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

Exhibit 5

Permit Number: HS001182

Onsite Wastewater Treatment System

Inspection Sheet

Date 12/11/2015 Legal Description ¼ ¼ 9/12/5 Section/Township/Range

Onsite System Location

Address (no rural route) 10600 W Agnew Rd City Valparaiso

Owner Thomas Novotny Address same

Mark One: ☒ Dwelling ☐ Non-dwelling

☒ New System ☐ Alteration [☐ Tank Only ☐ Trench Only] ☐ Lateral Only

☐ Temporary modification (Describe problem causing discharge and reason for temporary modification): _____

Drainfield Absorption System:

☒ Lateral ☐ Bed ☐ Non-standard (engineer-designed and NDEQ approved) ☐ Holding Tank ☐ Trench

Need 1060 1024

Total ~~square feet~~ of drainfield 1000 Sq. Ft. Tank Size 1500 gals

Total length of laterals _____ Type of Distribution: ☐ Chamber ☐ Perforated Pipe ☒ Other (describe) Chamber with gravel fill

No. of Absorption Laterals 3 Width _____ No. of Drop Boxes _____ Distribution Box 1

Leveling Method Used na

Setbacks (Check the Boxes Below if the Required Setback has been Satisfied):

Distance From	Private Well	Public Well	Surface Water	Ground water	Pressure Water Lines	Property Lines
Tank (ft)	50 ☑	500 ☑	50 ☑	NA ☐	10 ☑	5 ☑
Field (ft)	100 ☑	500 ☑	50 ☑	4 ☐	25 ☑	5 ☑

Geographical Coordinates to 6 Decimals:

Tank na

Lateral #1 na Lateral #3 na

Lateral #2 na Lateral #4 na

Comments:

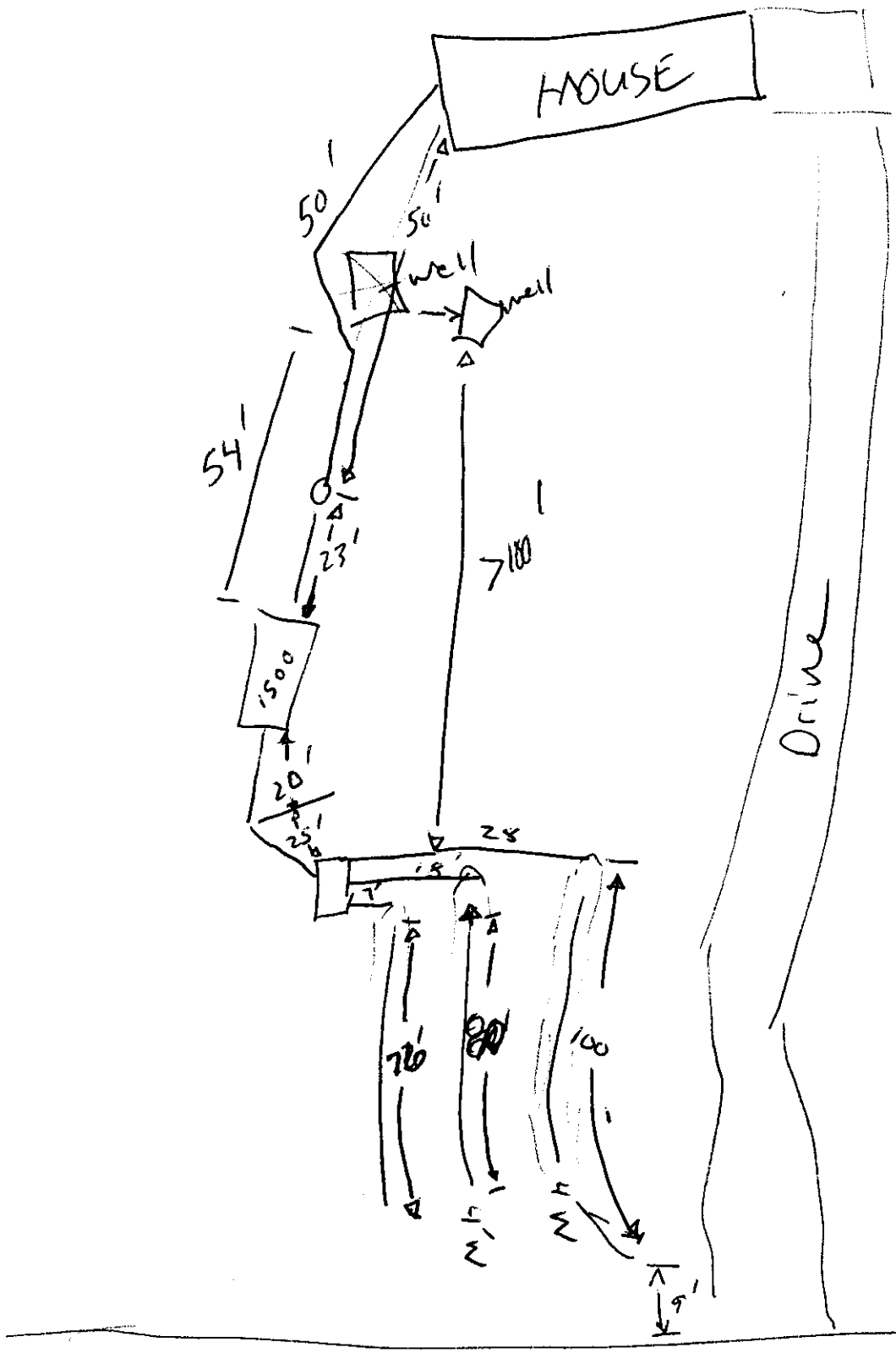
Inspections prior to Final Approval
Initial JM Date 12/11/15

Follow-Up _____ Date _____

Follow-Up _____ Date _____

Installation Final Written Approval
By _____
Date 12/11/15

Field Note Drawing (See Reverse Side):


N
HOUSE
50'
50'
well
well
54'
23'
1500
180'
20'
23'
28'
19'
7'
76'
100
9'
Drive

Lincoln-Lancaster County Health Department (LLCHD)
Environmental Public Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

B

Permit Number: HS001182

Onsite Wastewater Treatment System

Soil Evaluation Report

PLEASE PRINT OR TYPE

Onsite System Location

Address 10600 West Ag New City _____ NE, Zip _____
(no rural route)

Owner Tom + Eileen Novotny Address 10600 west AG New

Date of Tests 12-5 to 12-6-15 Weather: Precipitation 0 Temperature 50's

PID 06-09-300-001-000
T 12, R 5, S 9, LOT 10

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		Initial	End				
Hole No.	Hole Depth (in)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Date (Mo/Da)	Time (Hr/Min)	Water Lev (in.)	Date (Mo/Da)	Time (Hr/Min)	Elapsed Time Interval	Water Level Drop (in)	Percolation Rates (Min/in = mpi)
1	24	12-5	9:00	12-6	1:00	12-6	10:50	6	12-6	2:50	30	5/8	48
2	24	12-5	9:02	12-6	1:02	12-6	10:51	6	12-6	2:51	30	3/4	40
3	24	12-5	9:05	12-6	1:05	12-6	10:52	6	12-6	2:52	30	3/4	40
4	28	12-5	9:07	12-6	1:09	12-6	10:53	6	12-6	2:53	30	5/8	48
5	28	12-5	9-9	12-6	1:09	12-6	1054	6	12-6	2:54	30	3/4	40
6	24	12-5	9:10	12-6	1:10	12-6	10:55	6	12-6	2:55	30	3/4	40
	4 hrs	with 12 inches						6					
	in holes							6					

Person Conducting Percolation Test

Name: Douglas Lofts
Phone: 402-944-7636
Address 410 CO RD C
Ashland Ne 68003 CTSS

Sum of Percolation Rates: 256
Average of Rates: 42.64
Rate Used for Calculation: 42.66

Soil type (NRCS Maps/Other) _____
Groundwater Depth 15 FT

DO NOT WRITE BELOW THIS LINE

Reviewing Action

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

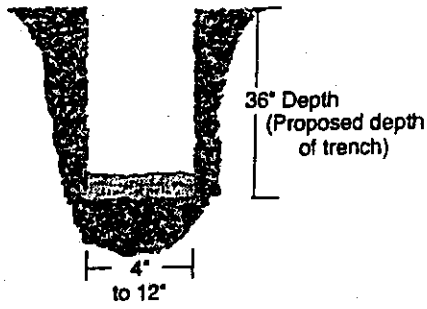
Signature of Reviewing Official _____ Date _____

READ THOROUGHLY

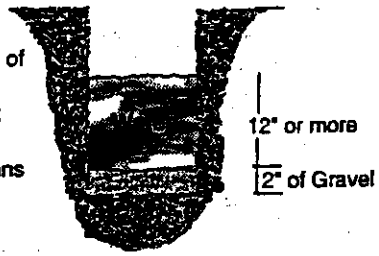
DIAGRAM OF PERCOLATION TEST PROCEDURE

Finished Grade or Natural Ground Level

I. Size, Number, and Location or Test Holes
   - A. Dig six or more holes spaced uniformly over proposed lateral field site.
   - B. Scratch smeared spots on sides of hole.
   - C. Remove loose material from hole.
   - D. Add 2" of gravel to hole.

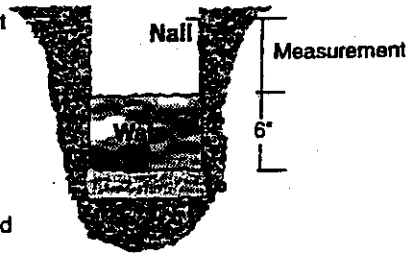


II. Saturation of Soil (Pre-soak)
   - A. Fill hole with 12" or more of water.
   - B. MAINTAIN THIS WATER LEVEL FOR 4 HOURS.
   - C. Record on Form B columns a thru f.



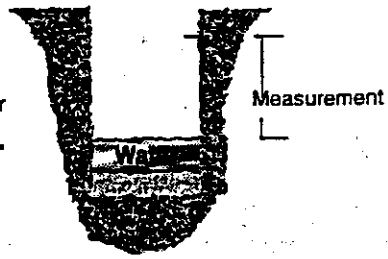
24 Hours Later

III. Percolation-rate Measurement **(refer to instructions 5a, 5b, or 5c.)**
   - A. Add 6" of water.
   - B. Measure from fixed reference point (nail) to water.
   - C. Record measurement and time on front of Form B.



½ hour later
(30 minutes)

   - D. 30 minutes later remeasure and record time.
   - E. If water will be too low for another reading 30 minutes later, adjust to 6" of water and remeasure and record time.



   - F. Continue for 3½ hours taking readings every 30 minutes.
   - G. Last 30 minute reading is used in filling out Form B. Record date, time, intervals and water level drops in column g thru m.

Instructions

1. **Number and location of tests.** Percolation tests shall be made in 6 or more separate test holes which shall be spaced uniformly over the proposed lateral field site.
2. **Type of test hole.** Dig or bore a hole 3 feet deep with a diameter of 4 to 12 inches. (To save time, labor and the volume of water required per test, a 4-inch auger hole is recommended).
3. **Preparation of the test hole.** Scratch or roughen any smeared spots on the sides of the hole with a knife blade or sharp pointed instrument to provide a natural soil interface into which water may percolate. Remove all loose material from the hole. Add 2 inches of gravel to protect the bottom from scouring when water is poured into the hole.
4. **Saturation and swelling of the soil.** Fill the hole with clear water to a depth of 12 inches or more above the gravel and maintain this water level at least 4 hours and preferably overnight. The accuracy and true value of the percolation data depends on thorough saturation and swelling of the soil.
5. **Percolation-rate measurement.** Percolation-rate measurements shall be made 24 hours after starting the saturation and swelling procedure described above. Record results on the front of this form and complete all calculations.
   a. If water remains in the test hole after the overnight swelling period, adjust the depth to approximately 6 inches over the gravel. From a fixed reference point, measure the drop in water level over a 30 minute period to the nearest 1/8 of an inch. This drop is used to calculate the percolation rate.
   b. If no water remains in the test hole after the overnight swelling period, add clear water to bring the depth to approximately 6 inches over the gravel. From a fixed point, measure the drop in water level to the nearest 1/8 of an inch at 30-minute intervals for 4 hours. Refill to the 6 inch level over the gravel as often as necessary. The drop that occurs during the final 30 minutes is used to calculate the percolation rate.
   c. In sandy soils (or other soils in which the first 6 inches of water seeps away in less than 30 minutes after the overnight swelling period) the time interval between measurements shall be 10 minutes instead of 30 minutes and the test run for 1 hour instead of 4 hours. The drop that occurs during the final 10 minutes is used to calculate the percolation rate.
6. **Record the test results and complete all calculations on the front of this form.** The average of the percolation rates calculated for all holes in the last 30 (10) minutes will normally be the rate used for calculations to size the system. ***Exceptions are the use of the greatest percolation rate when rates vary more than 20 min/in between holes or when other soil analysis indicates potential percolation problems.***

LLCHD reserves the right to require additional testing based on knowledge of soil types, percolation tests results on nearby properties, or due to concerns with procedures followed. In some situations, LLCHD staff will require and perform on-site observation of percolation tests.

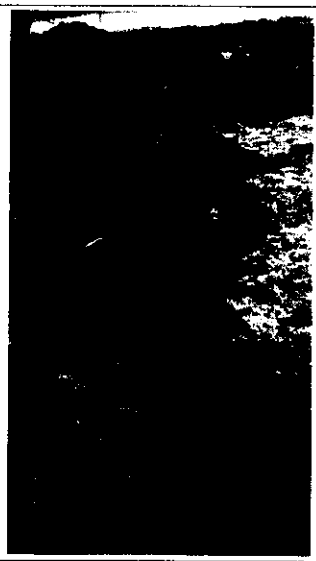
10600 W Agnew



2015-12-11 15:32



2015-12-14 08:15



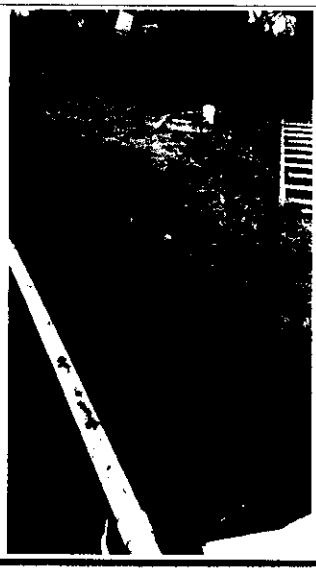
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Septic Installation

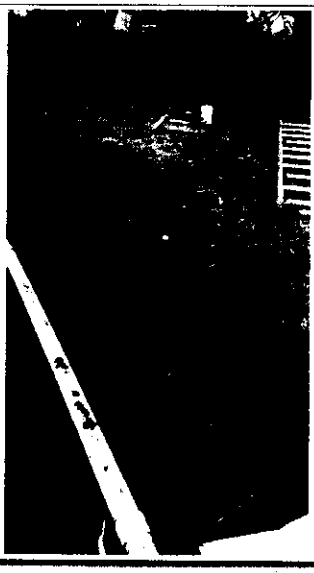
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2015-12-14 08:16



2015-12-14 08:16

Septic Installation

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

A

Permit Number
HS001182

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.

PLEASE PRINT OR TYPE

A. Onsite System Location

Address 10600 West AGNew City Valparaiso, NE Zip 68065
(no rural route)

Legal Description _____

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

PID _____

B. Owner

Name Tom + Eileen Novotny Signature X Thomas Novotny

Address 10600 West AGNew City/State/Zip Valparaisco Ne 68065

Home Phone 402-784-2257 Work Phone _____

C. Certified Installer

Name: Doug Loftes Signature Douglas A Loftes

Address 410 CO RD C City/State/Zip Ashland Ne 68003

Work Phone 402-944-7636

D. Engineer

☐ **Check and complete if engineer designed system** P.E. License Number: C1155

Designer Name _____ Firm _____ Work Phone _____

E. This system will serve a

☑ Residential Dwelling Number of Bedrooms 3 Whirlpool Bathtub? ☐ Yes ☑ No Total Acres 10.1

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 _____ Date rec'd _____ Date frwd _____
Comments _____
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 12-14-15 Amount Paid $385.00
Received By SB Cash/Check No. 14084

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

Lincoln-Lancaster County Health Department
Environmental Public Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

C

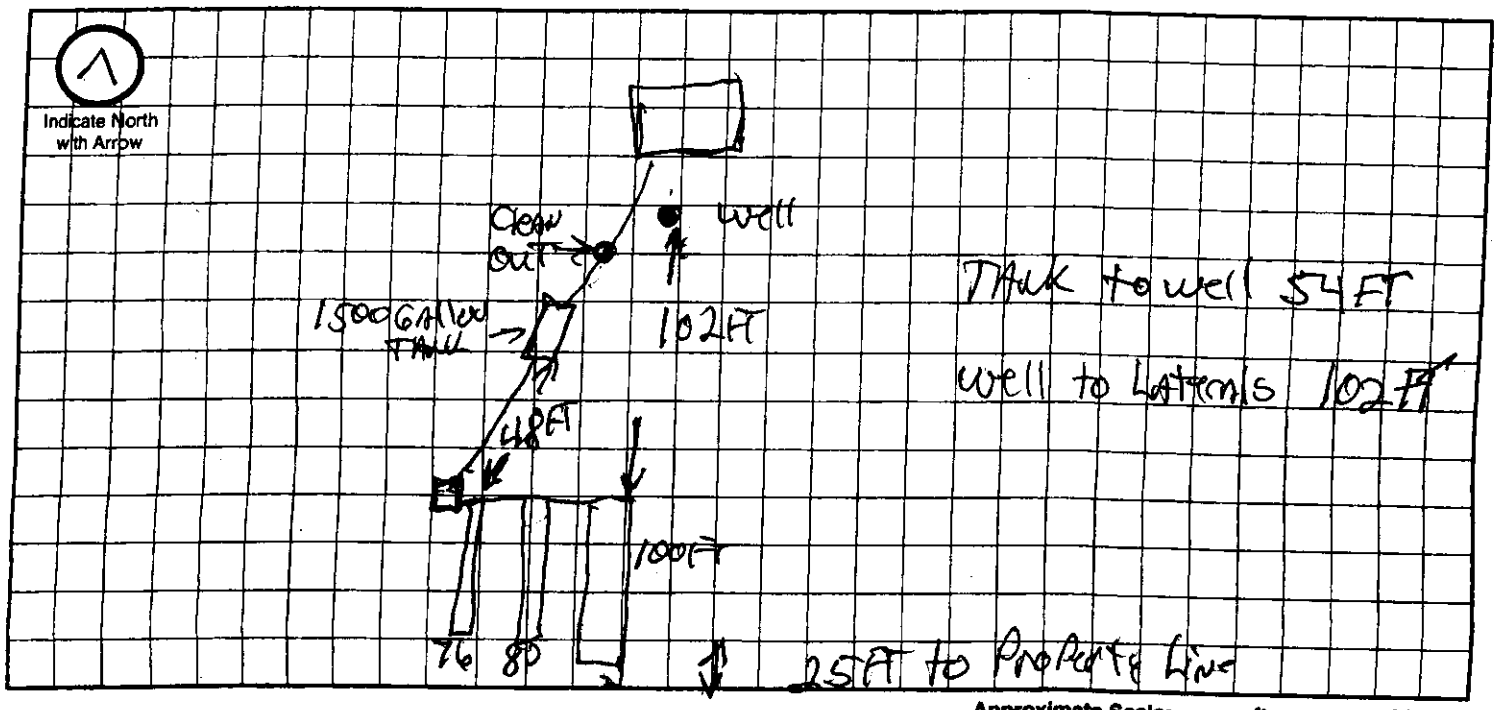
Permit Number: HS001182

well 54 FT
Cfarm 23 FT

Onsite Wastewater Treatment System

Preliminary Plan Specifications

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



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

A. Onsite System Location

Address (no rural route) 10600 West Agnew City Valparaiso NE, Zip 68065

B. Proposed Septic Tank/s

Septic Tank Cap 1500 gals Tank Material: ☑ Concrete ☐ Plastic ☐ Other_____ ☐ Lagoon(Max. seepage 1/8" per day)

C. Reserve Area for Replacement Onsite System

☑ Drainfield Absorption Area (percoloation test required) ☐ Lagoon

D. Drainfield Absorption System

Percolation Rate 42.66 (min/inch = mpi) No. of Bedrooms 3 Soil Type CLAY Land Slope 1 %

☑ Trench ☐ Bed ☐ Non-Standard (engineer designed and NDEQ approved Total Square feet of drainfield 1024 sq.ft.

Total length of laterals 256 Type of distribution: ☐ Perforated pipe ☐ Half-Round ☑ Chamber ☐ Other

No. of absorption trenches 3 Width 4 FT No. of drop boxes NONE Distrubtion Box 1

No. of absorption beds_____ Width_____ No of Distribution lines per bed_____

E. Setbacks Check the Boxes Below if the Required Setback has been Satisfied

Distance From	Private Well	Public Well	Surface Water	Gound Water	Pressure Water Lines	Property Lines	Foundations Yours	Foundations Neighbors	All Other Setbacks
Tank (ft)	50 ☑	500 ☑	50 ☑	NA ☑	25 ☑	20 ☑	15 ☑	25 ☑	☐
Field (ft)	100 ☑	500 ☑	50 ☑	4 ☑	30 ☑	20 ☑	30 ☑	40 ☑	☐
Lagoon (ft)	100 ☐	500 ☐	50 ☐	N/A ☐	30 ☐	50 ☐	100 ☐	200 ☐	☐

F. Required Signatures

Home Building Contractor_____ Date_____

Installer Lofton Septic Date 12-11-15

Lincoln-Lancaster County Health Department
Environmental Public Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

D

Permit Number: HS001182

Onsite Wastewater Treatment System

As Built Plans & Specifications

Date _____ Legal Description _____ 1/4 1/4 Section Township Range

Onsite System Location

Address (no rural route) 10600 West AG New City _____ NE, Zip _____

Owner Tom + Eileen Novotny Address 10600 West AG New

A. Sewer Pipe

1. Material: Plastic
   Diameter: 4 inch sch 40 in.
2. Distance above basement floor: _____ in.
   or distance below basement floor: 24 in.
3. Distance between dwelling and septic tank: 80 ft.
4. Number of clean-outs: 1
5. Distances to: well or suction line 20 ft.
   stream 300 ft.
   pressure line 30 ft.
   property line 200 ft.

B. Septic Tank

☐ Label with Manufacturer, address and gallon capacity

1. Material: Concrete
   Number of compartments: 1
2. Capacity: 1500 gal.
3. Factory built: ☑ Yes ☐ No
4. Manholes: Over inlet, diameter 18 in.
   Over outlet, diameter 18 in.
   Riser: ☑ above ☐ below grade 24 in.
5. Inlet: ☐ baffle ☑ tee ☐ 6" dia. inspection pipe
6. Outlet: ☐ baffle ☑ tee ☐ 6" dia. inspection pipe
7. Depth to top of tank, below unfinished grade: 24 in.
8. Distances to: Well or suction line 50 ft.
   Stream 200 ft.
   Pressure line 50 ft.
   Property line 250 ft.

C. ☑ Distribution Box ☐ Drop Boxes

(≥ 12" inspection opening) (removable lid to inspect)

1. Material: Plastic
   Number available outlets: 8
2. Factory built: ☑ Yes ☐ No
3. Distance from septic tank: 48 FT ft.

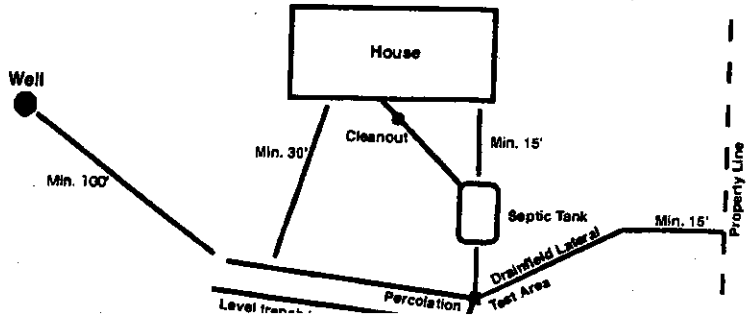
D. Drainfield Absorption

☑ Trench ☐ Bed ☐ Level Bottom

1. Type: ☐ Half rounds ☐ Perforated pipe ☑ Chambers
   Diameter or width: 3.63 FT
   Number of distribution lines in bed 3
   Material: ☐ fiberglass ☑ plastic ☐ concrete
   ☐ other _____
2. Drainfield Laterals: Number 3
   Length of each line: 100 ft. 80 ft.
   76 ft. _____ ft., _____ ft.
3. Drainfield dimensions: Width 4 ft.
   Distribution Pipe Slope Level to 2 in/100 ft.
   Average depth 36 in
4. Filter material: Gravel Over Laterals
   Depth of material 18 in.
5. Distances to: Well or suction line 102 ft.
   Pressure line 105 ft.
   Property line 25 ft.
   House or building 130 ft.
   Lake or Stream 200 ft.

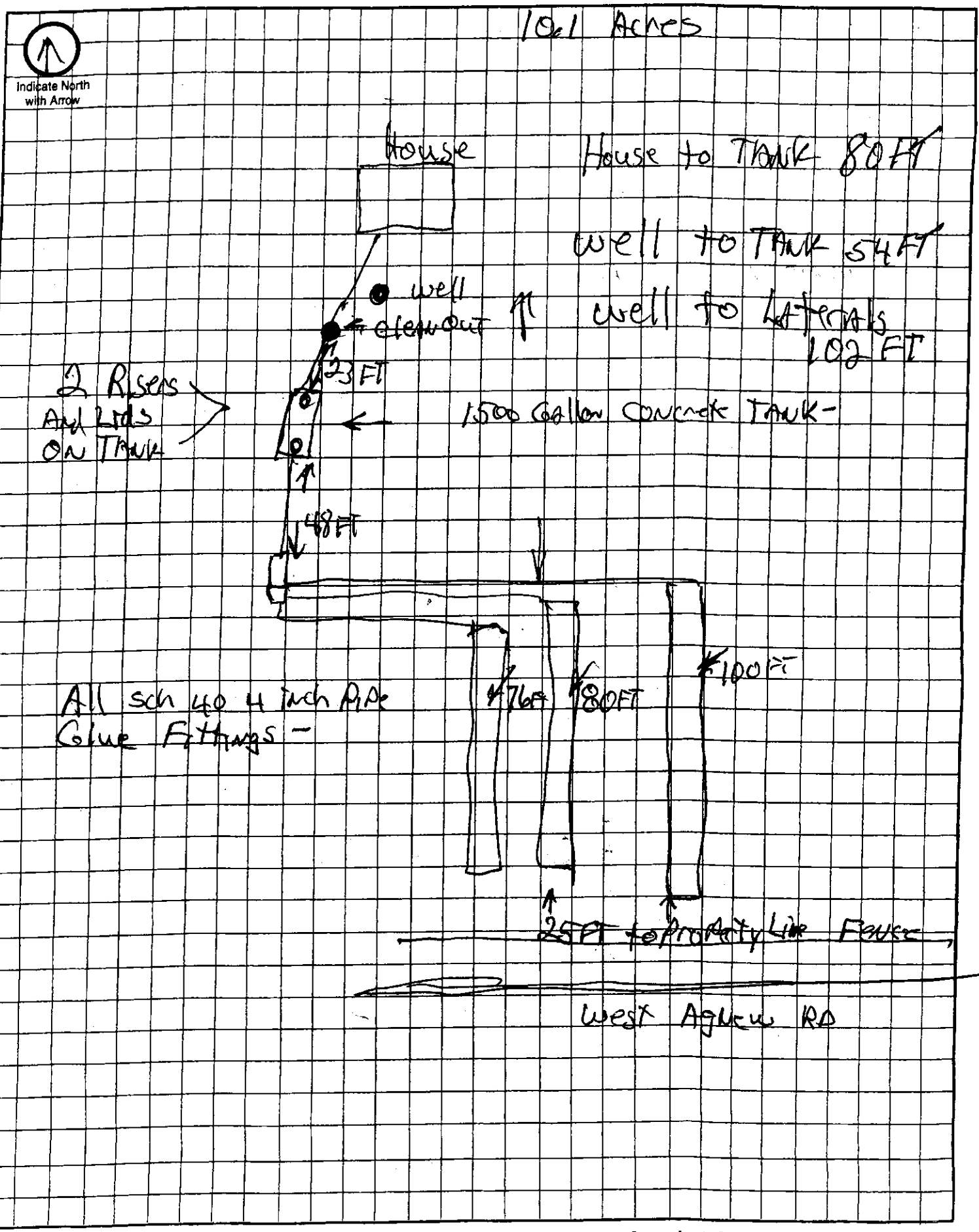
Complete As-Built drawing on the back to this form.

Onsite Wastewater System Design (Example)



cate North
th Arrow

As Built Drawing



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

Lincoln-Lancaster County Health Department
Environmental Public Health Division (402) 441-8027
3140 N Street Lincoln, Nebraska 68510-1514

ON-SITE WASTE WATER SYSTEM
CONSTRUCTION - INSTALLATION PERMIT
No. HS001182

System Type: Standard

Situs: 10600 W AGNEW RD, RURAL, NE

Issued: 12/23/2015

Expires: 12/23/2016

Description: S9, T12, R5, 6th Principal Meridian, LOT 10 & REM PORT E 1/2 SW 1/4

Owner: NOVOTNY, THOMAS
10600 W AGNEW RD
VALPARAISO, NE 68065

Judith A Halstead
Judith A. Halstead, MS, Health Director

Dear Applicant:

The above document is your permit to construct a new On-site Waste Water System at the location listed. Please contact this office once the sytem is complete in order to schedule a final inspection before use.

Judith A Halstead
Judith A. Halstead, MS
Health Director

LOFTUS SEPTIC PUMPING & CONST.
410 COUNTY ROAD C
ASHLAND, NE 68003

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

SCANNED

A

Permit Number
HS001182

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)

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Address 10600 West AGNew City Valparaiso, NE Zip 68065
(no rural route)

Legal Description _____
1/4 1/4 Section Township Range Subdivison Addition Block Lot

PID _____

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Name Tom + Eileen Novotny Signature X Thomas Novotny
Address 10600 West AGNew City/State/Zip Valparaiso Ne 68065
Home Phone 402-784-2257 Work Phone _____

C. Certified Installer

Name: Doug Loftus Signature Douglas A Loftus
Address 410 CO RD C City/State/Zip Ashland Ne 68003
Work Phone 402-944-7636

D. Engineer

☐ **Check and complete if engineer designed system** P.E. License Number: C1155

Designer Name _____ Firm _____ Work Phone _____

E. This system will serve a

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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 12/11/2015 Date rec'd 12/23/15 **ACTION** ☑ Approved ☐ Disapproved
Date frwd 12/23/15 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 12/11/15

Business Office Use Only
Date Received 12-14-15 Amount Paid $385.00
Received By SB Cash/Check No. 14084

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

10600 W Agnew



2015-12-11 15:32



2015-12-14 08:15



2015-12-14 08:16

Septic Installation

10600 W Agnew



2015-12-14 08:16



2015-12-14 08:16



2015-12-14 08:16

Septic Installation