Lincoln-Lancaster County Health Department

ENVIRONMENTAL HEALTH DIVISION

3140 N STREET · LINCOLN, NE 68510-1514 (402) 441-8000

Permit

SEWAGE INSTALLATION
OTHER SEWAGE DISPOSAL SYSTEM

Permit # 01380239201

Issued 10/30/01
Expires 04/30/02
Revenue Code 3157

FEES: $200.00

Establishment

DAN HABEL
T11N R7E SEC 25 QTR NW
SW1/4OFNW 1/4-I.T. LOT 12&13
8400 N 98 ST

Permittee

DAN HABEL
6020 S 48 ST
LINCOLN NE 68516

TOTAL: $200.00

Bruce D. Dart

Bruce D. Dart, Health Director

• POST IN A PROMINENT PLACE • NOT TRANSFERABLE

000222

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

A

Permit Number: 013802392

Sewage Disposal System

Request for Site Clearance and Permit

Include Form B, Form C and Applicable Fees with this Application.

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

The undersigned hereby requests site clearance and permit to construct a Sewage Disposal System in conformance with appropriate resolution or ordinance, as described herein:

PLEASE PRINT OR TYPE

A. System Location (Indicate correct number and street)

Address 8400 N 98th (no rural route) City LINCOLN NE, Zip 68517

Legal Description SW NW 25 T11N R7E (1/4 1/4 Section Township Range) Subdivision Addition Block 12 Lot 13 I.T.

Geographical Location (if known): Longitude _____ Latitude _____

☐ Check if system mail address is not the same as the owner's address

B. Owner

Name DAN HABER Signature Dan Haber call 441-4165

Address 6020 S 48th City/State/Zip LINCOLN NE 68516

☐ Check if owner designed system Home Phone 423-1257 Work Phone 434-1748

C. Contractor

Name DAN HABER Company Name _____

Address _____ City/State/Zip _____

☐ Check if contractor designed system Work Phone _____

D. Engineer/Installer ☒ Check and complete if engineer designed system

Designer Name JEREMY WILLIAMS Firm DESIGN ASSOCIATES Work Phone 474-3000

E. This System Will Serve a

☒ Residential Dwelling Number of Bedrooms 4 Is there a Whirlpool Bathtub (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. 2832

1. **Health Department**
   Date rec'd 10/29/01
   Date frwd 10/30/01
   ACTION ☒ Approved ☐ Disapproved
   Signature Jerrold C. Wood

2. **Supt. Bldg. Insp. or Village Clerk**
   Date rec'd 10-30-01
   Date frwd 10-30-01
   ACTION ☒ Approved ☐ Disapproved
   Signature _____

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

64.02 Jan test, saw only one best line in bed.
6/20/02 C.D.J.C.H.

Installation Final Written Approval

By _____

Date 12-24-02

Business Office Use Only

Date Rec'd 10/30/01
Amt Paid 200.00
Rec'd By _____ ~~Cash~~/Check No. 1512

FORM 23-100 10-96 White - Health Dept. Yellow - Engineer Pink - Bldg. Inspector

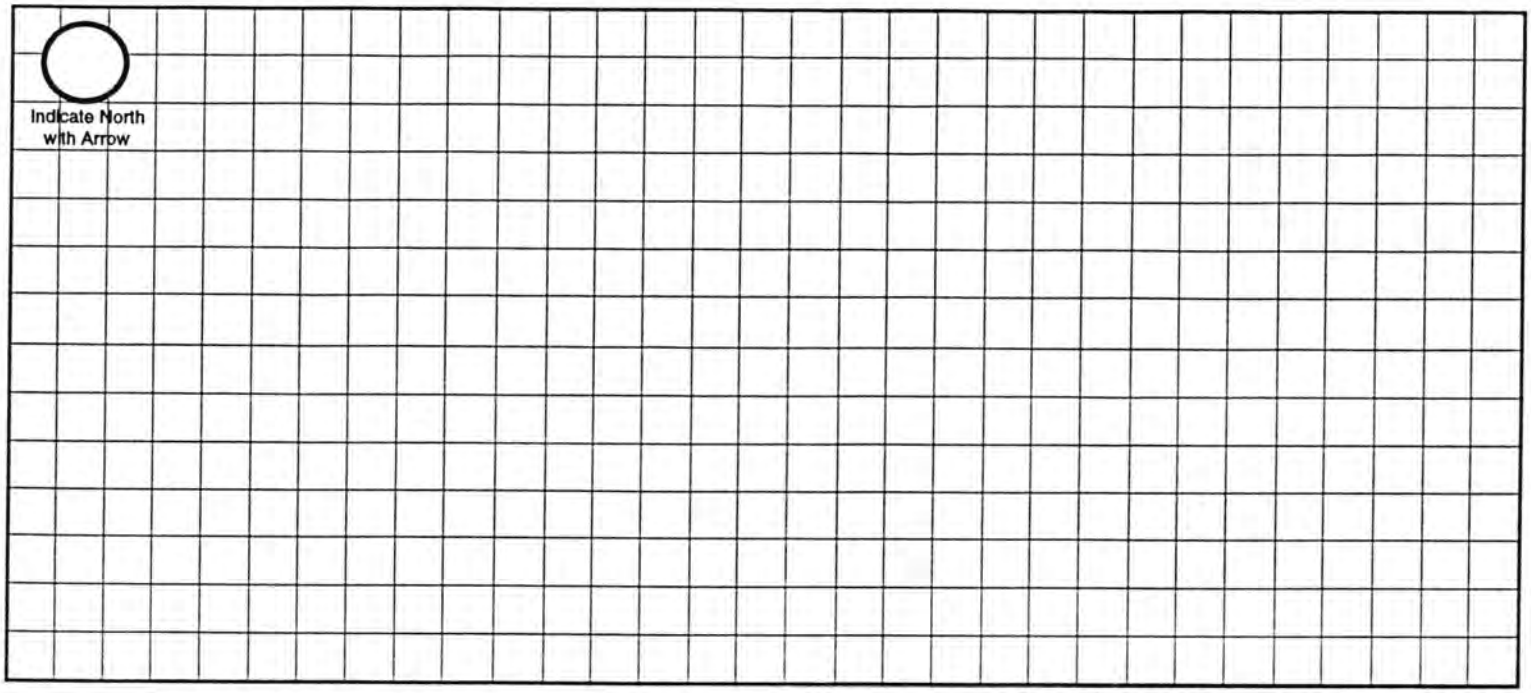
Lincoln-Lancaster County Health Department
Environmental Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

C

Permit Number: 013802392

Sewage Disposal System
Preliminary Plan Specifications

Draw a plot plan showing system location, lines, distribution box, tank and laterals, percolation test hole locations, well, residence, compass direction and property lines. Indicate on drawing if residence and well are existing or proposed.



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

A. System Location (Indicate correct number and street)

Address (no rural route) _____ City _____ NE, Zip _____

B. Proposed Septic Tank/s

Tank Material: ☐ Concrete ☐ Plastic ☐ Other _____

C. Proposed Absorption System (See Form B for Percolation Information)

Percolation Rate _____ (min. per inch) Soil Type: _____ Land Slope: _____ %

Type of Absorption System: ☐ Trench ☐ Bed ☐ Other _____

Total Square Feet of Field Required: _____ sq. ft.

Type of Lateral: ☐ Half-Moon ☐ Perforated Pipe ☐ Other Lateral Material: _____

Capacity of Septic Tank _____ gals Number of Absorption Beds: _____ Number of Distribution Laterals per Bed _____

Total Length of Laterals _____ ft. Number of Trenches _____ Trench Width _____

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

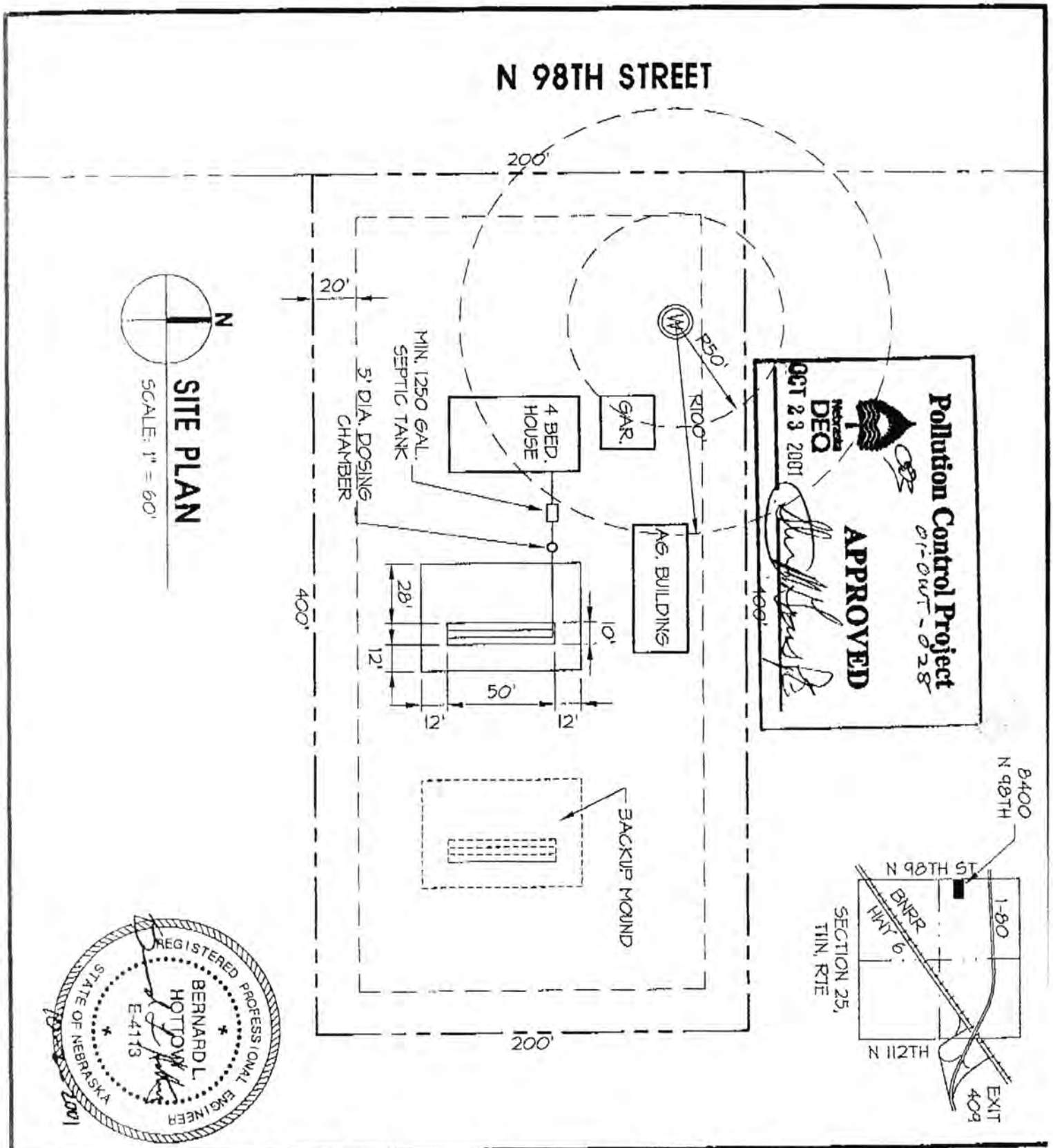
Distance From	Private Well	Public Well	Surface Water	Gound Water	Pressure Water Lines	Property Lines	Foundations Yours	Foundations Neighbors	All Other Setbacks
Tank (ft)	50 ☐	500 ☐	50 ☐	NA ☐	25 ☐	20 ☐	15 ☐	25 ☐	☐
Field (ft)	100 ☐	500 ☐	50 ☐	4 ☐	30 ☐	20 ☐	30 ☐	40 ☐	☐
Lagoon (ft)	100 ☐	500 ☐	50 ☐	N/A ☐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

E. Required Signatures

Home Building Contractor Don Holland Date 10-28-01

Installer Don Holland Date 10-28-01

FORM 23-102 10-96



1 OF 3

DESIGN ASSOCIATES OF LINCOLN, INC.
1609 "N" STREET
LINCOLN, NEBRASKA 68508
PHONE:(402) 474-3000
FAX:(402) 474-4045
desassoc@inebraska.com

SITE PLAN

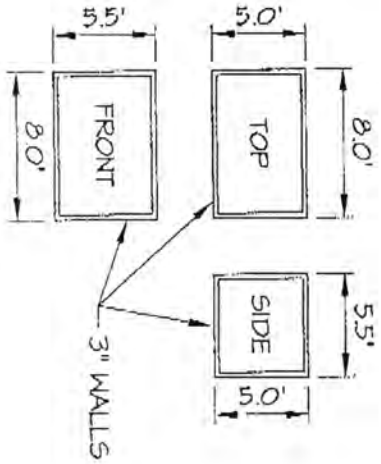
DAN HABEL MOUND

8400 N 98TH STREET
LINCOLN, NEBRASKA

2 OCT 200

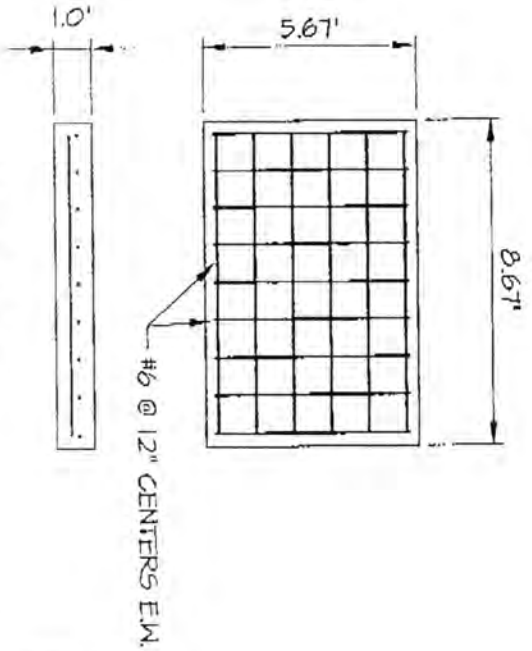
SEPTIC TANK

SCALE: 1" = 10'



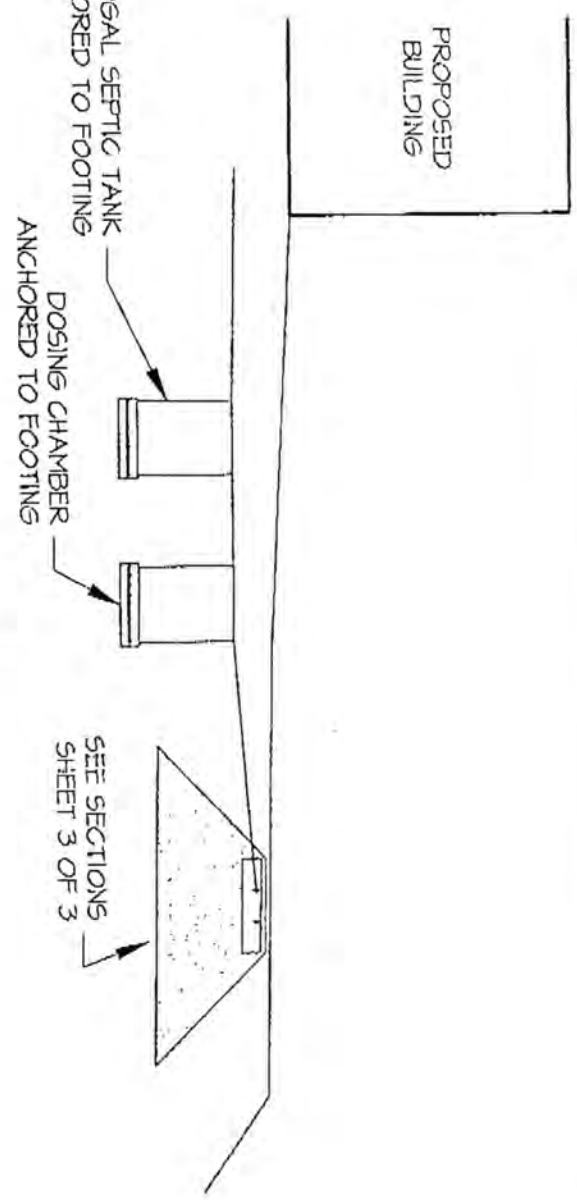
FOOTING

SCALE: 1" = 5'



SEPTIC SYSTEM

NO SCALE



REGISTERED PROFESSIONAL ENGINEER
BERNARD L. HOTTOVY
E-4113
STATE OF NEBRASKA
Oct 26, 2001

2 OF 3

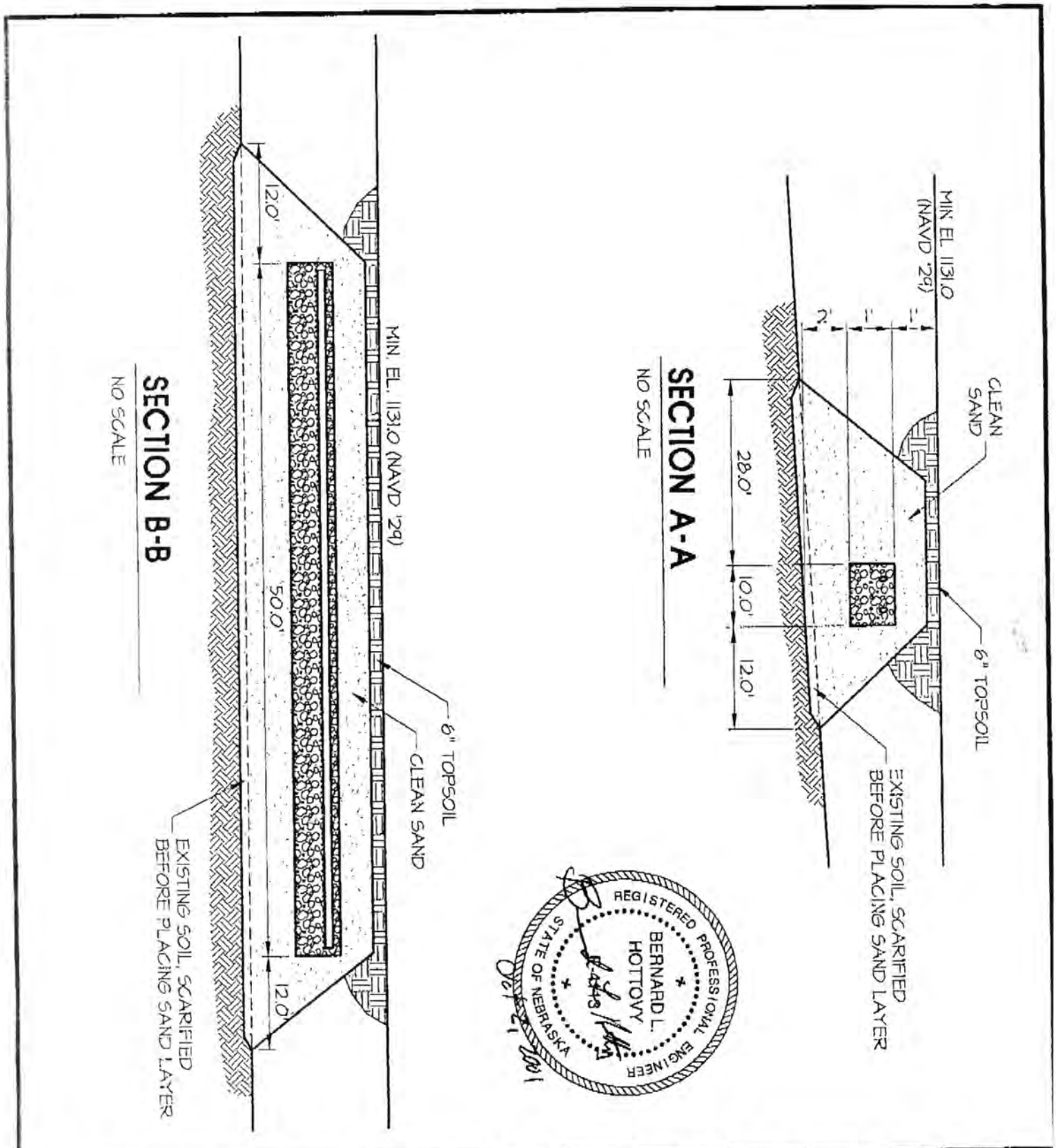
DESIGN ASSOCIATES OF LINCOLN, INC.
1509 "N" STREET
LINCOLN, NEBRASKA 68508
PHONE:(402) 474-3000
FAX:(402) 474-4045
desassoc@inebraska.com

DETAILS

DAN HABEL MOUND

8400 N 98TH STREET
LINCOLN, NEBRASKA

2 OCT 200



REGISTERED PROFESSIONAL ENGINEER
BERNARD L. HOTTOVY
STATE OF NEBRASKA
6448

3 OF 3

DESIGN ASSOCIATES OF LINCOLN, INC.
1609 "N" STREET
LINCOLN, NEBRASKA 68508
PHONE:(402) 474-3000
FAX:(402) 474-4045
desassoc@inebraska.com

MOUND SECTIONS

DAN HABEL MOUND
8400 N 98TH STREET
LINCOLN, NE

2 OCT 200

MOUND DESIGN WORKSHEET

(For Flows up to 1200 gpd)

A. FLOW

Estimated 600 gpd

or measured _____ x 1.5 = _____ gpd.

Estimated Sewage Flows in Gallons per day (gpd)				
Number of Bedrooms	Type I	Type II	Type III	Type IV
2	300	225	180	60% of the values in Type I, II or III columns
3	450	300	218	
4	600	375	256	
5	750	450	294	
6	900	525	332	
7	1050	600	370	
8	1200	675	408	

B. SEPTIC TANK LIQUID VOLUMES

1250 gallons

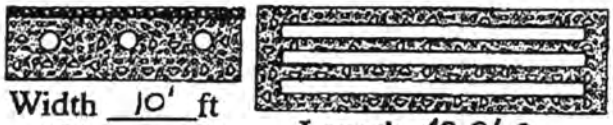
Septic Tank Capacities (in gallons)		
Number of Bedrooms	Minimum Liquid Capacity	Liquid capacity with garbage disposal
2 or less	750	1125
3 or 4	1000	1500
5 or 6	1500	2250
7, 8 or 9	2000	3000

C. SOILS (refer to site evaluation)

1. Depth to restricting layer = _____ inches _____ feet
2. Depth of percolation tests = 36 inches
3. Texture _____ Percolation rate 80 mpi
4. Land slope 0.5 %

D. ROCK LAYER DIMENSIONS

1. Multiply flow rate by 0.83 to obtain required area of rock layer: A x 0.83 = 600 gpd x 0.83 sq. ft./gpd = 498 sq. ft.
2. Select width of rock layer (max 10' if <120 mpi max 5') = 10.0 ft.
3. Length of rock layer = area ÷ width = 498 sq. ft. ÷ 10 ft. = 49.8 ft.



Width 10' ft
<120mpi <10'
>120mpi <5'

Length 49.8' ft

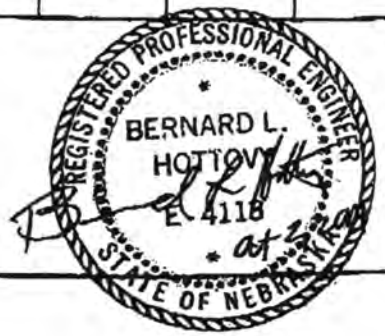
E. ROCK VOLUME

1. Multiply rock area by rock depth to get cubic feet of rock; 1 sq. ft. x 498 ft. = 498 cu. ft.
2. Divide cu. ft. by 27 cu. ft./cu. yd. to get cubic yards; 498 cu. ft. + 27 = 18.4 cu. yd.
3. Multiply cubic yards by 1.4 to get weight of rock in tons; 18.4 cu. yd. x 1.4 ton/cu. yd. = 25.8 tons.

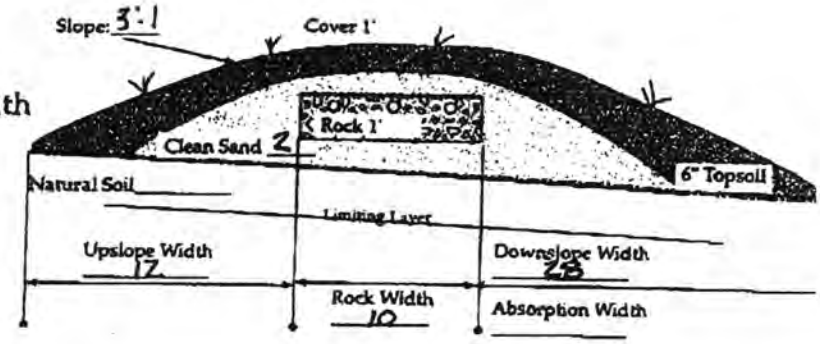
F. ABSORPTION WIDTH

1. Percolation rate in top 12 inches of soil is 80 mpi
   Texture _____
2. Select allowable soil loading rate from table;
   0.24 gpd/ft²
3. Calculate adsorption width ratio by dividing rock layer loading rate of 1.20 gpd/ft2 by allowable soil loading rate;
   1.20 gpd/ft² ÷ 0.24 gpd/ft² = 5.
4. Multiply adsorption width ratio by rock layer width to get required adsorption width;
   5 x 10 ft = 50 ft

Absorption Width Sizing Table			
Percolation Rate in Minutes per Inch (MPI)	Soil Texture	Gallons per day per square foot	Ratio of Absorption width to Rock Layer Width
Faster than 0.1	Coarse Sand	1.20	1.00
0.1 to 5	Sand	1.20	1.00
0.1 to 5	Fine Sand	0.60	2.00
6 to 15	Sandy Loam	0.79	1.52
16 to 30	Loam	0.60	2.00
31 to 45	Silt Loam	0.50	2.40
46 to 60	Clay Loam	0.45	2.67
60 to 120	Clay	0.24	5.00
Slower than 120	Clay	0.20	6.00



G. DOWNSLOPE BERM WIDTH



1. If landslope is **1% or more,** subtract rock layer width from adsorption width to obtain minimum downslope berm toe
____ ft - ____ ft = ____ feet

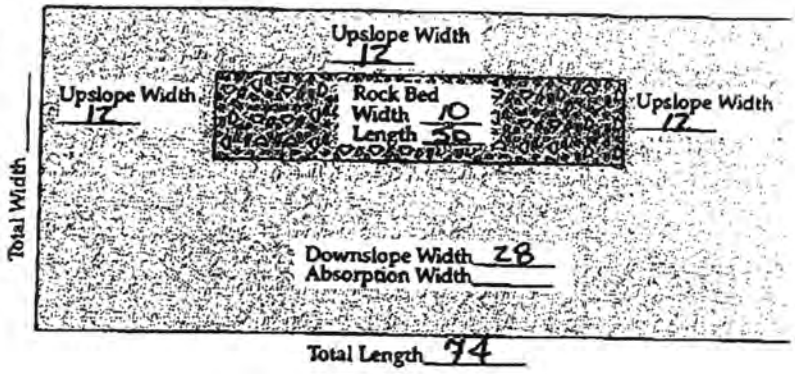
2. Calculate Minimum mound Size

a. Determine depth of clean sand fill at upslope edge of rock layer:
Separation 3' - 1 ft = 2 feet

b. Add depth of clean sand for separation (2a) at upslope edge, depth of rock layer (1 foot) to depth of cover (1 foot) to find the mound height at the upslope edge of rock layer;
2 ft + 1ft + 1ft = 4 feet

c. Enter table with landslope and upslope berm ratio. Select berm multiplier of 2.95.

d. Multiply berm multiplier by upslope mound height to find upslope berm width:
.95 x 4 = 11.8 feet



e. Multiply rock layer width by landslope to determine drop in elevation;
10 x 0.5 % ÷ 100 = 0.05 feet

f. Add depth of clean sand for slope difference (2e)at downslope edge, to the mound height at the upslope edge of rock layer (2d) to find the downslope height;
0.05 ft + 4 ft = 4.05 feet

g. Enter table with landslope and downslope berm ratio. Select berm multiplier of 3.05.

h. Multiply berm multiplier by downslope mound height to get downslope berm width:
3.05 x 4.05 = 12.4 feet

Compare the values of step G.1_____ and Step G.2h _____
Select the greater of the two values as the downslope berm width; 28 feet

j. Total mound width is the sum of upslope berm (G.2d) width plus rock layer width (D.2) plus downslope berm width(G.2i);
12 ft + 10 ft + 28 ft = 50 feet

k. Total mound length is the sum of upslope berm width (G.2d) plus rock layer length (D.3) plus upslope berm width (G.2d);
12 ft + 50 ft + 12 ft = 74 feet

Final Dimesions:
50' x 74'

BERM SLOPE MULTIPLIERS

Land Slope, in %	DOWNSLOPE berm multipliers for various berm slope ratios					UPSLOPE berm multipliers for various berm slope ratios					
	3:1	4:1	5:1	6:1	7:1	3:1	4:1	5:1	6:1	7:1	8:1
0	3.0	4.0	5.0	6.0	7.0	3.0	4.0	5.0	6.0	7.0	8.0
1	3.09	4.17	5.26	6.38	7.53	2.91	3.85	4.76	5.66	6.54	7.41
2	3.19	4.35	5.56	6.82	8.14	2.83	3.70	4.54	5.36	6.14	6.90
3	3.30	4.54	5.88	7.32	8.86	2.75	3.57	4.35	5.08	5.79	6.45
4	3.41	4.76	6.25	7.89	9.72	2.68	3.45	4.17	4.84	5.46	6.06
5	3.53	5.00	6.67	8.57	10.77	2.61	3.33	4.00	4.62	5.19	5.71
6	3.66	5.26	7.14	9.38	12.07	2.54	3.23	3.85	4.41	4.93	5.41
7	3.80	5.56	7.69	10.34	13.73	2.48	3.12	3.70	4.23	4.70	5.13
8	3.95	5.88	8.33	11.54	15.91	2.42	3.03	3.57	4.05	4.49	4.88
9	4.11	6.25	9.09	13.04	18.92	2.36	2.94	3.45	3.90	4.30	4.65
10	4.29	6.67	10.00	15.00	23.33	2.31	2.86	3.33	3.75	4.12	4.44
11	4.48	7.14	11.11	17.65	30.43	2.26	2.78	3.23	3.61	3.95	4.26
12	4.69	7.69	12.50	21.43	43.75	2.21	2.70	3.12	3.49	3.80	4.08

Note: The product of the multiplier and the height results in the horizontal distance to where the berm meets the original land slope. Example: Height at upper edge of rock layer is 3.0 feet, rock layer is 10 feet wide, land slope is 6% and berm slope ratio is 4:1. Upslope berm width is 3.23 x 3.0 = 9.7 ft; height at lower edge of rock layer is 3.0 + 10 x 0.6 = 3.6 ft and downslope berm width is 5.26 x 3.6 = 18.9 ft.

PRESSURE DISTRIBUTION SYSTEM

1. Select number of perforated laterals 2

2. Select perforation spacing = 3 feet.

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

$$\frac{50}{\text{Rock layer length}} - 2 \text{ ft.} = 48 \text{ feet.}$$

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

$$\text{Length perf. spacing} = \frac{48}{(3)} \text{ ft.} \div \frac{3}{(2)} \text{ ft.} = 16 \text{ spaces}$$

5. Number of perforations is equal to one plus the number of perforation spaces .

16 spaces + 1 = 17 perforations/lateral

6. Multiply perforations per lateral by number of laterals to get total number of perforations.

$$\frac{2}{\text{laterals}} \times \frac{17}{\text{perfs/lateral}} = 34 \text{ perforations.}$$

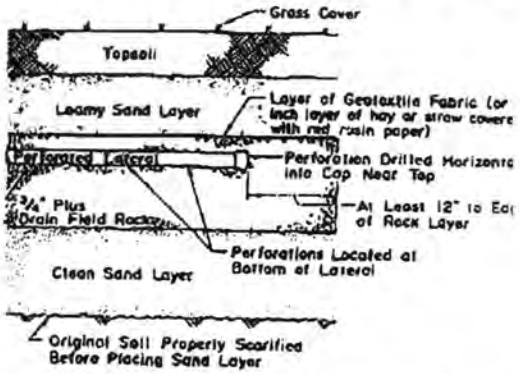
7. Determine required flow rate by multiplying number of perforations by flow per perforation

$$\frac{34}{\text{perfs}} \times \frac{0.74}{\text{gpm/perf}} = 25 \text{ gpm.}$$

8. If laterals are connected to header pipe as shown on upper example, to select minimum required lateral diameter; enter table with perforation spacing and number of perforations per lateral. Select minimum diameter for perforated lateral = 1½ inches.

9. If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length and number of perforations per lateral will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = 1¼ inches.

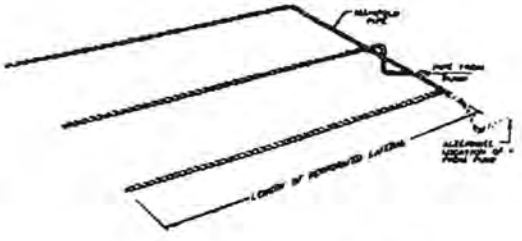
END PERFORATION OF A PERFORATED LATERA



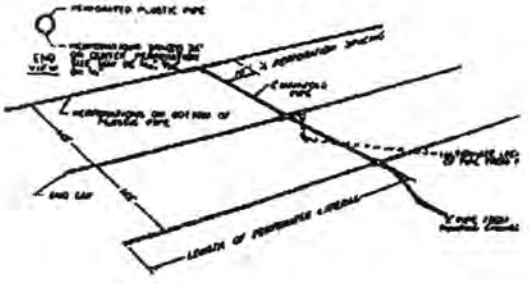
Required Perforation Discharge in gallons per minute (gpm)		
Discharge Head (feet)	7/32 inch perf	¼ inch perf
1.0a	0.56	0.74
2.0b	0.80	1.04
a. Use for single family homes b. Use for all other applications		

Maximum number of quarter inch perforations p lateral to guarantee < 10% discharge variation			
Perforation Spacing (feet)	1¼	1½	2
2.5	14	18	28
3.0	13	17	26
3.3	12	16	25
4.0	11	15	23
5.0	10	14	22

MANIFOLD LOCATED AT END OF PRESSURE DISTRIBUTION SYSTEM



LAYOUT OF PERFORATED PIPE LATERALS FOR PRESSURE DISTRIBUTION SYSTEM



STATE OF NEBRASKA

JUL 2 3 2002

COPY

DEPARTMENT OF ENVIRONMENTAL QUALITY
Michael J. Linder
Director
Suite 400, The Atrium
1200 'N' Street
P.O. Box 98922
Lincoln, Nebraska 68509-8922
Phone (402) 471-2186
FAX (402) 471-2909

Mike Johanns
Governor

July 17, 2002

Mr. Dan Habel
8400 N. 98th St.
Lincoln NE 68517

RE: Operating Permit No. **01-OWT-028**
Onsite Wastewater Treatment System
SW1/4 , NW1/4 , Section 25, T11N, R7E
8400 N. 98th St., Lincoln, Lancaster Co., Nebraska

Dear Mr. Habel:

The Department has received the Construction Completion Card verifying that construction of the referenced on-site wastewater system has been completed in compliance with the approved plans and specifications. The Department has also received and approved the Operation and Maintenance Manual for the referenced system. Pursuant to Neb. Rev. Stat. Sec. §81-1506(2)(Reissue 1987), an operating permit for the system (enclosed) is hereby granted.

This Operating Permit is issued under the condition that the operation of the system be in compliance with NDEQ's Title 124 - Rules and Regulations for the Design, Operation and Maintenance of On-site Wastewater Treatment Systems and the approved Operation and Maintenance Manual.

Should ownership of the referenced On-site Wastewater Treatment system change, NDEQ Title 124, Chapter 3, Section 007 provides that the transfer of ownership of a permitted system shall automatically authorize the new owner to operate under the existing permit. Subsequent permit holders are under the same obligations and conditions as the original permittee. The Department shall be notified of the transfer of ownership and given the name and address of the new owner.

If you have any questions please contact me at (402) 471-2589.

Sincerely,

Steven M. Goans, P.E.
Environmental Engineer IV
Water Quality Division
Technical Assistance Unit

SMG/RKH
Encl: Operation and Maintenance Manual
pc: Jeremy Williams, E.I.T., Design Associates, Lincoln, NE
pc: Ron Marquart, Lincoln/Lancaster County Health Department, Lincoln, NE

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Printed with soy ink on recycled paper

FILE #2367

CITY OF LINCOLN NEBRASKA

DEPARTMENT OF LICENSES AND PERMITS

INDIVIDUAL SEWAGE SYSTEM CONSTRUCTION	FEBRUARY 6, 1987
TYPE OF LICENSE OR PERMIT	THIS LICENSE OR PERMIT EXPIRES
MARK J. SOUTHWICK — 946 NO. 8 STREET	LINCOLN, NE 68508
LICENSEE OR PERMITTEE	ADDRESS
T11N; R7E; Sec 25; Lots 12 & 13 I.T.; No. 98th Street	
NAME OF ESTABLISHMENT, IF ANY	ADDRESS

REMARKS: NON TRANSFERABLE ALTER, EXTEND OR REPAIR

PERMIT	ACCOUNTING NUMBER	TOTAL
$ 30.00	018754	$ 30.00

Valid Receipt Only if Machine Receipted In This Space

Serial No. — Date and Amount

APPLICATION

HEALTH

ISSUING OFFICER OR DEPARTMENT

THIS LICENSE OR PERMIT IS ISSUED SUBJECT TO REVOCATION AS PROVIDED BY LAW

FORM HD-41(73) APPLICATION FOR PERMIT TO ALTER, EXTEND OR REPAIR INDIVIDUAL SEWAGE DISPOSAL SYSTEM

City Ordinance No. 9150 [X]
County Resolution No. 2832 [ ]

LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT
Division of Environmental Health
2200 St. Marys Ave.
Lincoln, Nebraska 68502 (Phone: 471-7800)

FILE NO. 2367

TO: Division of Environmental Health
Lincoln-Lancaster County Health Dept.

DATE: July 31, 86

The undersigned hereby applies for a permit to ALTER [X], EXTEND [X], or REPAIR [ ] an existing Individual Sewage Disposal System, in conformance with appropriate Ordinance or Resolution, as described in this application and drawings attached hereto.

1. Legal description of property: Twp. 11N ; Range 7E ; Section 25 ;
Block _____ ; Lot S/2 of 13 I.T. ; Addition _____
Street Address N. 98th

2. Property Use: Residential _____ [X]; Commercial _____ [ ]
No. Bedrooms 2 Describe _____
Other Use [ ]
Describe _____

3. Type of existing Individual Sewage Disposal System: Septic Tank [X]; Other [ ]

4. Description of proposed alteration, extension or repair: New Tank, 100' of line, and 6"X100' Latteral perforated Pipe. (Fiber-Glass Tank)

5. Work to be done by: Owner [ ] ; or Contractor [X], Big Clyde Sanitation
Contractor's Name

6. Estimated cost of project:

a. Materials	$	
b. Labor	$	
c. Other	$	
TOTAL	$	

Mark J. Southwick
Signature of Applicant (owner or lessee)

946 N. 8 Lincoln,
Address

(Do not write below this line)

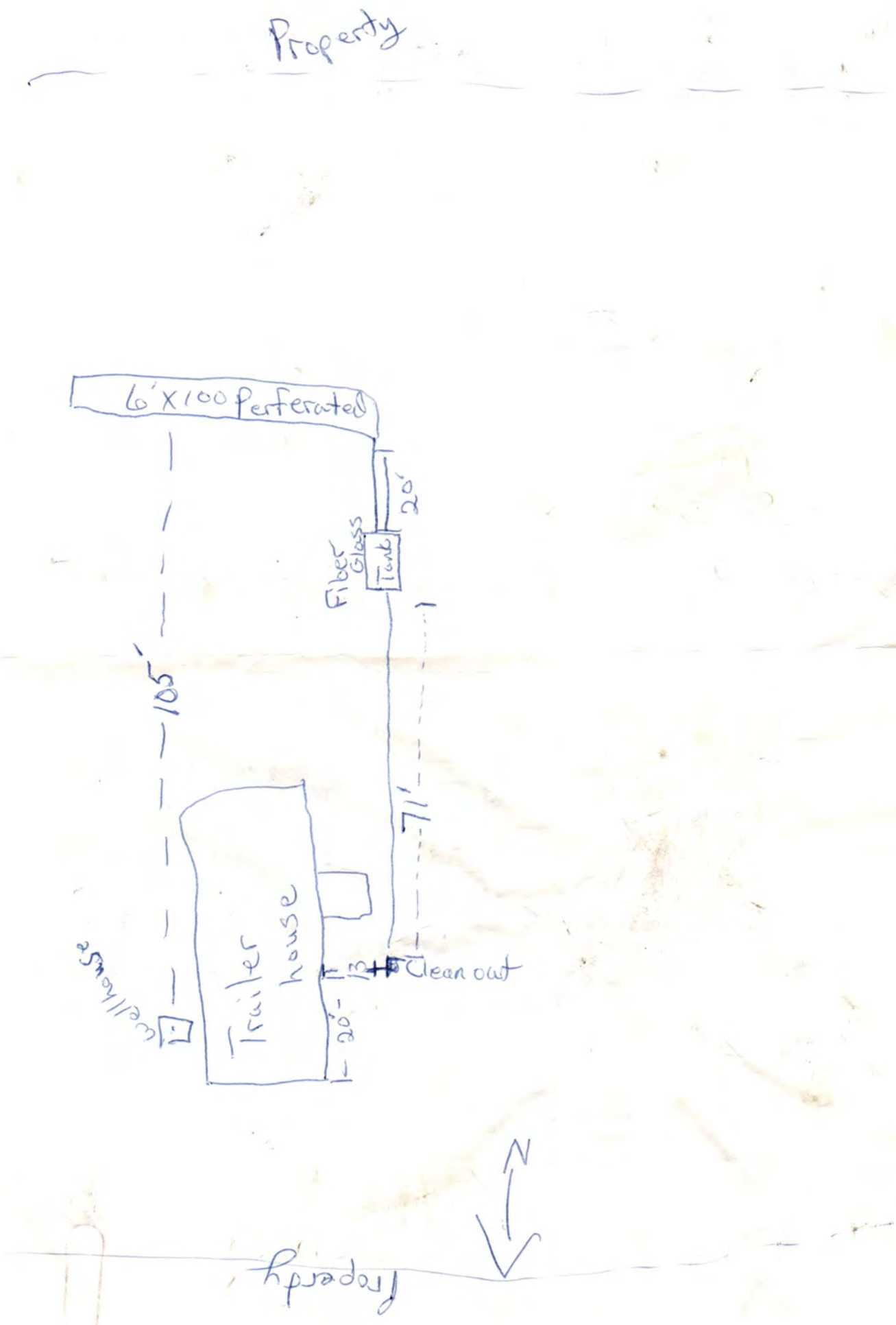
REVIEWING ACTION

1. Date Rec'd: 7-31-86
Filing Fee: $ 70.00

2. Site Visits:
Date: 7-31-86 by: mm
Date: _____ by: _____
Date: _____ by: _____

3. Date: Approved [X]; Disapproved [ ]
by: Jerrold C. Hood
EXPERIMENTAL

4. INSTALLATION FINAL WRITTEN APPROVAL
Date: 7-31-86 by: Ron Majorek


Property
6'X100 Perforated
20'
Fiber Glass Tank
105'
71'
Trailer house
Clean out
20'
Property