LINCOLN COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH
WASTEWATER TREATMENT AND DISPOSAL SYSTEM PERMIT

Issue Date: 05/28/2025 Expiration Date: 05/27/2026 Permit# 25-54543

Property Owner: David Michaelson

Mailing Address: [redacted]

Installer: Cory Clasen License #:181

Approved Work: (Check One) ☒ New Installation ☐ Existing System

☐ Replace Drainfield ☐ Replace Tank ☐ Extension

Describe: Installation of ESM for 5 Bedroom House.

Legal: KIRKS ELK RIDGE, S13, T36 N, R28 W, LOT 1, ACRES 20, PM 6562

Property Address: 451 Brookes Drive, Rexford, MT 59930 Assessment Code: 54543

DEQ COSA: E.Q.# Date:

Approved Design Criteria: Installation of ESM for 5 Bedroom House.

# of Bedrooms: 5 Septic Tank Size: 1500/500 Trench Width:

# of Laterals: ESM Length of Laterals: See Design Plan Trench Depth:

SYSTEM MUST INCLUDE INSTALLATION OF EFFLUENT FILTER AT SEPTIC TANK OUTLET!!

Special Instructions: Install system according to the lot layout, the Lincoln County Wastewater Treatment and Disposal Regulation, Circular DEQ-4, and COSA(If Applies). It is the installer's responsibility to ensure that all required horizontal setbacks are met. CHANGES MUST BE PRE-AUTHORIZED BY THE DEPARTMENT.

Issued By: *Robin Blumberg, RS*

NOTICE: The Department must be notified at least 3 business days (72 hours) prior to backfilling the system. Call 406-283-2442. Any system not inspected by the Department or its designated representative prior to closure is an illegal installation in violation of Lincoln County Health Board Regulation Ch. 3. Illegal installations may result in fines and/or requirements to remove or reconstruct the system.

Closure Statement:

This system is in compliance with the approved design criteria and Lincoln County's Wastewater Treatment and Disposal Regulation.

Signed: _____ *Date:* _____

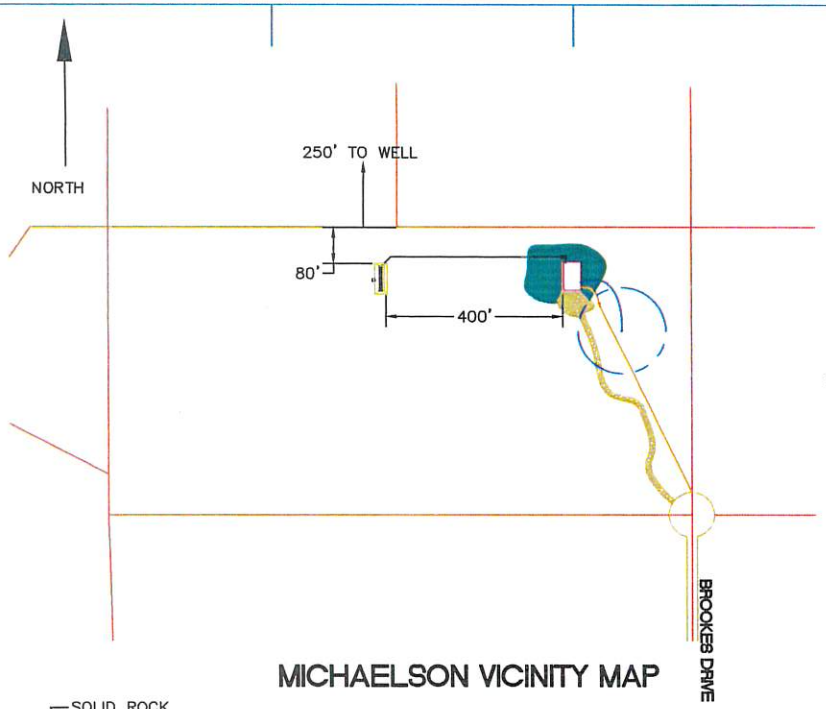
This permit is not finalized until the system is inspected and the closure statement is signed.

This permit is not a guarantee that the system will function properly for a prescribed period of time.

REV	DESCRIPTION	BY/DATE	APRD/DATE

LOT 1

20.0 ACRES
451 BROOKES DRIVE, REXFORD, MT 59930
S13, T36N, R28W,PM 6562
ASSESSMENT #0000054543
GEO 56-4822-13-3-01-35-0000



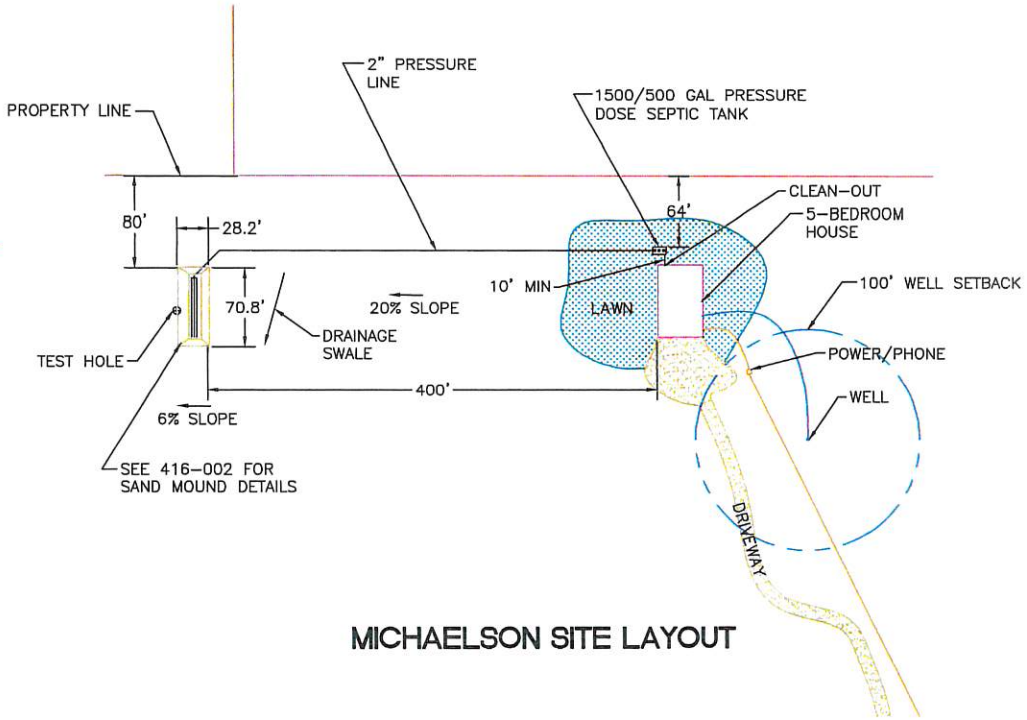
MICHAELSON VICINITY MAP



TEST HOLE
PICTURE TAKEN 4-30-25



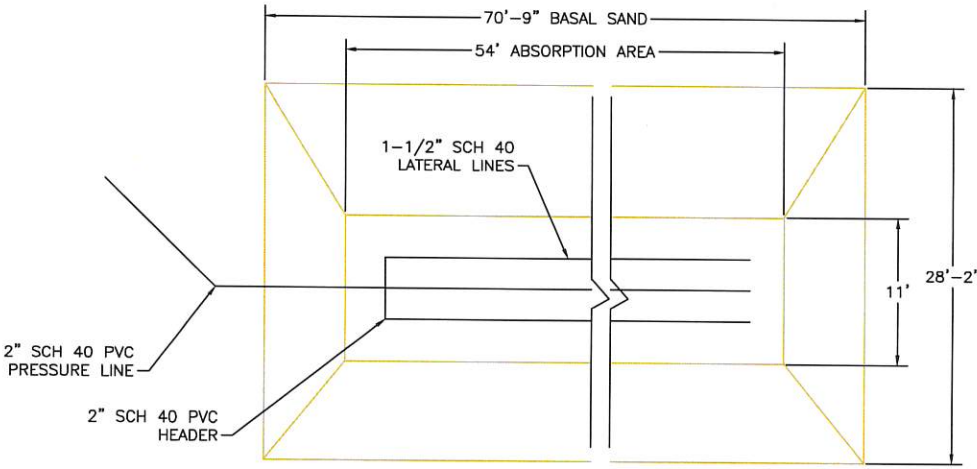
50' DEEP TEST HOLE



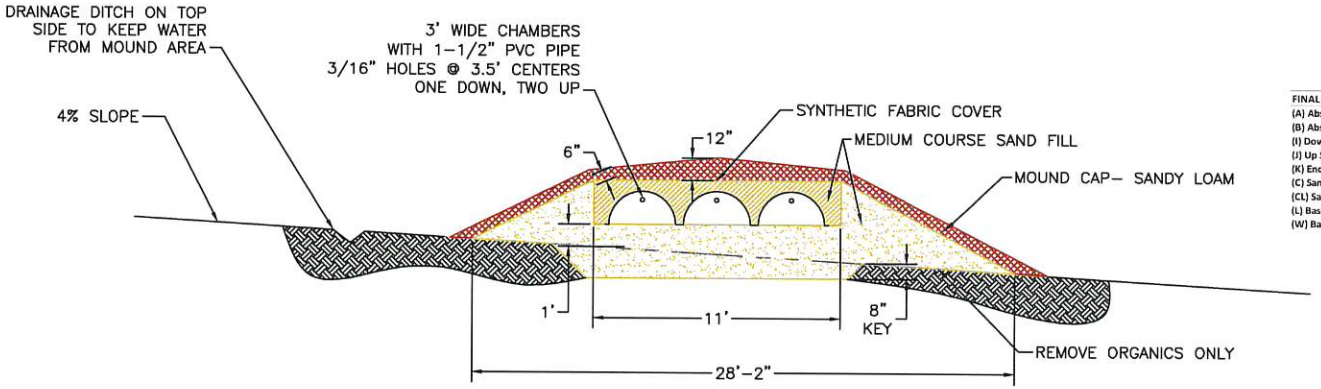
MICHAELSON SITE LAYOUT

THIS DRAWING IS PROPERTY OF MDS UNTIL CONTRACT HAS BEEN SECURED BETWEEN OWNER & MDS IT CAN NOT BE SUBMITTED TO ANY OTHER PARTIES WITHOUT WRITTEN APPROVAL FROM MDS MANAGEMENT

REV	DATE	COMPANY	SCALE:	MONTANA DESIGN SERVICES, INC.	MONTANA DESIGN SERVICES, INC. MICHAELSON SEPTIC
		MDS	1/10 & NOTED		SITE LAYOUT
		CONTRACT:	DATE:	DRG TOLERANCES	SCALE/ENGINEER: 5/6/25
		VERBAL	4/2025		DRAWN BY: C. CLASEN 5/28/25
		PLOT FILE:	WEIGHT	FINISH	DWG NO: 416-001 1
		PML-0001			



MICHAELSON SAND MOUND PLAN VIEW



MICHAELSON SAND MOUND SECTION

Elevate Sand Mound Design

Permit # 416 Michaelson — **Montana Design Services, Inc.**

05/28/25 — Green = You Input Grey = Calculated

Input Parameter	Value	Units	Notes
Soil Texture/Perc Rate	silty loam/gravel		*Soil horizon within 12in of surface*
Design Flow Rate	400	(gpd)	*MCCHD Reg11(12)(A)*
Sand Loading Rate	0.8	(gal/ft²)	*Washed coarse sand 0.8, Medium 0.6 (DEQ 4.)*
Basal Loading Rate	0.5	(gal/ft²)	*App. rate for soil in contact with sand*
Hydraulic Linear Loading Rate	5	(gal/lt)	*Clays, Clay/Silt Loams = 3.4.5|Loam, Sands = 7.8.9*
Slope Percent	6	%	*See Site Map*
Down Slope Correction	1.22		*See Table 1 (Wisc. Manual)*
Up Slope Correction	0.85		*See Table 1 (Wisc. Manual)*
Reduction if Level II	0.75	decimal	*None = 1.0|Sands, Loams = 0.5|Clays,Silts = 0.75*

Required Mound Design	Value	Units	Notes
MIN Absorption Area	375	(ft²)	*Calculated Min. (DEQ 4.,Wisc. Manual)*
MIN Basal Area	600	(ft²)	*Calculated. Design Flow/Basal Loading Rate*
MAX Absorption Area Width	6.3	(ft)	*Calculated Max. (Wisc. Manual)*
MIN Absorption Area Length	60	(ft)	*Calculated Min. (Wisc. Manual)*
MAX Number of Laterals	3		*Calculated (3' Min) (DEQ 4.,Wisc. Manual)*

Proposed Mound Design	Value	Units	Notes
(L) Proposed Basal Length	58.0	(ft)	*Provided by applicant*
(W)Proposed Basal Width	15.0	(ft)	*Provided by applicant*
(B) Proposed Absorption Area Length	54.0	(ft)	*Provided by applicant*
(A) Proposed Absorption Area Width	11.0	(ft)	*Provided by applicant*
(D) Proposed Sand Fill Depth	1.0	(ft)	*Provided by applicant (Min 12 inches DEQ 4.)*

Minimum Checks	Min	Design	Result	
Basal Sand Area	600.0	870.0	OK	
Absorption Area	375.0	594.0	OK	
Absorption Area Length:Width ratio	3	4.9	OK	
Max Width (Wis. Manual)	7.0	11.0	NO	*Limited from Linear Loading Rate*

Calculate Mound Design	Value	Units	Notes
Additional Sand Bed Width	2.0	(ft)	*Required 24inches (DEQ 4.)*
(E) Mound Fill Depth	1.38	(ft)	*Calculated from slope*
(F) Aggregate Depth	0.75	(ft)	*Minimum 9 inches (DEQ 4.)*
(G) Cap Depth	0.50	(ft)	*Required 6 inches (DEQ 4.)*
(H) Cover Depth	1.0	(ft)	*Required 12 inches (DEQ 4.)*
(I) Down Slope Sand Width	7.8	(ft)	*Calculated from slope (Wisc. Manual)*
(J) Up Slope Sand Width	5.4	(ft)	*Calculated from slope (Wisc. Manual)*
(K) End Slope Sand Length	6.4	(ft)	*Calculated from 3:1 slope (DEQ 4.)*

FINAL MOUND DESIGN	Value	Units	Notes
(A) Absorption Area Width	**11.0**	**(ft)**	*Proposed, may not meet standards*
(B) Absorption Area Length	**54.0**	**(ft)**	*Proposed, may not meet standards*
(I) Down Slope Sand Width	**7.8**	**(ft)**	*Calculated from Proposed, may not meet standards*
(J) Up Slope Sand Width	**5.4**	**(ft)**	*Calculated from Proposed, may not meet standards*
(K) End Slope Sand Length	**6.4**	**(ft)**	*Calculated from Proposed, may not meet standards*
(C) Sand Bed Width	**15.0**	**(ft)**	*Calculated from Proposed, may not meet standards*
(CL) Sand Bed Length	**58.0**	**(ft)**	*Calculated from Proposed, may not meet standards*
(L) Basal Sand Area Length	**70.8**	**(ft)**	*Calculated from Proposed, may not meet standards*
(W) Basal Sand Area Width	**28.2**	**(ft)**	*Calculated from Proposed, may not meet standards*

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REV	DATE	COMPANY	SCALE:	MONTANA DESIGN SERVICES MICHAELSON SAND MOUND
		MDS	1/16 & NOTED	SYSTEM DETAIL
		CONTRACT: VERBAL	DATE: 4/2025	DRAWN/DESIGNED 5/6/25
		PLOT FILE: PML–0001	WEIGHT:	C. CLASEN 5/28/25
			FINISH	416–002 1