Lincoln-Lancaster County Health Department

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

Permit

SEWAGE INSTALLATION
SEPTIC SYSTEM

Permit # 00380215401

Issued 03/13/00
Expires 09/13/00
Revenue Code 3157

FEES: $150.00

Establishment

HIMARK GOLF COURSE
T9N R7E SEC 11 QTR SE
HIMARK ESTATES NE1/4
S 98 ST & MERION CIRCLE

Permitee

ATTN DAVE LAMMLE
HIMARK GOLF COURSE
8901 AUGUSTA DR
LINCOLN NE 68520

TOTAL: $150.00

Leon F. Vinci, MPH, Health Director

• POST IN A PROMINENT PLACE • NOT TRANSFERABLE

011930

DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 08 2000

RECEIVED

A

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

Permit Number: 00380154

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 S. 98th St. & Merion Circle (no rural route) City Lincoln NE, Zip 68510

Legal Description NE (1/4) SE (1/4) 11 (Section), T9N (Township), R7E (Range) HiMark Estates (Subdivision) NA (Addition) NA (Block) NA (Lot)

Geographical Location (if known): Longitude _____ Latitude _____

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

B. Owner

Name HiMark Golf Course Attn: Dave Lamme Signature Dave Lamme

Address 8901 Augusta Dr. City/State/Zip Lincoln, NE 68520

☐ Check if owner designed system Home Phone 488-7888 Work Phone 560-0583

C. Contractor

Name _____ 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 Dan Muhleisen PE-6367 Firm D&M Development, L.L.C. Work Phone (402) 483-5831

E. This System Will Serve a

☐ Residential Dwelling Number of Bedrooms _____ Is there a Whirlpool Bathtub YES (NO)

☒ Commercial Establishment/Other Facility Specify Golf Course Restroom

Design flow in gallons per day 120 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 3/13/00 Date frwd 3/13/00 ACTION ☒ Approved ☐ Disapproved Signature Jerrold C. Hood
2. **Supt. Bldg. Insp. or Village Clerk** Date rec'd 3/13/00 Date frwd 3/13/00 ACTION ☒ Approved ☐ Disapproved Signature _____
3. **City or County Engineer** Date rec'd 3-13-00 Date frwd 3-13-00 ACTION ☒ Approved ☐ Disapproved Signature _____

5/16/00 Need final drawing. J.C.H.

Installation Final Written Approval

By Jerrold C. Hood R.E.H.S.

Date OCTOBER 23, 2000

Business Office Use Only

Date Rec'd 03/13/00

Amt Paid 150.00

Rec'd By _____ Cash/Check No. 8123

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

Hi'MARK

Soil Absorption Test Data Report

Percolation Test Data

Hole No.	Hole Depth (in.)	Saturation Period				Percolation Readings						Results		
		Start Date Mo./Day	Time	End Date Mo./Day	Time	Start Date Mo./Day	Time	Depth to Water (in.)	End Date Mo./Day	Time	Depth to Water (in.)	Elapsed Time (min.)	Water Level Drop in.	Perc. Rates (min./in)
1	36"	11/15/99	11:00 AM	11/16/99	8:00 AM	11/16/99	08:20 AM	19.500	11/16/99	08:50 AM	19.500	30	0.000	0.0
						11/16/99	08:50 AM	18.250	11/16/99	09:20 AM	18.250	30	0.000	0.0
						11/16/99	09:20 AM	18.250	11/16/99	09:50 AM	18.375	30	0.125	240.0
						11/16/99	09:50 AM	16.250	11/16/99	10:20 AM	16.375	30	0.125	240.0
						11/16/99	10:20 AM	16.375	11/16/99	10:50 AM	16.500	30	0.125	240.0
						11/16/99	10:50 AM	16.500	11/16/99	11:20 AM	16.500	30	0.000	0.0
						11/16/99	11:20 AM	16.500	11/16/99	11:50 AM	16.625	30	0.125	240.0
						11/16/99	11:50 AM	16.625	11/16/99	12:20 PM	16.625	30	0.000	0.0
2	36"	11/15/99	11:00 AM	11/16/99	8:02 AM	11/16/99	08:22 AM	18.500	11/16/99	08:52 AM	18.500	30	0.000	0.0
						11/16/99	08:52 AM	17.625	11/16/99	09:22 AM	17.625	30	0.000	0.0
						11/16/99	09:22 AM	17.625	11/16/99	09:52 AM	17.625	30	0.000	0.0
						11/16/99	09:52 AM	17.625	11/16/99	10:22 AM	17.750	30	0.125	240.0
						11/16/99	10:22 AM	17.750	11/16/99	10:52 AM	17.875	30	0.125	240.0
						11/16/99	10:52 AM	17.875	11/16/99	11:22 AM	17.875	30	0.000	0.0
						11/16/99	11:22 AM	17.875	11/16/99	11:52 AM	17.875	30	0.000	0.0
						11/16/99	11:52 AM	17.875	11/16/99	12:22 PM	18.000	30	0.125	240.0
3	36"	11/15/99	11:00 AM	11/16/99	8:04 AM	11/16/99	08:24 AM	17.500	11/16/99	08:54 AM	18.375	30	0.875	34.3
						11/16/99	08:54 AM	17.250	11/16/99	09:24 AM	18.250	30	1.000	30.0
						11/16/99	09:24 AM	18.250	11/16/99	09:54 AM	19.000	30	0.750	40.0
						11/16/99	09:54 AM	15.500	11/16/99	10:24 AM	16.500	30	1.000	30.0
						11/16/99	10:24 AM	16.500	11/16/99	10:54 AM	17.500	30	1.000	30.0
						11/16/99	10:54 AM	16.500	11/16/99	11:24 AM	17.500	30	1.000	30.0
						11/16/99	11:24 AM	17.500	11/16/99	11:54 AM	18.000	30	0.500	60.0
						11/16/99	11:54 AM	18.000	11/16/99	12:24 PM	18.625	30	0.625	48.0

+ Use 480 min/in for Calculating the Average Perc. Rate

Project:	Himark Golf Course
Location:	98th Between Pioneers & Old Chene
Job No.:	99-0877.01

MAR 17 '00 08:59 NEBR ENVIRON QUALITY 402*4712909 P.9

Hi Mark

Soil Absorption Test Data Report

Percolation Test Data

Hole No.	Hole Depth (in.)	Saturation Period: Start Date Mo./Day	Saturation Period: Time	Saturation Period: End Date Mo./Day	Saturation Period: Time	Percolation Readings: Start Date Mo./Day	Percolation Readings: Time	Percolation Readings: Depth to Water (in.)	Percolation Readings: End Date Mo./Day	Percolation Readings: Time	Percolation Readings: Depth to Water (in.)	Results: Elapsed Time (min.)	Results: Water Level Drop in.	Results: Perc. Rate (min /in)
4	36"	11/15/99	11:00 AM	11/16/99	08:06 AM	11/16/99	08:26 AM	17.750	11/16/99	10:36 AM	17.875	30	0.125	240.0
						11/16/99	08:56 AM	17.875	11/16/99	11:06 AM	17.875	30	0.000	0.0
						11/16/99	09:26 AM	17.875	11/16/99	11:36 AM	18.000	30	0.125	240.0
						11/16/99	09:56 AM	18.000	11/16/99	12:06 PM	18.000	30	0.000	0.0
						11/16/99	10:26 AM	18.000	11/16/99	12:36 PM	18.250	30	0.250	120.0
						11/16/99	10:56 AM	18.250	11/16/99	01:06 PM	18.375	30	0.125	240.0
						11/16/99	11:26 AM	15.500	11/16/99	01:36 PM	15.625	30	0.125	240.0
						11/16/99	11:56 AM	15.625	11/16/99	02:06 PM	15.750	30	0.125	240.0
5	36"	11/15/99	11:00 AM	11/16/99	8:08 AM	11/16/99	08:28 AM	15.000	11/16/99	10:38 AM	15.125	30	0.125	240.0
						11/16/99	08:58 AM	14.750	11/16/99	11:08 AM	15.000	30	0.250	120.0
						11/16/99	09:28 AM	15.000	11/16/99	11:38 AM	15.250	30	0.250	120.0
						11/16/99	09:58 AM	15.250	11/16/99	12:08 PM	15.500	30	0.250	120.0
						11/16/99	10:28 AM	15.500	11/16/99	12:38 PM	15.750	30	0.250	120.0
						11/16/99	10:58 AM	15.750	11/16/99	01:08 PM	15.875	30	0.125	240.0
						11/16/99	11:28 AM	15.750	11/16/99	01:38 PM	16.000	30	0.250	120.0
						11/16/99	11:58 AM	16.000	11/16/99	02:08 PM	16.125	30	0.125	240.0
6	36"	11/15/99	11:00 AM	11/16/99	8:10 AM	11/16/99	08:30 AM	17.125	11/16/99	10:40 AM	18.375	30	1.250	24.0
						11/16/99	09:00 AM	17.250	11/16/99	11:10 AM	18.500	30	1.250	24.0
						11/16/99	09:30 AM	16.750	11/16/99	11:40 AM	18.500	30	1.750	17.1
						11/16/99	10:00 AM	18.500	11/16/99	12:10 PM	19.875	30	1.375	21.8
						11/16/99	10:30 AM	14.625	11/16/99	12:40 PM	16.750	30	2.125	14.1
						11/16/99	11:00 AM	16.750	11/16/99	01:10 PM	18.250	30	1.500	20.0
						11/16/99	11:30 AM	16.000	11/16/99	01:40 PM	17.500	30	1.500	20.0
						11/16/99	12:00 PM	17.500	11/16/99	02:10 PM	18.500	30	1.000	30.0

Project:	Himark Golf Course
Location:	98th Between Pioneers & Old Chene
Job No.:	99-0877.01

MAR 17 '00 09:00 NEBR ENVIRON QUALITY 402*4712909 P.10

Hi Mark

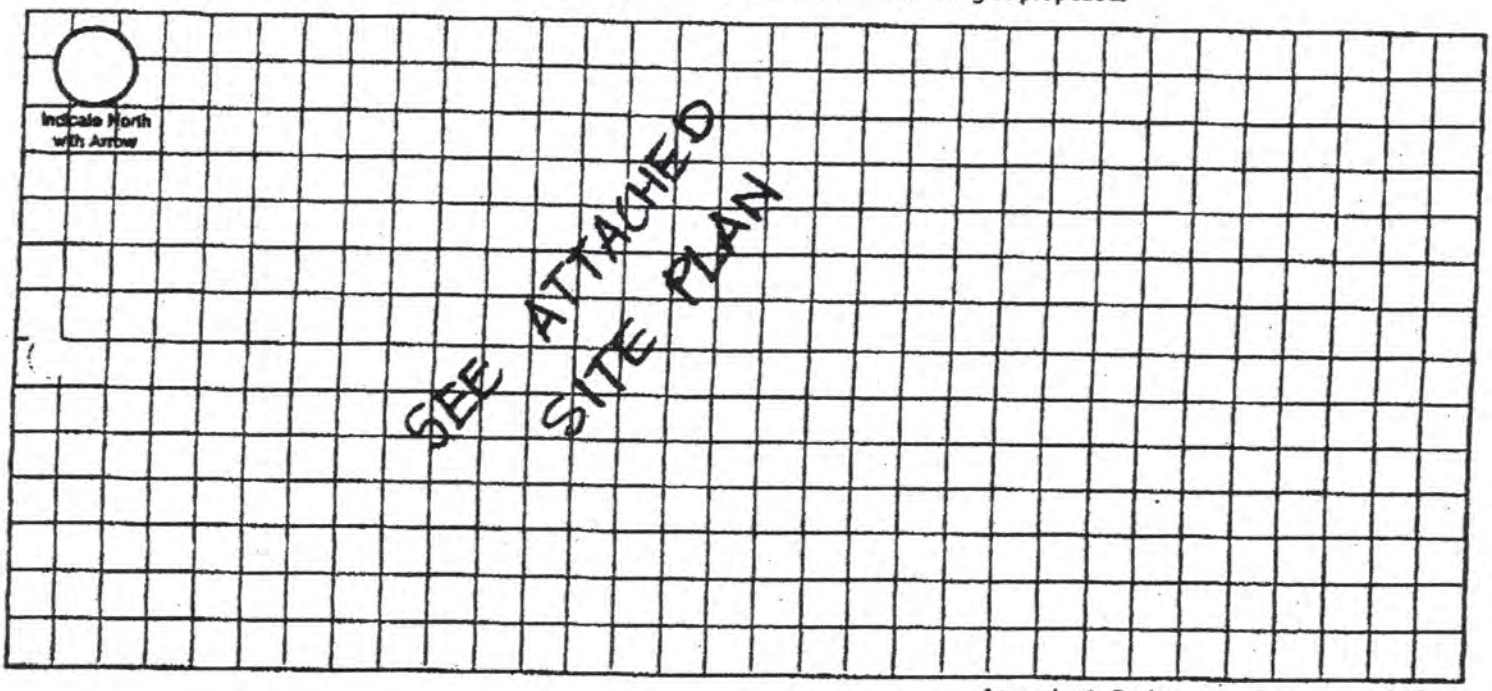
Lincoln-Lancaster County Health Department
Environmental Health Division
3140 "N" Street • Lincoln, NE 68510-1514
Phone: 402-441-8022

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 lines

A. System Location (Indicate correct number and street)

Address (no rural route) S. 98th St. & Merion Circle City Lincoln NE, Zip 68520

B. Proposed Septic Tank/s

(k Material: ☐ Concrete ☒ Plastic ☐ Other ____

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

Percolation Rate ~~2,850 min/in Well~~ 240 min/in Average (min. per inch) Soil Type: BpF – Burchard Land Slope: 10 %

Type of Absorption System: ☐ Trench ☒ Bed ☐ Other ____

Total Square Feet of Field Required: 376.7 sq. ft.

Type of Lateral: ☐ Half-Moon ☐ Perforated Pipe ☒ Other Lateral Material: See Attached Exhibit "A"

Capacity of Septic Tank 1000 gals Number of Absorption Beds: 1 Number of Distribution Laterals per Bed 3

Total Length of Laterals 50 ft. Number of Trenches 1 Trench Width 8 ft

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 ☐~~	~~300 ☐~~	~~50 ☐~~	~~N/A ☐~~	~~30 ☐~~	~~50 ☐~~	~~100 ☐~~	~~200 ☐~~	☐

E. Required Signatures

~~Home Building Contractor~~ Owner Dave Lamuda Date 2/18/00

Installer ____ Date ____

FORM 23-102 10-96

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

D

Permit Number:

Sewage Disposal System
As Built Plans & Specifications

This is for restroom addition to golf course on So 98th Between Old Cheney Rd. & Pioneers Blvd.

Date 5- -00

HI-MARK Golf Course 9th Hole Relief Station

System Location (Indicate correct number and street)

Address 8901 Augusta Dr. (no rural route) City LINCOLN NE, Zip 68520

A. Building Sewer

1. Material: Sch 40 PVC
   Diameter: 4" in.
2. Distance above basement floor: _____ in.
   or distance below basement floor: 9 in.
3. Distance between dwelling and septic tank: 13 ft.
4. Number of clean-outs: 1
5. Distances to: well or suction line >50 ft.
   stream NA ft.
   pressure line >20 ft.
   property line >5 ft.

B. Septic Tank

1. Material: Concrete
   Number of compartments: 1
2. Capacity: 1,000 gal.
3. Factory built: ☒ Yes ☐ No
4. Manholes: Over inlet, diameter 6X9 in.
   Over outlet, diameter 6X9 in.
   Riser: ☐ above ☒ below grade 11 in.
5. Inlet: ☒ baffle ☐ tee
6. Outlet: ☒ baffle ☐ tee
7. Depth to top of tank, below unfinished grade: 33 in.
8. Distances to: Well or suction line >50 ft.
   Stream >50 ft.
   Pressure line >25 ft.
   Property line >5 ft.

C. Distribution Box

1. Material: _____
   Number available outlets: _____
2. Factory built: ☐ Yes ☐ No
3. Distance from septic tank: _____ ft.

D. Absorption Field

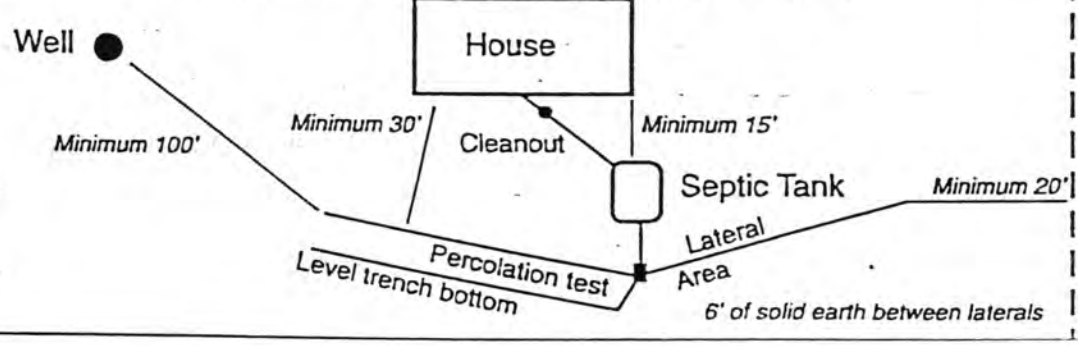
(Provide as-built drawings on back of this form)

1. Type: ☒ Half rounds ☐ Perforated pipe
   Diameter of half round: _____
   or perforated pipe: _____
   Material: ☐ fiberglass ☒ plastic ☐ concrete
   ☐ other Infiltrator
2. Lateral lines: Number 1
   Length of each line: 5 ft. _____ ft.
   _____ ft. _____ ft., _____ ft.
3. Trench dimensions: Width 8 ft.
   Slope 0 in/100 ft.
   Average depth 31 in
4. Filter material: Road Gravel
   Depth of material 17 in.
5. Distances to: Well or suction line >100 ft.
   Stream >50 ft.
   Pressure line >50 ft.
   Property line >20 ft.

Complete "As Built" drawing on back of this form.

Scale North with Arrow

Individual Sewage System Design (Example)



HiMark Golf Course - Restroom
Wastewater Treatment Facility

Assumptions:

1) 65,000 rounds / yr.
2) 27 Hole golf facility
3) 65% of the rounds are 9 holes
4) 7.5 month golf season (March 15 - Nov. 1 = 225 days)
5) 50% of golfers use the restroom
6) Usage consists of 1.6 gallons of wastewater, plus 0.2 gallons from sink = 1.8 gallons

Usage:

9 Holes - (65,000 rounds/yr.)(65%)(1/225days)(50% use restroom)(1/3)
= 32 golfers/day

18 Holes - (65,000 rounds/yr.)(35%)(1/225days)(50% use restroom)(2/3)
= 34 golfers/day

Total Usage = 66 golfers/day

Average Daily Flow:

(66 golfers/day)(1.8 gallons/golfer) = 119 gallons/day

The soil profiles in this area of Lincoln do not readily permit water to be absorbed. Therefore, a system designed to take advantage of evapotransporation and limited seepage is being proposed. A seepage rate of 0.5 inches/day was used in sizing calculations. Preliminary treatment for the evapotransporation/absorption (ETA) field will be provided by a 1,000 gallon septic tank. The ETA field will be built as indicated on the attached Exhibit "A".

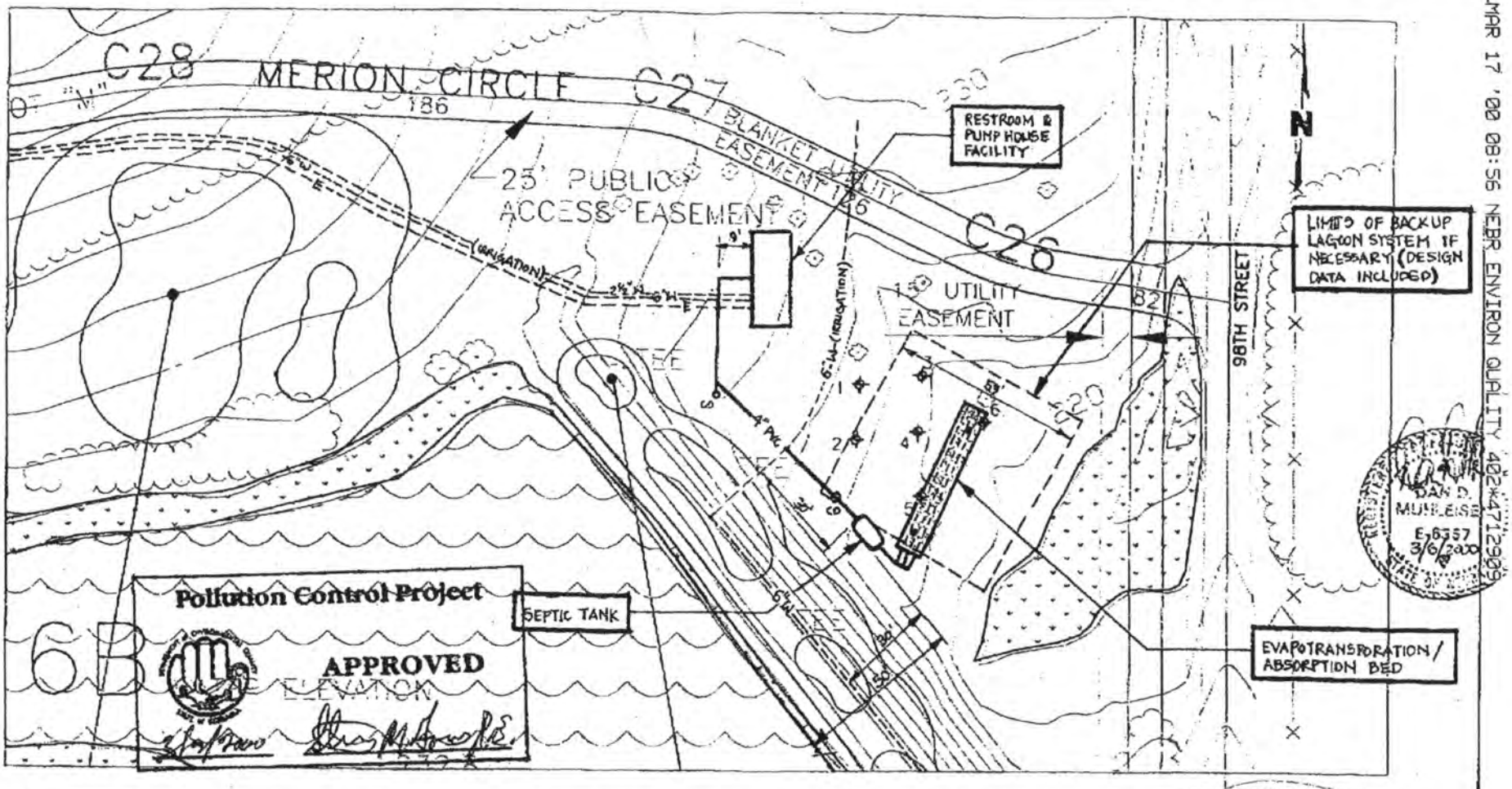
Design Assumptions:

Evaporation (in/yr) = 4
Lateral width (ft) = 8
Daily Loading (gal) = 120

Flow(gal/day)	Perc. Rate(in/day)	Evaporation(in/day)	Field Area Req'd(sf)	Lateral(ft)
120	0.5	0.0110	376.7	47

Build 50 ft. of lateral.

REGISTERED PROFESSIONAL ENGINEER
DAN D. MUHLEISEN
E-6367
3/6/2000
STATE OF NEBRASKA



NOTE:
DIAL BEFORE YOU DIG. CALL 1-800-331-5666 FOR LOCATION OF UNDERGROUND TELEPHONE, ELECTRIC, GAS MAINS, CABLEVISION AND CITY OF LINCOLN UTILITIES.

LEGEND

- PERCOLATION TEST LOCATION
- CO CLEANOUT
- MONITORING UNIT

HIMARK ESTATES
LINCOLN, NEBRASKA

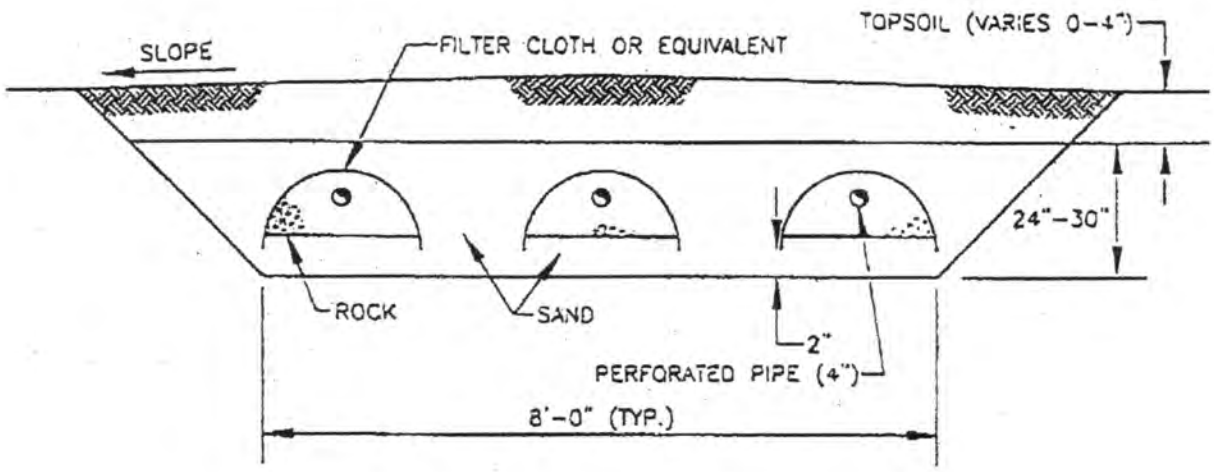
PERCOLATION LOCATION MAP	
SCALE: 1"=30'	DRAWN BY: JDS
DATE: 12/6/99	REVISIONS:
JOB #99-087.01	

MAR 17 '00 08:56 NEBR ENVIRON QUALITY 402*4712909

High Mark

EXHIBIT "A"

CROSS SECTION OF TYPICAL EVAPOTRANSPORATION/ABSORPTION BED



*NOTE: BEDS SHALL BE CONSTRUCTED WITH A LEVEL TRENCH BOTTOM

High Mark

Monitoring Unit

FLOAT ASSEMBLY

HiMark Golf Course
Design for Backup Lagoon System

Assumptions:

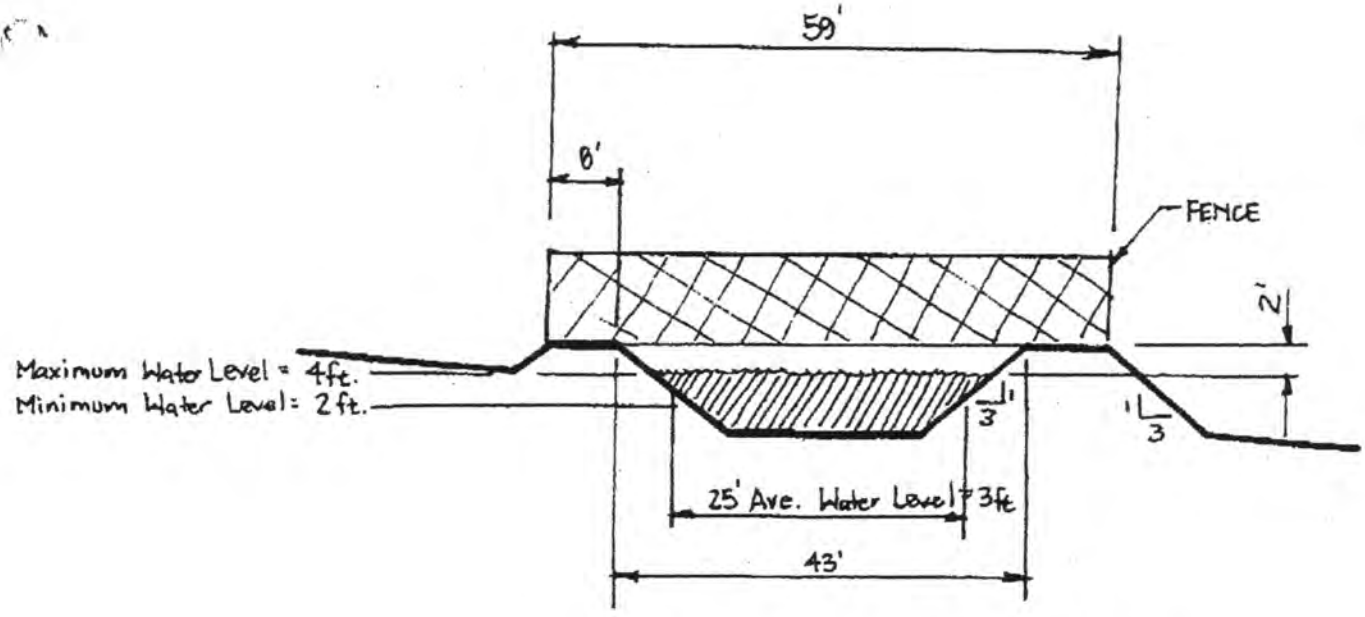
1) Seepage rate = 1/16in/day = 0.0625in/day
2) Rainfall = 30in/year
3) Evaporation = 42in/year
   Net loss = 12in/year = 0.0329in/day
   Total loss = 0.0625 + 0.0329 = 0.0954in/day
4) Minimum storage time 100 days
5) Maximum water level = 4ft
6) Minimum water level = 3ft
7) Flow rate = 120gal/day = 16.05 cubic ft/day

REGISTERED PROFESSIONAL ENGINEER
DAN D. MUHLEISEN
E-8367
3/16/2000
STATE OF NEBRASKA

Try a square lagoon with a surface area of 25ft X 25ft at the average water level of 3ft. Volume available = 1250 cubic ft, Surface area = 625ft.

Total water loss = 0.0954in/day / 12in/ft X 625 sq. ft.
= 4.97 cubic ft/day

Storage time available = $\frac{1250 \text{ cubic ft}}{(16.05 \text{ cubic ft/day} - 4.97 \text{ cubic ft/day})}$
= 112.8 days



LAGOON CROSS-SECTION