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

A

Permit Number HS001886

Onsite Wastewater Treatment System Permit Application

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

☑ Septic System ☐ Lagoon ☐ Other (Refer to Form C)

PLEASE PRINT OR TYPE

A. Onsite System Location

Address* 16470 Roca Rd City Bennet, NE Zip 68317
(no rural route)

Legal Description S 14 T 8 R 8 Irving Corner First Addition 1
1/4 1/4 Section Township Range Subdivison Addition Block Lot

PID 21-14-302-001-000 *Approx. Address (If to be determined)

B. Owner

Name Jason & Asha Cooper Signature

Address 5411 Stephanie Ct City/State/Zip Lincoln, NE 68516

Home Phone Work Phone

C. Certified Installer

Name: Marcus Hochstein Signature

Address PO Box 142 City/State/Zip Eagle, NE 68347

Work Phone 402-770-7749

D. Engineer

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

Designer Name Firm Work Phone

E. This system will serve a

☑ Residential Dwelling Number of Bedrooms 4 Whirlpool Bathtub? ☑ Yes ☐ No Total Acres 5
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

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

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

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

Installation Final Written Approval
By
Date

Business Office Use Only
Date Received 9-06-19 Amount Paid $430.00
Received By JAD Cash/Check No 6002

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

Lincoln-Lancaster County Health Department (LLCHD)
Environmental Public Health Division
3131 "O" Street • Lincoln, NE 68510-1514
Phone: 402-441-8643

B

Permit Number:

Onsite Wastewater Treatment System
Soil Evaluation Report

PLEASE PRINT OR TYPE

Onsite System Location

Address 16470 Reca Rd (no rural route) City Brunet NE, Zip 68317

Owner Jason + Asha Cooper Address 5411 Stephanie Ct, Lincoln, NE 68516

Date of Tests 9-4-19 to 9-4-19 Weather: Precipitation 0 Temperature 86 °F

Percolation Test Data Table

A.	B.	C. D. E. F. Saturation/Swelling Time				G. H. I. J. K. Water Level Drop Last 30 mins of 4 hr or last 10 mins of 1 hr					L. M. N. Results		
		Start		End		Start			End				
Hole No.	Hole Depth(in)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Initial Water Lev (in.)	Date (Mo/Da)	Time (Hr/Min)	Elapsed Time Interval	Water Level Drop(in)	Percolation Rates (Min/in = mpi)
1	40	9-4	8:08	9-4	12:08	9-4	3:38	6	9-4	4:08	30m	3/4	40
2	"	"	"	"	"	"	"	6	"	"	"	5/8	48
3	"	"	"	"	"	"	"	6	"	"	"	3/4	40
4	"	"	"	"	"	"	"	6	"	"	"	5/8	48
								6					
								6					
								6					
								6					

Person Conducting Percolation Test

Name: Mason Hecklein
Phone: 402-730-7745
Address PO Box 142
Eagle, NE 68347

Sum of Percolation Rates: 176
Average of Rates: 44
Rate Used for Calculation: 44

Soil type (NRCS Maps/Other) Pawnee clay loam
Groundwater Depth 15'+

DO NOT WRITE BELOW THIS LINE

Reviewing Action

Comments (Soil type, groundwater, floodplain, etc.)

Signature of Reviewing Official _____ Date _____

CONDUCTING A PERCOLATION TEST

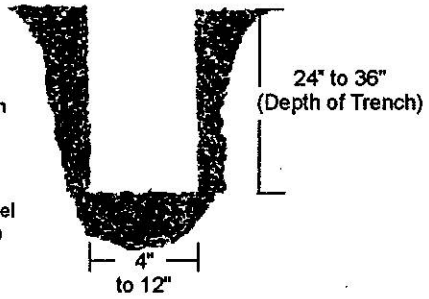
READ THOROUGHLY

DIAGRAM OF PERCOLATION TEST PROCEDURE

Natural Ground Level

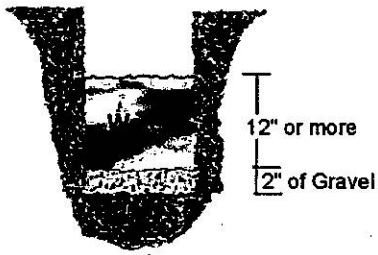
I. Number, Size and Location of Test Holes

- A. Dig six or more holes spaced evenly over proposed drainfield.
- B. Scratch smeared areas on the bottom 12" of hole.
- C. Remove loose material from hole.
- D. Add 2" layer of clean gravel in hole. Gravel (1/4"-3/4") may be placed in a nylon mesh bag so it can be used again.



II. Saturation/Swelling of Soil

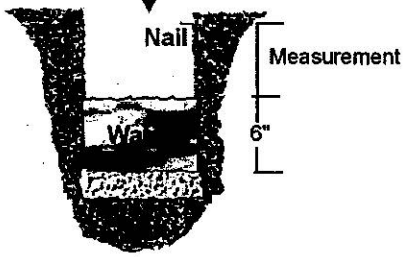
- A. Fill hole with at least 12" of clear water.
- B. **MAINTAIN THIS WATER LEVEL FOR 4 HOURS.**
- C. Record on Form B, Columns A to F
- D. **Must wait 24 hours before beginning Step III.**



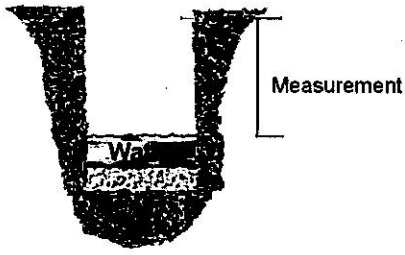
24 Hours Later

III. Water Level Drop Measurement (Refer to instructions 4a, b or c)

- A. Adjust water level to 6".
- B. Measure from fixed reference point (nail) to water, or use a percometer.
- C. Record measurement and time on scratch paper.
- D. 30 min. later re-measure and record time.
- E. After each measurement, refill to 6" above gravel.
- F. Continue for 4 hours taking readings evey 30 min. (Refer to 4b for exception)
- G. Last 30 min. reading is used in filing out Form B. Record in Column G through M.



½ hour later
(30 minutes)



IV. The Department will calculate Percolation Rates.

Instructions

1. Percolation test holes. Percolation tests should be made in 6 or more separate holes spaced uniformly over proposed drainfield. Dig or bore holes 4 to 12" in diameter to the depth of the bottom of drainfield trench. (If sides of hole collapse, a slotted PVC plastic pipe and gravel pack may be needed to support the sides of the hole.) Do not dig holes in soil that is above the plastic limit or where frost is within 12" from the bottom of hole.
2. Preparation of test hole. Scratch any smeared areas on the bottom 12" of hole with nails driven into a 1x2" board to provide a natural soil interface for water to percolate. Remove all loose soil from bottom of hole. Add 2" of clean gravel to protect the bottom from scouring when water is put into hole.
3. Saturation and swelling of the soil. Fill holes with clear water to a depth fo 12" or more above gravel and maintain this water level at least 4 hours (add water as necessary). Do not remove water from holes. Holes should be covered with boards during the 20 hrs. wait before the test begins. Soils with slow permeability or containing greater than 30% clay will require several days saturation for thorough swelling in a dry season. The accuracy of the percolation test depends on thorough saturation and swelling of soil. Sandy soil containing no clay does not swell. The percolation test may proceed immediately if the 12" of water seeps away in 10 min. or less after filling holes twice. Proceed to Step 4c.
4. Measure percolation rate. Measurements must be made 24 hrs after starting saturation/swelling procedure described above. Record results on the front of this form and the Department will complete the calculations.

   a. If water remains in hole after the saturation/ swelling period, adjust depth to 6" above gravel. From a fixed point, measure the drop in water level over a 30 min. period to nearest 1/8". This drop is used to calculate percolation rate.

   b. If no water remains in hole after the saturation/ swelling period, add 6" of clear water above gravel. From a fixed point, measure the drop in water level to nearest 1/8" at 30 min. intervals for 4 hrs. Refill to the 6" level above gravel after each measurement. The drop that occurs during the last 30 min. of the 4 hrs. is used to calculate the percolation rate (when 3 consecutive percolation rates vary by no more than 10%, the test can stop before the end of 4 hr. period).

   c. In sandy soils, or other soils in which t he first 6" of water seeps away in less than 30 min., allow 10 min. between measurements and run the test for 1 hr. The drop that occurs during the last 10 min. of 1 hour is used to calculate the percolation rate. If 6" of water seeps away in less than 10 min., use a stopwatch.
5. Record test results on the front of this form. The average of the percolation rates calculated for all holes in 30 (10) min. will usually be the rate used to size the drainfield. Exceptions are the use of the slowest percolation rate when rates vary more than 20 mpi between holes or when other soil evaluation indicates a problem.

LLCHD reserves the right to witness or perform percolation tests and to required additional soil or groundwater information.

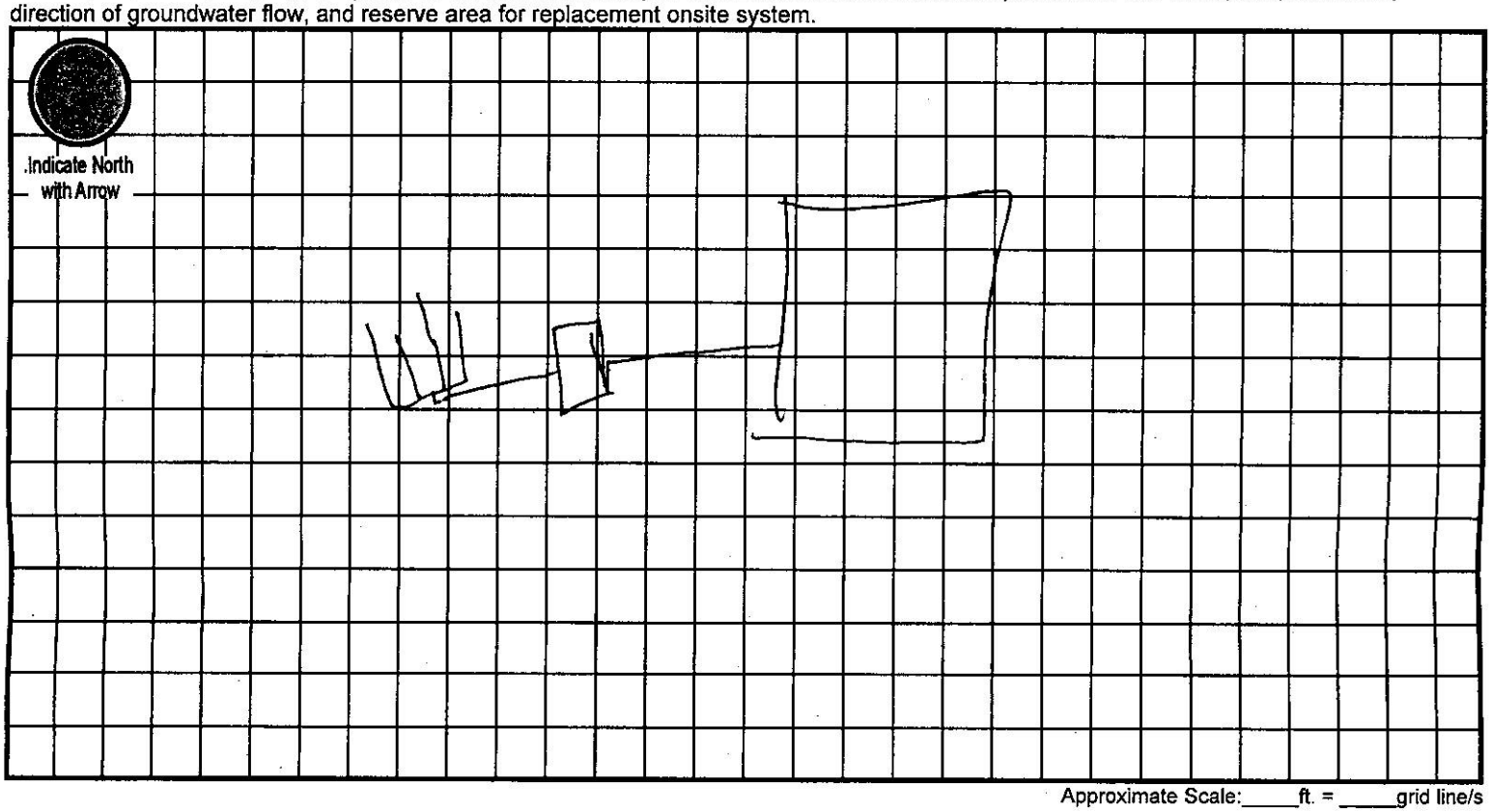
Lincoln-Lancaster County Health Department
Environmental Public Health Division
3131 O Street • Lincoln NE 68510-1514
Phone: 402-441-8643

C

Permit Number

Onsite Wastewater Treatment System
Preliminary Plan Specification

Draw a plot plan showing onsite system sewer lines, tank, drop or distribution boxes, drainfields, percolation test holes, well, residence, direction of groundwater flow, and reserve area for replacement onsite system.



Approximate Scale: ____ ft. = ____ grid line/s

A. Onsite System Location

Address (no rural route) 16470 Reca Rd City Bruno NE, Zip 68317

B. Proposed Septic Tank/s

Septic Tank Cap. 2000 gals Tank Material: ☑ Concrete ☐ Plastic ☐ Other _____ ☐ Lagoon (Max. Seepage 1/8"/day)

C. Reserve Area for Replacement Onsite System

☑ Drainfield Absorption Area (percolation test required) ☐ Lagoon

D. Drainfield Absorption System

Percolation Rate 44 (min/inch = mpi) No. of Bedrooms 4 Soil Type Pawnee Clay Loam Land Slope 4-6 %

☑ Trench ☐ Bed ☐ Non-standard (engineer-designed and NDEQ approved) Total square feet of drainfield 1350 Sq. Ft.

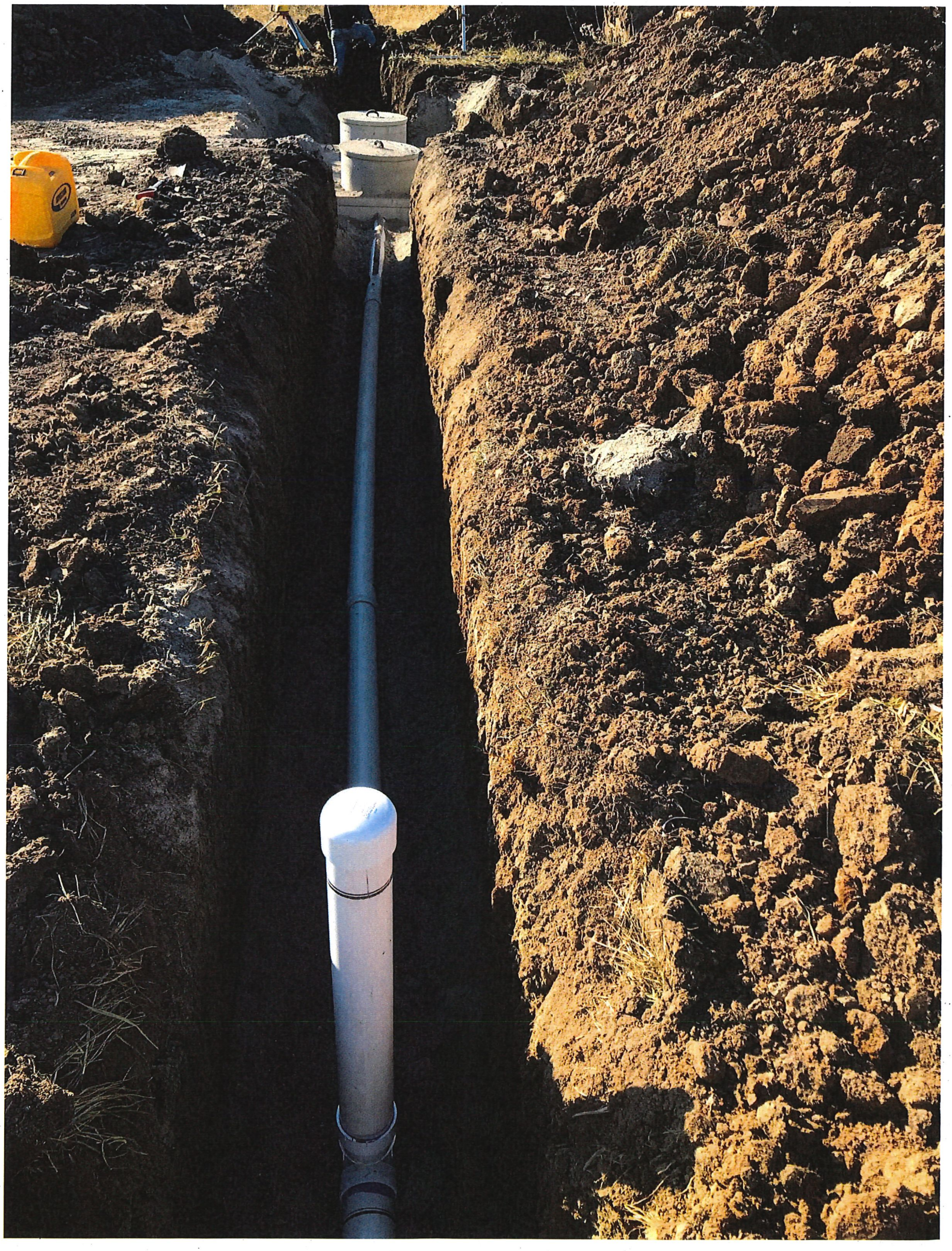
Total length of laterals 300 Type of Distribution: ☐ Perforated Pipe ☐ Half-Round ☐ Chambers ☑ Other EZ flow

No. of Absorption Trenches 3 Width 36" No. of Drop Boxes 0 Distribution Box 1

No. of Absorption Beds _____ Width _____ No. of Distribution Lines per Bed _____

Installer Means Hochstein Date: 9-5-19

Updated 2/18





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

A

Permit Number HS001886

Onsite Wastewater Treatment System Permit Application

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

☑ Septic System ☐ Lagoon ☐ Other (Refer to Form C)

Scott Weatherhogg

PLEASE PRINT OR TYPE

A. Onsite System Location

Address* 16470 Reca Rd (no rural route) City Benet NE Zip 68317

Legal Description S14 T8 R8 Irving Corner First 1

1/4 1/4 Section Township Range Subdivision Addition Block Lot

PID 21-14-302-001-000 *Approx. Address (If to be determined)

B. Owner

Name Jason & Asha Cooper Signature

Address 5411 Stephanie Ct City/State/Zip Lincoln, NE 68516

Home Phone Work Phone

C. Certified Installer

Name: Marcus Hochstein Signature

Address PO Box 142 City/State/Zip Eagle, NE 68347

Work Phone 402-770-7749

D. Engineer

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

Designer Name Firm Work Phone

E. This system will serve a

☑ Residential Dwelling Number of Bedrooms X 2 Bedrooms as per WDP Whirlpool Bathtub? ☑ Yes ☐ No Total Acres 5

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

1. Health Department
Site visits
Comments
Date rec'd 9/9/19
Date frwd 9/9/19
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 9-06-19 Amount Paid $430.00
Received By JAD Cash/Check No CC0021

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

Form A Updated: 4/15

REC'D NOV 25 2019

Lincoln-Lancaster County Health Department
Environmental Public Health Division
3131 N Street • Lincoln NE 68510-1514
Phone: 402-441-8643

D

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: Jason Cooper Address 16470 Roca Rd

A. Wastewater Piping

1. Material: PVC Diameter: 4 in.
2. Distance between dwelling and septic tank: 100 ft.

B. Septic Tank

1. Material Concrete
2. Capacity: 1000 g.
3. Depth to top of tank, below unfinished grade: 12 in.
4. Distance to:
   Well n/a ft.
   Pressure line 200 ft
   Property Line 200 ft.
   Foundation 100 ft.

C Distribution Box or Drop Box

Distance **and** Direction from septic tank: ____ ft. ____

D. Drainfield/Absorption Field

☒ Trench ☐ Bed

1. Type: ☐ Perforated Pipe ☐ Chamberless ☐ Other
   Material brand and inside width of Chamberless: Quik 4 ~~26"~~ 29"
2. Number of Laterals: 2
3. Length of each lateral (linear): ft. 100 ft. 70 ft. ____ ft. ____
4. Drainfield size: 550 sq. ft. 6/6 $5.1/ft
5. Distance to:
   Well [redacted] ft.
   Pressure line 210 ft.
   Property line 100 ft.
   Depth of Groundwater 10 ft

unable to make shallow restriction - allowed to cover

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

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

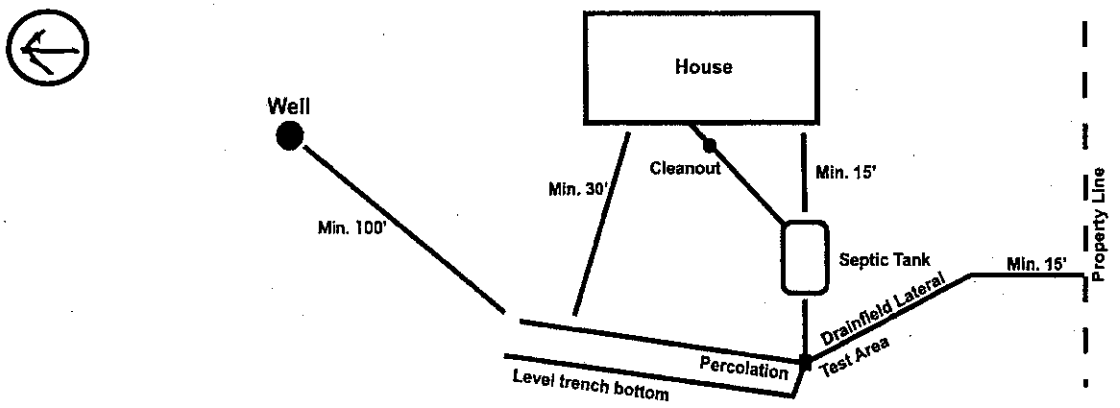
I swear and affirm that the system complies with Lincoln Municipal Code (LMC) 24.38 and/or County Resolution R-13-0062 requirements and that the information and documentation submitted are true and accurate.

Certified Professional Signature: _____ Date: 11/21/19

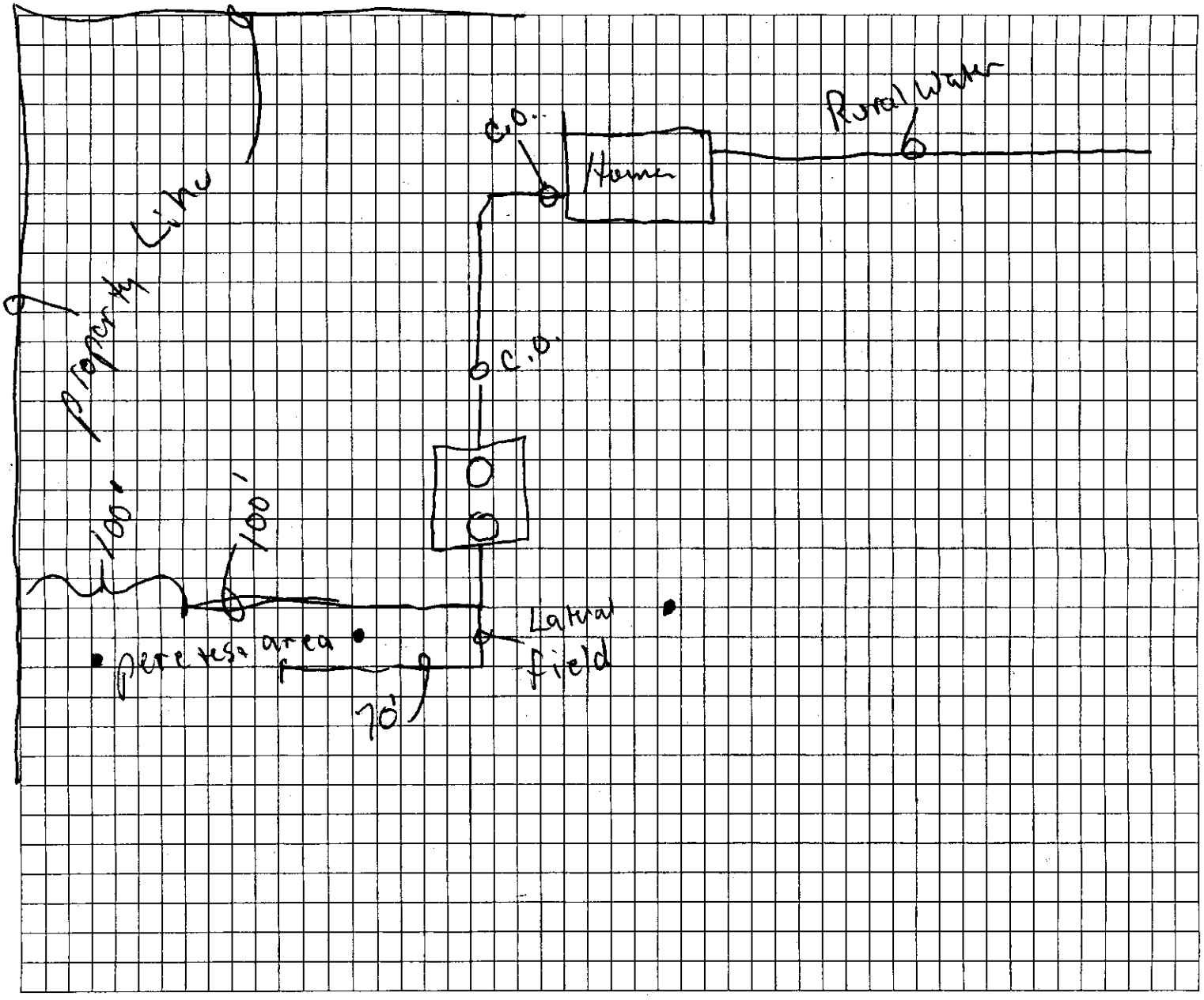
Complete As-Built drawing on the back of this form.

Onsite Wastewater System Design (Example)

Indicate North
w/ Arrow Here:



*Note-If Lagoon, show all applicable dimensions



Nebraska DEQ

Onsite Wastewater Treatment System
Soil Percolation Test Data Sheet

Owner Name Jason Cooper Phone 402-694-1372

Address ~~[illegible]~~ 16476 Roca Rd. Bennet NE 68317
(Address / City / State / Zip)

Location (Attach a sketch of the property showing test hole locations)

SW 1/4 1/4 Section 14 Township 8 Range East Lancaster County

Lot # _____ Subdivision _____

Soil Type (Check one)

Sand ___ Silt ___ Clay ___ Sandy Clay ___ Loamy Sand ___ Silty Clay ___

Silty Clay Loam ___ Sandy Loam ___ Silt Loam ___

Dates of Test

Start Date 8/12 to End Date 8/13, 2018

Weather Conditions

Precipitation 0 Avg. Temp 90 °F

Percolation Test Measurements and Data

Hole No.	Hole Depth (in.)	Pre-saturation Period: Start Date (Mo./Day)	Pre-saturation Period: Start Time (Hr./Min)	Pre-saturation Period: End Date (Mo./Day)	Pre-saturation Period: End Time (Hr./Min)	Percolation Readings (last period): Start Date (Mo./Day)	Percolation Readings (last period): Start Time (Hr./Min)	Water Level (inch)	Percolation Readings (last period): End Time (Hr./Min)	30min Water Level Drop (inch)	Results: Elapsed Time (minutes)	Results: Drop in Water Level (inches)	Results: Percolation Rate (min ÷ in) (Minutes per inch)
1	42	8/12	7:30	8/13	8:00	8/14	8:00	6	12:00	7/8	30	7/8	34
2	42	8/12	7:30	8/13	8:00	8/14	8:00	6	12:00	3/4	30	3/4	40
3	42	8/12	7:30	8/13	8:00	8/14	8:00	6	12:00	3/4	30	3/4	40

Tests must be performed by a certified professional, a professional engineer or a registered environmental health specialist.

Signature _____

Certificate or License # 1742

Address 405 Washington St

City Douglas NE St ___ Zip 68344

Phone 310-9048

Sum of Percolation Rates = 148

Avg. of Percolation Rates* = 38
(sum of rates ÷ number of tests)
(minutes per inch)

* If rates vary by more than 20 min./in., do not average. Use slowest rate measured for sizing soil absorption area.

Version 9-2012

Lincoln-Lancaster County Health Department (LLCHD)
Environmental Public Health Division
3131 "O" Street • Lincoln, NE 68510-1514
Phone: 402-441-8643

REC'D NOV 13 2019

B

Permit Number:

Onsite Wastewater Treatment System
Soil Evaluation Report

PLEASE PRINT OR TYPE

Onsite System Location

Address 16470 Rocca Rd. (no rural route) City Bennet NE, Zip 68317

Owner Jason Cooper Address

Date of Tests 8/12 to 8/13 Weather: Precipitation 0 Temperature 90°

Percolation Test Data Table

A.	B.	C. D. E. F. Saturation/Swelling Time				G. H. I. J. K. Water Level Drop Last 30 mins of 4 hr or last 10 mins of 1 hr					L. M. N. Results		
		Start		End		Start			End				
Hole No.	Hole Depth(in)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Initial Water Lev (in.)	Date (Mo/Da)	Time (Hr/Min)	Elapsed Time Interval	Water Level Drop(in)	Percolation Rates (Min/in = mpi)
1	42	8/12	7/30	8/13	8/0	8/14	8/0	6	12/0	12/30	30	7/8	34
2	42	8/12	7/30	8/13	8/0	8/14	8/0	6	12/6	12/30	30	3/4	40
3	42	8/12	7/30	8/13	8/0	8/14	8/0	6	12/0	12/30	30	3/4	40
								6					
								6					
								6					
								6					
								6					

Person Conducting Percolation Test

Name: Scott Weathershog
Phone: 402-310-9048
Address 405 Washington St.
Douglas, NE 68344

Sum of Percolation Rates: 114
Average of Rates: 38
Rate Used for Calculation: 38

Soil type (NRCS Maps/Other)

Groundwater Depth

DO NOT WRITE BELOW THIS LINE

Reviewing Action

Comments (Soil type, groundwater, floodplain, etc.)

Signature of Reviewing Official Date

CONDUCTING A PERCOLATION TEST

READ THOROUGHLY

DIAGRAM OF PERCOLATION TEST PROCEDURE

Natural Ground Level

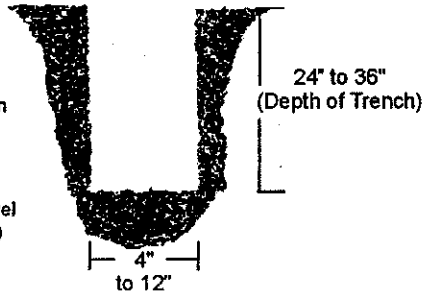
I. Number, Size and Location of Test Holes

A. Dig six or more holes spaced evenly over proposed drainfield.

B. Scratch smeared areas on the bottom 12" of hole.

C. Remove loose material from hole.

D. Add 2" layer of clean gravel in hole. Gravel (1/4"-3/4") may be placed in a nylon mesh bag so it can be used again.



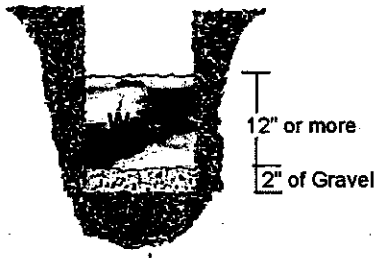
II. Saturation/Swelling of Soil

A. Fill hole with at least 12" of clear water.

B. **MAINTAIN THIS WATER LEVEL FOR 4 HOURS.**

C. Record on Form B, Columns A to F

D. **Must wait 24 hours before beginning Step III.**



24 Hours Later

III. Water Level Drop Measurement (Refer to instructions 4a, b or c)

A. Adjust water level to 6".

B. Measure from fixed reference point (nail) to water, or use a percometer.

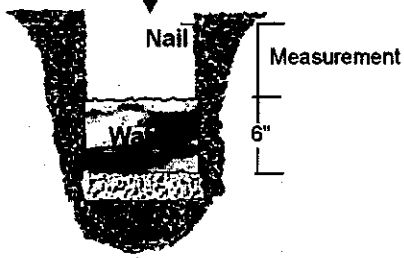
C. Record measurement and time on scratch paper.

D. 30 min. later re-measure and record time.

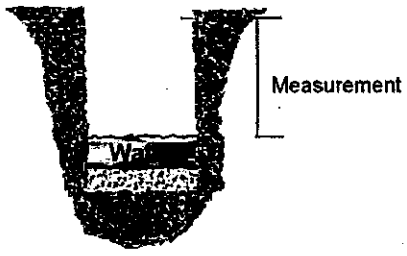
E. After each measurement, refill to 6" above gravel.

F. Continue for 4 hours taking readings evey 30 min. (Refer to 4b for exception)

G. Last 30 min. reading is used in filing out Form B. Record in Column G through M.



½ hour later
(30 minutes)



IV. The Department will calculate Percolation Rates.

Instructions

1. Percolation test holes. Percolation tests should be made in 6 or more separate holes spaced uniformly over proposed drainfield. Dig or bore holes 4 to 12" in diameter to the depth of the bottom of drainfield trench. (If sides of hole collapse, a slotted PVC plastic pipe and gravel pack may be needed to support the sides of the hole.) Do not dig holes in soil that is above the plastic limit or where frost is within 12" from the bottom of hole.
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3. Saturation and swelling of the soil. Fill holes with clear water to a depth fo 12" or more above gravel and maintain this water level at least 4 hours (add water as necessary). Do not remove water from holes. Holes should be covered with boards during the 20 hrs. wait before the test begins. Soils with slow permeability or containing greater than 30% clay will require several days saturation for thorough swelling in a dry season. The accuracy of the percolation test depends on thorough saturation and swelling of soil. Sandy soil containing no clay does not swell. The percolation test may proceed immediately if the 12" of water seeps away in 10 min. or less after filling holes twice. Proceed to Step 4c.
4. Measure percolation rate. Measurements must be made 24 hrs after starting saturation/swelling procedure described above. Record results on the front of this form and the Department will complete the calculations.

   a. If water remains in hole after the saturation/ swelling period, adjust depth to 6" above gravel. From a fixed point, measure the drop in water level over a 30 min. period to nearest 1/8". This drop is used to calculate percolation rate.

   b. If no water remains in hole after the saturation/ swelling period, add 6" of clear water above gravel. From a fixed point, measure the drop in water level to nearest 1/8" at 30 min. intervals for 4 hrs. Refill to the 6" level above gravel after each measurement. The drop that occurs during the last 30 min. of the 4 hrs. is used to calculate the percolation rate (when 3 consecutive percolation rates vary by no more than 10%, the test can stop before the end of 4 hr. period).

   c. In sandy soils, or other soils in which t he first 6" of water seeps away in less than 30 min., allow 10 min. between measurements and run the test for 1 hr. The drop that occurs during the last 10 min. of 1 hour is used to calculate the percolation rate. If 6" of water seeps away in less than 10 min., use a stopwatch.
5. Record test results on the front of this form. The average of the percolation rates calculated for all holes in 30 (10) min. will usually be the rate used to size the drainfield. Exceptions are the use of the slowest percolation rate when rates vary more than 20 mpi between holes or when other soil evaluation indicates a problem.

LLCHD reserves the right to witness or perform percolation tests and to required additional soil or groundwater information.

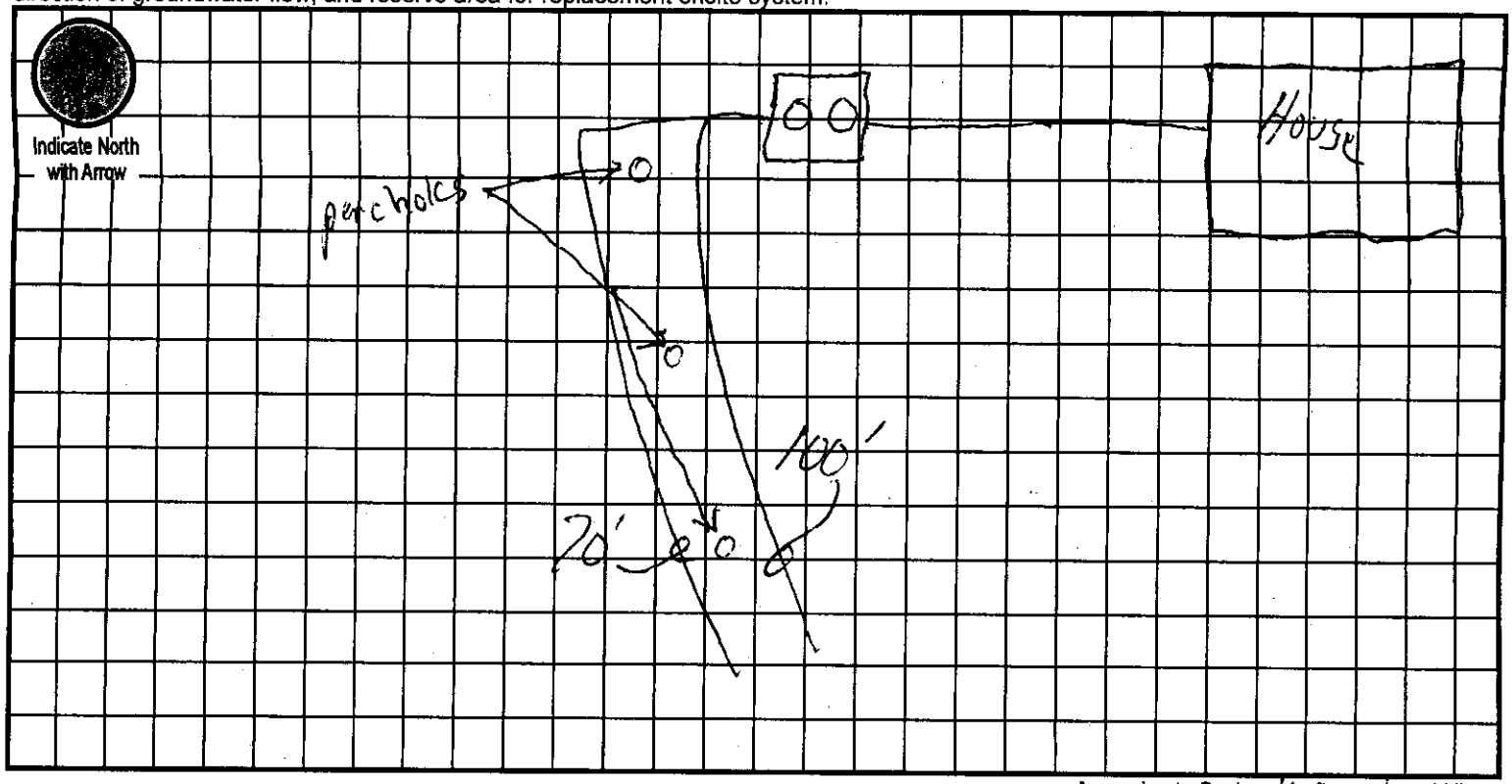
Lincoln-Lancaster County Health Department
Environmental Public Health Division
3131 O Street • Lincoln NE 68510-1514
Phone: 402-441-8643

C

Permit Number

Onsite Wastewater Treatment System
Preliminary Plan Specification

Draw a plot plan showing onsite system sewer lines, tank, drop or distribution boxes, drainfields, percolation test holes, well, residence, direction of groundwater flow, and reserve area for replacement onsite system.



Approximate Scale: 10 ft. = 1 grid line/s

A. Onsite System Location

Address (no rural route) 16470 Roca Rd City Bennet NE, Zip 68317

B. Proposed Septic Tank/s

Septic Tank Cap. 1060 gals Tank Material: ☒ Concrete ☐ Plastic ☐ Other _____ ☐ Lagoon (Max. Seepage 1/8"/day)

C. Reserve Area for Replacement Onsite System

☒ Drainfield Absorption Area (percolation test required) ☐ Lagoon

D. Drainfield Absorption System

Percolation Rate 39 (min/inch = mpi) No. of Bedrooms 2 Soil Type _____ Land Slope _____ %

☒ Trench ☐ Bed ☐ Non-standard (engineer-designed and NDEQ approved) Total square feet of drainfield _____ Sq. Ft.

Total length of laterals 170' Type of Distribution: ☐ Perforated Pipe ☐ Half-Round ☒ Chambers ☐ Other _____

No. of Absorption Trenches 2 Width 3' No. of Drop Boxes 0 Distribution Box n/a

No. of Absorption Beds _____ Width _____ No. of Distribution Lines per Bed _____

Installer _____ Date: _____

Updated 2/18