Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

		Owne	er Information		
Date 9/22/2022			Sec / Twp / Rng	S.9 T.49 R.22	2
Parcel ID)1		LUG (county, city, township)	Aitkin County	
Property Owner: Cole Gordo	on		Owners address (if different)		
Property Address: xxxxx Kest	rel Ave.				
City / State / Zip: Tamarack,	MN. 55757				
	Flow In	formation	and Waste Type / Strengt	h	
					☐ Domostic
Estimated Design flow3	00		Anticipated Waste strength	Hi Strength	✓ Domestic
Comments:			Any Non-Domestic Waste	Yes (class V)	✓ No
			Sewage ejector/grinder pump	Yes	✓ No
		2.5	Water softener	Yes	✓ No
			Garbage Disposal	Yes	✓ No
			Daycare / In home business	Yes	✓ No
		Site	Information		
Existing & proposed lot improvements located (see site n	✓ Yes nap)	☐ No	Well casing depth	No well ye	et
Easements on lot located (see site map)	✓ Yes	☐ No	Drainfield w/in 100' of residential well	Yes	✓ No
Property lines determined (see site map)	✓ Yes	∏ No =	Site w/in 200' of transient noncommunity water supply (T	☐ Yes NCWS)	✓ No
Req'd setbacks determined	✓ Yes	☐ No	Site w/in an inner wellhead	Yes	✓ No
(see site map)			mgmt zone (CWS/NTNCWS)		
(see site map) Utilities located & identified (gopher state one call)	✓ Yes	☐ No		Yes	✓ No
Utilities located & identified	✓ Yes ✓ Yes		mgmt zone (CWS/NTNCWS) Buried water supply pipe	_	✓ No ✓ No
Utilities located & identified (gopher state one call) Access for system maintenance		☐ No	mgmt zone (CWS/NTNCWS) Buried water supply pipe w/in 50' of system Site located in Shoreland	Yes	

		S	oil Information		
Original soils	✓ Yes	□ No	Evidence of site: Cut Filled Compacted Disturbed	☐ Yes ☐ Yes ☐ Yes ☐ Yes	✓ No ✓ No ✓ No ✓ No
Soil logs completed and attached	✓ Yes	∏ No	Perk test completed and attached (if applicable)	☐ Yes	☑ No
Soil loading rate (gpd/ft²)	0.45		Percolation rate (if applicable)		
Depth/elev to SHWT Depth to system bottom	-30.0		Flooding or run-on potential (comments)	Yes	✓ No
maximum (or elev minimum) Depth/elev to standing			Flood elevation (if applicable)		
water (if applicable) Depth/elev to bedrock (if applicable)			Elevation of ordinary high water level (if applicable)		
Soil Survey information determined (see attachment)	☐ Yes	✓ No	Floodplain designation and elev - 100 yr/10 yr (if applicable)		
Differences between soil survey and field evaluation (if applicable)	-				
)				

I hereby certify this evaluation was completed in acco	ordance with MN 7080 and any local req's.	
Roger Huns	R.H. Inspection & Design	3847
Designer Signature	Company	License #

2011 purple code

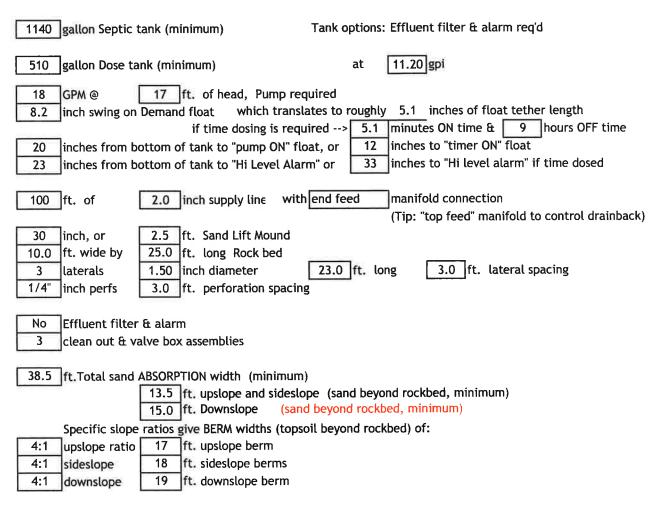
Mound Design - Aitkin county

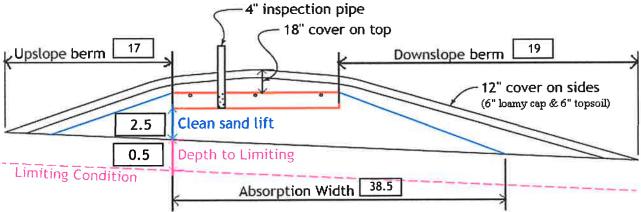
www.SepticResource.com (vers 15.2)

	Property Owner:	Cole Gordon	Date: 9/22/2022
	Site Address:	xxxxx Kestrel Ave.	PID: 10-0-013201
	Comments:		
instruc	tions: = ente	er data = adjust if desired	= computer calculated - DO NOT CHANGE!
1)	1 bedroom	Type I Residential	System
2)	300 GPD design flo	DW .	
3)	No Garbage dispo	osal or pumped to septic	
4)	1000 Gal Septic tar		eptic tank (design size / LUG req'd) options: Effluent filter & alarm req'd
5)	1.2 GPD/ft ² mour	nd sand loading rate contour loading	rate of 12 req's a min 25 ft. long rockbed
6)	10.0 ft rockbed w	idth 25.0 ft rockbed length	
7)	3.0 ft lateral space		(maximum of 3 for both) old connection
8)	3 laterals	23.0 feet long 8.0 perfs / latera (1/2 a perf means the	l 24 perfs total e first perf starts at the middle feed manifold)
9)	1/4" inch perfs at	1 feet residual head gives 0.74	gpm flow rate per perforation
	for this perf size & sp	acing, & pipe size on line 12, max perfs/later	ral = 16, line #8 must be less> OK
10)	4.0 doses per day	(4 minimum)	
11)	75 gallons per do	ose (treatment volume)	
12)	1.50 inch diamete	r laterals must be used to meet "4x pipe volur	2.00 5x me" requirement 2.00 3x
13)	100 feet of	2.0 inch supply line leads to 17	gallons of drainback volume (Tip: "top feed" manifold to control the drainback)
14)	92 gallons TOTA	L pump out volume (treatment + drainback)	
15) 16)	10 feet vertical 18 GPM @	lift from pump to mound laterals, leads to a: 17 feet of head, Pump requirement	(note: >50gpm may require an extra 3-6' of head)
17)	500 gal Dose tank leads to a	(code minimum) 510 gal Dose tank	(design size / LUG req'd) at 11.20 gpi
18)	8.2 inch swing on	Demand float, or timed dosing of 5.1 verage flow, =70% of Peak design flow) 9	min ON (confirm pump rate with drawdown hrs OFF test and adjust as necessary)
19)	And the second s	pottom of tank to "Pump OFF" float	7
20)		pottom of tank to "Pump ON" float, or oottom of tank to "Hi Level" float, or 33	inches to "Timer ON" float if time dosed inches to "Hi Level" float if time dosed
22)		e capacity (after High Level Alarm is activate	ted)

23)	gpd/ft ² Absorption area Soil Loading Rate, which gives a mound ratio of (this must match the soil boring log) desired mound ratio 2.7 (minimum)
24)	1 percent site slope (0-20% range) 1 (% downslope site slope, if different than upslope)
25)	6 inches, or 0.5 ft. to Redox or other limiting condition (need at least 12" to be a Type I) Treatment zone contains 0 inches of 0% soil credit, and 0 inches of 50% soil credit. Giving a:
26)	30 inch, or 2.5 ft. Sand Lift Mound CRITICAL FOR FUTURE CERTIFICATIONS!!!
27)	27.0 ft. base absorption width (with sand beyond rockbed as follows:)
28)	38.5 greater of: absorption width OR sand slope 8.5 ft. upslope and sideslope sand upslope 13.5
	8.5 ft. Downslope sand down slope 15.0
	Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
29)	4:1 upslope ratio 17 ft. upslope berm
30)	4:1 sideslope 18 ft. sideslope berms
31)	4:1 downslope 19 ft. downslope berm
32)	Overall Dimensions: 10.0 ft. wide by 25.0 ft. long Rock bed ft. wide by 46 ft. wide by 61 ft. long Mound footprint
l	—4" inspection pipe
	18" cover on top
	Upslope berm 17 Downslope berm 19
	12" cover on sides
	(6" loamy cap & 6" topsoil)
1	2.5 Clean sand lift
1	2.3
1	0.5 Depth to Limiting
ı	Limiting Condition
l	Absorption Width 38.5
1	Note:
	For 0 to 1% slopes, <i>Absorption Width</i> is measured from the <i>Bed</i> equally in both directions. For slopes >1%, <i>Absorption Width</i> is measured downhill from the upslope edge of the <i>Bed</i> .
33)	Rock Bed:
	10.0 ft. by 25.0 ft. by 6 inches under pipe, plus 20% gives 9 yd ³ or *1.4= 13 ton
34)	Mound Sand: (note: volume is based on 3:1/4:1 slope from top of rockbed, Exchange sand for loamy cap if desired) 46.3 up + 53.0 downslope + 19.2 ends + 23.6 under rock = 171 yd ³ or *1.4= 239 ton
ł	46.3 up + 53.0 downslope + 19.2 ends + 23.6 under rock = 171 yd or *1.4 239 ton plus 20%
35)	Loamy Cap:
	42 ft. by 57 ft. 6" deep, plus 20% gives 54 yd3 or *1.4= 76 ton
36)	Topsoil:
77.08-0	46 ft. by 61 ft. 6" deep, plus 20% gives 63 yd3 or *1.4= 88 ton
_	
1	I hereby certify that Thave completed this work in accordance with all applicable ordinances, rules and laws. R.H. Inspection & Design 3847 9/22/2022
	R.H. Inspection & Design 3847 9/22/2022 Designer Signature Company License# Date
	Designer signature Company Licenser Date

Installer Summary





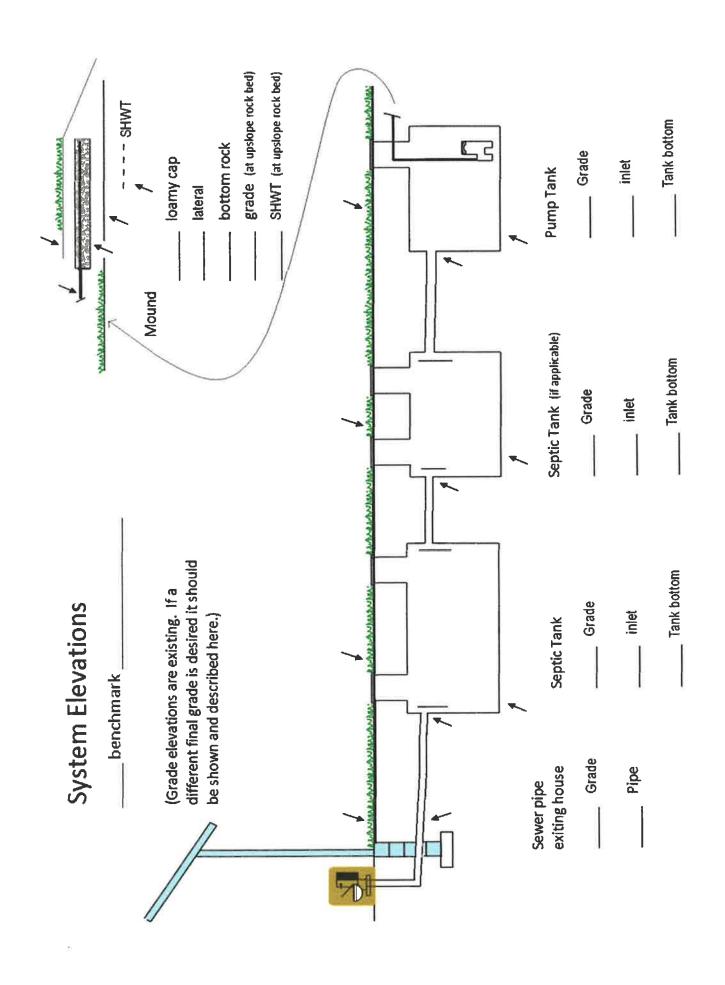
Note:

For 0 to 1% slopes, Absorption Width is measured from the Bed equally in both directions. For slopes >1%, Absorption Width is measured downhill from the upslope edge of the Bed.

Rock Bed:	9.0 yd ³ or *1.4=	13 ton	6 inches under pipe
Mound Sand:	171 yd ³ or *1.4=	239 ton	calculation based on 3:1/4:1 slope from top of rockbe
Loamy Cap:	54 yd ³ or *1.4=	76 ton	6" deep
Topsoil:	63 yd ³ or *1.4=	88 ton	6" deep

INSPECTOR CHECKLIST - mound

	xxxxx Kestrel Ave.			
	WELL setbacks: 20)' to pressure tested so	ewer line (5 psi for 15 min)	
	50)' to everything	100' to dispersal area with	shallow well
)' to everything		
	-			d easement, or outer ditch.
			D, RD, NE P	rotected wetland
	9) for everything, 20'1	-	
	WATER LINE under pressure se 10)' to bed,tank & sewer	r line. (else sewer line > 12"	below, else ok w/pvc)
	Sewer line & baffle connection (no depth req's, clean o			ax 2" in 8')
	Septic tank and risers (water ti	ight, insulated, prope	r depth, existing verified by	pumping)
			Effluent filter & alarm req	
	: 			
	Riser over outlet, riser over inl	et or center, and 6"+	inspection pipe over any re	maining baffles.
	No effluent filter & alarm			
	Dose tank risers and piping (wa		proper depth, drainback)	
	mfg Jacobson	510 gallons		
	dose pump	gpm17	head VERIFY PUMP CURVI	5.1 min ON 9 hr OFF
	float setting drop 8.2 in	ches at	11.2 gpi "DESIGNED" gpi "INSTALLED" =	5.1 inches approx float tether length inches float drop (field corrected
	LABEL pump requireme	-		
	Cam lock reachable from grade			ss (no hard 90's)
H	2.0 inch supply pipe: Sch40			
\vdash	splice box / control panel / ele			
\vdash	flow measurement: CT, ETM, ti		er meter	
H	mound absorption area rough u			
П	•	10.0 X 25.0		
	Sand lift depth 30 in	ches. (Jar tes	t: 2" sand leaves < 1/8" silt	after 30 min)
	Absorption Sand beyond rock	13.5 upslope	•	15.0 downslope
		-		
	Bermed topsoil beyond rockbed	17 upslope	± 18 sideslope	downslope
	cover depth of 12-18"+		VERIFY	
	3 laterals (1-2' from edg	ge of rock)		
	1.50 inch pipe size (S	Sch40 pipe & fittings)		
	3.0 ft lateral spacing			
	1/4" inch perforations			
Ш	3.0 ft perforation spacing			
	Air inlet at end of laterals, and	l at top feed manifold	d if necessary. VERIF	Υ
Н	clean outs (no hard 90's)	rut top recu mamou	2 11 1100000001 1	
Н	4" inspection pipe to bottom of	rock, anchored	VERIFY	
	Abandon existing system - if ne		Re-use existing tan	k certification
\vdash	monitoring plan and type	ccssary	inc asc existing tall	a de la recieri
H	well abandonment form - if ne	cessary		



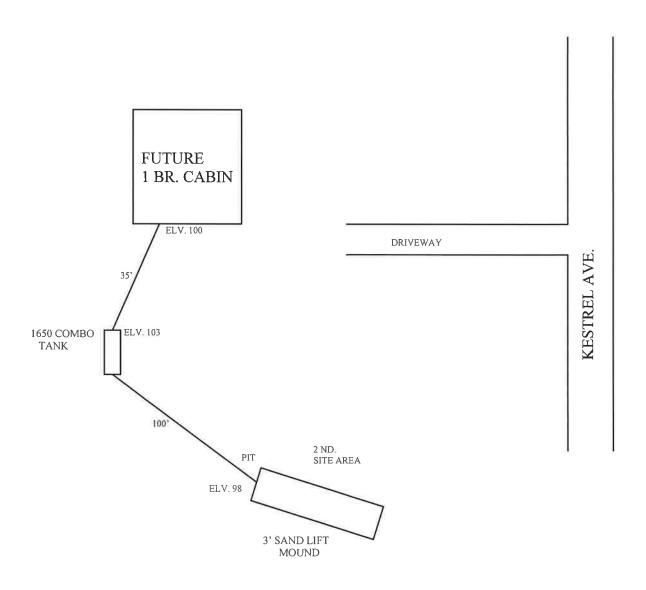
Soil Observation Log

					www.	SepticResourc	e.com vers 12.4
		w	Owner Info	rmation			
Property Owner / project:		Cole Gordo	n	Date	9/22	2/2022	
Property Add	ress / PID:	xxxxx Kest	rel Ave.	-			
			Soil Survey I	nformation	refer	to attached soi	l survey
Parent matl's:	:	⊠ π∥	Outwash La	custrine All	uvium 🗌 Or	ganic] Bedrock
landscape pos	sition:	Summit	Shoulder	Side slope	Toe slope		
soil survey m	ap units:	7	ë	slopel	% direction-	downhill	•
			Soil Lo	a #1			
	Borin	g ✓ Pit	Elevation	g #1	Depth to SHWT	6"	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0-6	Topsoil	<35	5YR3/3		Friable	Weak	Granular
6+	Clay Loam	<35	10YR5/4	2.5YR4/4	Firm	Moderate	Blocky
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
Comments:	•	1			*		

xxxxx Kestrel Ave. Soil Log #2							
31	Boring	✓ Pit	Elevation		Depth to SHWT	6"	3)
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0-6	Topsoil	<35	5YR3/3		Friable	Weak	Granular
6+	Clay Loam	<35	10YR5/4	2.5YR4/4	Firm	Moderate	Blocky
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
xxxxx Kes	trel Ave.		S	oil Log #3			
	Boring	✓ Pit	Elevation		Depth to SHWT	6"	_
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0-6	Topsoil	<35	5YR3/3		Friable	Weak	Granular
6+	Clay Loam	<35	10YR5/4	2.5YR4/4	Firm	Moderate	Blocky
		<35 35 - 50			loose friable	loose weak	single grain granular blocky
		>50			firm rigid	moderate strong	prismatic platy massive

I hereby certify	this wo	rk was	completed in accordance with MN 7080 and any local req's
Rasul	1.	1	

Koa	u Hull	R.H. Inspection & Design	3847
	Signature	Company	License #



Subsurface Sewage Treatment System Management Plan

Substituce Sewage Treatm	icht System Manageme	TIC I Idii
Property Owner: COLE GORDON	Phone: 218-429-1818	Date: <u>22 SEP 27</u>
Mailing Address:	City:	Zip:
Site Address: KESTREL AVE.	City: TAMARACK	Zip: <u>\$\$7.\$7</u>
This management plan will identify the operation and ma performance of your septic system. Some of these activiti must be performed by a licensed septic service provider of System Designer: Recommends SSTS check every 36 Modern SSTS check every 37 Modern SSTS check every 38 Modern SSTS che	months. My System ne months.	_
(State requirements are based on MN Rules Chapter 7080.2450, Subp.	. 2 & 3)	
Homeowner Management Tasks: Leaks – Check (look, listen) for leaks in toilets and dripping Surfacing sewage – Regularly check for wet or spongy soil Effluent filter – Inspect and clean twice a year or more. Alarms – Alarm signals when there is a problem. Contact Event counter or water meter – Record your water use. -recommend meter readings be conducted (circle)	l around your soil treatment area. a service or maintenance provider any	
Check to make sure tank is not leaking Check and clean the in-tank effluent filter (if each of the sludge/scum layer levels in all sept Recommend if tank should be pumped Check inlet and outlet baffles Check the drainfield effluent levels in the rock Check the pump and alarm system functions Check wiring for corrosion and function Check dissolved oxygen and effluent temperate Provide homeowner with list of results and all Flush and clean laterals if cleanouts exist	exists) cic tanks k layer ature in tank	
"I understand it is my responsibility to properly operate and ma Management Plan. If requirements in the Management Plan ar necessary corrective actions. If I have a new system, I agree to system."	re not met, I will promptly notify the permi	tting authority and take
Property Owner Signature:		
Property Owner Signature:	2. 7	45 GP 77

See Reverse Side for Management Log

AITKIN COUNTY ENVIRONMENTAL SERVICES

APPLICATION for an OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

PERMITTEE C	OLE GO	ROON	PARCEL NUM	BER 10-(<u> </u>
ADDRESS	K	ESTREL	AVE.	TAMAT	RACK
LEGAL DESCRIF					
TELEPHONE # 2	18-429-1	818	GIS LOCATIO	N	<u> </u>
construction, management	site evaluation operation, moderation, moderation, moderation, moderated systems with the second with	and design; onitoring, servestem life, hydronical serves (2) SAN	estimated cos rice, compone draulic and org なら、 かかいいい	t of system nt replacem ganic loadir	ent, and
PARAMETER	COMPLIANCE	SAMPLE	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
FLOW	300 GPD	LOCATION EVENT	MONTHLY	HE	I YEAR TO COUNTY
5-DAY BOD	500 415		8	567	
TOTAL NITROGEN	*				140
TOTAL PHOSPHORUS					
TSS					k
FATS,OILS AND GREASE FECAL			4		
COLIFORM				- T	
SEPARATION DISTANCE	3'	mound	YEARLY		1 YEAR TO COUNTY
TO COUNT		HTUOM	LY AND	REPORT	<u> </u>
OLYNIET	2	will perform	the monitoring	n of this ser	otic system.

C. MAINTENANCE PLANS

PARAMETER	LOCATION	FREQUENCY
300 GPD	E.C. AT TANK	PLATHOM
		•
D. MITIGATION PLAN:	· · · · · · · · · · · · · · · · · · ·	
INSPECT SYST	EM TYEAR AFTO	ER INSTALL
application is true and corre hold Aitkin County harmless	nature as the designer, that all dect to the best of my knowledges from loses, damages, costs and use of the information submitter	. I agree to indemnify and nd charges that may be
Roam Hund Signature	3847 License Number	Z4 <u>SEP ZZ</u> Date
Name (please print)	2169 SCHELINDER Address CARCON	<u>718 -391-0510</u> Telephone #

Maintenance Log

Activity		Date	Accompl	ished	
Check frequently:					
Leaks: check for plumbing leaks					
Soil treatment area check for surfacing					
Lint filter: check, clean if needed					
Effluent screen: if owner-maintained					
Water usage rate (monitor frequency)				
Check annually:			11.		
Caps: inspect, replace if needed					
Sludge & Scum/Pump					
Inlet & Outlet baffles					
Drainfield effluent leaks					
Pump, alarm, wiring					
Flush & clean laterals if cleanouts exists					
Other:	_				
Other:	_				
Notes:					
		11			

ROGER HURD INSPECTION & DESIGN

2169 Schelinder Road, Carlton, MN. 55718 LICENSE #3847 – CERT. #9573

Phone: 218-391-0510 - e-mail: <u>rlhurd1960@hotmail.com</u>

It is up to the Property Owner to protect septic drain field sites from damage.

Rope off area to be protected. <u>Do not</u> drive on site area with a wheeled vehicle of any type. Only a tracked vehicle can be used. (A riding lawn mower is accepted).

Review the stakes that have been placed on the property. Stakes indicate the location of the tank and drain field area. Property lines are to be verified by owner to be ten feet or more from the stakes.

It is the responsibility of the owner to perform maintenance of the system with a licensed maintainer.

The design must be submitted to the Local Government Unit (L.G.U.) for permit. Once the L.G.U. has issued a permit, our responsibility for the design is done.

Any changes of the design should be made prior to L.G.A. approval, call 218-391-0510 for changes. Any changes to design will be at a cost of a new design.

Any tree removal is the responsibility of the home owner. Cut stumps to grade, <u>do not</u> remove roots or stumps.

Before digging get locates! Gopher State One Call is: 1-800-252-1166.

Any results and / or information in this report are strictly the interpretation of the licensed individual issuing the report. All field work and test results were done to the best of the individual's ability, and under no circumstances is any work to be performed or action taken as a result of this report prior to full review and approval by the L.G.U.

ROGER HURD

INSPECTION & DESIGN / GENERAL CONTRACTOR

INVOICE

2169 Schelinder Rd Carlton, MN 55718 Phone: (218) 391-0510

DATE: SEPTEMBER 24, 2022

TO: COLE GORDON

FOR: P.I.D. 10-0-013201

DESCRIPTION	HOURS	RATE	AMOUNT
Septic system design.			\$700.00
	e e		
	1		
	1		
	Ĭ		
		TOT::	+700.00
		TOTAL	\$700.00

Make all checks payable to **ROGER HURD**

Total due upon receipt. Overdue accounts subject to a service charge of 10% per month.

Thank you for your business!