet) x 1.61 Feet x 110 Pounds per Cubic Foot = 7686 Pounds

Minimum weight of soil within Corrugations:

= 3400 Pounds

Weight of concrete collar:

(16.20 Feet x 7.50 Feet) - (14.20 Feet x 5.50 Feet) x 1.00 Feet x 150 Pounds per Cubic Foot = 6510 Pounds

Weight of soil + Tank + Concrete collar:

15036 lbs + 581 lbs + 6510 lbs = 22127 Pounds

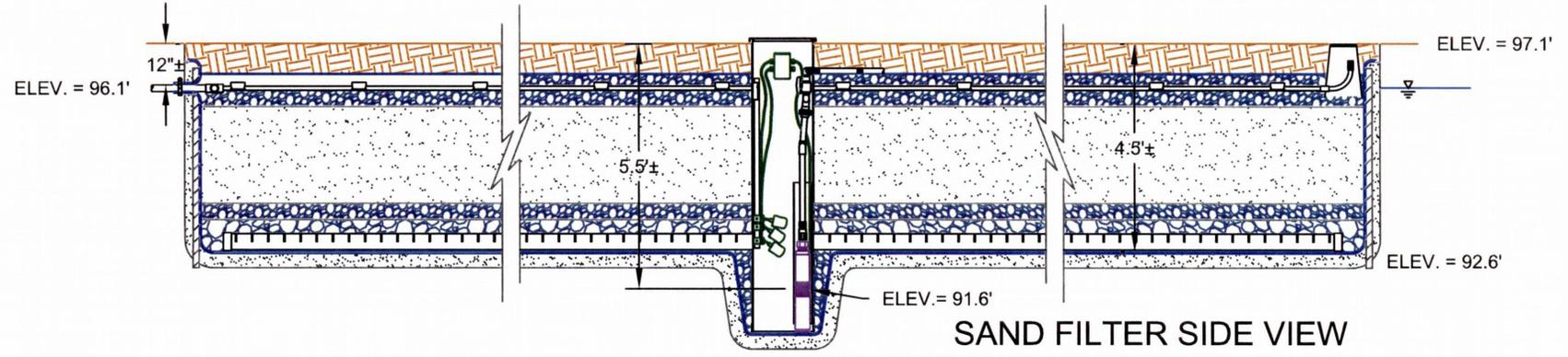
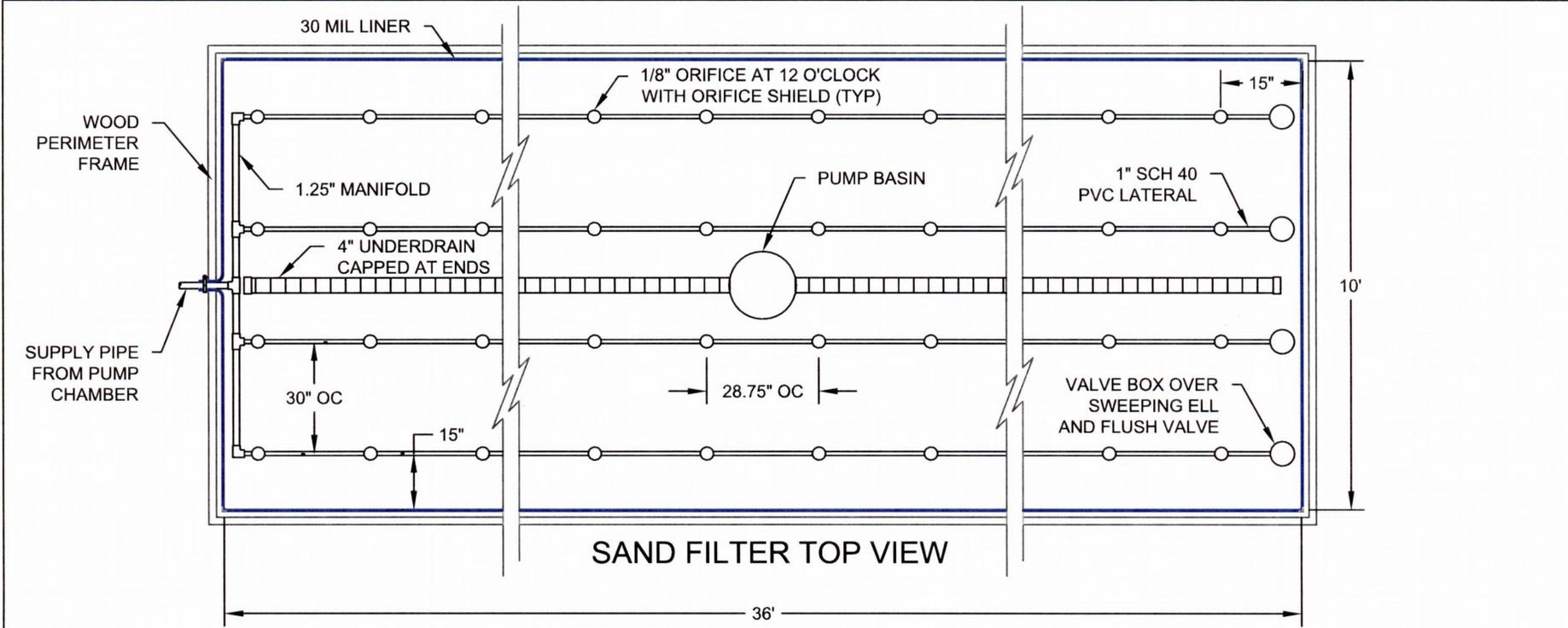
Factor of Safety against tank floating:

22127 Pounds > 14904 Pounds

Factor of Safety = 1.48

12-135846 SP

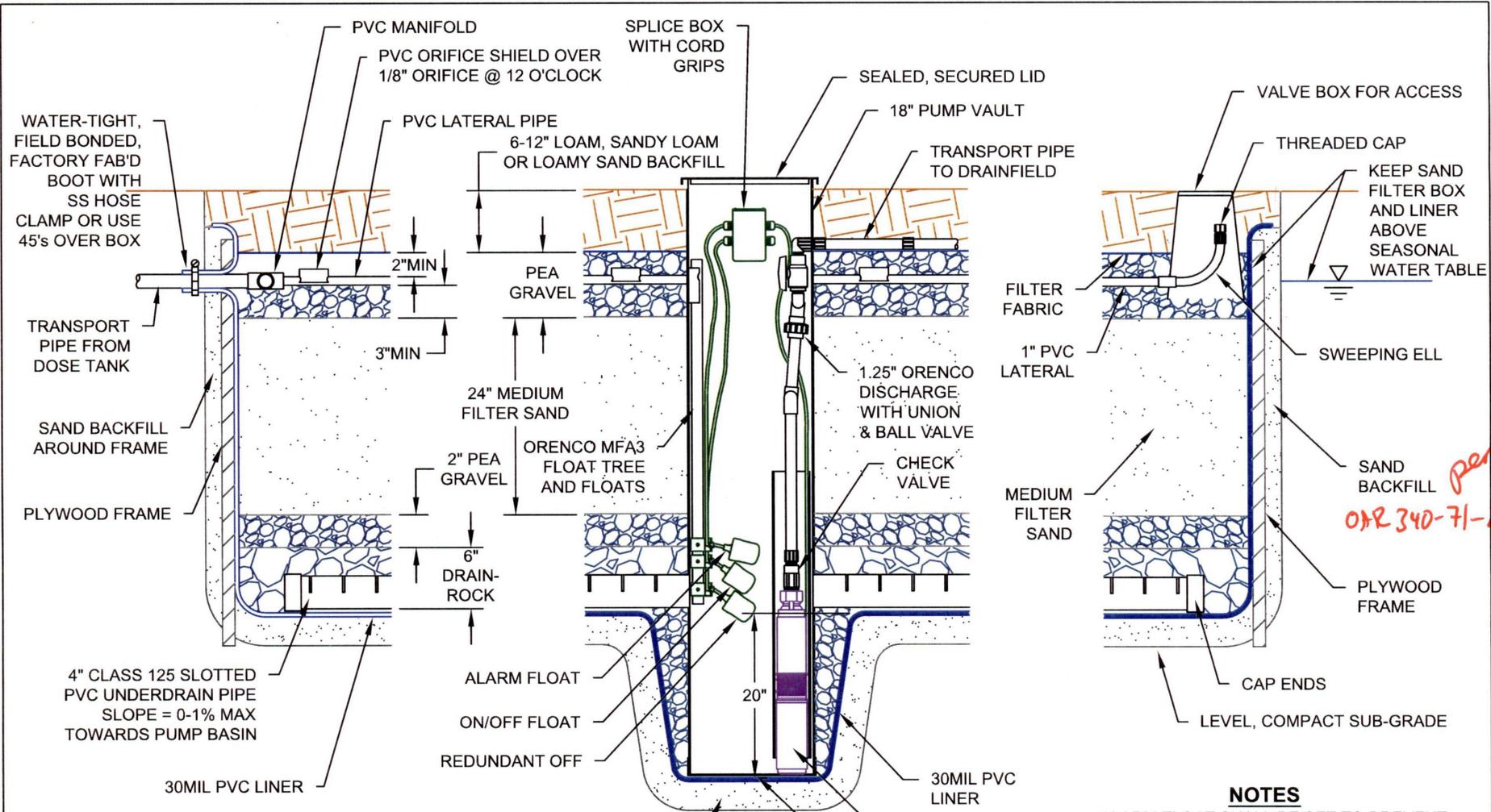
12-135846 SF



EVER GREEN SEPTIC DESIGN INC.		Sheet: SAND FILTER DETAILS	
7503 NE 219th STREET · Battle Ground, WA 98604		Location: 2922 NW 53RD DR	
PH: (360)687-9919 · FAX: (360)687-9929		Proj: 11097	
WEB: www.EGSD.com · EMAIL: info@EGSD.com		Date: 3/20/2012	Client: BROOKS, DENNIS
DATE:	REVISION:	BY:	

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12-135846 JP



TRANSPORT TO SF = 1.25" SCH 40 PVC
MANIFOLD PIPE = 1.25" SCH 40 PVC
LATERAL PIPE = 1" SCH 40 PVC
TRANSPORT TO DF = 1.25" SCH 40 PVC

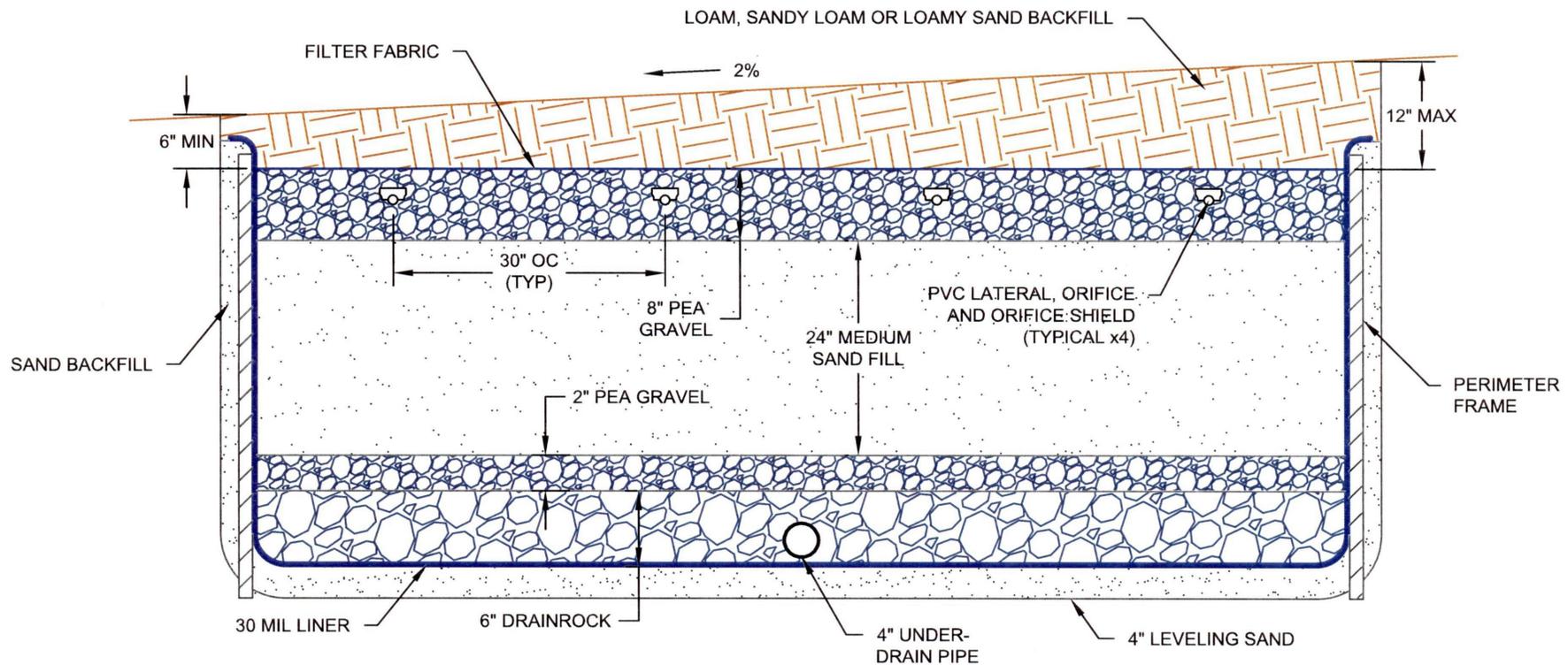
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- NOTES**
- ALARM FLOAT SHALL BE SET TO PREVENT EFFLUENT FROM REACHING ANY CLOSER THAN 2" FROM SAND MEDIA
 - PUMP OFF SHALL OCCUR NO LOWER THAN MIDPOINT OF UNDERDRAIN PIPE SLOTS
 - SET DOSE TO NO MORE THAN 10% DAILY VOLUME TO FILTER, NO MORE THAN 20% TO DRAINFIELD
 - PEA GRAVEL = UNDERDRAIN MEDIA
DRAIN ROCK = DRAIN MEDIA
 - ALL LINER AND VAULT PENETRATIONS TO BE WATER-TIGHT

per
 OR 340-71-100 (127)

EVER GREEN SEPTIC DESIGN INC. 7503 NE 219th STREET · Battle Ground, WA 98604 PH: (360)687-9919 · FAX: (360)687-9929 WEB: www.EGSD.com · EMAIL: info@EGSD.com			Sheet: SAND FILTER SIDE VIEW		
			Location: 2922 NW 53RD DR	Proj: 11097	
Date: 3/20/2012	Client: BROOKS, DENNIS				
DATE:	REVISION:	BY:			

12-135846 SP



SAND FILTER END VIEW

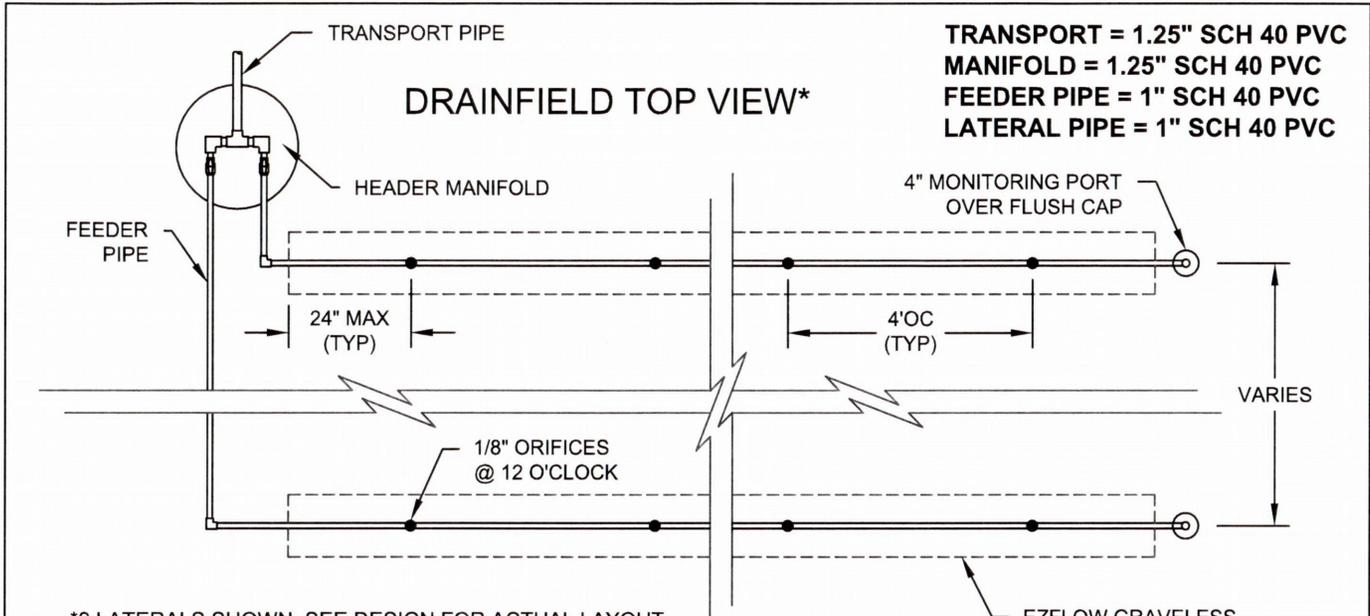
NOTES

- SET DOSE TO NO MORE THAN 10% DAILY VOLUME TO FILTER, NO MORE THAN 20% TO DRAINFIELD
- PEA GRAVEL = UNDERDRAIN MEDIA. DRAIN ROCK = DRAIN MEDIA.
- ALL LINER AND VAULT PENETRATIONS TO BE WATER-TIGHT
- COVER MATERIAL TO BE INSPECTED BY REGULATOR PRIOR TO BACKFILL. SLOPE OR MOUND BACKFILL TO CREATE SURFACE DRAINAGE.
- PROVIDE 18-GAUGE (MIN) GREEN JACKETED TRACER WIRE OR GREEN COLOR-CODED METALIC TAPE ABOVE ALL EFFLUENT SEWER AND TRANSPORT PIPES

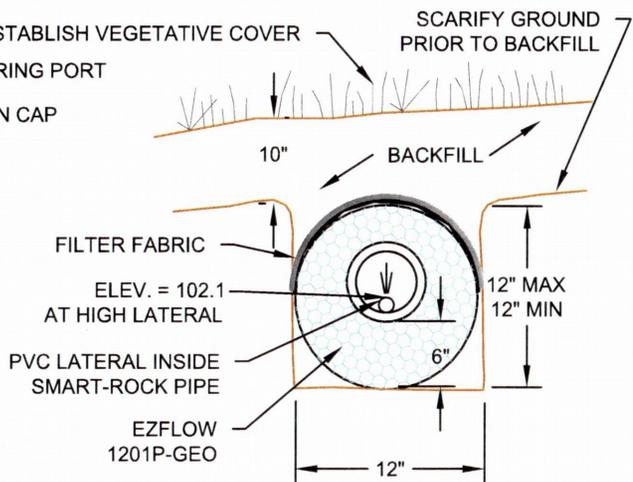
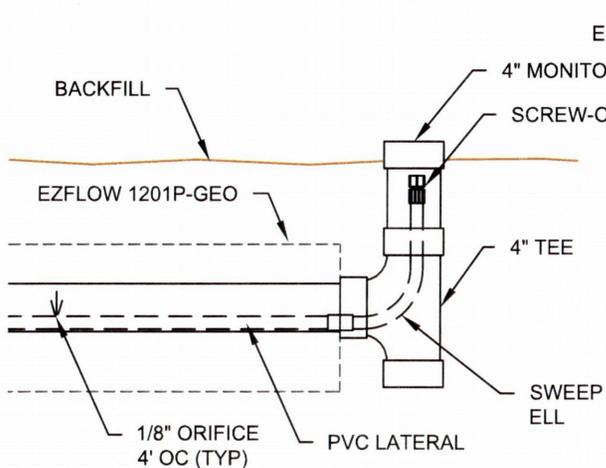
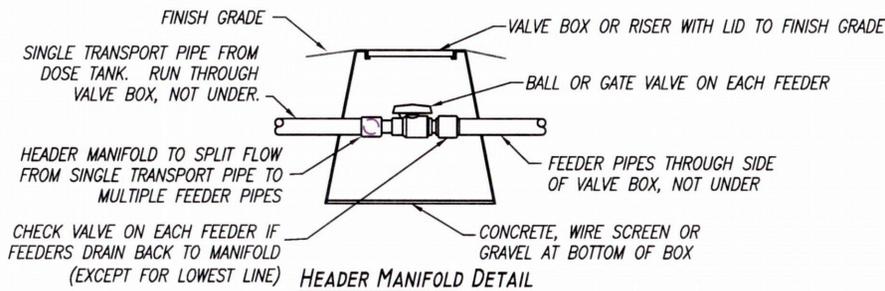
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Location: 2922 NW 53RD DR		Proj: 11097		
DATE:	REVISION:	BY:	Date: 3/20/2012	Client: BROOKS, DENNIS

12-135846 SP



*2 LATERALS SHOWN. SEE DESIGN FOR ACTUAL LAYOUT.
 LATERALS SHOWN STRAIGHT. FOLLOW CONTOURS DURING INSTALLATION.



DRAINFIELD SIDE SECTION

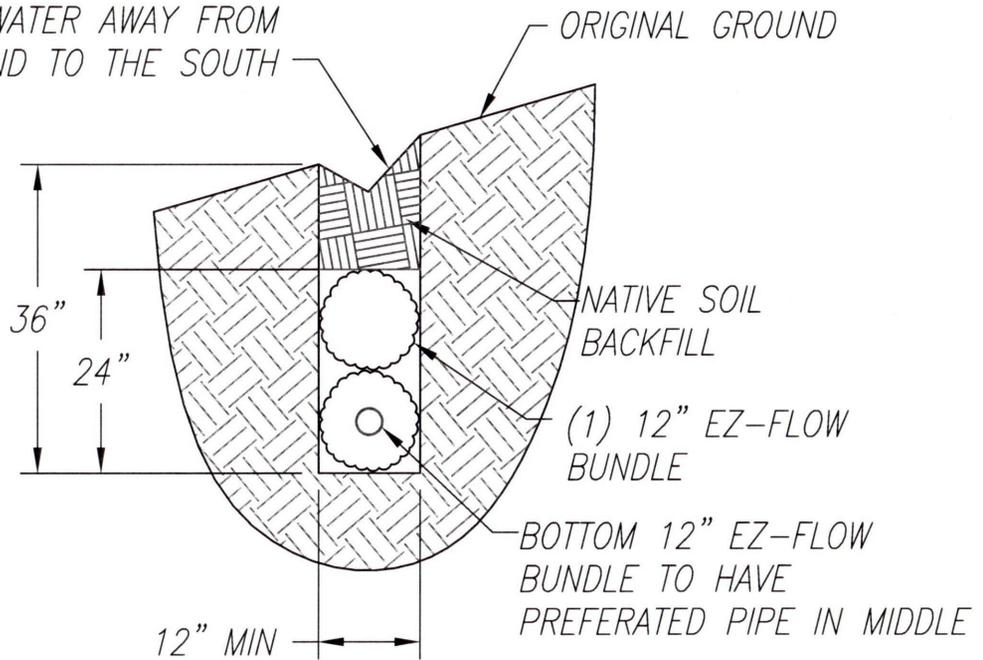
DRAINFIELD END SECTION

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Location: 2922 NW 53RD DR		Proj: 11097		
DATE:	REVISION:	BY:	Date: 3/20/2012	Client: BROOKS, DENNIS

12-135846 SP

V-BOTTOM BACKFILL TO DIVERT
SURFACE WATER AWAY FROM
DRAINFIELD AND TO THE SOUTH



CUT-OFF TRENCH

"GWI"

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			Location: 2922 NW 53RD DR	Proj: 11097
DATE:	REVISION:	BY:	Date: 3/20/2012	Client: BROOKS, DENNIS

12-135846 SP

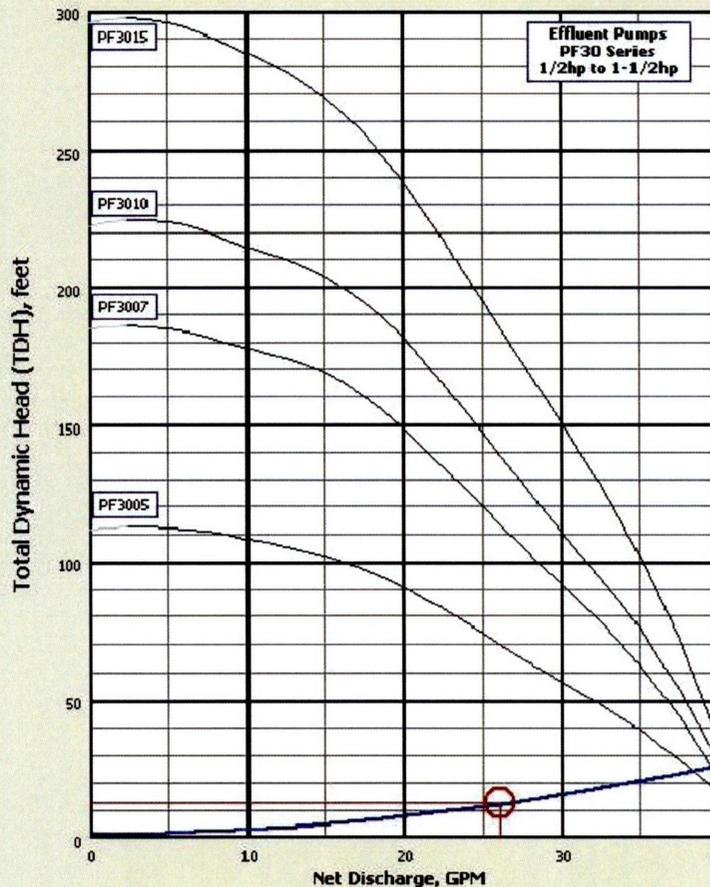
Pump Selection for a Pressurized System

Input Parameters

Orifice Size	1/8 inches
Residual Head at Last Orifice	5.0 feet
Orifice Spacing	2.4 feet
Number of Laterals per Cell	4
Lateral Length	36.0 feet
Lateral Line Size	1.00 inches
Lateral Pipe Class/Schedule	40
Distributing Valve Model	None
Manifold Length	9.0 feet
Manifold Line Size	1.25 inches
Manifold Pipe Class/Schedule	40
Lift to Manifold	2.1 feet
Transport Length	20.0 feet
Transport Line Size	1.25 inches
Transport Pipe Class/Schedule	40
Discharge Assembly Size	1.25 inches
Flow Meter	None inches
*Add-on' Friction Losses	0.0 feet

Calculations

Minimum Flow Rate per Orifice	0.43 gpm
Number of Orifices per Zone	60
Total Actual Flow Rate	26.2 gpm
Number of Lines per Zone	4
% Flow Differential 1st and Last	2.9 %
Lift to Manifold	2.1 feet
Residual Head at Last Orifice	5.0 feet
Head Loss in Laterals	0.4 feet
Head Loss through Distributing Valve	0.0 feet
Head Loss in Manifold	0.2 feet
Head Loss in Transport Pipe	1.7 feet
Head Loss through Discharge	3.4 feet
Head Loss through Flow Meter	0.0 feet
*Add-on' Friction Losses	0.0 feet
Total Flow Rate	26.2 gpm
Total Dynamic Head	12.8 feet




Orengo Systems
Incorporated

814 AIRWAY AVENUE
SUTHERLIN, OREGON
97479

TOLL FREE:
(800) 348-9843

TELEPHONE:
(541) 459-4449

FACSIMILE:
(541) 459-2894

www.orengo.com

Select a Pump Series

PF30 HH Effluent

Note! The operating point should be within 30% of the selected pump's nominal flow rate, or the longevity of the pump may be affected.

EVER GREEN SEPTIC DESIGN INC.			Sheet: PUMP CALCS #1	
7503 NE 219th STREET · Battle Ground, WA 98604 PH: (360)687-9919 · FAX: (360)687-9929 WEB: www.EGSD.com · EMAIL: info@EGSD.com			Location: 2922 NW 53RD DR Proj: 11097	
DATE:	REVISION:	BY:	Date: 3/20/2012	Client: BROOKS, DENNIS

CHOOSE ORENCO: PF3005
FOR PUMP IN PUMP TANK, DOSING SAND FILTER

12-135846 SP

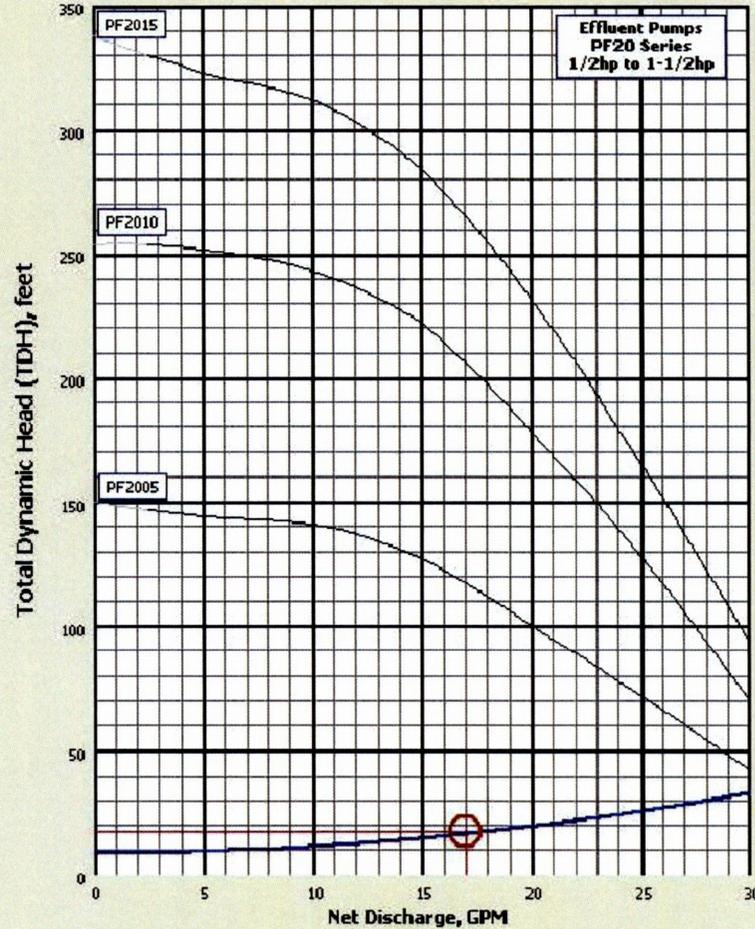
Pump Selection for a Pressurized System

Input Parameters

Orifice Size	1/8 inches
Residual Head at Last Orifice	5.0 feet
Orifice Spacing	4.0 feet
Number of Laterals per Cell	3
Lateral Length	50.0 feet
Lateral Line Size	1.00 inches
Lateral Pipe Class/Schedule	40
Distributing Valve Model	None
Manifold Length	2.0 feet
Manifold Line Size	1.25 inches
Manifold Pipe Class/Schedule	40
Lift to Manifold	9.5 feet
Transport Length	30.0 feet
Transport Line Size	1.25 inches
Transport Pipe Class/Schedule	40
Discharge Assembly Size	1.25 inches
Flow Meter	None inches
'Add-on' Friction Losses	0 feet

Calculations

Minimum Flow Rate per Orifice	0.43 gpm
Number of Orifices per Zone	39
Total Actual Flow Rate	17.0 gpm
Number of Lines per Zone	3
% Flow Differential 1st and Last	3.1 %
Lift to Manifold	9.5 feet
Residual Head at Last Orifice	5.0 feet
Head Loss in Laterals	0.4 feet
Head Loss through Distributing Valve	0.0 feet
Head Loss in Manifold	0.0 feet
Head Loss in Transport Pipe	1.2 feet
Head Loss through Discharge	1.4 feet
Head Loss through Flow Meter	0.0 feet
'Add-on' Friction Losses	0.0 feet
Total Flow Rate	17.0 gpm
Total Dynamic Head	17.5 feet




Orengo Systems
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97479

TOLL FREE:
(800) 348-9843

TELEPHONE:
(541) 459-4449

FACSIMILE:
(541) 459-2884

www.orengo.com

Select a Pump Series

PF20 HH Effluent

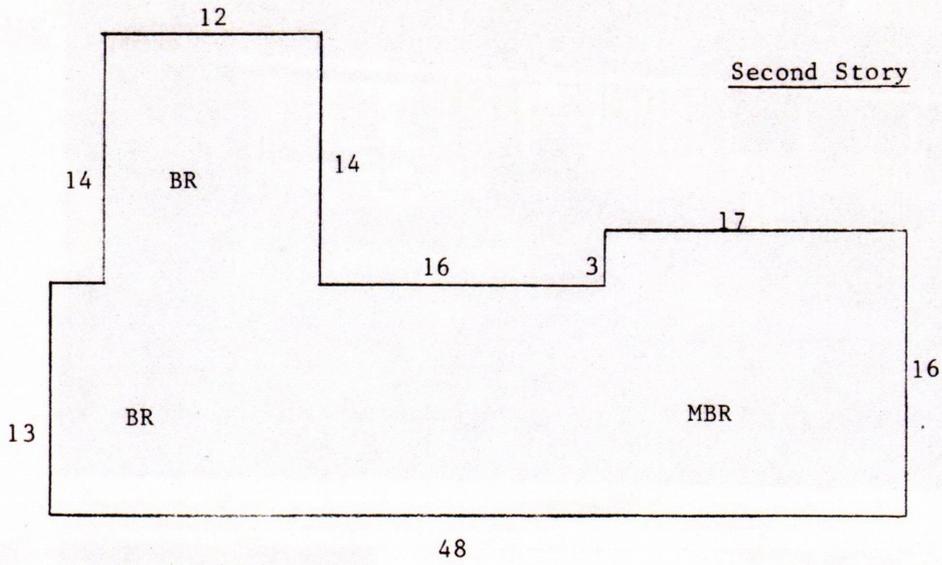
Note! The operating point should be within 30% of the selected pump's nominal flow rate, or the longevity of the pump may be affected.

EVER GREEN SEPTIC DESIGN INC.			Sheet: PUMP CALCS #2		
7503 NE 219th STREET · Battle Ground, WA 98604			Location: 2922 NW 53RD DR		
PH: (360)687-9919 · FAX: (360)687-9929			Proj: 11097		
WEB: www.EGSD.com · EMAIL: info@EGSD.com			Client: BROOKS, DENNIS		
DATE:	REVISION:	BY:	3/20/2012		

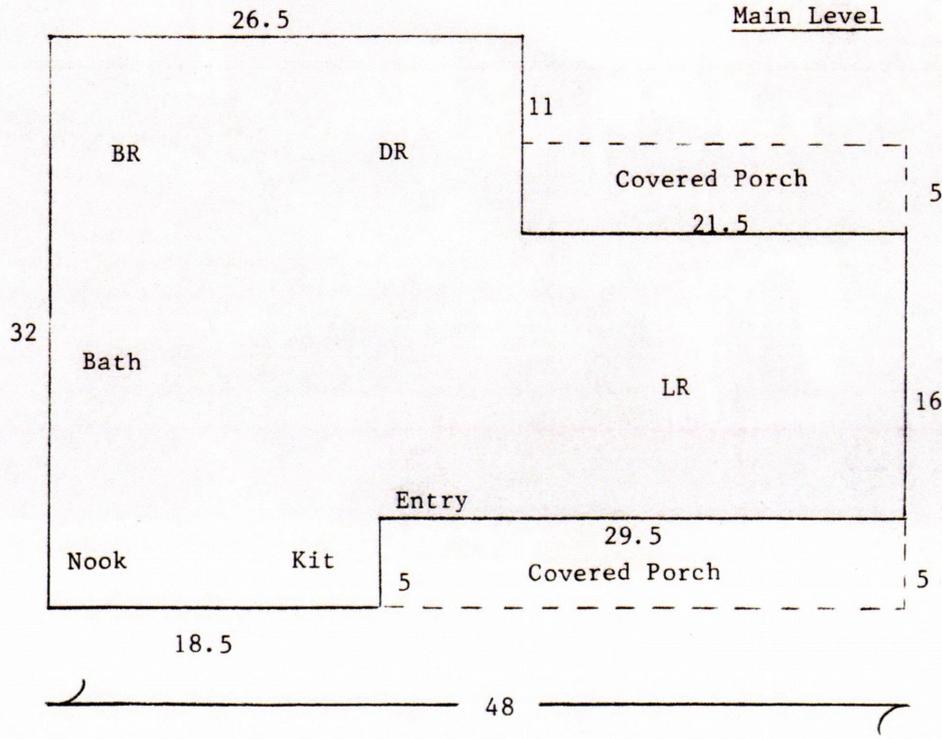
CHOOSE ORENCO: PF2005
FOR PUMP IN SAND FILTER, DOSING DRAINFIELD

Floor Plan

12-135846 SP.



$$\begin{array}{r}
 48 \times 13 = 624 \\
 12 \times 14 = 168 \\
 17 \times 3 = \underline{51} \\
 \hline
 843
 \end{array}$$



$$\begin{array}{r}
 48 \times 16 = 768 \\
 18.5 \times 5 = 92.5 \\
 26.5 \times 11 = \underline{291.5} \\
 \hline
 1152
 \end{array}$$

Total: 1995

Mick, Erin (BDS)

From: Don KIENHOLZ [don.d.kienholz@multco.us]
Sent: Wednesday, May 23, 2012 2:37 PM
To: Pat Speer
Cc: Mick, Erin (BDS)
Subject: Re: FW: permits R961250880

Perfect Pat,

these satisfy the requirements. I've CC'd Erin so she's aware I've seen the pictures and have given the OK.

Don Kienholz
Land Use Planner

Multnomah County Land Use Planning
1600 SE 190th Ave, Suite 116
Portland, OR 97233
Ph: 503-988-3043 x29270
Fax: 503-988-3389
don.d.kienholz@multco.us

On Wed, May 23, 2012 at 2:07 PM, Pat Speer <PatS@rivercityusa.com> wrote:

Hope these will work pretty nice coop please let Erin Mick know u got these

Patrick Speer

Sales, Field Supervisor | River City Environmental, inc.
P.O. Box 30087 Portland, Oregon 97294 | Cell: [503-710-2489](tel:503-710-2489) | Office Direct [503-467-2603](tel:503-467-2603)



From: Dennis Brooks [mailto:dennis@commsnw.com]
Sent: Wednesday, May 23, 2012 12:10 PM
To: Pat Speer
Subject: RE: permits RRRRRRRRRR

Here they are and sorry for the delay . . .

From: Pat Speer [mailto:PatS@rivercityusa.com]
Sent: Wednesday, May 16, 2012 4:41 PM
To: Dennis Brooks
Subject: permits RRRRRRRRRRR

Hello Dennis

I need a couple of pictures of your house from u before the county will release the permit

Habitable Dwelling – An existing dwelling that:

- (a) Intact exterior walls and roof structure;

- (b) Indoor plumbing consisting of a kitchen sink, toilet and bathing facilities connected to a sanitary waste disposal system;

- (c) Interior wiring for interior lights;

- (d) Heating system;

They think it maybe a chicken coop or something

Patrick Speer

5/25/2012

SECTION 1 - TO BE COMPLETED BY APPLICANT (may be filled in electronically by tabbing to each field)

1. Applicant Name/Property Owner: Rivercity environmental / Dennis Brooks

Mailing Address: PO Box 30087

City, State Zip Code: Portland Or 97294

Telephone: 503-252-6144

2. Property Information:

County: Multnomah

Tax Lot No.: r324497

Township: 1n

Range: 1w

Section: 25a

Physical Address: 2922 NW 53rd dr

Block: _____

Lot: 2500

Subdivision Name (if applicable): _____

3. This proposed facility is for:

An individual, single-family dwelling

Describe the type of development, business, or facility and the provided services or products: _____

4. Permit or approval being requested:

Construction-Installation permit for: New Construction Repair Alteration

Non-water -carried facility requests (for example, pit privy/vault toilet for campgrounds)

Authorization Notice for: Replacement of dwelling Bedroom addition

Other changes in land use involving potential sewage flow increases

Print Form

SECTION 2 - TO BE COMPLETED BY CITY OR COUNTY PLANNING OFFICIAL

5. Property Zoning: CFU-2 Zoning Minimum Parcel Size: 80-9600

6. The facility is located: inside city limits inside UGB outside UGB

If inside UGB, the proposed facility is subject to:

City jurisdiction

County jurisdiction

Shared City/County jurisdiction

7. Does the proposed facility comply with all applicable local land use requirements: Yes No

If you answered "Yes" above, was this compliance based on:

Compliance with local comprehensive plans and land use requirements (provide a citation to the applicable provisions)

Conditional approval (provide findings and citation or attach a copy of the applicable land use decision)

Measure 49 waiver (provide Department of Land Conservation and Development approval number)

Either provide reasons for affirmative compliance decision or attach findings of fact: _____

Prior to issuing permit Applicant must
submit photos demonstrating home is "habitable" per
33.0005

8. Planning Official Signature: Don Kienholz

Print Name: Don Kienholz

Date: 4/27/12

Title: Planner

Telephone: 503-988-3043

12-135 846 SP RHJ 4/27/12



ONSITE SANITATION City of Portland – Bureau of Development Services
 1900 SW 4th Avenue, Portland, Oregon 97201 – 503-823-7363 – TTY 503-823-6868 – www.portlandoregon.gov/bds

INSTALLATION PERMIT APPLICATION

Category		
<input checked="" type="checkbox"/> 1 & 2 Family Dwelling	<input type="checkbox"/> Multi-Family	
<input type="checkbox"/> Accessory Building	<input type="checkbox"/> Comm'l/Industrial	
Job Site Information and Location		
Property Owner:	Dennis Brooks	
Job Address:	2922 NW 53rd St	
City/State/Zip:	Portland OR	
Street/Cross Street:		
Legal Description:		
Size/Acreage of Parcel:	1.73	
Domestic Water Source:	Private <input checked="" type="checkbox"/> Public <input type="checkbox"/>	
Project/System description:		
Land Feasibility Study (LFS) #	02-12	
Existing System:	1000 gpd GRAVITY	
Existing # of Bedrooms	4	
Tank:	1000 gpd	
System Type:		
Drainfield Dispersal Method:	GRAVITY	
Lineal Feet	2	
Proposed System:		
Proposed # of Bedrooms	4	
Tank:	1500	
System Type:	3605F SAND FILTER	
Drainfield Dispersal Method:	GRAVITY RD	
Lineal Feet	150	
Installer		
Business Name:	River City Environmental	
Installer Name:	Patrick Steer	
Address:	PO Box 30087	
City/State/Zip:	Portland OR 97294	
Phone:	503-262-6144	
FAX:	503-299-3668	
DEQ Lic #:	1055	
CCB#:	147355	
Authorized Signature:	[Signature]	
Date:		
Applicant		
Name:	[Signature]	
Address:		
City/State/Zip:		
Phone:		
FAX:		
E-mail:		
Signature:		
Date:		
Sanitation Fees		
NOTE: DEQ surcharge applies to ALL installation permits	Subtotal	
	DEQ Surcharge	
	TOTAL	

Application Submittal Checklist	
Applications must be complete with all the submittals indicated. Only complete application packets will be accepted for review. See back side for additional description of required submittal	
FOR ALL PERMITS:	
<input type="checkbox"/>	Completed Application Form
<input type="checkbox"/>	Scaled, legible & detailed site plan
<input type="checkbox"/>	Floor Plans
<input type="checkbox"/>	DEQ approved tank spec sheet
<input type="checkbox"/>	Water supply source & line location (<input type="checkbox"/> public <input type="checkbox"/> private)
<input type="checkbox"/>	Property Address from Multnomah County
DRAINFIELDS:	
<input type="checkbox"/>	Planning & Zoning approval (LUCS form)
<input checked="" type="checkbox"/>	Beginning, middle & end elevations of each line
<input checked="" type="checkbox"/>	Drainfield material type
<input checked="" type="checkbox"/>	Test pit location(s) on SAME site plan
<input checked="" type="checkbox"/>	Pump calcs & selection (as applicable)
<input checked="" type="checkbox"/>	Sand Filter construction details (as applicable)
Advanced Treatment Technology (ATT)	
<input type="checkbox"/>	Signed O&M contract
<input type="checkbox"/>	DEQ approved spec sheet

PERMIT FEES		
Description	Qty	Fee
Single Family Construction – (New Installation Permit)		
Standard Septic Tank/Drainfield		\$ 1,705
Sand Filtration		\$ 2,317
Advanced Treatment Technology		\$ 2,317
Capping Fill		\$ 2,317
Pressure Distribution		\$ 2,317
Seepage Trench		\$ 1,705
Tile Dewatering		\$ 2,317
Gray Water Waste Disposal Sump		\$ 874
Other (Redundant and Steep Slope)		\$ 1,705
Single Family (Repair/Replacement Permit)		
Septic Tank (only) – minor		\$ 372
Septic Tank/Standard Drainfield – major		\$ 751
Septic Tank/Non-Standard Drainfield – major	1	\$ 1,021
Commercial/Multi-Family Construction – (New Installation Permit)		
Standard Septic Tank/Drainfield		\$ 1,705
Sand Filtration		\$ 2,317
Advanced Treatment Technology		\$ 2,317
Alternative & Non-Standard System		\$ 2,317
Holding Tank		\$ 1,705
Commercial/Multi-Family (Repair/Replacement Permit)		
Septic Tank (only) – minor		\$ 874
Septic Tank/Standard Drainfield - major		\$ 1,705
Alternative & Non-Standard System		\$ 2,317
Holding Tank		\$ 1,705
Large Systems (over 601-2,500 gpd)		
Plan Review		\$ 1025
Additional charge per 500 gallons (# of 500 gallons)		\$ 216
Alteration Permit (expansion/relocation)		
Septic Tank/Drainfield – major		\$ 1,714
Septic Tank (only) – minor		\$ 874
Reinspection fee		
Reinspection Fee (commercial or residential)		\$ 184
Miscellaneous		
Third and Subsequent Checksheets		\$ 167
Work without Permit (two times the permit fee)		
DEQ Surcharge		
Applies to ALL Installation Permits	1	\$ 60

Issued permit will be mailed to the applicant listed on the application
 Allow up to 20 working days after complete submittal for review of your application

1081 08/01/11