Lincoln-Lancaster County Health Department
Environmental Public Health Division
3140 N Street • Lincoln NE 68510-1514
Phone: 402-441-8643

A

Permit Number #S001932

Onsite Wastewater Treatment System
Request for Site Clearance and Permit

Include Form B and C. Submit correct fee with this Application

3 acres or more required for: ☐ Septic System ☐ Lagoon ☒ Other (Refer to Form C)

The undersigned hereby requests site clearance and permit to construct a Wastewater Treatment System in conformance with appropriate regulations.

4700 $230

PLEASE PRINT OR TYPE

A. Onsite System Location

Address 3400 S. 93rd Cir City Lincoln, NE Zip 68520
(no rural route)

Legal Description S11 T9 R7 Wildflower Farms Add. 2
1/4 1/4 Section Township Range Subdivison Addition Block Lot

PID

B. Owner

Name Jeffrey Soucie Signature

Address 4700 S. 93rd Cir City/State/Zip Lincoln, NE 68520

Home Phone 402-429-2282 Work Phone

C. Certified Installer

Name: Jeff Schoeneck, P.E. Signature Jeff Schoeneck

Address 1291 County Rd V City/State/Zip Fremont, NE 68025

Work Phone 402-720-9209

D. Engineer

☒ **Check and complete if engineer designed system** P.E. License Number: E8989

Designer Name Jeff Schoeneck Firm Horizon Envirotech, LLC Work Phone

E. This system will serve a

☒ Residential Dwelling Number of Bedrooms 3 Whirlpool Bathtub? ☐ Yes ☐ No Total Acres 3
Garbage Grinder? ☐ Yes ☐ No

☐ Commercial Establishment/Other Facility Specify Design flow in gallons per day

Type of Wastewater ☐ Domestic ☐ Non-Domestic

DO NOT WRITE BELOW THIS LINE

Approval Process ☐ Municipal Code 24.38 ☐ County Resolution No. 02-30

1. Health Department
Site visits
Comments
Date rec'd
Date frwd
ACTION ☐ Approved ☐ Disapproved
Signature

2. Supt. Bldg. Insp. or Village Clerk
Comments
Date rec'd
Date frwd
ACTION ☐ Approved ☐ Disapproved
Signature

3. City or County Engineer
Comments
Date rec'd
Date frwd
ACTION ☐ Approved ☐ Disapproved
Signature

Installation Final Written Approval
By
Date

Business Office Use Only
Date Received 11-14-19 Amount Paid $230.00
Received By JAO Cash/Check No CA4232

White - Health Department Yellow - Engineer Pink - Building & Safety

Form A Updated 1/13

Lincoln-Lancaster County Health Department
Environmental Public Health Division
3140 N Street • Lincoln NE 68510-1514
Phone: 402-441-8643

D Exhibit 4

Permit Number:

Onsite Wastewater Treatment System
As-Built Description and Drawing

Type of Onsite Wastewater System: ☐ Lagoon (Skip to Back Page) ☐ Subsurface Septic ☐ Mound

Onsite Wastewater System Location

Address or Legal Description or Parcel Identification Number (PID) _____

Owner: _____ Address _____

A. Wastewater Piping

1. Material: PVC SDR-26 PVC SDR-21 Diameter: 4 2 in.
2. Distance between dwelling and septic tank: _____ ft.

B. Septic Tank

1. Material Existing Concrete
2. Capacity: 1500
3. Depth to top of tank, below unfinished grade: 12 in.
4. Distance to:
   Well 7100 ft.
   Pressure line _____ ft
   Property Line _____ ft.
   Foundation _____ ft.

C Distribution Box or Drop Box

Distance and Direction from septic tank: _____ ft. _____

D. Drainfield/Absorption Field

☐ Trench ☒ Bed Mound Treatment

1. Type: ☐ Perforated Pipe ☐ Chamberless ☐ Other
   Material brand and inside width of Chamberless: _____
2. Number of Laterals: _____
3. Length of each lataral (linear): ft._____ ft._____ ft._____ ft._____
4. Drainfield size: _____ sq. ft.
5. Distance to:
   Well _____ ft.
   Pressure line _____ ft.
   Property line _____ ft.
   Depth of Groundwater _____

190WT029

SEE Permitted NDEE Plans
Facility ID 65880

Was the Onsite Wastewater System covered prior to LLCHD inspection? ☒ Yes ☐ No

If Yes, the Certified Professional must sign below for final approval:

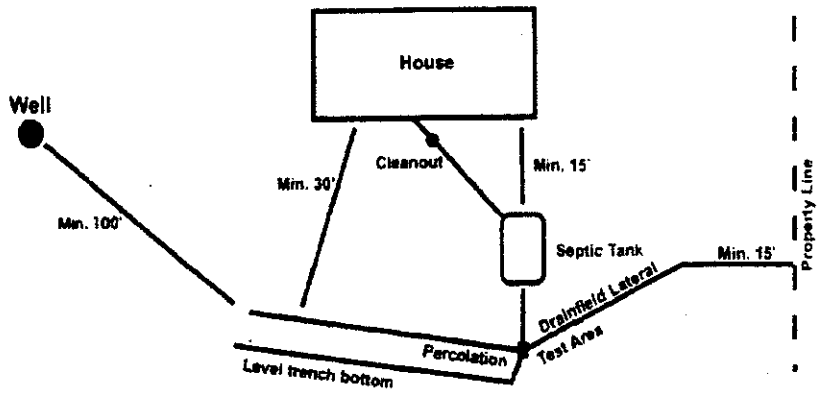
I swear and affirm that the system complies with Lincoln Municipal Code (LMC) 24.38 and/or County Resolution R-13-0062 requirements and that the information and documentation submitted are true and accurate.

Certified Professional Signature: Jeffrey N Schwenk Date: 11/14/2019

Complete As-Built drawing on the back of this form.

Onsite Wastewater System Design (Example)

Indicate North
w/ Arrow Here:



*Note-If Lagoon, show all applicable dimensions

SEE PERMITTED
NDEE Approved Plans
Facility ID 65880
190WT029

COPY

SEPTIC SYSTEM MODIFICATION DESIGN - MOUND/SAND FILTER TREATMENT

Prepared by: Jeffery N. Schoeneck, P.E.

Owner: Jeff & Barb Sucie – 4700 S 93rd Cir, Lincoln, NE 68520

HORIZON ENVIROTECH,LLC

1291 COUNTY RD V
FREMONT, NE 68025

(402)-720-9209

E-mail jeffhet@1791.com

9/30/2019

SEPTIC SYSTEM MODIFICATION - Facility ID 65880

4700 S 93rd Cir, Lincoln, NE
Lot #4, Wildflower Farms

→ Propose Modified Mound Treatment (Dosed Sand Filter)
- To be constructed over Constructed Wetlands Cell
- Wetland Cell Plugging @ Inlet Header Area
- Modified Mound Sand Filter to Provide Even Distribution of effluent over treatment sand media

Design Flow - 3 Bedroom Home → 400 gpd

Mound / SF Design



Sand Loading Rate = 1.2 gal/Ft2 (Same For Mound Systems)
Minimum Size = 400 gpd / 1.2 gal/Ft2 = 333 sq Ft

→ Propose 18ft x 20ft = 360 sq Ft
Using Bundled Expanded Polystyrene
(6) - (3) x 12" x 20' PS Bundles

Dosing Laterals

Propose (6) - 1¼"Ø Laterals (3ft oc)
3/16" Ø Holes @ 2.5' Spacing (1st Hole 12" From End)
10 Perforations / Lateral x 6 lines = 60 Perfs
Flow = 60 x 0.42 gal/perf = 25.2 gpm

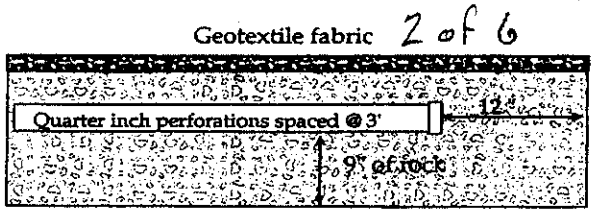
Septic Tank - To use Existing 1500 Gal Septic Tank

Dose Tank - Propose 1,000 gal Dose Tank w/pressure effluent Filter on discharge pipe

Dose Volume - 4 times/day of 100 gal Each Dose
Draw down 1000 gal / 45" = 22.2 gal/in ⇒ 4.5"
(Use Pressure Effluent Filter)

Disposal - To use existing Polishing / Evaporation Pond

PRESSURE DISTRIBUTION SYSTEM



Perf Sizing 3/16" - 1/4"
Perf Spacing 1.5'- 5'

1. Select number of perforated laterals 6

2. Select perforation spacing = 2.0 ft

3. Since perforations should not be placed closer than 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the ~~rock~~ layer length.

PS BUNDLE $\frac{20}{\text{Rock layer length}}$ - 2 ft = 18 ft

E-4: Maximum allowable number of 1/4-inch perforations per lateral to guarantee <10% discharge variation

perforation spacing (feet)	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	8	14	18	28
3.0	8	13	17	26
3.3	7	12	16	25
4.0	7	11	15	23
5.0	6	10	14	22

4. Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down to nearest whole number.

Perforation spacing = 18 ft ÷ 2 ft = 9 spaces

5. Number of perforations is equal to one plus the number of perforation spaces(4). *Check figure E-4 to assure the number of perforations per lateral guarantees <10% discharge variation.*

9 spaces + 1 = 10 perforations/lateral

E-6: Perforation Discharge in gpm

head (feet)	perforation diameter (inches) 3/16	7/32	1/4
1.0[a]	0.42	0.56	0.74
2.0[b]	0.59	0.80	1.04
5.0	0.94	1.26	1.65

[a] Use 1.0 foot for single-family homes.
[b] Use 2.0 feet for anything else.

6. A. Total number of perforations = perforations per lateral (5) times number of laterals (1)

10 perfs/lat x 6 lat = 60 perforations

B. Calculate the square footage per perforation.
Recommeded value is 6-10 sqft/perf. *Does not apply to at-grades.*
(PS Bund) ~~Rock~~ bed area = rock width (ft) x rock length (ft)
3 ft x 2 ft = 6 sqft
Square foot per perforation = Rock bed area ÷ number of perfs (6)
360 sqft ÷ 60 perfs = 6 sqft/perf

7. Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforation *(see figure E-6)*

60 perfs x 0.42 gpm/perfs = 25.2 gpm

USE 2" Header

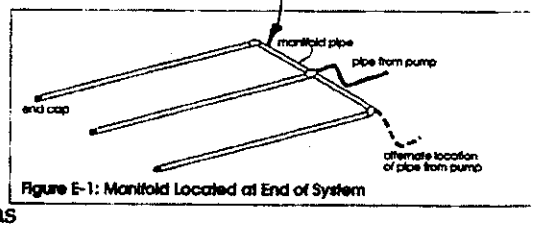
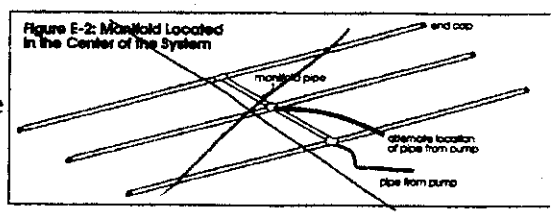


Figure E-1: Manifold Located at End of System

8. If laterals are connected to header pipe as shown on upper example, to select minimum required lateral diameter; enter figure E-4 with perforation spacing (2) and number of perforations per lateral (5) Select minimum diameter for perforated lateral = 1 inches. ⇒ USE 1 1/4"

9. If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = _____ inches.



I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

Jeffery N Schmidt (signature) 9/30/19 (license #) E8989 (date)

PUMP SELECTION PROCEDURE

1. Determine pump capacity:

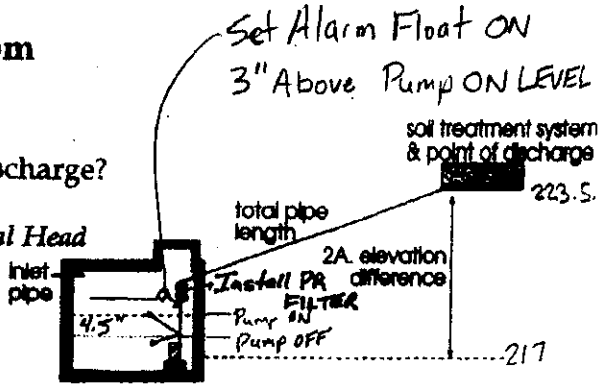
A. Gravity distribution

1. Minimum required discharge is 10 gpm
2. Maximum suggested discharge is 45 gpm. For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.

B. Pressure distribution

See pressure distribution work sheet

From A or B Selected pump capacity: 25.2 gpm



2. Determine pump head requirements:

A. Elevation difference between pump and point of discharge?
6.5 feet

B. Special head requirement? *(See Figure at right - Special Head Requirements)*
5 feet

Special Head Requirements	
Gravity Distribution	0 ft
Pressure Distribution	5 ft

C. Calculate Friction loss

1. Select pipe diameter 2 in
2. Enter *Figure E-9* with gpm (1A or B) and pipe diameter (C1)

Read friction loss in feet per 100 feet from Figure E-9
Friction Loss = 1.11 ft/100ft of pipe

3. Determine total pipe length from pump discharge to soil treatment discharge point. Estimate by adding 25 percent to pipe length for fitting loss. Total pipe length times 1.25 = equivalent pipe length
80 feet x 1.25 = 100 feet

4. Calculate total friction loss by multiplying friction loss (C2) in ft/100 ft by the equivalent pipe length (C3) and divide by 100.
= 1.11 ft/100ft x 100 +100 = 1.11 ft

D. Total head required is the sum of elevation difference (A), special head requirements (B), and total friction loss (C4)
6.5 ft + 5 ft + 1.11 ft + 1Ft (Filter) = 13.61

E-9: Friction Loss in Plastic Pipe Per 100 feet

flow rate gpm	nominal pipe diameter 1.5"	2"	3"
20	2.47	0.73	0.11
30	5.23	1.55	0.23
35	6.96	2.06	0.30
45	11.07	3.28	0.48
50	13.46	3.99	0.58
60		5.60	0.82
65		6.48	0.95
70		7.44	1.09

Total head: 13.61 feet

3. Pump selection

A pump must be selected to deliver at least 30 gpm (1A or B) with at least 15 feet of total head (2D)

I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

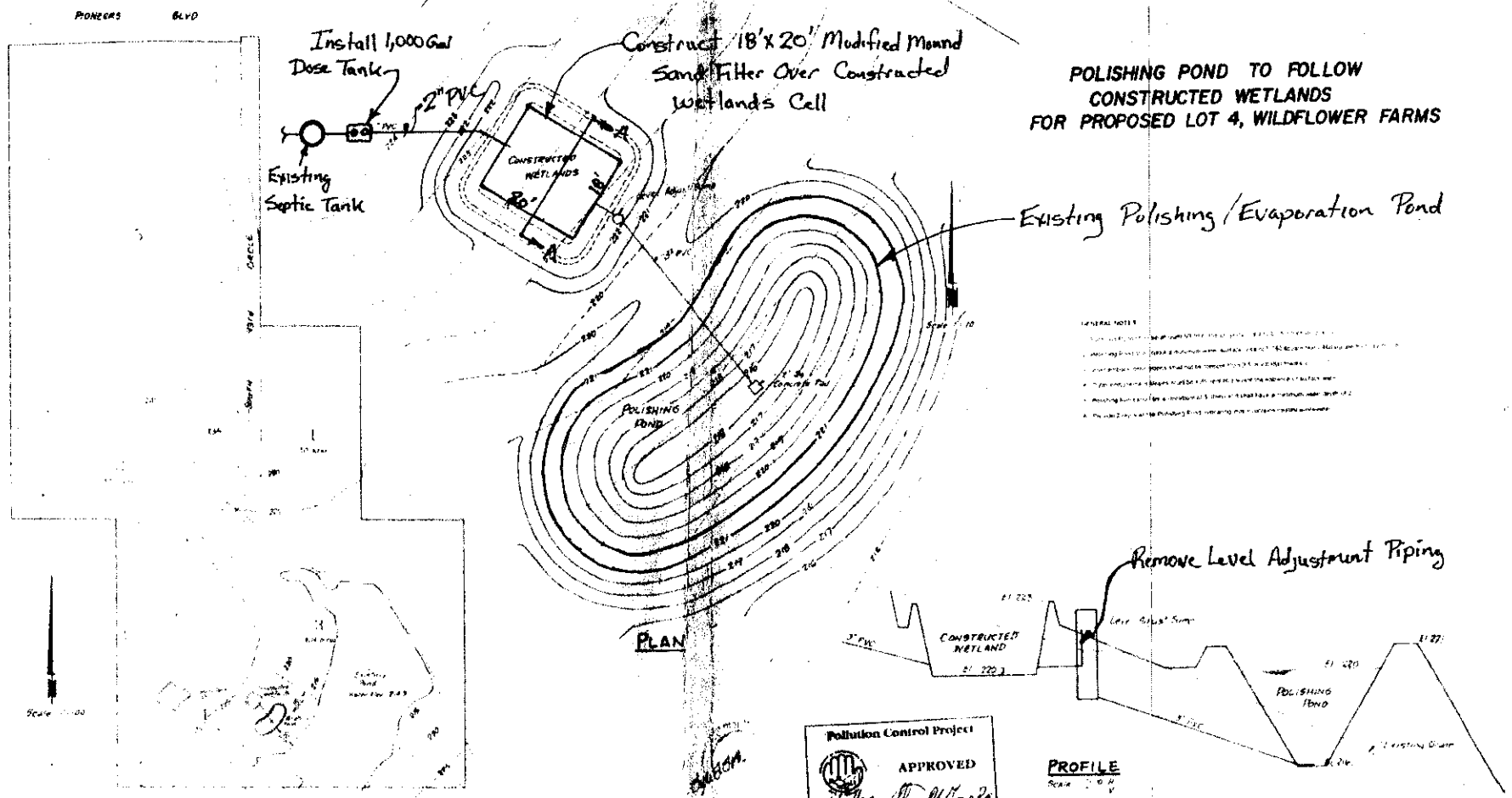
Jeffrey N Schoenek (signature) 9/30/2019 (license #) E 8989 (date)

SEPTIC SYSTEM MODIFICATION

4700 S. 93rd Cir
Lincoln, NE

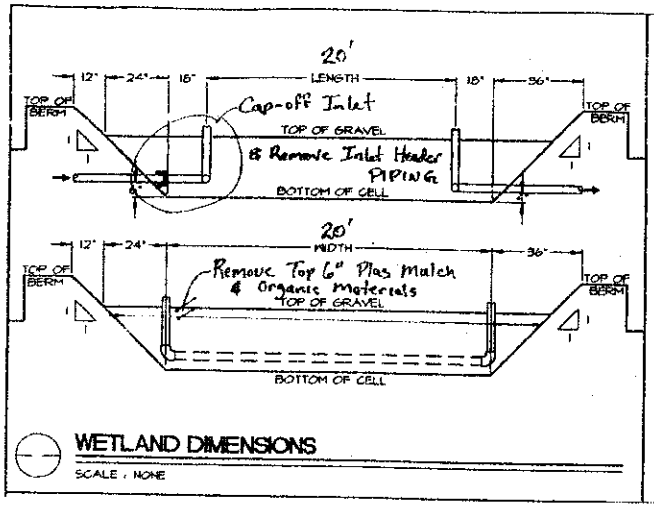
Facility 65880

POLISHING POND TO FOLLOW CONSTRUCTED WETLANDS FOR PROPOSED LOT 4, WILDFLOWER FARMS

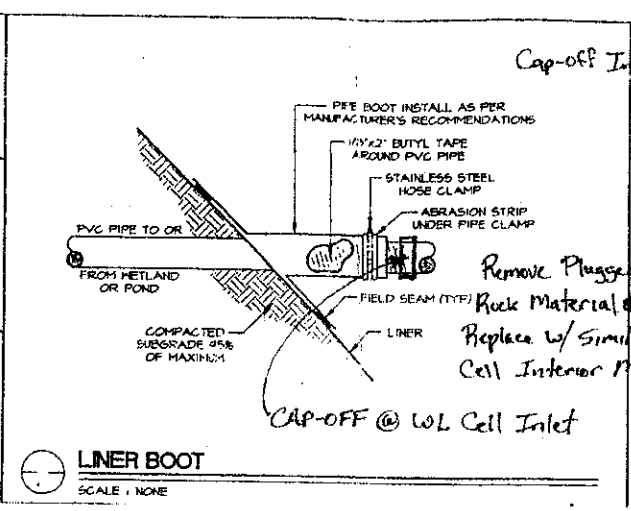


Pollution Control Project
APPROVED
11/20/97

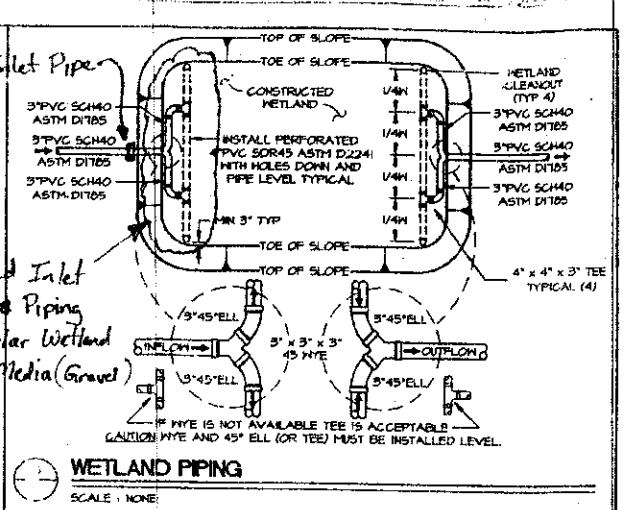
(Original) WETLANDS DESIGN → ESP ◆ Engineering • Surveying • Planning ◆ Lincoln, Nebraska



WETLAND DIMENSIONS
SCALE : NONE



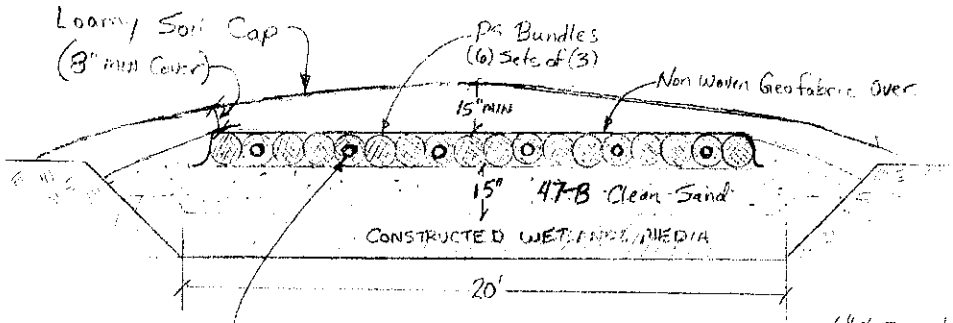
LINER BOOT
SCALE : NONE



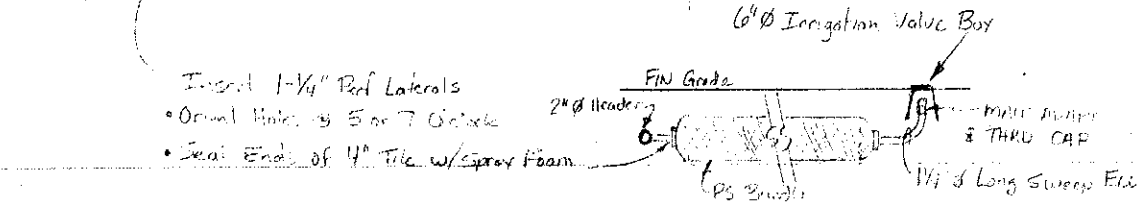
WETLAND PIPING
SCALE : NONE

NOTE: Ensure that the force main drains completely between dose cycles to prevent freezing.
The pump control panel shall have an external visible and audible alarm set for 3" above pump start level

Cross Section A-A



Pollution Control Project
AS-NOTED
Nebraska DEQ
APPROVED
10/18/19 Tom Trapp PE



Modified Mound/Sand Filter

Notes:

1. Orientation & Location of Septic Tank & Pressure Line May Vary Slightly From Shown
2. Contractor Responsible for Contacting 811 for Primary Utilities.
3. Owner Responsible for locating any secondary utilities.
4. Septic Installation Meet Minimum Requirements of NDEQ Title 124 and Shall Be Registered With NDEE Onsite Department
5. Contractor shall also obtain permit from Lancaster County Health Dept.
6. Refer to NDEQ Title 124, Chapter 11 for basic Mound System Construction for Modified Mound/ Sand Filter.
7. Follow maintenance protocols for Mound Systems.
8. Contractor must have mound endorsement as certified installer.
9. Contractor to Warrant Workmanship Items for a Period of 1-Year (Equipment Warranties Limited To Mfg. Warranty Terms and Coverage)
10. Septic Installation Excavation Back-fill to be Left Slightly Mounded to Allow for Natural Settling (Especially Over Mound) - Additional Future Grading & Seeding May Be Required
11. Homeowner responsible for seeding or sodding of mound immediately after installation
12. Owner To Keep Trees and shrubs From Growing Within Mound Treatment Area and Restrict Vehicle Traffic From Area.
13. Electrical Contractor To Provide Dedicated 20 Amp, 110V, 1 Ph Circuit to Pump & Separate 110V circuit for high water alarm

Jeffery N. Schoeneck, P.E.
Horizon Envirotech, LLC
1291 County Rd V
Fremont, NE 68025
402-720-9209
jeffhet@1791.com

PROFESSIONAL AGRICULTURAL ENGINEERS — JEFFERY N. SCHOENECK E-8089 — STATE OF NEBRASKA — 9/30/2019

END OF SECTION

"Quality Pumps Since 1939"

SECTION: 3.20.073
FM2090
0705
Supersedes
0304/2

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

PUMP CO.

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
(502) 778-2731 • 1 (800) 928-PUMP • FAX (502) 774-3624

visit our web site:
www.zoeller.com

ZOELLER ON-SITE WASTEWATER PRODUCTS

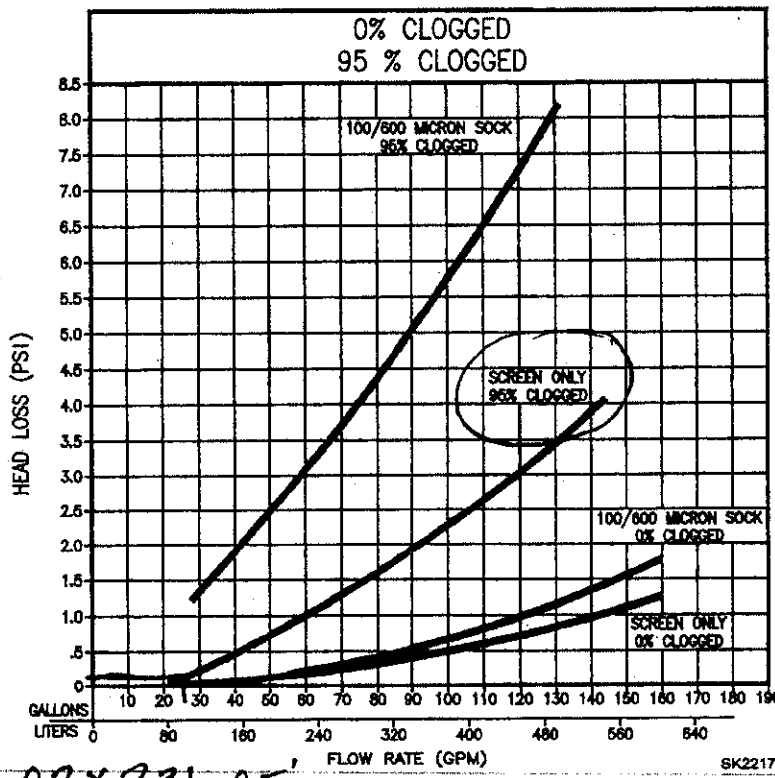
ZOELLER SEPTIC SYSTEM FILTERS

Zoeller Pressure Effluent Filter

The Zoeller Pressure Filter will help prolong the life of an on-site drainfield by filtering out solids which cause plugging. Used in both residential and commercial applications, this unique design and mounting location allows the filtering screen to be scrubbed while in operation, providing maximum maintenance intervals and unmatched performance.

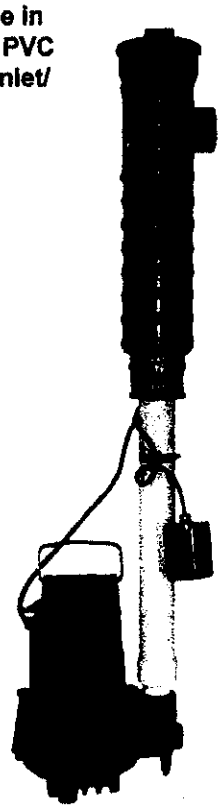
The filter screen is a type 347 S.S. with .062 diameter holes, which controls the particle sizes leaving the tank. By using sock inserts, filtration to 100 or 600 microns is achieved. The element is 3 inches in diameter and 18 inches long with a 69.5 square inch open area. The large open area results in minimal head loss (see below).

Use in low-pressure pipe, drip, or enhanced flow applications. Use as a prefilter for dosed treatment devices such as recirculating media filters.



0.2 x 2.31 = 0.5

Available in 2" or 3" PVC socket inlet/ outlet.



NOTE: Pump, switch and discharge pipe not included.

Part Number	Description
5000-0001	2" inlet/outlet
5000-0008	3" inlet/outlet
5000-0013	Replacement Screen (fits 2" or 3" models)

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Lincoln-Lancaster County Health Department
Environmental Public Health Division (402) 441-8027
3131 O Street Lincoln, Nebraska 68510-1514

ON-SITE WASTE WATER SYSTEM
ALTERATION PERMIT
No. HS001932

System Type: Non-Standard

Situs: 4700 S 93RD CIR, LINCOLN, NE 68526

Issued: 11/18/2019

Expires: 11/18/2020

Description: WILDFLOWER FARMS ADDITION, Lot 2

Owner: SOUCIE, JEFFREY &
SCUDDER-SOUCIE, BARBARA
4700 S 93 CIR
LINCOLN, NE 68520

Patricia D. Lopez

Patricia D. Lopez, RN, MSN, Interim Health Director

Dear Applicant:

The above document is your permit to alter an existing On-site Waste Water System at the location listed. Please contact this office once the alteration is complete to obtain final approval before use.

Patricia D. Lopez

Patricia D. Lopez, RN, MSN
Interim Health Director

HORIZON ENVIROTECH, LLC
1291 COUNTY ROAD V
FREMONT, NE 68025

SCANNED

Lincoln-Lancaster County Health Department
Environmental Public Health Division
3140 N Street • Lincoln NE 68510-1514
Phone: 402-441-8643

A

Permit Number #S001932

Onsite Wastewater Treatment System
Request for Site Clearance and Permit

Include Form B and C. Submit correct fee with this Application

3 acres or more required for: ☐ Septic System ☐ Lagoon ☒ Other (Refer to Form C)

4700 The undersigned hereby requests site clearance and permit to construct a Wastewater Treatment System in conformance with appropriate regulations.

PLEASE PRINT OR TYPE

A. Onsite System Location

Address 4700 S. 93rd Cir City Lincoln, NE Zip 68520
(no rural route)

Legal Description S11 T9 R7 Wildflower Farms Add. 2
1/4 1/4 Section Township Range Subdivison Addition Block Lot

PID

B. Owner

Name Jeffrey Soucie Signature

Address 4700 S. 93rd Cir City/State/Zip Lincoln, NE 68520

Home Phone 402-429-2282 Work Phone

C. Certified Installer

Name: Jeff Schoeneck, P.E. Signature Jeff Schoeneck

Address 1291 County Rd V City/State/Zip Fremont, NE 68025

Work Phone 402-720-9209

D. Engineer

☒ Check and complete if engineer designed system P.E. License Number: E8989

Designer Name Jeff Schoeneck Firm Horizon Envirotech, LLC Work Phone

E. This system will serve a

☒ Residential Dwelling Number of Bedrooms 3 Whirlpool Bathtub? ☐ Yes ☐ No Total Acres 3
Garbage Grinder? ☐ Yes ☐ No

☐ Commercial Establishment/Other Facility Specify Design flow in gallons per day

Type of Wastewater ☐ Domestic ☐ Non-Domestic

DO NOT WRITE BELOW THIS LINE

Approval Process ☒ Municipal Code 24.38 ☐ County Resolution No. 02-38

1. Health Department
Site visits
Comments
Date rec'd 11/18/19
Date frwd 11/18/19
ACTION ☒ Approved ☐ Disapproved
Signature

2. Supt. Bldg. Insp. or Village Clerk
Comments
Date rec'd
Date frwd
ACTION ☐ Approved ☐ Disapproved
Signature

3. City or County Engineer
Comments
Date rec'd
Date frwd
ACTION ☐ Approved ☐ Disapproved
Signature

Installation Final Written Approval
By
Date 11/25/19

Business Office Use Only
Date Received 11-14-19 Amount Paid $230.00
Received By JMO Cash/Check No CC4232

White - Health Department Yellow - Engineer Pink - Building & Safety

Form A Updated 1-13