LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT

ENVIRONMENTAL HEALTH DIVISION

3140 "N" STREET
Lincoln, NE 68510-1514
(402) 441-8000

NON TRANSFERABLE

PERMIT

Permit

SEWAGE INSTALLATION
OTHER

No. 98380186801

Issued 10/14/98
Expires 04/14/99
Revenue Code 3157

FEES: $150.00

PAID

Establishment

EDWARD J KLEIN
T11N R8E SEC 18
NE-15&16,NW-3,7,14 LOT 5SW
12511 WAVERLY RD-WAVERLY

TOTAL $150.00

Permittee

EDWARD J KLEIN
12511 WAVERLY RD
LINCOLN NE 68462

Issued By Health Director
Lincoln-Lancaster County Health Department

008203

THIS LICENSE OR PERMIT IS ISSUED SUBJECT TO REVOCATION AS PROVIDED BY LAW "POST IN A PROMINENT PLACE"

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

A

Permit Number: 98380186801

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

T11N R8E Sec 18

A. System Location (Indicate correct number and street)

(477-4191) clerk

Address 12511 Waverly Road (no rural route) City Waverly NE, Zip 68462

Legal Description Lots 15 + 16 NE + Lots 3, 7 + 14 NW + Lot 5 SW 17-11-8
1/4 1/4 Section Township Range Subdivision Addition Block Lot

Geographical Location (if known): Longitude _____ Latitude _____

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

B. Owner

Name Edward Klein Signature Edward J Klein

Address 12511 Waverly Road City/State/Zip Waverly, NE 68462

☐ Check if owner designed system Home Phone 402-477-9483 Work Phone _____

C. Contractor

Name Mike Pietze Company Name Waverly Plumbing & W-4

Address PO Box 116 City/State/Zip Waverly NE 68462

☐ Check if contractor designed system Work Phone 786-5620

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

Designer Name Wm. C. Arneson. E-5883 Firm G.S.I. - Lincoln. Work Phone 402 466-8154.

E. This System Will Serve a

☒ Residential Dwelling Number of Bedrooms 3 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 10-14-98 Date frwd 10-14-98 ACTION ☒ Approved ☐ Disapproved Signature [signature]
2. **Supt. Bldg. Insp. or Village Clerk** Date rec'd 10/20/98 Date frwd 10/20/98 ACTION ☒ Approved ☐ Disapproved Signature Virgil E. Meade
3. **City or County Engineer** Date rec'd 10-20-98 Date frwd 10-20-98 ACTION ☒ Approved ☐ Disapproved Signature [signature]

10-14-98 Jar test
10-15-98 Jar test
10-23-98 Rock bed distribution pipe 7/8/99 J. Coff. TANK & LIFT

Installation Final Written Approval

By Jerrold C. Hood *

Date JULY 8, 1999

* PROVISIONAL, EXPERIMENTAL SYSTEM

Business Office Use Only

Date Rec'd 10/14/98
Amt Paid 150
Rec'd By _____ Cash/Check No. 1757

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

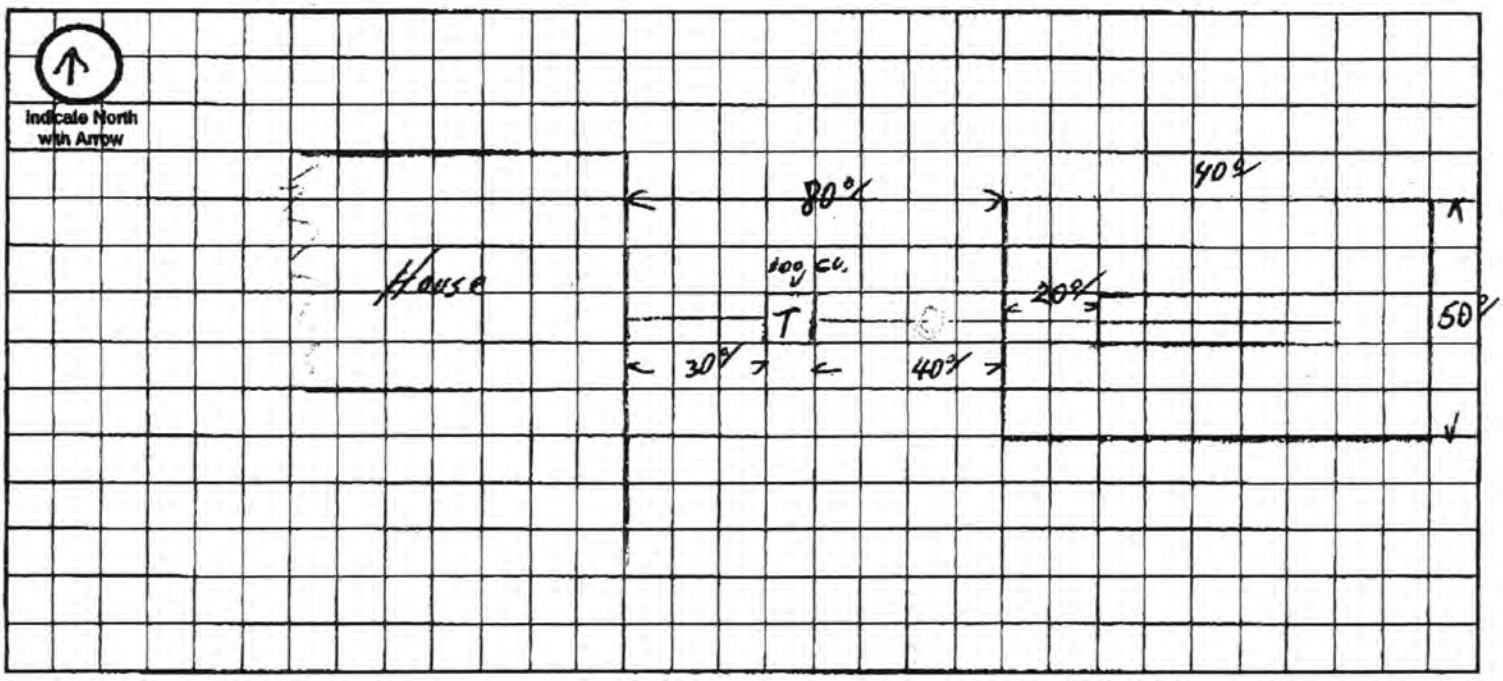
Lincoln-Lancaster County Health Department
Environmental Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

C

Permit Number:

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) 12511 Waverly Road City Waverly NE, Zip 68462

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

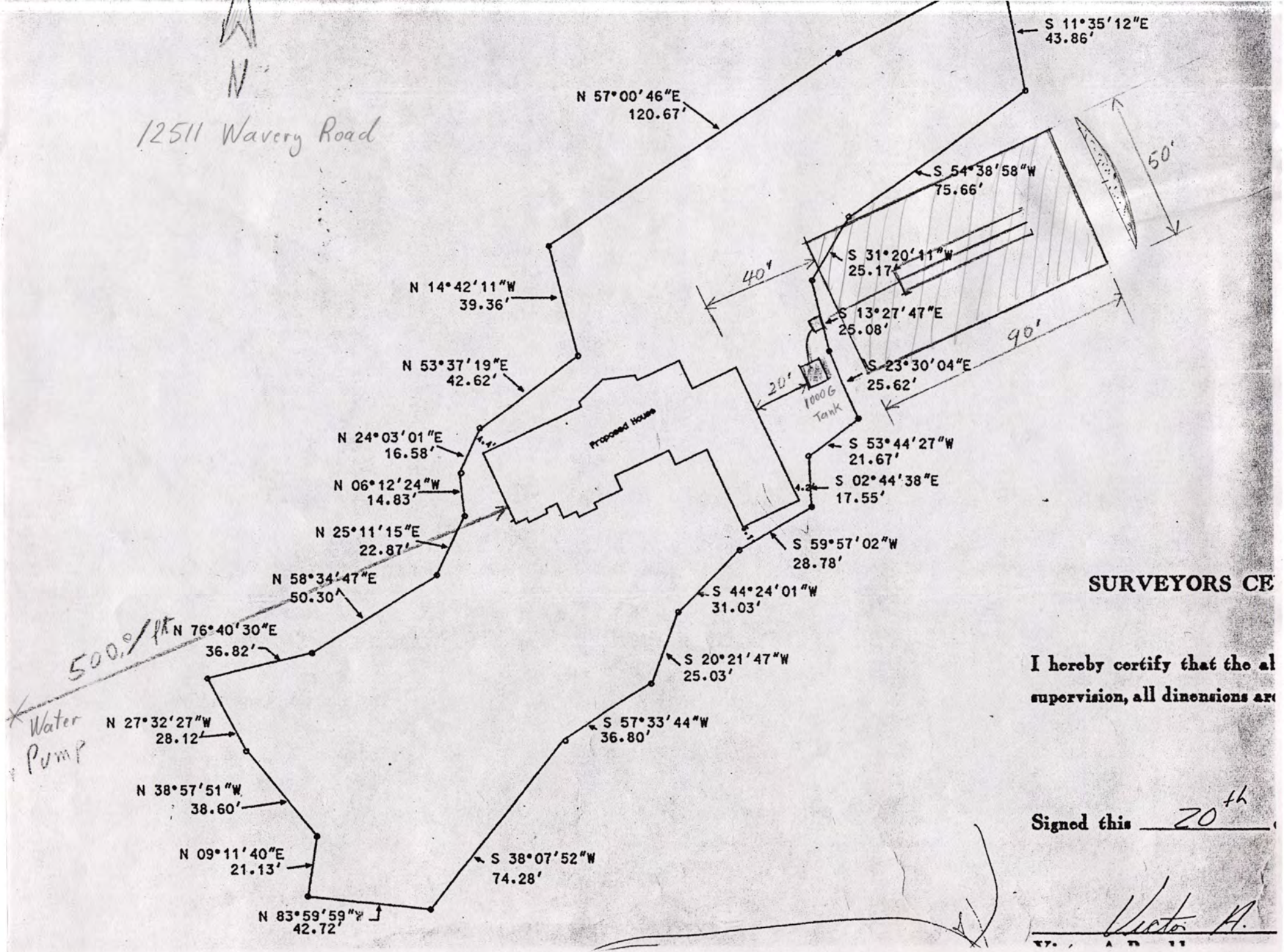
Distance From	Private Well	Public Well N/A	Surface Water	Gound Water	Pressure Water Lines	Property Lines	Foundations Yours	Foundations Neighbors N/A	All Other Setbacks
Tank (ft)	50 ☐	500 ☐	50 ☐	NA ☐	25 ☐	20 ☐	15 ☐	25 ☐	☐
Field (ft)	100 ☐	500 ☐	50 ☐	4 ☐	30 ☐	20 ☐	30 ☐	40 ☐	☐
Lagoon (ft)	100 ☒	500 ☐	50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

E. Required Signatures

Home Building Contractor _____ Date _____

Installer Mike Rutz Date 8-25-98

FORM 23-102 10-96



SURVEYORS CE

I hereby certify that the al
supervision, all dimensions ar

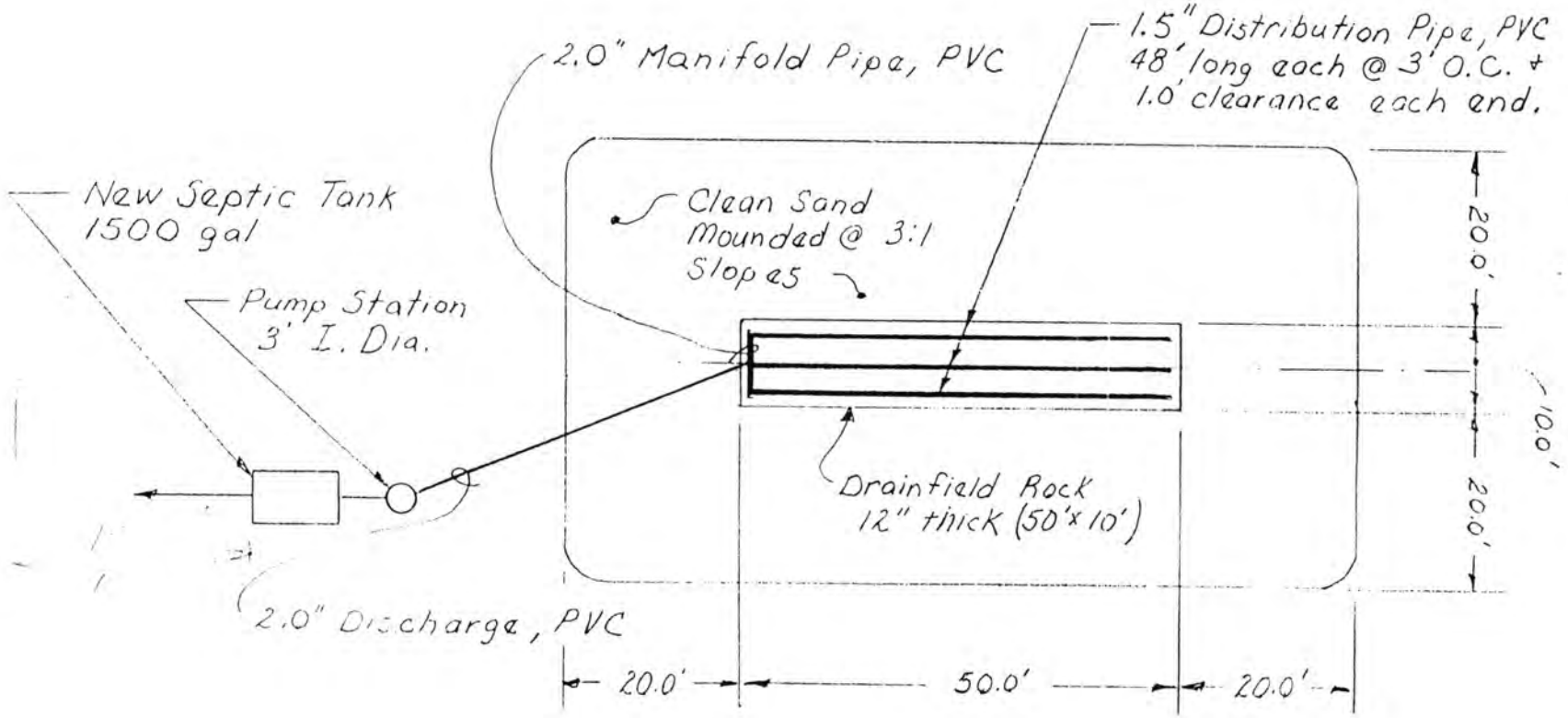
Signed this 20th

Victor A.

National Brand

MOUND DESIGN: Ed Klien Prop.; Sect 17, TIIN, R8E

PLAN + PROFILE



N

1" = 20'

APPROVED

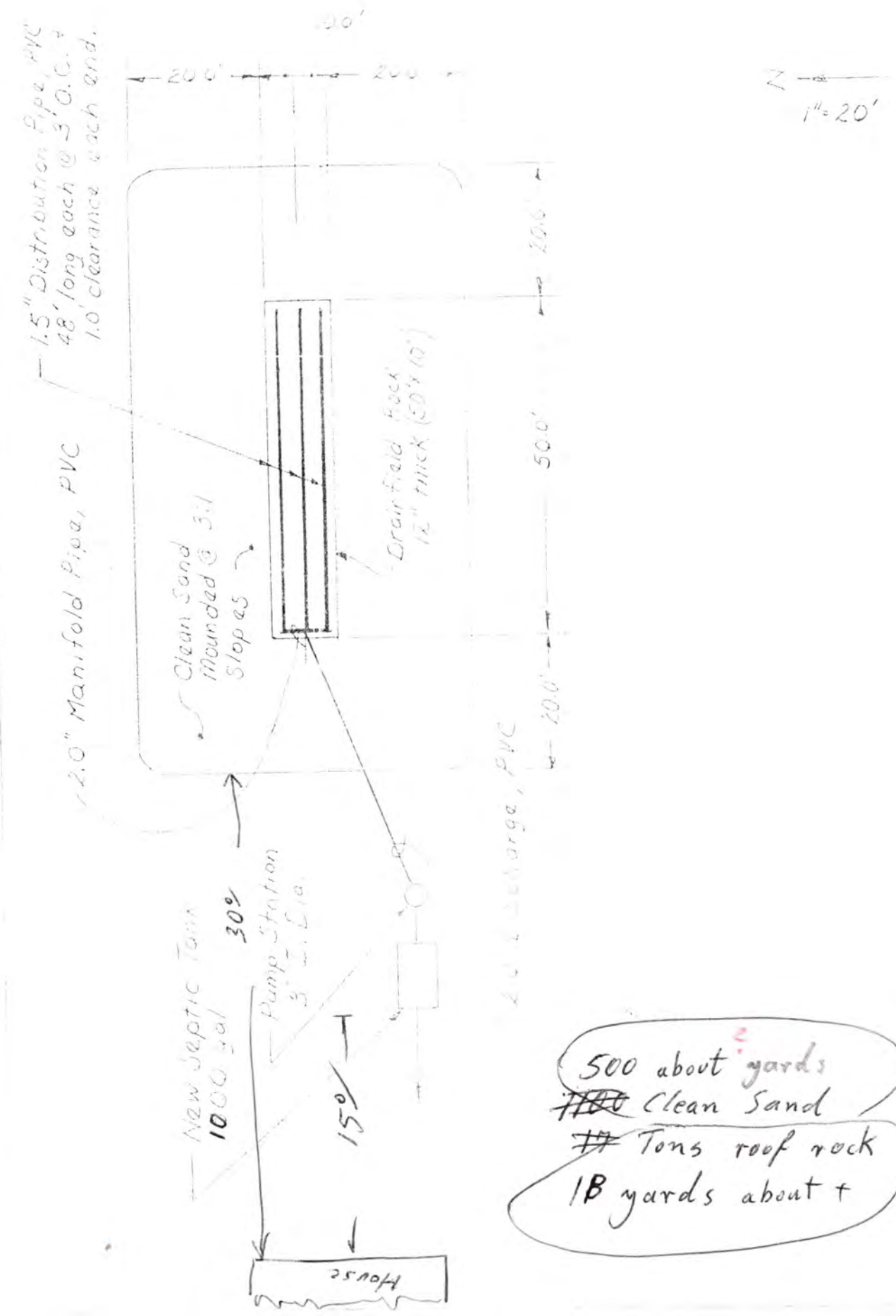
9/30/92

Pollution Control Project

Egon

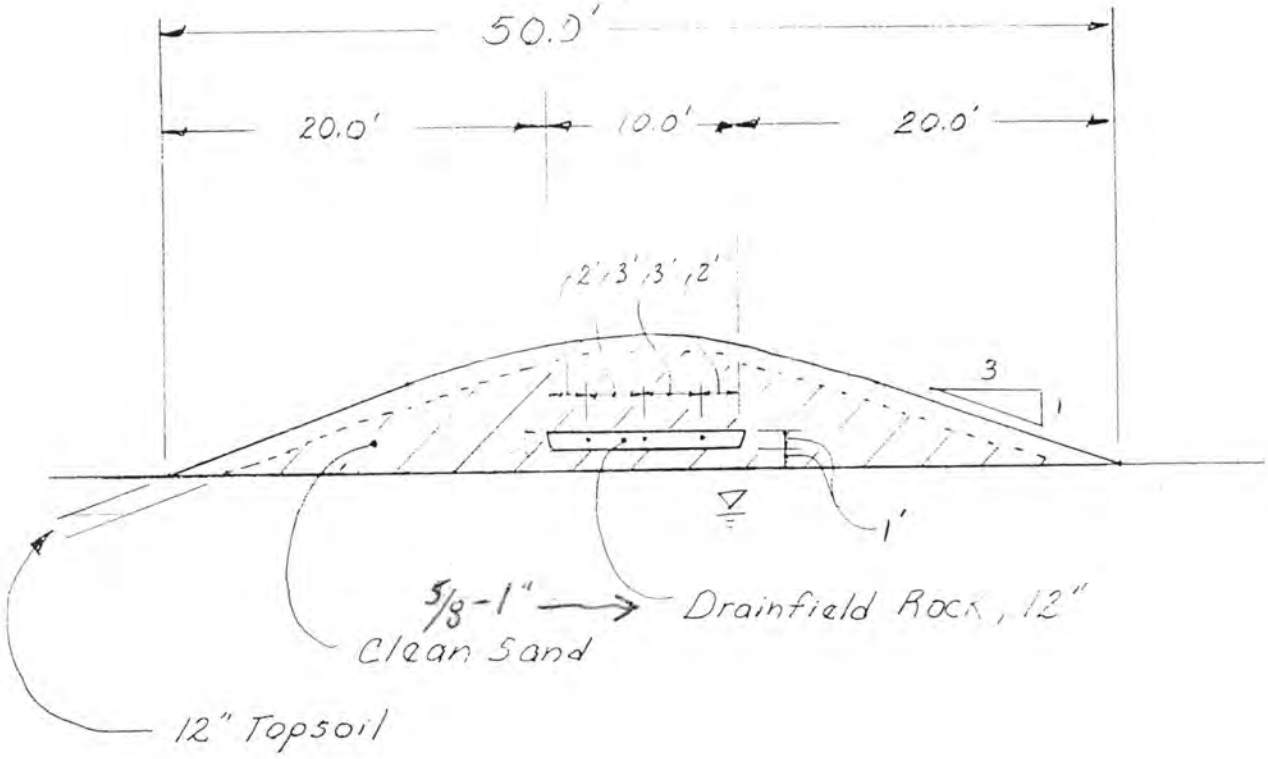
PLAN & PROFILE

MOUND DESIGN: Ed Klein Prop., Sect 11, T11N, R8E



500 about ~~1100~~ yards
~~1100~~ Clean Sand
~~##~~ Tons roof rock
18 yards about +

26L204


50.0'
20.0'
10.0'
20.0'
2' 3' 3' 2'
3
1
1'
5/8-1" → Drainfield Rock, 12"
Clean Sand
12" Topsoil

26L204

MATERIALS LIST (Estimated).

Laterals: 1½" PVC Pipe × 3 lines × 48' length = 144' with ¼" perforations every 3' (see drawing)

— End Caps: 3 × 1½"

— Couplers: 1 for each joint. Amount depends on length of pipe.

— Manifold: 2" PVC Pipe × 10' = 10'

— Main: 2" PVC Pipe from house to septic system ESTIMATED 50'

— Drainfield Crushed Rock. 17.2 tons, roof rock = 18 yards

— Clean sand. 50 × 8.5 × 70 = 29,750 ft^3

= ~~1102~~ 500 cubic yards

— Pumps 1 main + 1 backup. ⅓ hr pump × 2

Myer 3F-21P cap. = 27 gpm @ 20' head (min.)
(Auto control 230V = $202.00)

— Fiberglass Basin ≈10' deep w/ cover + Control panel (230V)
($587) + ($94) + ($342 + 32 + 26 + 71).
= 681 + 471
= $1152

MOUND DESIGN WORKSHEET
(For Flows up to 1200 gpd)

A. FLOW — new DEQ Title 124

Estimated 400* gpd

or measured _____ x 1.5 = _____ gpd.

B. SEPTIC TANK LIQUID VOLUMES

1000 gallons

W.C.A.

C. SOILS (refer to site evaluation)

1. Depth to restricting layer = 48" inches
2. Depth of percolation tests = 22.5 (ave.) inches
3. Percolation rate 65 mpi
4. Land slope < 1 %

Estimated Sewage Flow 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 the other 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	

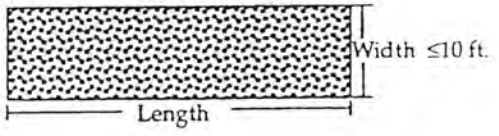
Number of Bedrooms	Minimum Septic Tank Liquid Capacity (gallons)	Minimum Capacity with Garbage Disposal (gallons)
2 or less	750	1,125
3 or 4	(1,000)	1,500
5 or 6	1,500	2,250
7 or 8	2,000	3,000
over 9	See fig. C-6	(x 1.5)

D. ROCK LAYER DIMENSIONS

1. Multiply flow rate by 0.83 to obtain required area of rock layer: A x 0.83 =

   400 gpd x 0.83 sq. ft./gpd = 332 sq. ft.
2. Select width of rock layer (10 feet or less) = 10 ft.
3. Length of rock layer = area ÷ width =

   332 sq. ft. ÷ 10 ft. = 33.2 ft.



E. ROCK VOLUME

1. Multiply rock area by rock depth to get cubic feet of rock;

   332 sq. ft. x 1.0 ft. = 332 cu. ft.
2. Divide cu. ft. by 27 cu. ft./cu. yd. to get cubic yards;

   332 cu. ft. ÷ 27 = 12.3 cu. yd.
3. Multiply cubic yards by 1.4 to get weight of rock in tons;

   12.3 cu. yd. x 1.4 ton/cu. yd. = 17.2 tons.

F. ADSORPTION WIDTH

1. Percolation rate in top 12 inches of soil is 65 mpi
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 = 5.00
4. Multiply adsorption width ratio by rock layer width to get required adsorption width;

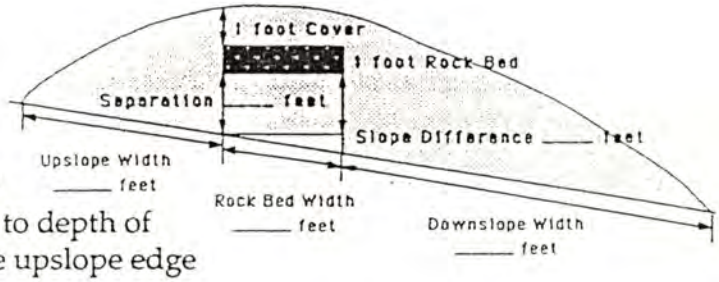
   5.0 x 10 ft = 50 ft

Absorption Width Sizing Table			
Percolation Rate Minutes per inch (mpi)	Soil Texture	Gallons per day per square feet	Ratio of rock bed width to absorption 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
61 t0 120	Clay	0.24	5.00
Slower than 120	Clay	—	—

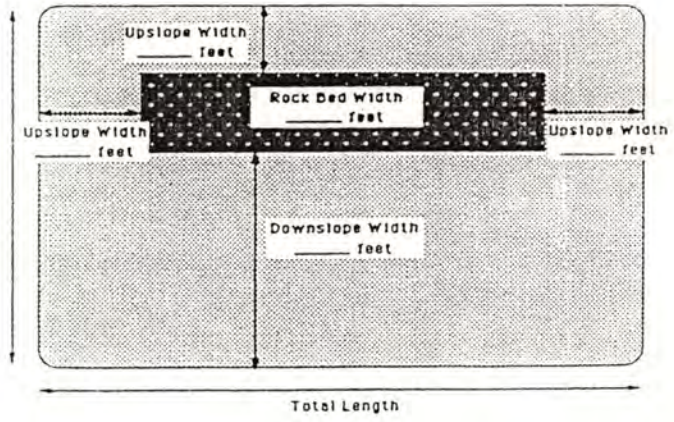
** Soil having 50% or more of fine or very fine sand.

G. DOWNSLOPE DIKE WIDTH

1. If landslope is **3% or more,** subtract rock layer width from adsorption width to obtain minimum downslope dike toe
   _____ ft - _____ ft = _____ feet
2. Calculate Minimum mound size based on geometery:
   a. Determine depth of clean sand fill at upslope edge of rock layer: *Separation* 1 feet
   b. Multiply rock layer width by landslope to determine drop in elevation;
      Slope Difference
      _____ x _____ % ÷ 100 = 0 feet



   c. 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;
      1 ft + 1ft + 1ft = 3 feet
   d. Enter table with landslope and upslope dike ratio. Select dike multiplier of 3.0.
   e. Multiply dike multiplier by upslope mound height to find upslope dike width: 3 x 3 = 9 feet
   f. Add depth of clean sand for slope difference (2b) at downslope edge, to the mound height at the upslope edge of rock layer (2c) to find the downslope height;
      3 ft + 0 ft = 3 feet
   g. Enter table with landslope and downslope dike ratio. Select dike multiplier of 3.0.
   h. Multiply dike multiplier by downslope mound height to get downslope dike width: 3 x 3 = 9 feet
   i. Compare the values of step G.1 and Step G.2h Select the greater of the two values as the downslope dike width;
      9 feet
   j. Total mound width is the sum of upslope dike (G.2e) width plus rock layer width (D.2) plus downslope dike width(G.2i);
      9 ft + 10 ft + 9 ft = 28 feet
   k. Total mound length is the sum of upslope dike width (G.2e) plus rock layer length (D.3) plus upslope dike width (G.2e);
      9 ft + 50 ft + 9 ft = 68 feet

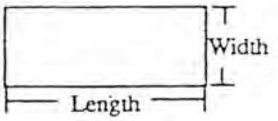


	Downslope					Upslope					
	3:1	4:1	5:1	6:1	7:1	3:1	4:1	5:1	6:1	7:1	8:1
% slope											
0	(3.0)	4.0	5.0	6.0	7.0	(3.0)	4.0	5.0	6.0	7.0	8.0
1	3.09	4.17	5.26	6.38	7.53	2.91	3.85	4.76	5.66	6.54	7.41
2	3.19	4.35	5.56	6.82	8.14	2.83	3.70	4.54	5.36	6.14	6.90
3	3.30	4.54	5.88	7.32	8.86	2.75	3.57	4.35	5.08	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	10.0	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

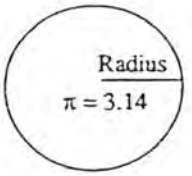
4

Sizing of Pump Station

1. Determine Surface Area
   Rectangle = Area = L x W
   _____ x _____ = _____ square feet



   Circle = Area = π x (Radius)²
   3.14 x _____ x _____ = _____ square feet



   Other = Get Surface Area from Manufacturer
   _____ square feet

2. Calculate Gallons Per Inch
   There are 7.5 gallons per cubic foot of volume, therefore you must multiply the area times the conversion factor and divide by 12 inches per foot to calculate gallons per inch
   Area x 7.5 ÷ 12
   _____ x 7.5 ÷ 12 = _____ gallons/inch

3. Calculate Gallons to Cover Pump (with 2 inches of water covering pump)
   (Height (in) + 2 inches) x gallons/inch
   (_____ + _____) x _____ = _____ gallons

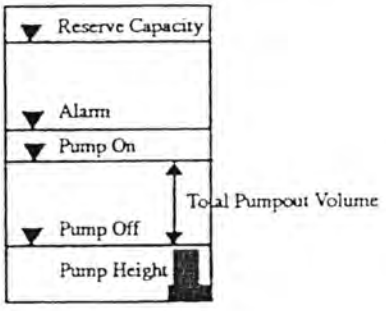
Estimated Sewage Flow in Gallons per Day (gpd)				
Number of Bedrooms	Type I	Type II	Type III	Type IV
2	300	225	180	60% of the values in the other columns
3	450	300	218	
4	600	375	256	
5	750	450	294	
6	900	525	332	
7	1050	600	370	
8	1200	675	408	

4. Calculate Total Pumpout Volume
   A. To maximize pump life select sump size for 4 to 5 pump operations per day.
   _____ gpd ÷ 4 = _____ gallons per dose
   B. Calculate drainback
      a. Determine total pipe length, _____ feet.
      b. Determine liquid volume of pipe, _____ gallons per 100 feet. (see page F-13)
      c. Multiply length by volume: Drainback quantity =
      _____ feet x _____ gallons ÷ 100 ft. = _____ gallons.
   C. Total pump out volume equals dose volume + drainback
   _____gallons per dose + _____ gallons = _____ Total gallons

Pipe diameter (inches)	Gallons per 100 feet
1	4.49
1.25	7.77
1.5	10.58
2	17.43
2.5	24.87
3	38.4
4	66.1

5. Calculate Volume for Alarm (typically 2 to 3 inches)
   Depth (in) x gallons/inch =
   _____ x _____ = _____ gallons

6. Calculate Reserve Capacity (75% the daily flow)
   Daily flow (see page D-7) x .75 =
   _____ x .75 = _____ gallons



7. Calculate total gallons
   gallons over pump + gallons pumpout + gallons alarm + gallons reserve
   3 + 4 + 5 + 6
   _____ + _____ + _____ + _____ = _____ gallons

8. Total Depth (Total gallon divided by gallon per inch)
   Total Gallon÷ gallon/inch
   _____ ÷ _____ = _____ inches

9. Float Separation Distance (equal total pumpout volume)
   Total pumpout volume÷ gallons/inch
   _____÷_____= _____ inches

SIZING OF PUMP STATION

GIVEN: 3' dia. pit r = 1.5' A = 7.07 V = 4.4 gal/inch.

Estimated Sewage Flow in Gal. per day (gpd)

Nebr. DEQ Title 124

3 bedroom house = 400 gpd.

REQUIRED:

I) Gallons to cover pump (2 in. of cover) (≈ 12" pump)

(12" + 2) 4.4 gal/in = 61.6 gal

II) Total pumpout volumn

A) 4 pump operations per day

= 400 gpd ÷ 4 = 100 gal/dose.

B) Drain back

a) Distribution pipe - 1.5 dia

ℓ = 48' × 3 = 144.0' A = 0.0123 ft²

144' × 0.0123 ft² × 7.5 gal/ft³ = 13.28 gal.

b) Manifold - 2.0" dia.

ℓ = 10' A = 0.0218 ft²

10' × 0.0218 ft² × 7.5 gal/ft³ = 1.64 gal

c) Main - 2.0" dia.

ℓ = 50' A = 0.0218 ft²

50' × 0.0218 × 7.5 = 8.18 gal

23.1 gal.

PRESSURE DISTRIBUTION, con't

SOLUTION (con't):

B) Pumping Capacity for perforated lateral system.

Fig. E-16 @ 1/4" perforations and 1.0' head pressure = 0.74 gpm/perf.

Total flow = Total no. perf. × flowrate

$$= 17 \frac{\text{perf.}}{\text{lateral}} \times 3 \text{ lateral} \times 0.74 \frac{\text{gpm}}{\text{perf.}}$$

$$= 51 \text{ perf.} \times 0.74 \text{ gpm/perf.}$$

$$= \underline{37.7 \text{ gpm}}$$

Individual lateral flow = 37.7 gpm ÷ 3

= 12.6 gpm

NOTE: Check Figure E-15 to verify no more 10% discharge variation

@ Perf. spacing of 3 ft. and lateral pipe size = 1.5" dia maximum no. perfs. = 17 OK

13-782 500 SHEETS, FILLER, 5 SQUARE
42-381 50 SHEETS EYE-EASE® 5 SQUARE
42-382 100 SHEETS EYE-EASE® 5 SQUARE
42-389 200 SHEETS EYE-EASE® 5 SQUARE
42-392 100 RECYCLED WHITE 5 SQUARE
42-399 200 RECYCLED WHITE 5 SQUARE
Made in U.S.A.
National® Brand

PRESSURE DISTRIBUTION

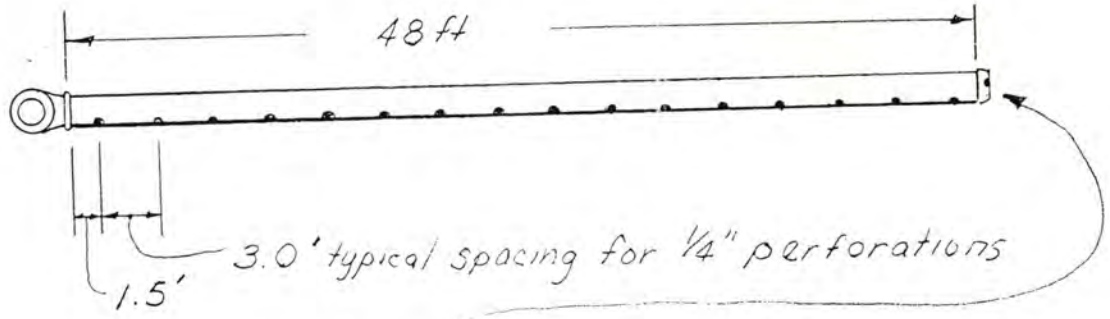
GIVEN: Distribution System: 3 lines 48.0 feet long with plastic pipe having dia. of 1.5 inchs. Perforations are expected to be 1/4 inch dia. Average operating pressure of 1.0 foot head. (Figures E-16, E-17 + E-18)

REQUIRED: A) Determine spacing of perforations

B) Maintain friction loss in pipe to less than 2% of average operating pressure (1.0 foot head.)

SOLUTION:

A) Use spacing of 36 inches (3 feet). Length of laterals will be 48 feet (length of rock bed - 2' = 50' - 2' = 48 feet)



NOTE: 17 total perf. per lateral

Single perf. 1/4" dia. in the upper portion of end cap

13-782 50 SHEETS FILLER 5 SQUARE
42-381 50 SHEETS EYE-EASE® 5 SQUARE
42-382 100 SHEETS EYE-EASE® 5 SQUARE
42-388 200 SHEETS EYE-EASE® 5 SQUARE
42-302 100 RECYCLED WHITE 5 SQUARE
42-309 200 RECYCLED WHITE 5 SQUARE
Made in U.S.A.
National® Brand

PRESSURE DISTRIBUTION SYSTEM

1. Select number of perforated laterals 3

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.

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

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

Length perf. spacing = $\underset{(3)}{48}$ ft. ÷ $\underset{(2)}{3}$ ft. = 16 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.

$$\underset{\text{laterals}}{3} \times \underset{\text{perfs/lateral}}{17} = 51 \text{ perforations.}$$

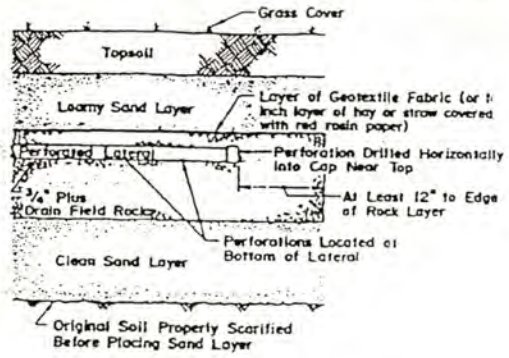
7. Determine required flow rate by multiplying number of perforations by flow per perforation

$$\underset{\text{perfs}}{51} \times \underset{\text{gpm/perf}}{0.74} = 37.7 \text{ gpm.}$$

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 = 1.5 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 = _____ inches.

END PERFORATION OF A PERFORATED LATERAL

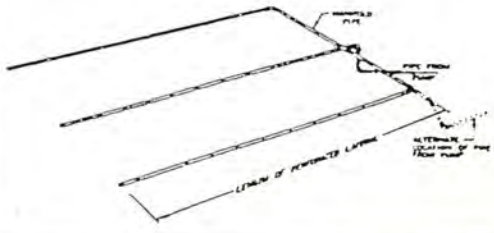


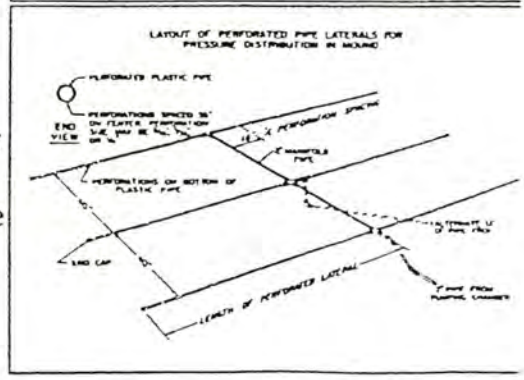
Required Perforation Discharge in gallons per minute (gpm)		
Discharge Head (feet)	$\frac{3}{32}$ inch perf	$\frac{1}{4}$ inch perf
→ 1.0a	0.56	(0.74)
2.0b	0.80	1.04

a. Use for single family homes
b. Use for all other applications

Maximum number of quarter inch perforations per 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





SIZING OF PUMP STATION (con't)

REQUIRED (con't):

II) Total pump out volumn, (con't):

C. Total pump out volumn (A+B).

100 gal + 23.1 = 123.1 gal

III Volumn for Alarm

2" x 4.4 gal/in. = 8.8 gal

IV Reserve Capacity (75% of daily flow)

400 x .75 = 300.0

V. Total of I + II + III + IV

61.6 + 123.1 + 8.8 + 300 = 493.5 gal

VI Total depth of station

493.5 gal ÷ 4.4 gal/inch = 112.2 in

= 9.3 ft ★

★ Note: This is for 3' dia pit. A 4' dia. pit would be approx. 5.5' deep.

VII Float Separation Distance (equal total pump out volume)

123.1 gal ÷ 4.4 gal/in. = 27.98

use 28"

13-782 500 SHEETS, FILLER 5 SQUARE
42-381 50 SHEETS EYE-EASE® 5 SQUARE
42-382 100 SHEETS EYE-EASE® 5 SQUARE
42-389 200 SHEETS EYE-EASE® 5 SQUARE
42-392 100 RECYCLED WHITE 5 SQUARE
42-399 200 RECYCLED WHITE 5 SQUARE
National® Brand

26L204

MATERIALS LIST (Estimated).

Laterals: 1½" PVC Pipe × 3 lines × 48' length = 144' with ¼" perforations every 3' (see drawing)

— End Caps: 3 × 1½"

— Couplers: 1 for each joint. Amount depends on length of pipe.

— Manifold: 2" PVC Pipe × 10' = 10'

— Main: 2" PVC Pipe from house to septic system ESTIMATED 50'

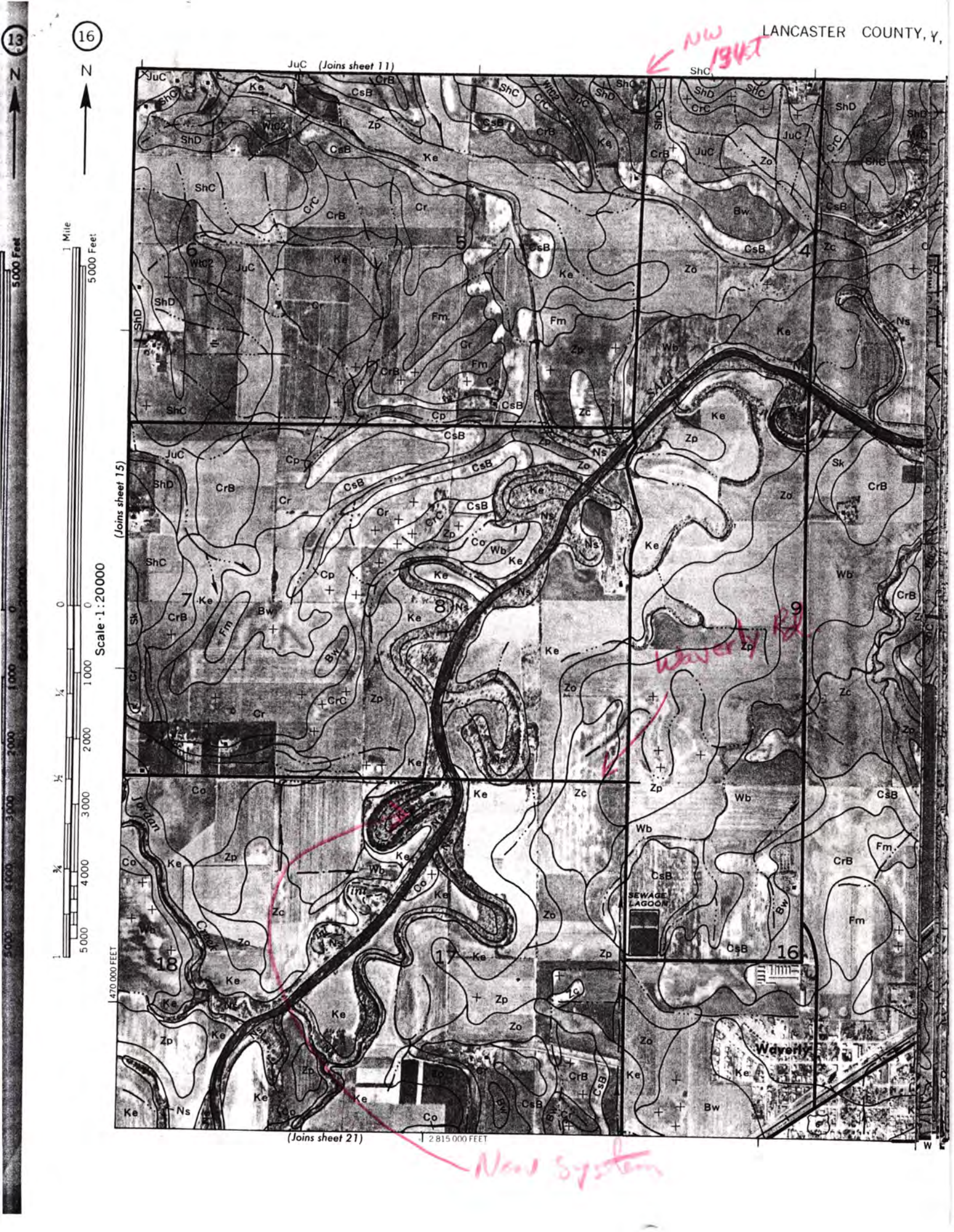
— Drainfield Crushed Rock. 17.2 tons, roof rock ← 17 yards

— Clean sand. 50 × 8.5 × 70 = 29,750 ft³ = 1102 cubic yards ← ?

— Pumps 1 main + 1 backup. ⅓ hr pump × 2

Myer 3F-21P cap. = 27 gpm @ 20' head (min.)
(Auto control 230V = $202.00)

— Fiberglass Basin ≈10' deep w/ cover + Control panel (230V)
($587) + ($94) + ($342 + 32 + 26 + 71)
= 681 + 471
= $1152


N
N
NW 134T
JuC (Joins sheet 11)
ShC
ShD
Ke
CsB
CrB
Wtc2
Zp
Zo
Zc
Bw
Cr
CrC
Fm
Ns
Wb
Co
Cp
Sk
5
6
4
7
8
9
16
18
1
SALT
Waverly Rd.
SEWAGE LAGOON
Waverly
Jordan
(Joins sheet 15)
(Joins sheet 21)
470 000 FEET
2 815 000 FEET
Scale 1:20000
1 Mile
5000 Feet
New System

STATE OF NEBRASKA

OCT 2 1998

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

E. Benjamin Nelson
Governor

Construction Permit # 98S077

Edward Klien
12511 Waverly Rd.
Waverly, NE 68462

RE: Onsite Wastewater Treatment System - Mound System
SW1/4, Sec 17, T11N, R8E
12511 Waverly Rd.
Waverly, NE, Lancaster County

Dear Mr. Klein:

Documents describing the above-referenced project have been approved and stamped accordingly. Pursuant to Neb. Rev. Stat. Sec. §81-1506(2)(Reissue 1987), a permit for construction is hereby granted. This permit shall also serve as the operating permit for the facility once construction is complete.

Compliance with minimum sanitary engineering design criteria was the only consideration in the review of this project and items such as quality of material, structural soundness, electrical and mechanical design features were not considered unless specifically noted in the review comments. However, this approval does not in any way release the owner from the responsibility of providing an operable facility.

Construction shall be as described in the approved documents. If, for any reason, major changes are necessary, written approval must be obtained from this Department before proceeding.

One set of documents is being made a part of this Department's records, and the remaining documents are being returned to you.

Please complete and return the enclosed card as soon as the information is available. If you have any questions please contact Steven M. Goans, P.E. at (402) 471-2580.

Pursuant to a Delegation Memorandum dated January 30, 1995, and signed by the Director, the undersigned hereby executes this document on behalf of the Director.

Signed the 30th day of September, 1998.

Sincerely,

Patrick W. Rice

Patrick W. Rice
Assistant Director

PWR/mrm
cc: John Minor LLCHD
William Arneson, GSI

An Equal Opportunity/Affirmative Action Employer

Printed with soy ink on recycled paper

CL Waverly Road

N 1/4 Cor
Section 17 T11N R8E

N 89°41'30"W
591.84'

NE Cor
Section 17 T11N R8E

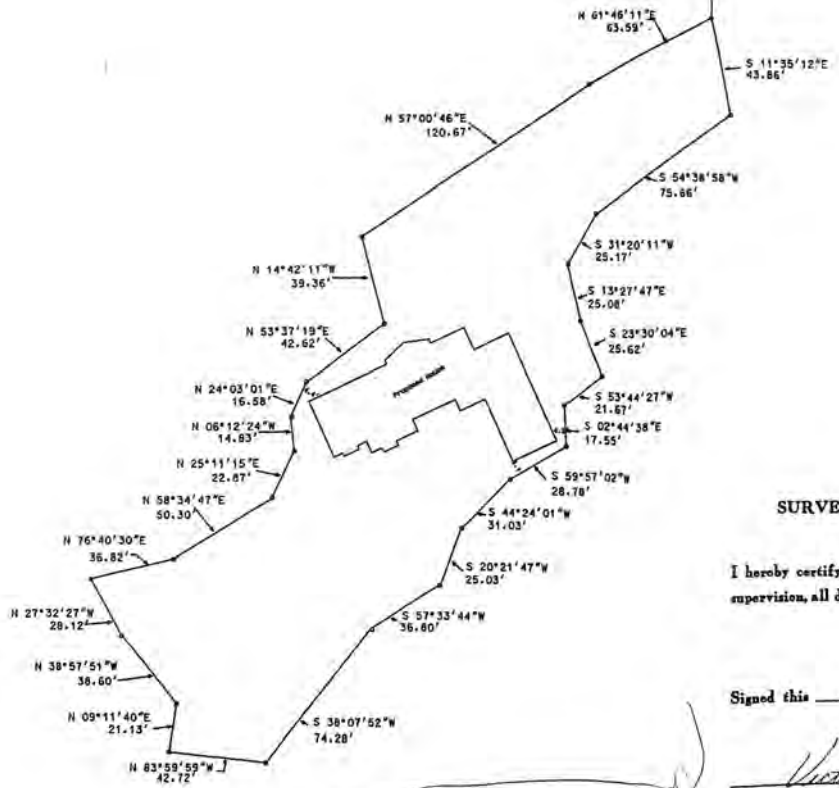
PLOT PLAN

ED KLIEN PROPERTY

All data pertaining to the survey of this data was obtained from the Letter of Map Amendment, filed in the Lancaster County, Register of Deeds office, as instrument number 93-11005.

Please note, the letter of map amendment was accepted in a letter recieved by the Nebraska Natural Resources Commission August 16, 1993. At that time FEMA did remove said parcel surveyed in a letter of map amendment Attachment, from the flood way.

S 00°00'00"E
418.09'



SCALE = 1" = 40'

SURVEYORS CERTIFICATE

I hereby certify that the above Plot Plan was prepared by me, or under my direct supervision, all dimensions are in feet and hundredths of a feet.

Signed this 20th day of _____ 1998

NEBRASKA REGISTERED LS-461 LAND SURVEYOR VICTOR A. BEENBLOSSOM

Victor A. Beenblossom RLS • 461