FIELD EVALUATION SHEET

PRELIMINARY EVALUA	ATION DATE_18	-1-20, FIELD E	EVALUATION D	ATE 9-1-27	
PRELIMINARY EVALUATED PROPERTY OWNER: ADDRESS: 28555 LEGAL DESCRIPTION:	STAN & JUD	Y CARLSON	PHONE	- 30	,
LEGAL DESCRIPTION:	305 40 7[_CITY,STATE,ZIP:_	ATTICIN	MV 5643	
PIN# 04-0-0(64002 SEC	34 T46 R 25	TWP NAME (GLEN	to the second se
FIRE#LAKE/R	IVER		AKE CLASS	OHWL	F
DESCRIPT	TION OF SOIL TRE	ATMENT AREAS			
*	AREA #1	AREA #2	REFEREN	CE BM ELEV. 10	O F
DISTURBED AREAS COMPACTED AREAS	YES_NO	YES_NO	REFEREN	CE BM DESCRIP	TION
FLOODING	YESNO_\ YES_NO_\	YESNO_		LEVEL NE	
RUN ON POTENTIAL	YES NO	YES_NO_	COKNEK	of Cabin	
SLOPE %	0	I La Commission I V Commission			Production of the same
DIRECTION OF SLOPE				A CONTRACTOR CONTRACTO	Printered State (see Telephones representation of the State (see S
LANDSCAPE POSITION					
VEGETATION TYPES	MOODED	American Ame			
DEPTH TO STANDING V	NATER OR MOTTI	FD SOIL BORING	#16+ 10	11 21/4 21	
					produced and the endpointed by the second
BOTTOM ELEVATION-F	FIRST TRENCH OF	R BOTTOM OF ROO	CK BED: #1	FT., #2	FT.
SOIL SIZING FACTOR:	CITE #4 1 17	A1777 11A	ו מר		-
JOIL SIZING PACTUR.	SIIE#1 . AI	, SIIE #2_	1.4		
CONSTRUCTION RELATE	DISSUES: PRES	SURE BED	11650	compo Ta	VCA
CONSTRUCTION RELATE	" OF ROCK I	UNITER PIPE	= 1.000	COM IA	
104 127		9	- JA	٠. ٥	
.ic# 127	SITE EVALUATO	OR SIGNATURE: OG	was John	ngud	Managaran
SITE EVALUATOR NAME:	LARRY LIL	JENOUIST T	TELEPHONE#	218 820	2886
				1.0 000	
UG REVIEW			DATE		
comments:					
	-				
	SOIL BORIN	G LOGS ON REVE	PSE SIDE		
		~ mv vv via izm A mi	INUL VILL		

PRESSURE DISTRIBUTION SYSTEM

- Select number of perforated laterals _ 3
- 2. Select perforation spacing = 4 3 ft
- 3. Since perforations should not be placed closer than 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length.

Rock layer length - 2 ft = 31 ft

Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down to nearest whole number.

Perforation spacing = 37 ft = 13 spaces

Number of perforations is equal to one plus the number of perforation spaces(4). Check figure E-4 to assure the number of perforations per lateral guarantees <10% discharge variation.

 $_{\rm spaces} + 1 = 13$ perforations/lateral

A. Total number of perforations = perforations per lateral (5) times number of laterals (1)

13 perfs/lat x 3 lat = 39 perforations

 B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades.

Rock bed area = rock width (ft) x rock length (ft)

10 It x 39 ft = 390 sqft Square foot per perforation = Rock bed area ÷ number of perfs (6)

390 sqft ÷ 39 perfs = 10 sqft/perf

7. Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforation (see figure E-6)

perfs x .74 gpm/perfs = 29

If laterals are connected to header pipe as shown on upper 8. example, to select minimum required lateral diameter; enter figure E-4 with perforation spacing (2) and number of perforations per lateral (5) Select minimum diameter for perforated lateral = 1.25 inches.

If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = _____ inches.



Perf Sizing 3/16" - 1/4" Perf Spacing 1.5'- 5'

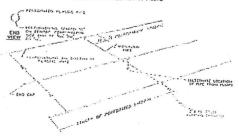
E-4: Maximum allowable number of 1/4-inch perforations per lateral to guarantee <10% discharge variation

	- P 19	T	1	The same of the sa	
	perforation				
-	spacing				
-	(feet)	1 inch	1.25 inch	1.5 inch	2.0 inch
Manage Land					
This seems	2.5	8	14	18	28
Actorishment	3.0	8	13	17	26
Section of Persons	3.3	7	12	16 ,	25
-	4.0	7	11	15	23
	5.0	6	10	14	22
_					-

E-6: Perfo	ration D	ischarge	in gpm			
perforation diameter head (inches)						
(feet) 1/8 3/16 7/32 1/4						
1.00	0.18	0.42	0.56	0.74		
2.0b	0.26	0.59	0.80	1.04		
5.0	0.41	0.94	1.26	1.65		
a Use 1.0 foot for single-family homes. b Use 2.0 feet for anything else.						

MANIFOLD LOCATED AT END OF PRESSURE DISTRIBUTION SYSTEM





I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

(signature) 127 (license #) 10-1-20 (date)

TRENCH AND BED WORKSHEET

1. AVERAGE DESIGN FLOW	A	-1: Esti	mated Sewa	ge Flows in Go	allons p	er Day	
A. Estimated 300 gpd (see figure A-1)	1	umber	1		T		
or measured $\underline{\hspace{0.1cm}} \times \underline{1.5}$ (safety factor) = $\underline{\hspace{0.1cm}}$ gpd	b	edroon	1		Clos 18		Class IV
B. Septic tank capacity 1000 gal (see figure C-1)		2	300 450		21		60% of the
b. Depite that capacity gui total i and i		4	600	375	25	1	values
D. COTY C (C') - 1 - 1' - 1 - 1		5	750	450	29	A	in the
2. SOILS (Site evaluation data)		6	900	525	33		Class I.
C. Depth to restricting layer =ft,		7	1050 1200	600	37		II, or III columns.
D. Max depth of system I tem $2C-3$ ft = ft - 3 ft = ft		0	1200	0/3	1 40	10	JOIGHTHS.
E. Texture SANDY LOPP Colation rate 6-15 MPI							
F. Soil Sizing Factor (SSF) 1. 27 sqft/gpd (see figure D-15)	C-1: S	eptic Tar	ak Copocities (it	n golfons)			
G. % Land Slope 6 %	Number	rof I	Minimum Liquid	Liquid capaci	ty with I	Liquid ca with disp	
J. Wildid Olope	Bedroo	ms	Capacity	garbage disp	osal	lift îns	
2 TRENCH PED BOTTOM A DEA	2 or le		750 1000	1125		1500	
3. TRENCH or BED BOTTOM AREA	3 or 4	6	1500	2250	1	2000 3000	
H. For trenches with 6 inches of rock below the pipe:	7. 8 or	-	2000	3000		4000	
$A \times F = gpd \times gpd = sqft$,		* 2			
I. For trenches with 12 inches of rock below the pipe:		D-1	5: Soil Char	acteristics an	d Soil:S	izing	
$A \times F \times 0.8 = gpd \times sqft/gpd \times 0.8 = sqft$			tor (SSF) (> 3	(separation)		ing Facto	-
J. For trenches with 18 inches of rock below the pipe:		min	ites per inch	Soil Texture		eel/gallo sqft/gpd	
$A \times F \times 0.66 = gpd \times gpd \times 0.66 = sqft$		(mpi	-		3	saft/gpd	7
K. For trenches with 24 inches of rock below the pipe:		faste 0.1 to	r than 0.1°	Coarse sand Medium sand	0.83 0.83		
$A \times F \times 0.6 = \underline{\hspace{1cm}} \text{gpd} \times \underline{\hspace{1cm}} \text{sqft/gpd} \times 0.6 = \underline{\hspace{1cm}} \text{sqft}$		0.1 to	5~	Loamy sand Fine sand Sandy loam	1.67 1.27		
L. For gravity beds with 6 or 12 inches of rock below the pipe;		16 to 3	30	Loam Silt loam	1.67		
$1.5 \times A \times F = 1.5 \times gpd \times sqft/gpd = sqft$		46 to		Silt Clay loam	2.20		1
For pressure beds with 6 or 12 inches of rock below the pipe;		46 10	1	Sandy clay Silty clay	220		1
		over	67 to 120***	Clav	4.20		
$A \times F = 300 \text{gpd} \times 1.3 \text{sqft/gpd} = 381 \text{sqft}$		slow	er than 120****	Sandy clay Silty clay	ĺ		
		*Use	systems for rap	odly permeable	soils:		-
4. DISTRIBUTION (Check all that apply)		1 same	rave distribution	or savial district	systemath tors	ith	
Bed (< 6% slope) Drop boxes (any slope) Rock	٠	**Soi	each >25% of th I having 50% or mound must be	more fine sand used.	plus ver	y fine sar	143
Trenches Distribution box (< 3%) Chamber			n other or perfe				
Y Pressure Gravity Gravelless							
•		I D.	: Soil Charac	tarieties and S	ini) sizi	70	
5. SYSTEM WIDTH, LENGTH and VOLUME		1 0.5	factors (SSF)	for Gravelles	s Pipe	6	
M. Select trench width = 10 ft		per (m	colation rate inutes/inch)	soil texture	lineal i	feet/ /day	
N. If using rock, divide bottom area by width: (H, I, J,K or L) ÷ M =			ter than 0.1 "	Coarse Sand			•
381 sqft ÷ 10 ft= 38.1 lineal feet			0.1 to 5	Medium Sand Loamy Sand	0.2		
			0.1 to 5 6 to 15	Fine Sand ** Sandy Loam	0.4	2 }	
Rock depth below distribution pipe plus 0.5 foot times bottom area:			16 to 30 31 to 45	Silt Loam	0.5	2	
Rock depth in feet + 0.5 feet x Area (H,I,J,K, or L)			46 to 60 C	lay Loam (CL)	0.7	4	
$(.5 \text{ ft} + 0.5 \text{ ft}) \times 38 \text{ sqft} = 361 \text{ cuft}$		l alon	ver than 60°°°	Sandy CL Silty CL			
Volume in cubic yards = cuft ÷27		2104	ver annitio.	Sandy Clay Silty Clay			
38 cuft $\div 27 = 14$ cuyds		*Soil to	oò coarse for sev				
Weight of rock in tons = cubic yds x 1.4		"Spil	systems for fap having 50% or n	ldly permeables nore line sand +	oils. very fine	sand.	
14 cuyds $\times 1.4 = 19.6$ tons		***Soil	oò coarse für sev systems for rap having 50% or n twith too high a allation of a stan	percentage of cli dard inground s	sy for ystem.		
O. If using 10" Gravelless Pipe, Flow (A) x Gravelless SSF(see figure D-9)		4		ressessesses			
gpd xlineal feet/gpd = lineal feet			27.74	of other sections] T Bet Co		
P. If using Chambers, H,I,J, or K(based on hieght of chamber slats) ÷			11140		F Dist. 71	1po	
width of chamber in feet(M)			500				
sqft ÷ft= lineal ft			10000				
AMAZONA ST.			127		6-24" R		
6. LAWN AREA			os na		3/4-21	12	
			in the				
Q. Select trench spacing, center to center =feet			141.0	18-36 Width			
R. Multiply trench spacing by lineal feet R x Q = sqft of lawn area							
10 ft \times 38.1 ft = 381 sqft			1.1. (
7. Include a drawing with scale (one inch =ft). Show pertinent b	oounc	laries	, right of	way, easei	nents	5,	
location of house, garage, driveway, all other imporvements, existing or pre-	opose	ed soi	il treatmer	nt system,	well	and	
dimensions of all elevations, setbacks and separation distances.	1700						
,							
I hereby certify that I have completed this work in accordance with applic	cable	ordin	ances. Ti	les and la	WS.		
•• •• •• •• •• •• •• •• •• •• •• •• ••		~ a V4 L4	10				
Jan 20 127 0	1:	14)	10-1	-70	: /.1-	ital	
Jarry Lyngul (signature) 127 (ncens	e #)			(da	ile)	
		Name of the Association			-		1

1. Determine pump capacity:

A. Gravity distribution'

- Minimum required discharge is 10 gpm
- 2. Maximum suggested discharge is 45 gpm. For other establishments at least 10% greater than the water supply rate. but no faster than the rate at which effluent will flow out of the distribution device.
- B. Pressure distribution See pressure distribution work sheet

From A or B Selected pump capacity: 29

2.	Determine	numn	head	requirements:
మణ భ	TO CECTWEETING	pump	ncau	icumements.

A. Elevation difference between pump and point of discharge?	soil treatment syste
feet	& point of dischort
B. Special head requirement? (See Figure at right - Special Head Requirements) total pipe	Education
5 feet into 2	A. elevation
C. Calculate Friction loss pipe	difference
1. Select pipe diameter <u>a</u> in	
2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1).	

I.	Select pipe diameter of in
2.	Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1).
	Read friction loss in feet per 100 feet from Figure E-9
	Friction Loss = 1.55 ft/100ft of pipe
3.	Determine total pipe length from pump discharge to soil treat

discharge point. Estimate by adding 25 percent to pipe length for fitting loss. Total pipe length times 1.25 = equivalent pipe lengthfeet x 1.25 = 194 feet

4. Calculate total friction loss by multiplying friction loss (C2) in ft/100 ft by the equivalent pipe length (C3) and divide by 100. = .55 ft/100ft × 144 +100 = <math>2.25 ft

 Total head required is the sum of elevation difference (A), special head requirements (B), and total friction loss (C4)

__ft+ 2.35ft=

Total head: 19.35 feet

3. Pump selection

A pump must be selected to deliver at least ______ (1A or B) with at least 19. 25 feet of total head (2D)

Special Head	Requirements		
Gravity Distribu		0	ft
Pressure Distrib	oution	5	ft

E-9: Friction Loss in Plastic Pipe						
	Per 100 feet					
		nominal e diam				
gpm flow rate	1.5"	2"	3"			
20	2.47	0.73	0.11			
25	3.73	1.11	0.16			
30	5.23	1.55	0.23			
35	6.96	2.06	0.30			
40	8.91	2.64	0.39			
45	11.07	3.28	0.48			
50	13.46	3.99	0.58			
55	all desirations	4.76	0.70			
60		5.60	0.82			
65		6.48	0.95			
70		7.44	1.09			

I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

(signature)

(license #) 10 - 1 - 20 (date)

SOILS CHARTS FOR BOTH PROPOSED AND ALTERNATE SITES

1 (PROPOSED) SOILS DATA

2 (PROPOSED) SOILS DA "A

DEPTH	TEXTURE	MURSELL	
(INCHES)	i : , ; ; ; ; ; ; ;	COLOR	
0-8	TOPSOZL	10 4 R 3/1	
8-20	SANDY	1048 614 1048 5/4	
20-41	SAND	10485/4 LR	an ulai
41-71	SAND LOAM	10 YR 5/4	
^	DO REDO)X	

ONCHES IN THE	TEXTURE:	IM JASSETT
0-8	TOPSOUL	104R 3/1
8-24	SAMD	1078 6/4 1048 5/4
24-48	SAMD LOAM M±3k	10 tr 5/41
48-72	SAND	10 tr 5/6
	VO REC	10X

1 (ALTERNISTE SEILS DATA

·- '	-	:			100		
;	٠.	2	(ALTE	RWÁŢÈ	SOIL	S.DI	150

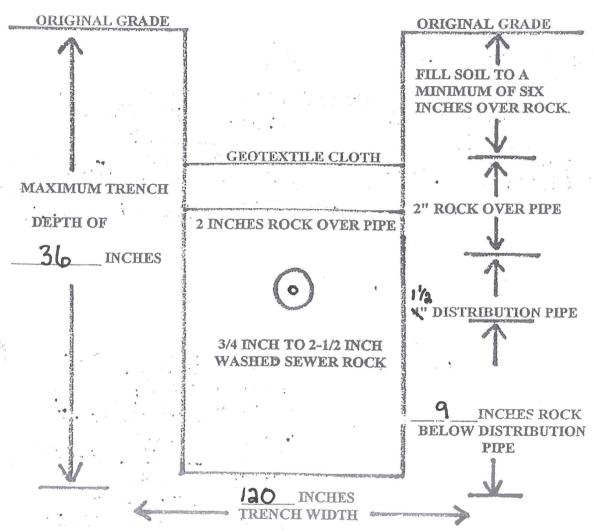
(INCHES)	2000 000 000000	COLOK
0-7	TOPSOIL	10 hr 3/,
	SANDY	10 YR 514
7 - 24	LOAM	10 18 5/4
24-36	SMAD	10 YR 414
36-52	SAND Y LDAM	10 HR 5/L
52-72	SAND	16th 5/3
NO	REDO	

DEF	7		URE	MI	NSELL	7 (T)
(INCH	S);	377-4-16		BE	NSELL.	
			1000	-		

TRENCH CROSS-SECTION

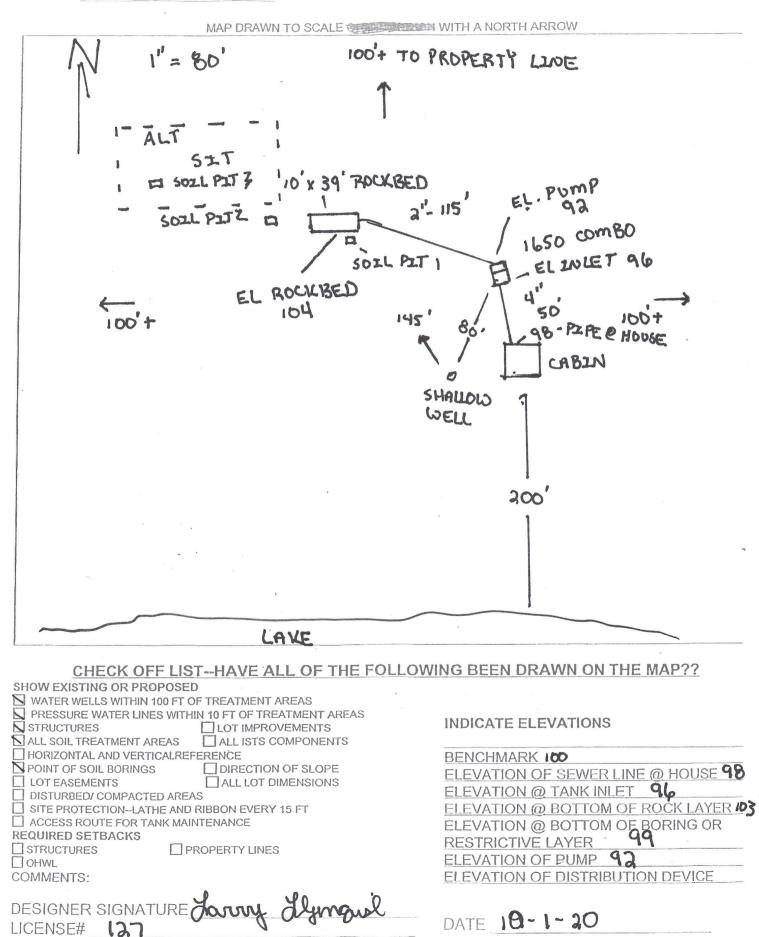
FINISHED GRADE

12 INCHES OF BACKFILL OVER ROCK



TNSTALL WILL BE APPR. 2' IN THE GROWD. HAUL 2 LOADS OF FILL TO MOUND OVER BED FOR MORE COVER

DATE: 9-1-20



Subsurface Sewage Treatment System Management Plan

Property Owner: 5	IN CARLSON	Phone:	Date:
'Mailing Address:		City:	Zip:
Site Address:			Zip:
performance of your se must be performed by	will identify the operation at : meptic system. Some of these activity a licensed septic service provider	i les must be performed by you	y to ensure long-term u, the homeowner. Other tasks
Local Government: constant Requirement: cons		months. every	m needs to be checked months.
	ed on MN Rules Chapter 7080.2450	2 & 3)	
Surfacion Effluent Alarms Event of Surfacional Market Surfacional Mark	Check (look, listen) for leaks in tong sewage — Regularly check in tong sewage — Regularly check in tong sewage — Regularly check in the filter — Inspect and clean two is a pounter or water meter — Recordly — recommend meter reading: he anagement Tasks Check to make sure tank is not be check and clean the in-tank offlet. Check the sludge/scum layer level. Recommend if tank should to put the check the drainfield effluent level. Check the number and clears so the	wet or spongy soil around your vear or more. The blem. Contact a service provous water use. Conducted (circle one: DAIL) The blem is a service provous water use. Conducted (circle one: DAIL) The service of the blem is a service provous water use. The blem is a service provous water use. The blem is a service provous water use. The blem is a service provous water use.	r soil treatment area.
	Check the pump and alarm s: ite Check wiring for corrosion an: I fi		
	Check dissolved oxygen and emile		
	Provide homeowner with list : if Flush and clean laterals if cle: 10		ken
Management Plan. If requi	onsibility to properly operate and m irements in the Management Plana ns. If I have a new system, I agree to	re not met, I will promptly notify t	tem on this property, utilizing the the the permitting authority and take rea for future use as a soil treatment
Property Owner Signatu	re:	<u> </u>	Date:
Designer Signature:	any Lyng		Date:

See Reverse : de for Management Log

Mairi:enance Log

Activity	Date Accomplished						paga-language pagentage and			
		angewerthologischen von der spannen	un and audientica emobile in installation	a electric constraint					and the same of th	
Check frequently: Leaks: check for plumbing leaks	T									Mark Stranger of the Stranger
Soil treatment area check for surfacing	-	1	1							Mark to the Control
Soil treatment area check for surfacing	-	-								-
Lint filter: check, clean if needed Effluent screen: if owner-maintained		1		1						
Effluent screen: if owner-maintained	-	-	12.1							
Water usage rate (monitor frequency	1 1	1	1			es. Succession of		and the second s	CONTRACTOR OF THE PARTY OF THE	
Check annually:	- T	1	T	1	1			na sinopugah distambank		
Caps: inspect, replace if needed		+	-	+	+			na tepatosativities essenties		
Sludge & Scum/Pump		-	-		-	natural and designation of the same		S mayoululusperson		
Inlet & Outlet baffles		+		-	1	Lety and Description of the State of the Sta	-			
Drainfield effluent leaks		-	+	+	-					
Pump, alarm, wiring					-	-	-		1	
Flush & clean laterals if cleanouts exists	-		-	-	-	-	1			
Other:	-		<u> </u>		-	1.		1		1
Other:	-		1		L		1	Laurenten	1	1
			÷							
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	three discriptions and every		odnickog bekenspersoniste	ne destination establishing process	quintant quality (file)		with cutting and other states	ypis emsädiskototos	desperient and second	Negavanov-toli
Acknowledge of contract Action (Action Contract						3				Daniel State of the State of th
entire transfer and the second	crus pr -consequenticonifornicies	negale est construction de la const ee	enterobalenticis de principal en grandin de est	gagadi perennengan kulturaken d	Activities anguignas paragraphic	A CONTRACTOR OF THE CONTRACTOR				
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Mitigation/corrective action plan:	tagan an malaniminan mengaman mengam	Stanford Stanford Stanford	allegene et allegen (grenne) et allegen (grenne)	ower programmed medicals	againmin jama provincialismi	ам болган үзгэг тэхэрх гэх х өрг тай		egas estineljinatur etra		open and the same of the same
Call a Licensed septic prois	くてうべ	mal	1111	th	011	Mon	25			
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