Lincoln-Lancaster County Health Department

ENVIRONMENTAL HEALTH DIVISION

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

nit
SEWAGE INSTALLATION
LAGOON

Permit # 02380247901

Issued 05/20/02
Expires 11/20/02
Revenue Code 3157

FEES: $200.00

TOTAL: $200.00

ablishment
MIKE POE
T7N R7E SEC 36
GOLDEN POND ESTATES LOT 3
29301 GOLDEN POND RD-FIRTH

rmittee
MIKE POE
8701 ROCA RD
ROCA NE 68430

Bruce D. Dart

Bruce D. Dart, Health Director

POST IN A PROMINENT PLACE • NOT TRANSFERABLE

002372

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

A

Permit Number: 02380247 9

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 2930/ Golden Pond Rd. (no rural route) City Firth NE, Zip Ne. 68358

Legal Description Lot 3, Golden Pond Estates, Firth, L.C.N.
1/4 1/4 Section Township Range Subdivision Addition Block Lot

Geographical Location (if known): Longitude 36 7N 7E Latitude

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

B. Owner

Name [illegible] Signature

Address 8701 Rock Rd. City/State/Zip Roca, Ne. 68430

☐ Check if owner designed system Home Phone 792.2266 Work Phone 580 4290

C. Contractor

Name Ascon Pumice Construction 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 Firm Work Phone

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 5/20/02 Date frwd ACTION ☒ Approved ☐ Disapproved Signature Jerrold C. Wood
2. **Supt. Bldg. Insp. or Village Clerk** Date rec'd 5-25-02 Date frwd ACTION ☒ Approved ☐ Disapproved Signature Michael A. Merfeld
3. **City or County Engineer** Date rec'd 5/29/02 Date frwd 5/29/02 ACTION ☒ Approved ☐ Disapproved Signature

10/11/02 Need drawing for C.H.

8/6/02 Lagoon + line 8/25/02 Lagoon construction approved
Need fence drawing + drainage system for embankment - need pad, marker fence + line mods.

Installation Final Written Approval

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

Date OCTOBER 15, 2002

Business Office Use Only

Date Rec'd 05/20/02

Amt Paid 200.00

Rec'd By JO Cash/Check No. 6703

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

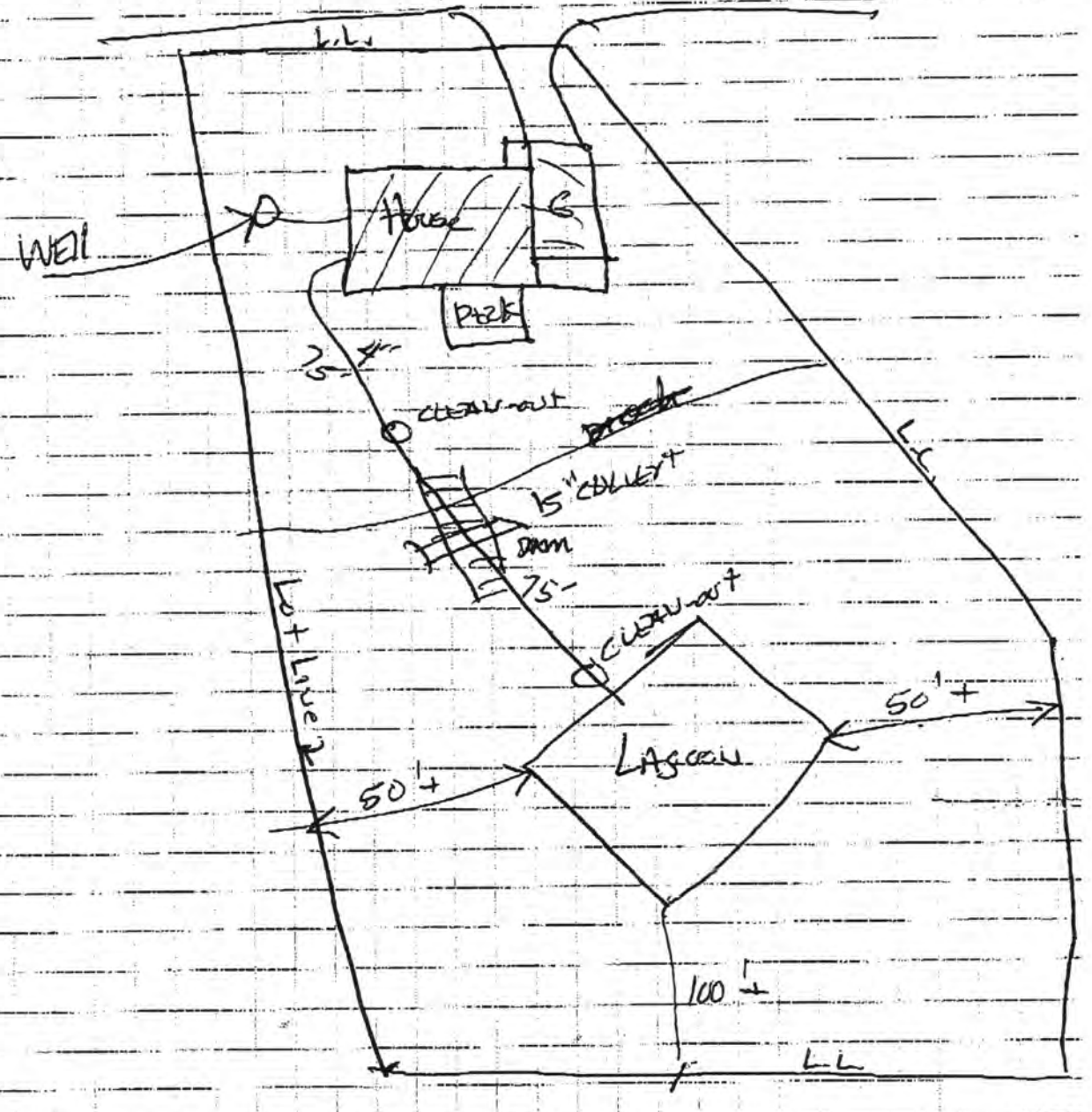
29301 S. Golden Pond Rd.
Firth, Ne. Lot 3, Golden Pond Estates,
Firth, Lancaster Co.

From: Poe Development Co.
Fax: 792.2269

SITE PLAN



Road (Golden Pond Rd.)



OCT 2 2002

ENGINEERING PLANNING SURVEYING

File No. 00-0280
September 27, 2002

LYLE L. LOTH, P.E./L.S.

Suite A - 601 Old Cheney Road
Lincoln, NE 68512
Phone (402) 421-2500
Fax (402) 421-7096
Email: lyle@espeng.com

Jerry Hood
Lincoln-Lancaster County Health Department

Re: Wastewater Lagoon for Lot 3, Gold Pond Estates

Dear Jerry,

With reference to Lot 3, Golden Pond Estates, Mike Poe asked me to evaluate the "dam" across the natural drainage that he has constructed to accommodate the 4" sewer line from the house to the lagoon system.

The "dam" is approximately 14 feet high and has a 6" PVC drain pipe installed at its base (Assumed Elevation 100.0). The drainage area above the "dam" is about 5.68 acres.

I have calculated the 2 year and 100 year storm events to produce 10.69 cfs and 20.72 cfs respectively. Routing these 2 storm events through the holding pond, I have concluded that the 6" PVC drain line has adequate capacity to convey the discharge from both storm events without overtopping the "dam".

However, I have recommended to Mike that he install a 12" PVC at elevation 111.0 which would function as an emergency spillway in the event the 6" drain were to become obstructed.

With the addition of this 12" PVC overflow, I believe that this "dam" will provide adequate protection for the 4" sewer line. Copies of the calculations are enclosed for your review.

E-S-P, Inc.
Engineering-Surveying-Planning

Lyle L. Loth, P.E.

HYDROGRAPH REPORT

RECORD NUMBER : 7
TYPE : UNIV. RATIONAL
DESCRIPTION : 2 YR STORM

[HYDROGRAPH INFORMATION]

Peak Discharge	=	10.69 (cfs)
Volume	=	0.39 (acft)
Time Interval	=	1 (min)
Time to Peak	=	24.00 (min)
Time of Base	=	88.00 (min)
Multiplication factor	=	1.00

[RATIONAL HYDROGRAPH INFORMATION]

Runoff Coefficient	=	0.40000
Receding limb factor	=	1.00000

[BASIN DESCRIPTION]

Watershed Area	=	5.68 (ac)
Runoff coefficient	=	0.40

[TIME CONCENTRATION -- USER DEFINED]

Time of Concentration	=	8.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type	=	SYNTHETIC
Total Precipitation	=	0.63 (in)
Return Period	=	2 (yr)
Storm Duration	=	0.13 (hr)

HYDROGRAPH REPORT

RECORD NUMBER : 8
TYPE : UNIV. RATIONAL
DESCRIPTION : 100 YR STORM

[HYDROGRAPH INFORMATION]

Peak Discharge	=	20.72 (cfs)
Volume	=	0.75 (acft)
Time Interval	=	1 (min)
Time to Peak	=	24.00 (min)
Time of Base	=	88.00 (min)
Multiplication factor	=	1.00

[RATIONAL HYDROGRAPH INFORMATION]

Runoff Coefficient	=	0.40000
Receding limb factor	=	1.00000

[BASIN DESCRIPTION]

Watershed Area	=	5.68 (ac)
Runoff coefficient	=	0.40

[TIME CONCENTRATION -- USER DEFINED]

Time of Concentration	=	8.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type	=	SYNTHETIC
Total Precipitation	=	1.22 (in)
Return Period	=	100 (yr)
Storm Duration	=	0.13 (hr)

HYDROGRAPH REPORT

RECORD NUMBER : 10
TYPE : RESER STOR. IND
DESCRIPTION : ROUTING 2 YR STORM THRU LOT 3

[HYDROGRAPH INFORMATION]

Peak Discharge	=	2.17 (cfs)
Volume	=	0.39 (acft)
Time Interval	=	1 (min)
Time to Peak	=	53.00 (min)
Time of Base	=	202.00 (min)
Peak Elevation	=	106.85 (ft)

[INFLOW HYDROGRAPH INFORMATION]

Hydrograph #	=	7
Hydrograph Description	=	2 YR STORM

HYDROGRAPH REPORT

RECORD NUMBER : 9
TYPE : RESER STOR. IND
DESCRIPTION : ROUTING 100 YR STORM THRU LOT 3 POND

[HYDROGRAPH INFORMATION]

Peak Discharge	=	2.73 (cfs)
Volume	=	0.75 (acft)
Time Interval	=	1 (min)
Time to Peak	=	79.00 (min)
Time of Base	=	295.00 (min)
Peak Elevation	=	110.78 (ft)

[INFLOW HYDROGRAPH INFORMATION]

Hydrograph #	=	8
Hydrograph Description	=	100 YR STORM

RESERVOIR REPORT

RECORD NUMBER : 1
STORAGE TYPE : MAN STAGE/AREA
DISCHARGE TYPE : COMP STAGE/DISC
DESCRIPTION : LOT 3 GOLDEN POND

[RATING CURVE LIMIT]

Minimum Elevation..... = 100.00 (ft)
Maximum Elevation..... = 114.00 (ft)
Elevation Increment..... = 1.00 (ft)

[STAGE STORAGE INFORMATION]

Input file = NULL
Output file = NULL

[Manual Contour Area vs. Elevation]

ELEVATION (ft)	CONTOUR AREA (sqft)
100.00	100.00
114.00	5000.00

[STAGE DISCHARGE INFORMATION]

OUTLET STRUCTURE:
STR # : 1
TYPE : CIRCULAR CONCRETE w/ groove end projecting
DESCRIPTION : POND DRAIN LINE

STR # : 2
TYPE : CIRCULAR CONCRETE w/ groove end projecting
DESCRIPTION : OVERFLOW PIPE- LOT 3 GOLDEN POND

OUTLET STRUCTURE REPORT

RECORD NUMBER : 1
TYPE : CIRCULAR CONCRETE w/ groove end projecting
DESCRIPTION : POND DRAIN LINE

[RATING CURVE LIMIT]

Minimum Elevation	=	100.00 (ft)
Maximum Elevation	=	114.00 (ft)
Elevation Increment	=	1.00 (ft)

[OUTLET STRUCTURE INFORMATION]

Circular Radius	=	0.25000 (ft) 6" PVC
Culvert Length	=	30.00000 (ft)
Culvert Invert Elevation	=	100.00000 (ft)
Slope	=	0.01000 (ft/ft)
Manning's n-value	=	0.01200
Entrance Loss Coefficient	=	0.60000
Tailwater Elevation	=	100.00000 (ft)
Number of barrels	=	1

[UNSUBMERGED EQUATION]

H/Diam = Hc/Diam + K *(Q/A*Diam^0.5))^M - 0.5*S^2

Coefficient K	=	0.00450
coefficient M	=	2.00000

[SUBMERGED EQUATION]

H/Diam = c*(Q/(A*Diam^0.5))^Z + Y - 0.5*S^2

Coefficient c	=	0.03170
Coefficient Y	=	0.69000

[DEFINITIONS]

H = Headwater depth, (ft)
Diam = Interior height of culvert barrel, (ft)
Hc = Specific head at critical depth (dc + Vc^2/2g), (ft)
Q = Discharge, (cfs)
A = Full cross sectional area of culvert barrel, (sqft)
S = Culvert barrel slope, (ft/ft)

OUTLET STRUCTURE REPORT

RECORD NUMBER : 2
TYPE : CIRCULAR CONCRETE w/ groove end projecting
DESCRIPTION : OVERFLOW PIPE- LOT 3 GOLDEN POND

[RATING CURVE LIMIT]

Minimum Elevation	=	100.00 (ft)
Maximum Elevation	=	114.00 (ft)
Elevation Increment	=	1.00 (ft)

[OUTLET STRUCTURE INFORMATION]

Circular Radius	=	0.50000 (ft) 12" PVC
Culvert Length	=	20.00000 (ft)
Culvert Invert Elevation	=	111.00000 (ft)
Slope	=	0.01000 (ft/ft)
Manning's n-value	=	0.01200
Entrance Loss Coefficient	=	0.60000
Tailwater Elevation	=	110.00000 (ft)
Number of barrels	=	1

[UNSUBMERGED EQUATION]

H/Diam = Hc/Diam + K *(Q/A*Diam^0.5))^M - 0.5*S^2

Coefficient K	=	0.00450
coefficient M	=	2.00000

[SUBMERGED EQUATION]

H/Diam = c*(Q/(A*Diam^0.5))^Z + Y - 0.5*S^2

Coefficient c	=	0.03170
Coefficient Y	=	0.69000

[DEFINITIONS]

H = Headwater depth, (ft)
Diam = Interior height of culvert barrel, (ft)
Hc = Specific head at critical depth (dc + Vc^2/2g), (ft)
Q = Discharge, (cfs)
A = Full cross sectional area of culvert barrel, (sqft)
S = Culvert barrel slope, (ft/ft)