AGENDA

THE AITKIN COUNTY PLANNING COMMISSION WILL ASSEMBLE FOR A HEARING ON FEBRUARY 24, 2025 AT 4:00 P.M.
IN THE BOARD ROOM OF THE AITKIN COUNTY GOVERNMENT CENTER (THIRD FLOOR)
307 SECOND STREET NW, AITKIN, MINNESOTA 56431
THE FOLLOWING ITEMS WILL BE REVIEWED:

1. **Call the meeting to order.**

2. **Roll call.**

3. **Approve of Agenda.**

OLD BUSINESS:

4. David James Emmons, PO BOX 438, ISLE, MN 56342 Requesting a Conditional Use Permit to operate an event venue, in an area zoned Farm Residential. PT SW NW IN DOC 438562 (PARCEL A) AND PART SW NW IN DOC 438562 (PARCEL B). SECTION EIGHTEEN (18), TOWNSHIP FORTY-THREE (43), RANGE TWENTY-FOUR (24), Aitkin County, Minnesota.
APP# 2024-002199

5. Approval of Minutes, JANUARY 27, 2025 Planning Commission Meeting.

6. Adjourn.

Conditional Use Permit (general) App. # 2024-002199, UID # 212913
App. Status: Pending Review

Aitkin County Planning & Zoning / Environmental Services
307 2nd Street NW, Room 219
Aitkin, MN 56431
Phone: 218-927-7342
Fax: 218-927-4372
Email: aitkinpz@aitkincountymn.gov

Contact Information

Are you the property owner?	Yes
Applicant Contact Info:	Name: David James Emmons Phone: (763) 639 - 7199 Email Address: david.j.emmons@gmail.com Mailing Address: PO Box 438 Isle MN 56342
Have you had a pre-application meeting with the Planning & Zoning Department?	Yes

Project Location

Property:

Property Location			Owner Information	Tax Payer Information	Legal Description			Property Attributes	
Parcel Number	**Property Address**	**Township or City Name**	**Owner Name(s)**	**Taxpayer Name(s)**	**Legal Description**	**Plat Name**	**Section-Township-Range**	**Lake Class**	**Lake Name**
13-0-029902		IDUN TOWNSHIP	EMMONS, DAVID & NANCY	EMMONS, DAVID & NANCY	PT SW NW IN DOC 438562 (PARCEL A)		S:18 T:43 R:24		
13-0-029903		IDUN TOWNSHIP	EMMONS, DAVID & NANCY	EMMONS, DAVID & NANCY	PART SW NW IN DOC 438562 (PARCEL B)		S:18 T:43 R:24		

Driving directions from Aitkin to Property:	South on Hwy 47 to County Road 18, East 4 miles to 280th Place, South 0.5 miles to 13584 280th Place, then east to the Arched Barn on PID 13-0-029903.

Brief Narrative

Brief Narrative:	We are seeking a conditional use permit for hosting events at the restored arched barn located on the16.5 Acre parcel in Idun Township (PID 13-0-029903). Events would include family reunions, weddings, corporate retreats, and other public or private gatherings.
Provide a detailed explanation on why and how this proposal is meeting the Comprehensive Land Use Plan for Aitkin County.:	Our proposal to establish an event venue in the restored arched barn on our 16.5-acre parcel (PID 13-0-029903) directly supports Aitkin County's land use goals by promoting sustainable economic development, preserving natural resources, and enhancing community engagement. The barn's restoration as a cultural landmark aligns with these goals, alongside our environmental stewardship efforts, which include creating wildlife ponds, improving soil health through composting and carbon amendments, and installing an 18.5 kW solar array to reduce our carbon footprint. In partnership with the NRCS and Aitkin County Soil and Water Conservation, we are planning pollinator plantings, delayed haying to support wildlife habitats, and developing a managed forestry plan. Future initiatives also include rotational grazing to build topsoil and reduce erosion. These efforts, combined with the proposed community-focused event venue, underscore our commitment to sustainable land use, environmental restoration, and local tourism. Our vision is to create a space that celebrates the region's natural beauty, fosters community connections, and ensures a healthier, more vibrant landscape for future generations.
How will this proposal be compatible with existing land uses?	Our proposed event venue aligns with Aitkin County's criteria for a conditional use permit based on the following findings of fact: Injury to Environment or Property The proposed use will enhance the environment and surrounding property values through continued restoration and preservation efforts, including wildlife ponds, soil amendments, and pollinator-friendly plantings. The venue will operate in harmony with the land, providing a picturesque and well-maintained space for community and private events without causing injury to neighboring properties or impairing their enjoyment. Expenditures for Servicing Neighboring Properties The venue will not require additional local or state expenditures for servicing or maintaining neighboring properties. Existing infrastructure and self-sustaining practices, including solar energy and composting, will minimize external resource demands. Consistency with Desirable Development Patterns The location and character of the restored barn and surrounding farm align with desirable rural development patterns, preserving the historic and cultural integrity of the community while creating a sustainable use for the property. This project reflects the County's vision for combining economic growth with environmental stewardship. Conformance with the Comprehensive Land Use Plan The venue fulfills key goals of the County's comprehensive plan by enhancing tourism, supporting local economic development, and conserving natural resources. By integrating community-focused events and sustainable land use practices, the project exemplifies the County's blueprint for growth and stewardship. Proper Notice We will comply with Minnesota Statutes, Chapter 394, ensuring proper notice is given to all required parties and that the Planning Commission hearing is conducted transparently. Compliance with County Ordinances The proposed use will meet all applicable requirements under Aitkin County ordinances, including zoning and environmental regulations, to ensure the venue is established responsibly. Public Health, Safety, and Welfare The venue will enhance public welfare by providing a safe and welcoming space for community gatherings, family events, and celebrations. Our practices to restore and

	protect the environment, including ongoing collaboration with the NRCS, will further support public health and the long-term sustainability of the area. This proposal reflects a thoughtful balance of preserving the land's historical significance, fostering community engagement, and advancing the County's goals for sustainable and responsible development.
Is this proposal meeting the Findings of Fact?	Yes

Detailed Operational Plan

Detailed Operational Plan:	Restoration Acres, located on 16.5 acres of diverse natural beauty, is proposing an event venue designed to host weddings, retreats, family reunions, vendor sales, and other community and private events (PID 13-0-029903) The focus is on enhancing the local environment and fostering connections with nature.
If you have already prepared a detailed operational plan, please attach it below:	File 1: Aitkin_County_Conditional_Use_Plan_Restoration_Acres_2-20-2025_4.docx

A Scaled Drawing

Attach Scaled Drawing:	File 1: 241376MS_SKETCH_2-20-2025.pdf

Septic Compliance

Is there an existing septic system on the property?	Yes
If you answered Yes, please attach one of the following: - A current compliance inspection on the existing septic system. - A design for a new/replacement septic system.	File 1: 13584_280TH_PL_ISLE_MN_SEPTIC_DESIGN_EVENT_CENTER.pdf

Property Deed

Please attach the property deed(s):	File 1: EMMONS_DEED-p0001_-_p0003.pdf

Terms

Conditional Use Terms & Conditions

The landowner or authorized agent hereby certifies that to the best of their knowledge the application and supporting documents are a factual representation of the proposed project. The landowner or authorized agent agrees that, in making application, the landowner grants permission to Aitkin County, at reasonable times, to enter the property to determine compliance of the application with applicable Local, County or State Ordinances or Statutes. It is the applicant's responsibility to contact other Local, County or State agencies to ensure the applicant has complied with all relevant Local, County or State Ordinances or Statutes.
Submittal of the above materials does not always constitute a complete application. Other information may be necessary to complete the application based on the type of request and onsite inspection.
The landowner or authorized agent may make application for a Conditional Use permit agreeing to do such work in accordance with all Aitkin County Ordinances. The landowner or authorized agent agrees that the application, site plan, and all other attachments submitted herewith are true and accurate and shall become a part of the permit. The landowner or authorized agent agrees that, in making application for a Conditional Use permit, the landowner grants permission to Aitkin County, at reasonable times, to enter the property to determine compliance of the application with applicable Local, County or State Ordinances or Statutes. It is the applicants sole responsibility to contact other Local, County or State agencies to ensure the applicant has complied with all relevant Local, County or State Ordinances or Statutes.
All corners of the proposed structure(s) need to be staked with visible flags, ribbon, or lathes prior to onsite inspection by Aitkin County.
Conditional Use Permit fees are non-refundable if denied or approved.
I acknowledge that by submitting this application, the application and its attachments are public information.

Invoice #62053 (12/20/2024) Expected Payment Method: Pay Online - Card or ECheck

Charge	Cost	Quantity	Total
Conditional Use Application Fee added 12/19/2024 8:47 PM $650 Flat Fee	$650.00	x 1	$650.00
Recording Fee added 12/19/2024 8:47 PM $46 Flat Fee	$46.00	x 1	$46.00
Grand Total			
		Total	**$696.00**
		Payment 12/20/2024	**$696.00**
		Due	**$0.00**

Invoice #62174 (01/29/2025) Expected Payment Method: Pay Online - Card or ECheck

Charge	Cost	Quantity	Total
Republication Fee added 01/29/2025 9:44 AM	$50.00	x 2	$100.00
Grand Total			
		Total	**$100.00**
		Payment 02/21/2025	**$100.00**
		Due	**$0.00**

Approvals

Approval	Signature
Applicant	David James Emmons - 02/21/2025 9:06 AM - witnessed by Shannon Wiebusch ac5fd26846e983d0ee0b6c5fec3ef4ae 3ab97137af744c5c85347ab1c89178a1
#1 Admin	Shannon Wiebusch - 02/21/2025 3:32 PM 4cdf5a20d28756c868c8053e58ab6584 be918bc17c541bd4ff979b053bb34dd5
#2 Planning Commission	

Public Notes

Text:	1/28/25 Returned to applicant to remove details and plans on request for campground. 60 day extension issued by an additional 60 days for a decision by 4/22/25. Tabled at the January 27 meeting; will be heard again at the February 24 meeting.
File(s):	File 1: 60_Day_Extension_Form_Emmons_2024-002199.pdf File 2: Emmons_2024-002199.pdf

Restoration Acres Event Center: Conditional Use Application **2-20-2024**

Nature of the Request: Restoration Acres, located on 16.5 acres of diverse natural beauty, is proposing an event venue designed to host weddings, retreats, family reunions, vendor sales, and other community and private events (PID 13-0-029903) The focus is on enhancing the local environment and fostering connections with nature.

Proposed Changes:

1. **Buildings:** Add commercial wayfinding, including exit signs, tornado plans, and escape routes. Work with the Minnesota Fire Marshall to determine maximum occupancies and required signage.
2. **Landscaping:** Introduce trees to reduce noise, along with shrubs and flowers to support pollinators and improve visual appeal.
3. **Parking Entrance:** Construct a new entrance to hay field to the Northwest of the Venue to minimize travel distance on 280th place and allow for screened parking on the East side of hay field on PID 13-0-029902.

Impact on Neighboring Properties: The venue aims to bring economic benefits, such as boosting local businesses, creating jobs, and increasing tax revenue. Community engagement through events and improved infrastructure are additional positives. To mitigate potential challenges like noise and traffic, noise management, eco-friendly practices, and traffic flow plans will be implemented.

Consistency with the Area's Character: The venue aligns with the Isle, MN area's small-town charm and rural atmosphere. It will enhance the area by offering a modern barn venue for gatherings while respecting the natural surroundings.

Impact on Community Facilities:

1. **Parking and Access:** An entrance and parking area will alleviate potential traffic issues and enhance safety while minimizing potential impact (visual and sound) from guests.
2. **Event-Specific Amenities:** Outdoor lighting, portable restrooms for large gatherings, and accessible pathways will be provided. Upgrade fixed drain field as required based on state regulations and event capacities.

Impact on Neighborhood Character: The venue will add value to the community by fostering identity, economic growth, and aesthetic improvements. Challenges like noise and traffic will be addressed through proactive measures, including noise management, traffic flow plans, and engaging with neighbors.

Traffic Impact: Increased traffic is anticipated during peak event times. Adequate off-street parking and parking attendants will ensure safe and efficient access. Designated spaces for guests, vendors, and shuttles will prevent overflow onto public roads. No Parking will be allowed on 280th place.

Environmental Limitations: The property includes wetlands and natural habitats protected by regulations. Sustainable practices will be employed to address challenges like erosion, runoff, and wildlife disruption.

Additional Comments:

- **Property Overview:** The venue features a historic gothic arch barn and 16.5 acres of fields, forests, and wetlands, designed for nature-inspired events and restorative experiences.
- **Safety Measures:** Clear signage, adherence to safety codes, and coordination with State and local authorities. Work with Minnesota Fire Marshall to determine occupancy maximums, signage, exit routes, and safety plans, policies and procedures.
- **Noise Control:** Sound systems directed inward, compliance with decibel restrictions, and quiet hours.
- **Water Management:** Address runoff from events, especially considering proximity to natural water sources. Implement erosion controls if needed.
- **Waste Management:** Proper disposal methods for trash, recyclables, and organic waste from events. Septic systems must handle increased usage.
- **Dust Management:** Maintenance of roads and parking areas to minimize dust.
- **Parking:** On-site parking with attendants for large events.
- **Community Respect:** Open communication with neighbors and commitment to fostering goodwill.
- **Toilet facilities:**
    - Venue has a septic system and drain field which will be supplemented with portable bathroom facility proportional to the event size. Existing certified fixed septic and drain field will be augmented as required by existing State and Local regulations.
- **Staff:**
    - Restoration Acres plans no permanent staff and will bring in temporary contract staff on an as needed basis proportional to the scale of the events.

Proposed Hours of Operation:

- Sunday through Thursday: 8:00 AM – 8:00 PM
- Friday and Saturday (Event Days): 8:00 AM – 11:30 PM (all music ends by 11:00 PM)

Event Management Policies:

- Noise monitoring plans and landscaping buffers to reduce impact.
- Sustainable practices to preserve natural beauty.
- Events conclude by 11:30 PM on Fridays and Saturdays, with cleanup respecting quiet hours.
- Large Venue events will not exceed 300 people and typically be less than 200 people. Exact occupancy by specific space within the Venue will be determined by collaboration with the State fire Marshall and other State and County regulatory bodies.

Operational Goals: Restoration Acres aims to balance ecological preservation with community integration, offering a premier destination for events while enhancing local tourism, fostering connections with nature, and supporting the surrounding community.

Site Plan Overview (Restoration Acres)

PID 13-0-029902 is an unimproved 5-acre hay field for Venue entrance and Parking

PID 13-0-029903 is a 16.5-acre parcel for the proposed Event Barn.

All other parcels and structures on PID 13-0-029900 and to the South are part of the Farmstead.

Detailed Site Plan (Restoration Acres)

CONCEPT PLAN

~for~ DAVID & NANCY EMMONS
~of~ 13584 280th Place
Isle, Minnesota 56342

EXISTING PARCEL DESCRIPTION:

PARCEL A:

That part of the SW1/4 of the NW1/4 of Section 18, Township42, Range 24, Altkin County, Minnesota, described as follows: Commencing at the Southwest Corner of said NW1/4; thence on an assumed bearing of North 01 degrees 12 minutes 04 seconds West along the west line of said Section 18, a distance of 527.34 feet to the point of beginning of the parcel to be herein described; thence North 82 degrees 05 minutes 42 seconds East, a distance of 664.54 feet to the East line of the West 660.00 feet of the SW1/4 of the NW1/4, thence 01 degree 12 minutes 04 seconds West, along said line, a distance of 410.25 feet to the South line of the North 330.00 feet of said SW1/4 of the NW¼; thence South 85 degrees 45 minutes 17 seconds West, a distance of 660.93 feet to the West line of Section 18; thence South 01 degree 12 minutes 04 seconds East along said line 452.74 feet to the point of beginning.

Subject to easements of record and subject to the right of the public to 280th Place.

PARCEL B:

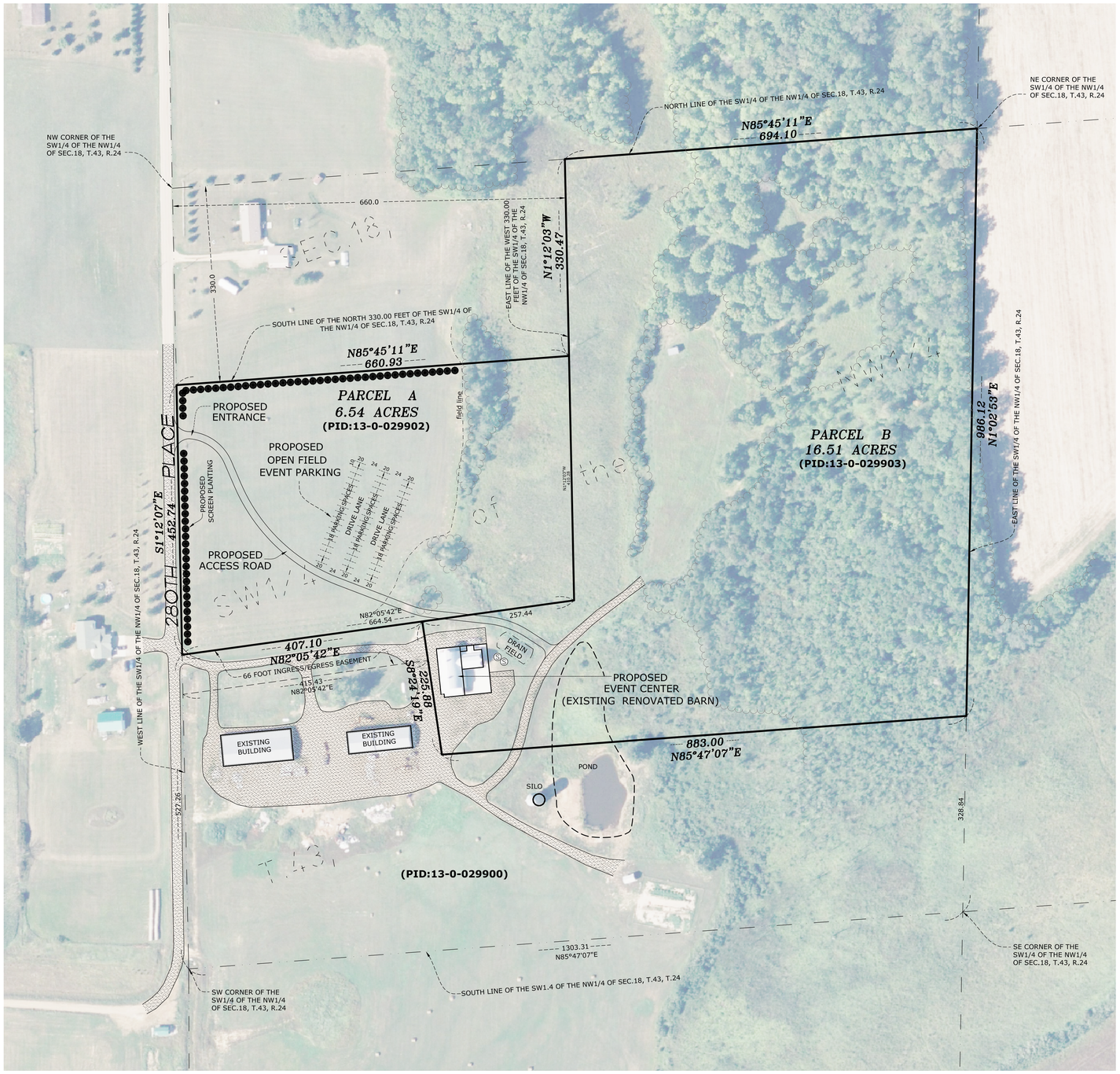
That part of the SW1/4 of the NW1/4 of Section 18, Township42, Range 24, Altkin County, Minnesota, described as follows:

Commencing at the Southwest Corner of said NW1/4; thence on an assumed bearing of North 01 degrees 12 minutes 04 seconds West along the west line of said Section 18, a distance of 527.34 feet; thence North 82 degrees 05 minutes 42 seconds East, a distance of 407.10 feet to the point of beginning of the parcel herin described; thence North 8 degree 24 minutes 19 seconds East, a distance of 225.88 feet; thence North 85 degrees 47 minutes 10 seconds East, a distance of 884.84 feet to the East line of said SW1/4 of the NW1/4; thence North 01 degree 00 minutes 09 seconds East, along last said line, a distance of 986.02 feet to the North line of said SW1/4 of the NW1/4; thence South 85 degrees 45 minutes 17 seconds West along last said line, a distance 695.15 feet to the East line of the West 660.00 feet of said SW1/4 of the NW1/4; thence South 01 degree 12 minutes 04 seconds East alonglast said line 740.73 feet to the intersection with a line bearing North 82 degrees 05 minutes 42 seconds East and to said point

Subject to easements of record.

NOTES

- Bearings shown are on Aitkin County datum.
- Parcel ID Number: 13-0-029902 & 13-0-029903.
- Total Parcel Area: 23.05 Acres.
- Property is Zoned: Rural Residential
- Building Setbacks: 50 Feet Front Yard - From Twsp Road Centerline
  30 Feet From Adjacent Property Line
- Maximum Impervious Surface Coverage: 35%
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.



NORTH

GRAPHIC SCALE

100 0 50 100 200

1 INCH = 100FEET

E. G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

JASON E. RUD

Date: December 26, 2024 License No. 41578

DRAWN BY: CJT		JOB NO: 24.1376MS	DATE: 01/27/24
CHECK BY: JER		FIELD CREW:	
1	01/27/24	REMOVE RV SITES, ADD PLANTINGS	CJT
2			
3			
NO.	DATE	DESCRIPTION	BY

CONCEPT PLAN

~for~ DAVID & NANCY EMMONS
~of~ 13584 280th Place
Isle, Minnesota 56342

EXISTING PARCEL DESCRIPTION:

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Subject to easements of record.

NOTES

- Bearings shown are on Aitkin County datum.
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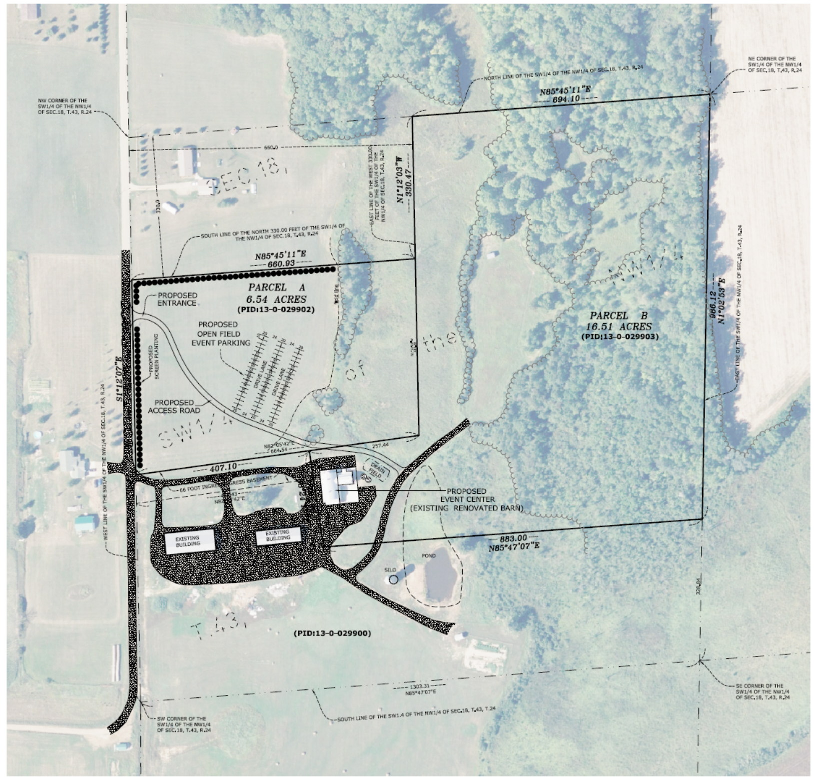
- Total Parcel Area: 23.05 Acres.
- Property is Zoned: Rural Residential
- Building Setbacks: 50 Feet Front Yard – From Twsp Road Centerline
  30 Feet From Adjacent Property Line
- Maximum Impervious Surface Coverage: 35%
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.

NORTH

GRAPHIC SCALE

1 INCH = 100FEET



E. G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

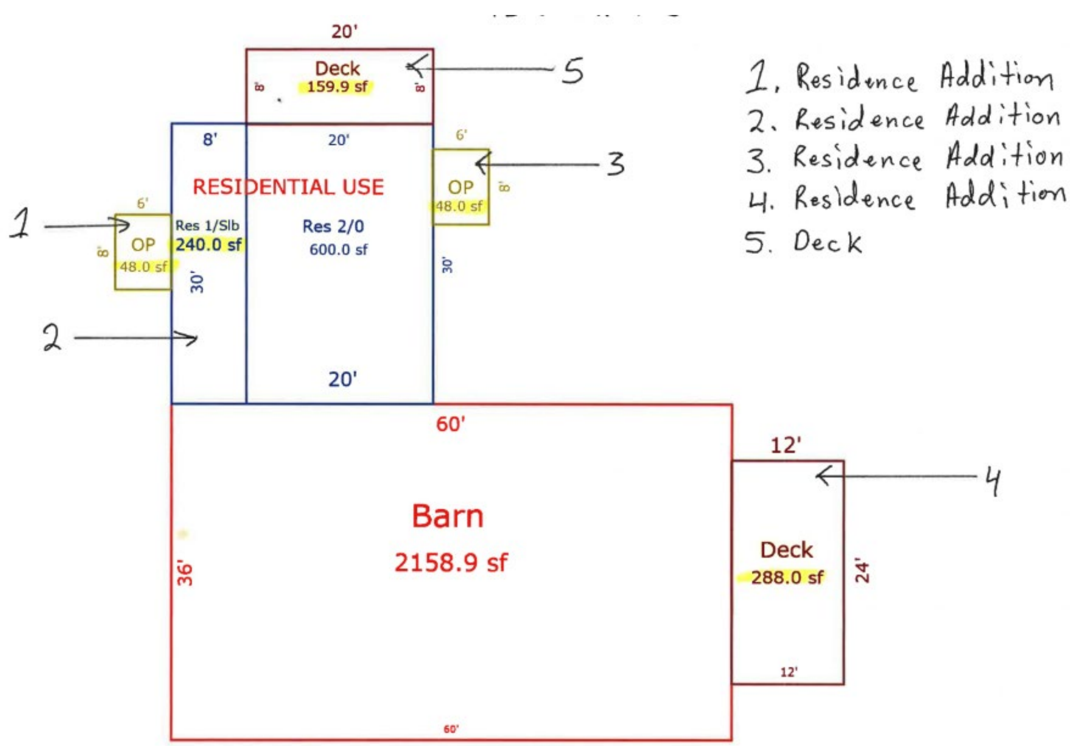
I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

JASON E. RUD

Date: December 26, 2024 License No. 4

24.1376MS

Event Barn Floorplan



R & R Septic
A division of Rum River Ranch, Inc.
11603-290th St., Onamia, MN 56359
(320) 339-1890

2/15/2025

RE: PID 13-0-029900
13584 280TH PL ISLE, MN

Hello,

Please see the attached septic design:

System figured at 300 people at 6 G.P.D. =1800 G.P.D. needed
A 5-bedroom mound = 750 G.P.D. and a 7-bedroom mound = 1050 G.P.D.
For a total of 1800 G.P.D. system

Septic Mound design for the rebuild and adding to existing mound to make a 5-bedroom mound system with an additional 7-bedroom mound system added alongside.
Reuse existing 1500-gal combo tank add a 2000-gal combo tank and 1650-gal reverse combo tank with 2 alternating pumps in the 1000-gal chamber The 1650-gal reverse that will alternate pumping between the two new mounds.

Any questions or concerns please call.

Thanks,

Ron Straka
Lic. # L2846

COVER SHEET (to accompany all designs)

All components and setbacks shall be shown on the sketch provided by the Designer

Owner Name: EMMONS / DAVID	Owner Telephone # Cell #
Owner Address: 4767 WALNUT RD P.O. BOX 438 ISLE MN	
Address of Property where system is to be installed: 13584 280TH PL ISLE MN 56342	
Installer Name:	Installer Telephone # Cell #
Installer Address:	License # Installer FAX #
Designer name: RONALD STRAKA License # L2846	Designer Telephone # Cell # 320-339-1890
Designer address: 11603-290TH ST, ONAMIA, MN 56359	Designer E-mail: RSTRAKA@HOTMAIL.COM Designer FAX #
	Parcel #: 13-0-029900
Type of Dwelling: EVENT CENTER	# of bedrooms: 5+7 Flow (gpd): 750+1050

(NEW SYSTEM) or REPLACEMENT SYSTEM or (UPGRADE) (Please Circle)

SEPTIC/PUMP TANKS: Pump tank capacity: 1650 COMBO REV. USE 1000 GAL A PUMP TANK 1000 GAL	**County recommends sizing septic tank based on garbage disposal if there is a new dishwasher in the home** ALT. BETWEEN MOUNDS -
Pump in basement : Yes / (No)	Septic Tank Capacity: 1500 GAL COMBO EXISTING 6 + 2000 GAL COMBO + 650 GAL
FILTER/ALARM: Yes / (No)	Pressure Test Required Yes / (No)
Plan for existing tank, if any: REUSE	
Distance from nearest well,(show all wells w/in 100' on sketch), including neighboring wells: 50'+	Well type: (deep) or shallow
Distance from nearest building(s) 10'+	Distance from OHWL NA
Distance from all property lines (show all property lines in sketch) 20'+	Distance to Road 100'+
DRAINFIELD Type of drainfield 2 - MOUNDS	MOUND #1 48'x103' MOUND #2 48'x128' Size of drainfield:
Depth to restricting layer: 11"	Height of Lift to be added: 36"
Circle One: Standard Sys. (Type I) Holding Tanks (Type II)	Other Sys. (Type III) Pretreatment Sys. (IV)
Distance from nearest well 50'+	Well type: (deep) or shallow
Distance from building(s) 20'+	Distance from OHWL NA
Distance from property lines 20'+	Distance to Road 100'+

NOTE: REBUILD EXISTING MOUND TO A 5 BEDROOM SYSTEM. ADD A 7 BEDROOM MOUND SYSTEM. TOTAL FOR 300 PEOPLE 6 GAL PER PERSON 6X300= 1800 G.P.D.

I hereby certify that I am a currently licensed SSTS designer certified to design this system, that I have followed all requirements of State and County SSTS Codes and that the number of bedrooms identified is true and correct.

Designer Signature: RS

Date: 2/15/25

5 BED MOUND = 750 GPD
7 BED MOUND = 1050 GPD

1800 GPD

2011 purple code

Mound Design

www.SepticResource.com (vers 24.8)

Property Owner: DAVID / EMMONS **Date:** 2/15/25

Site Address: 13584 280TH PL **PID:** 13-0-029900

Comments: ISLE MN

instructions: = enter data = adjust if desired = computer calculated - DO NOT CHANGE!

1) 5 bedroom Type I Residential System

2) 750 GPD design flow

3) No Garbage disposal or pumped to septic

4) 1500 Gal Septic tank (code minimum) 1500 Gal Septic tank (design size / LUG req'd)
Tank options: none

5) 1.2 GPD/ft^2 mound sand loading rate contour loading rate of 12 req's a min 62.5 ft. long rockbed

6) 10.0 ft rockbed width 62.5 ft rockbed length

7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection

8) 3 laterals 60.5 feet long 21.0 perfs / lateral 63 perfs total
(1/2 a perf means the 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 & spacing, & pipe size on line 12, max perfs/lateral = 25, line #8 must be less --> OK

10) 4.0 doses per day (4 minimum)

11) 188 gallons per dose (treatment volume)

12) 2.00 inch diameter laterals must be used to meet "4x pipe volume" requirement

13) 30 feet of 2.0 inch supply line leads to 5 gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)

14) 193 gallons TOTAL pump out volume (treatment + drainback)

15) 9 feet vertical lift from pump to mound laterals, leads to a:

16) 47 GPM @ 17 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)

17) 750 gal Dose tank (code minimum) 1000 gal Dose tank (design size / LUG req'd) at 23.00 gpi
leads to a:

18) 8.4 inch swing on Demand float,

Optional Time dosing of:
(this delivers Average flow, =70% of Peak design flow)

4.1	min ON
8.5	hrs OFF - normal
12	inches to "Timer ON" float
33	inches to "Hi Level" float
5.9	hrs OFF - peak / OR

19) 12 inches from bottom of tank to "Pump OFF" float

20) 20 inches from bottom of tank to "Pump ON" float

21) 23 inches from bottom of tank to "Hi Level" float

22) 471 gallons reserve capacity (after High Level Alarm is activated-demand dosed)

23) 0.60 gpd/ft² Absorption area Soil Loading Rate, (this must match the soil boring log) which gives a mound ratio of 2 (minimum) desired mound ratio 2.0

24) 1 percent site slope (0-20% range) 1 (% downslope site slope, if different than upslope)

25) 0 inches, or 0.0 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) 36 inch, or 3.0 ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**

27) 20.0 ft.Total ABSORPTION width (with sand beyond rockbed as follows:)

28) 5.0 ft. upslope and sideslope
5.0 ft. Downslope

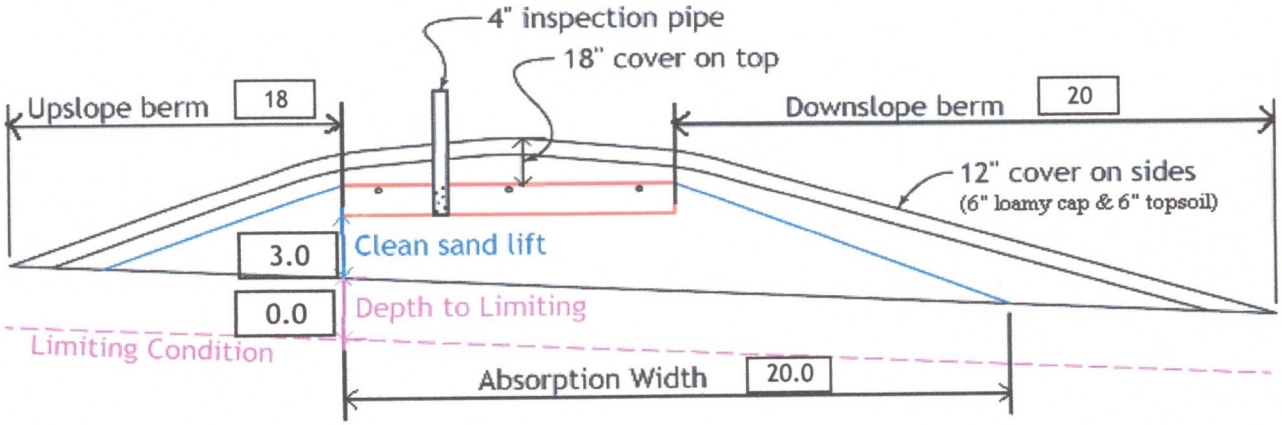
Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29) 4:1 upslope ratio 18 ft. upslope berm

30) 4:1 sideslope 20 ft. sideslope berms

31) 4:1 downslope 20 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 62.5 ft. long Rock bed
48 ft. wide by 103 ft. long Mound footprint



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*.

33) Rock Bed:
10.0 ft. by 62.5 ft. by 9 inches under pipe, plus 20% gives 28 yd³ or *1.4= 39 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)
107.8 up + 122.7 downslope + 24.9 ends + 70.6 under rock = 391 yd³ or *1.4= 548 ton
plus 20%

35) Loamy Cap:
44 ft. by 99 ft. 6" deep, plus 20% gives 97 yd³ or *1.4= 136 ton

36) Topsoil:
48 ft. by 103 ft. 6" deep, plus 20% gives 110 yd³ or *1.4= 154 ton

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

Designer Signature	Company	License#	Date
RD	R & R SEPTIC	L2846	2/15/25

Installer Summary

1500 gallon Septic tank (minimum) — Tank options: none

1000 gallon Dose tank (minimum) — at 23.00 gpi

47 GPM @ 17 ft. of head, Pump required

8.4 inch swing on Demand float — which translates to roughly 5.2 inches of float tether length

Optional Time dosing of:

- 4.1 minutes ON
- 8.5 hours OFF - normal
- 12 inches to "timer ON" float
- 33 inches to "Hi level" float

20 inches from bottom of tank to "pump ON" float, or

23 inches from bottom of tank to "Hi Level Alarm" or

30 ft. of 2.0 inch supply line with end feed manifold connection

(Tip: "top feed" manifold to control drainback)

36 inch, or 3.0 ft. Sand Lift Mound

10.0 ft. wide by 62.5 ft. long Rock bed

3 laterals 2.00 inch diameter 60.5 ft. long 3.0 ft. lateral spacing

1/4" inch perfs 3.0 ft. perforation spacing

No Effluent filter & optional alarm

3 clean out & valve box assemblies

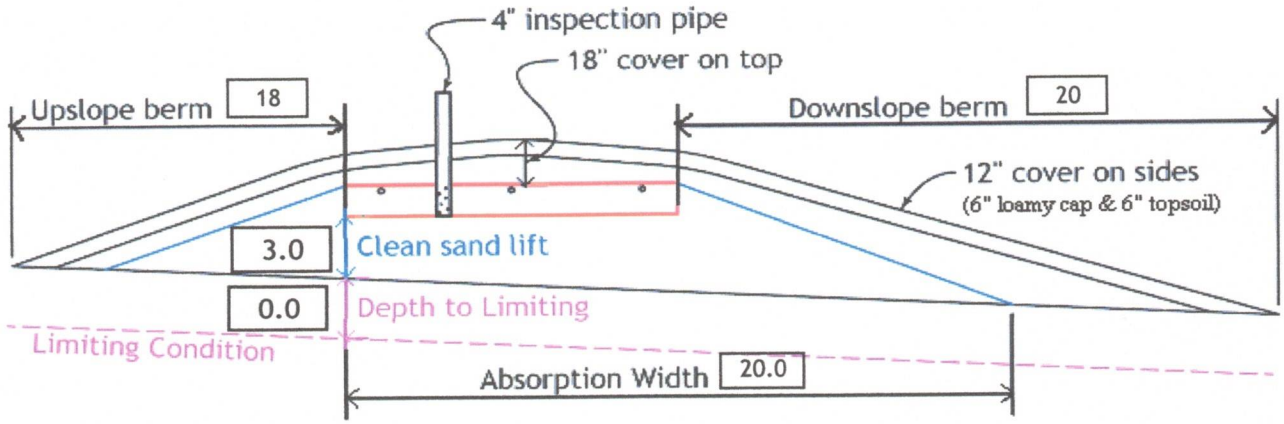
20.0 ft.Total sand ABSORPTION width (minimum)

5.0 ft. upslope and sideslope (sand beyond rockbed, minimum)

5.0 ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:

4:1	upslope ratio	18	ft. upslope berm
4:1	sideslope	20	ft. sideslope berms
4:1	downslope	20	ft. downslope berm



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:	28.0	yd^3 or *1.4=	39	ton	9 inches under pipe
Mound Sand:	391	yd^3 or *1.4=	548	ton	calculation based on 3:1/4:1 slope from top of rockbe
Loamy Cap:	97	yd^3 or *1.4=	136	ton	6" deep
Topsoil:	110	yd^3 or *1.4=	154	ton	6" deep

INSPECTOR CHECKLIST - mound

☐ WELL setbacks: 20'- 50' to sewer line req's MDH pressure test form (5 psi for 15 min)
50' to everything 100' to drainfield with shallow well

☐ PROPERTY LINES setback: 10' to everything

☐ Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.

☐ LAKE / BLUFF setback: 20' for bluff. Lakes: GD ___, RD ___, NE ____. Protected wetland ___.

☐ Building setbacks: 10' for everything, 20' for dispersal area.

☐ WATER LINE under pressure 10' to bed,tank & sewer line. (else sewer line > 12" below)

☐ Sewer line & tank connection (no hard 90's, long sweep 90 or 2-45's, slope minimum 1" in 8' = 1%)
(no depth req's, clean out every 100', Sch 40 pipe)

☐ Septic tank and risers (water tight risers, baffles, insulated, proper depth, existing verified by pumping)
mfg_____ 1500 gallons none

☐ Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.

☐ No effluent filter & optional alarm

☐ Dose tank, risers and piping (water tight risers, insulated, proper depth, drainback)
mfg_____ 1000 gallons

Optional Time dosing of:
4.1 min ON 8.5 hr OFF

☐ dose pump _____ 47 gpm 17 head VERIFY PUMP CURVE

☐ verify that installed "vertical lift from pump to laterals" is no more than design value of 9 feet

☐ float setting drop 8.4 inches at 23.0 gpi "DESIGNED" 5.2 inches approx float tether length
193.0 gal dose divided by _____ gpi "INSTALLED" = _____ inches float drop (field corrected
LABEL pump requirements and drawdown on riser or panel

☐ Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)

☐ 2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.

☐ splice box / control panel / electrical connections / Hi Level Alarm

☐ flow measurement: CT, ETM, time dosed, home water meter

☐ mound absorption area rough up

☐ mound rock dimensions 10.0 X 62.5

☐ Sand lift depth 36 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

☐ Absorption Sand beyond rock 5.0 upslope 5.0 downslope

☐ Bermed topsoil beyond rockbed 18 upslope 20 sideslope 20 downslope

☐ cover depth of 12-18"+ VERIFY

☐ 3 laterals (1-2' from edge of rock)

☐ 2.00 inch pipe size (Sch40 pipe & fittings)

☐ 3.0 ft lateral spacing

☐ 1/4" inch perforations

☐ 3.0 ft perforation spacing

☐ Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY

☐ clean outs (no hard 90's)

☐ 4" inspection pipe to bottom of rock, anchored VERIFY

☐ Abandon existing system - if necessary ☐ Re-use existing tank certification

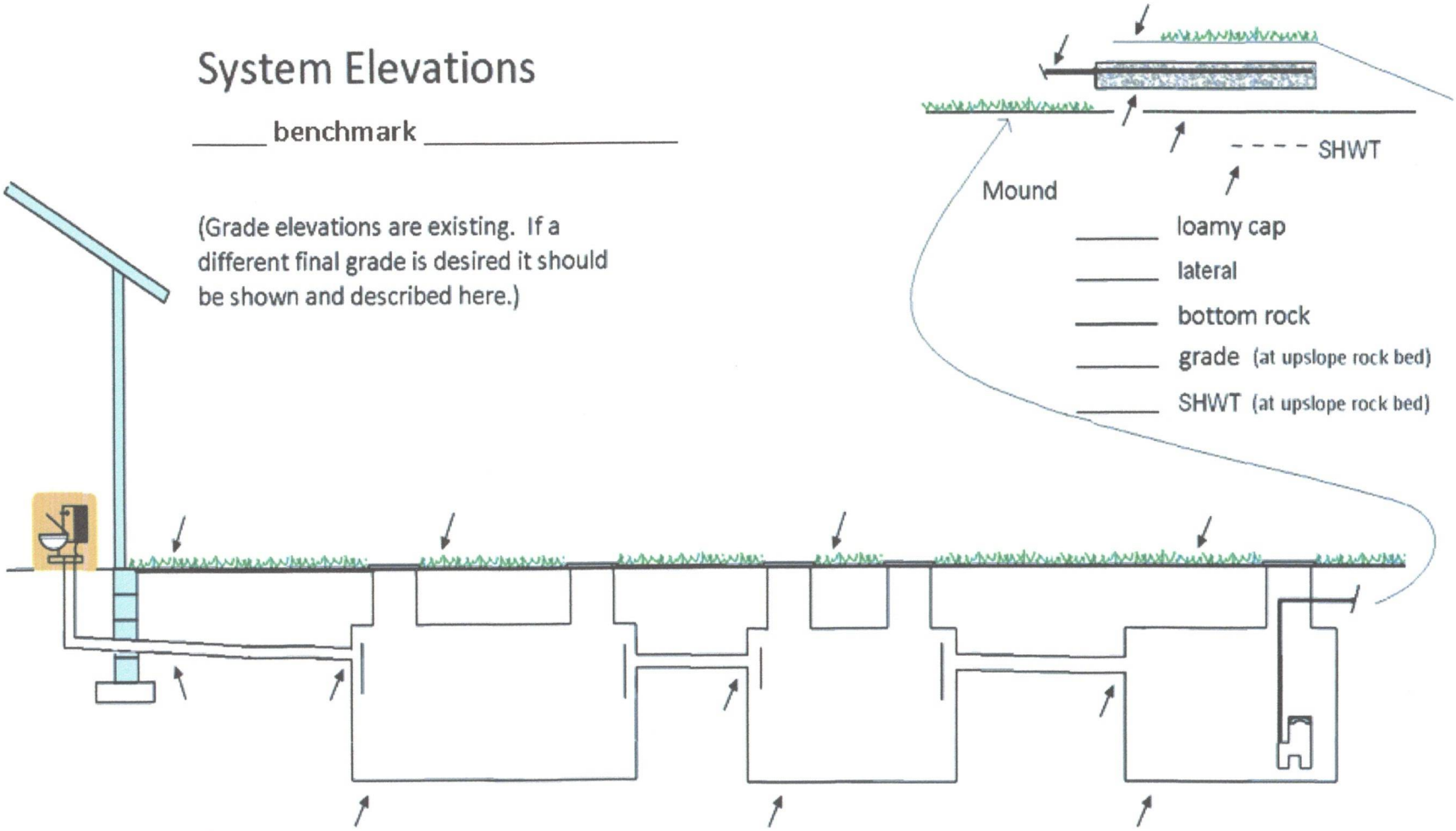
☐ monitoring plan and type _____

☐ well abandonment form - if necessary

System Elevations

_____ benchmark _____

(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



Sewer pipe exiting house

_____ Grade

_____ Pipe

Septic Tank

_____ Grade

_____ inlet

_____ Tank bottom

Septic Tank (if applicable)

_____ Grade

_____ inlet

_____ Tank bottom

Pump Tank

_____ Grade

_____ inlet

_____ Tank bottom

2011 purple code

Mound Design

www.SepticResource.com (vers 24.8)

Property Owner: DAVID/EMMONS **Date:** 2/15/25

Site Address: 13584 280TH PL **PID:** 13-0-029900

Comments: ISLE MN

instructions: [ ] = enter data [ ] = adjust if desired [ ] = computer calculated - DO NOT CHANGE!

1) 7 bedroom Type I Residential System

2) 1050 GPD design flow

3) No Garbage disposal or pumped to septic

4) 2000 Gal Septic tank (code minimum) 2000 Gal Septic tank (design size / LUG req'd)
Tank options: none

5) 1.2 GPD/ft^2 mound sand loading rate contour loading rate of 12 req's a min 87.5 ft. long rockbed

6) 10.0 ft rockbed width 87.5 ft rockbed length

7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection

8) 3 laterals 85.5 feet long 29.0 perfs / lateral 87 perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)

9) 7/32 inch perfs at 1 feet residual head gives 0.56 gpm flow rate per perforation

for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 30, line #8 must be less --> OK

10) 4.0 doses per day (4 minimum)

11) 263 gallons per dose (treatment volume)

12) 2.00 inch diameter laterals must be used to meet "4x pipe volume" requirement

13) 30 feet of 2.0 inch supply line leads to 5 gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)

14) 268 gallons TOTAL pump out volume (treatment + drainback)

15) 9 feet vertical lift from pump to mound laterals, leads to a:

16) 49 GPM @ 17 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)

17) 1050 gal Dose tank (code minimum) 1000 gal Dose tank (design size / LUG req'd) at 23.00 gpi
leads to a:

Optional Time dosing of:
(this delivers Average flow, =70% of Peak design flow)

18) 11.7 inch swing on Demand float,

5.5	min ON
8.5	hrs OFF - normal
12	inches to "Timer ON" float
37	inches to "Hi Level" float
5.9	hrs OFF - peak / OR

19) 12 inches from bottom of tank to "Pump OFF" float

20) 24 inches from bottom of tank to "Pump ON" float

21) 27 inches from bottom of tank to "Hi Level" float

22) 379 gallons reserve capacity (after High Level Alarm is activated-demand dosed)

23) 0.60 gpd/ft² Absorption area Soil Loading Rate, (this must match the soil boring log) which gives a mound ratio of 2 (minimum) desired mound ratio 2.0

24) 1 percent site slope (0-20% range) 1 (% downslope site slope, if different than upslope)

25) 0 inches, or 0.0 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) 36 inch, or 3.0 ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**

27) 20.0 ft.Total ABSORPTION width (with sand beyond rockbed as follows:)

28) 5.0 ft. upslope and sideslope
5.0 ft. Downslope

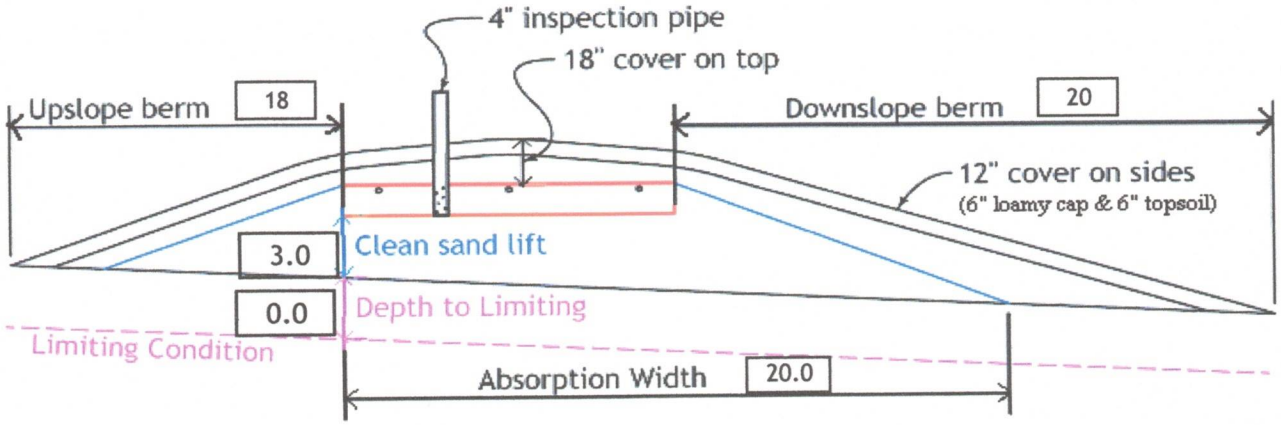
Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29) 4:1 upslope ratio 18 ft. upslope berm

30) 4:1 sideslope 20 ft. sideslope berms

31) 4:1 downslope 20 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 87.5 ft. long Rock bed
48 ft. wide by 128 ft. long Mound footprint



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*.

33) Rock Bed:
10.0 ft. by 87.5 ft. by 9 inches under pipe, plus 20% gives 39 yd³ or *1.4= 55 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)
136.3 up + 155.1 downslope + 24.9 ends + 98.8 under rock = 498 yd³ or *1.4= 698 ton
plus 20%

35) Loamy Cap:
44 ft. by 124 ft. 6" deep, plus 20% gives 121 yd³ or *1.4= 169 ton

36) Topsoil:
48 ft. by 128 ft. 6" deep, plus 20% gives 136 yd³ or *1.4= 190 ton

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

Designer Signature	Company	License#	Date
RD	R&R SEPTIC	L2846	2/15/25

Installer Summary

2000 gallon Septic tank (minimum) Tank options: none

1000 gallon Dose tank (minimum) at 23.00 gpi

49 GPM @ 17 ft. of head, Pump required

11.7 inch swing on Demand float which translates to roughly 6.9 inches of float tether length

Optional Time dosing of:

5.5 minutes ON

8.5 hours OFF - normal

12 inches to "timer ON" float

37 inches to "Hi level" float

24 inches from bottom of tank to "pump ON" float, or

27 inches from bottom of tank to "Hi Level Alarm" or

30 ft. of 2.0 inch supply line with end feed manifold connection

(Tip: "top feed" manifold to control drainback)

36 inch, or 3.0 ft. Sand Lift Mound

10.0 ft. wide by 87.5 ft. long Rock bed

3 laterals 2.00 inch diameter 85.5 ft. long 3.0 ft. lateral spacing

7/32 inch perfs 3.0 ft. perforation spacing

No Effluent filter & optional alarm

3 clean out & valve box assemblies

20.0 ft.Total sand ABSORPTION width (minimum)

5.0 ft. upslope and sideslope (sand beyond rockbed, minimum)

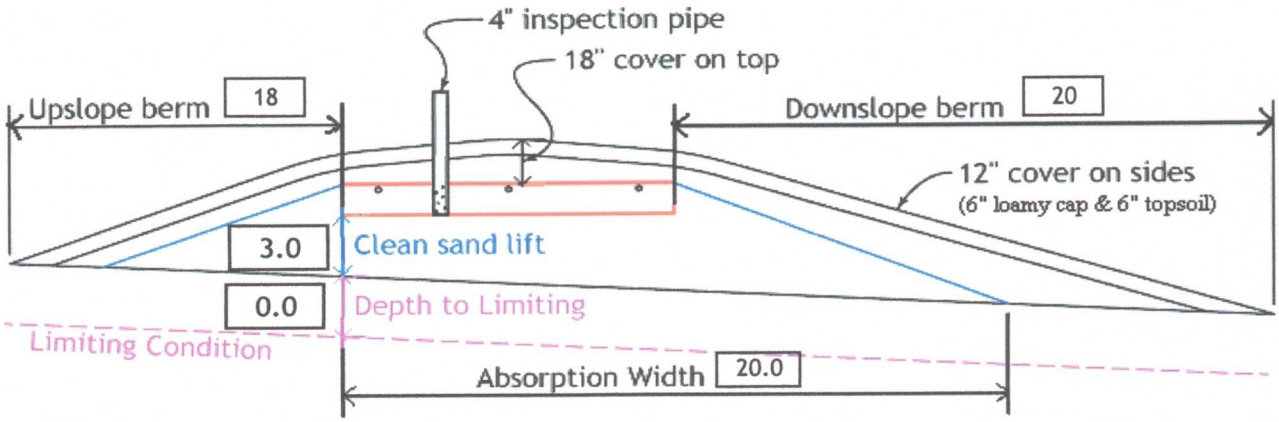
5.0 ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:

4:1 upslope ratio 18 ft. upslope berm

4:1 sideslope 20 ft. sideslope berms

4:1 downslope 20 ft. downslope berm



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:	39.0	yd^3 or *1.4=	55	ton	9 inches under pipe
Mound Sand:	498	yd^3 or *1.4=	698	ton	calculation based on 3:1/4:1 slope from top of rockbe
Loamy Cap:	121	yd^3 or *1.4=	169	ton	6" deep
Topsoil:	136	yd^3 or *1.4=	190	ton	6" deep

INSPECTOR CHECKLIST - mound

☐ WELL setbacks: 20'- 50' to sewer line req's MDH pressure test form (5 psi for 15 min)
50' to everything 100' to drainfield with shallow well

☐ PROPERTY LINES setback: 10' to everything

☐ Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.

☐ LAKE / BLUFF setback: 20' for bluff. Lakes: GD ___, RD ___, NE ____. Protected wetland ___.

☐ Building setbacks: 10' for everything, 20' for dispersal area.

☐ WATER LINE under pressure 10' to bed,tank & sewer line. (else sewer line > 12" below)

☐ Sewer line & tank connection (no hard 90's, long sweep 90 or 2-45's, slope minimum 1" in 8' = 1%)
(no depth req's, clean out every 100', Sch 40 pipe)

☐ Septic tank and risers (water tight risers, baffles, insulated, proper depth, existing verified by pumping)
mfg_____ 2000 gallons none

☐ Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.

☐ No effluent filter & optional alarm

☐ Dose tank, risers and piping (water tight risers, insulated, proper depth, drainback)
mfg_____ 1000 gallons

Optional Time dosing of:
5.5 min ON 8.5 hr OFF

☐ dose pump _____ 49 gpm 17 head VERIFY PUMP CURVE

☐ verify that installed "vertical lift from pump to laterals" is no more than design value of 9 feet

☐ float setting drop 11.7 inches at 23.0 gpi "DESIGNED" 6.9 inches approx float tether length
268.0 gal dose divided by _____ gpi "INSTALLED" = _____ inches float drop (field corrected
LABEL pump requirements and drawdown on riser or panel

☐ Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)

☐ 2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.

☐ splice box / control panel / electrical connections / Hi Level Alarm

☐ flow measurement: CT, ETM, time dosed, home water meter

☐ mound absorption area rough up

☐ mound rock dimensions 10.0 X 87.5

☐ Sand lift depth 36 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

☐ Absorption Sand beyond rock 5.0 upslope 5.0 downslope

☐ Bermed topsoil beyond rockbed 18 upslope 20 sideslope 20 downslope

☐ cover depth of 12-18"+ VERIFY

☐ 3 laterals (1-2' from edge of rock)

☐ 2.00 inch pipe size (Sch40 pipe & fittings)

☐ 3.0 ft lateral spacing

☐ 7/32 inch perforations

☐ 3.0 ft perforation spacing

☐ Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY

☐ clean outs (no hard 90's)

☐ 4" inspection pipe to bottom of rock, anchored VERIFY

☐ Abandon existing system - if necessary ☐ Re-use existing tank certification

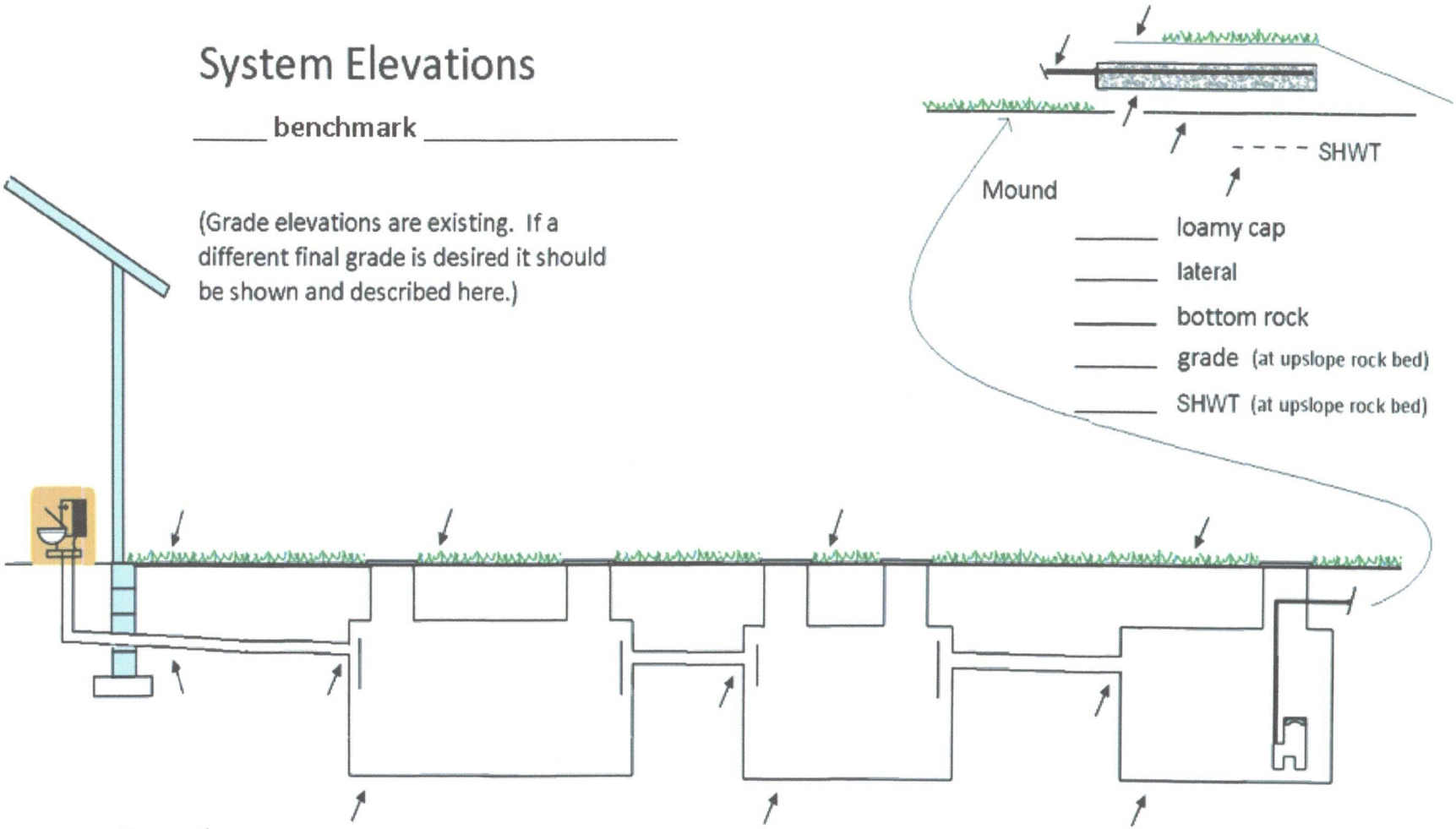
☐ monitoring plan and type _____

☐ well abandonment form - if necessary

System Elevations

_____ benchmark _____

(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



Sewer pipe exiting house

_____ Grade

_____ Pipe

Septic Tank

_____ Grade

_____ inlet

_____ Tank bottom

Septic Tank (if applicable)

_____ Grade

_____ inlet

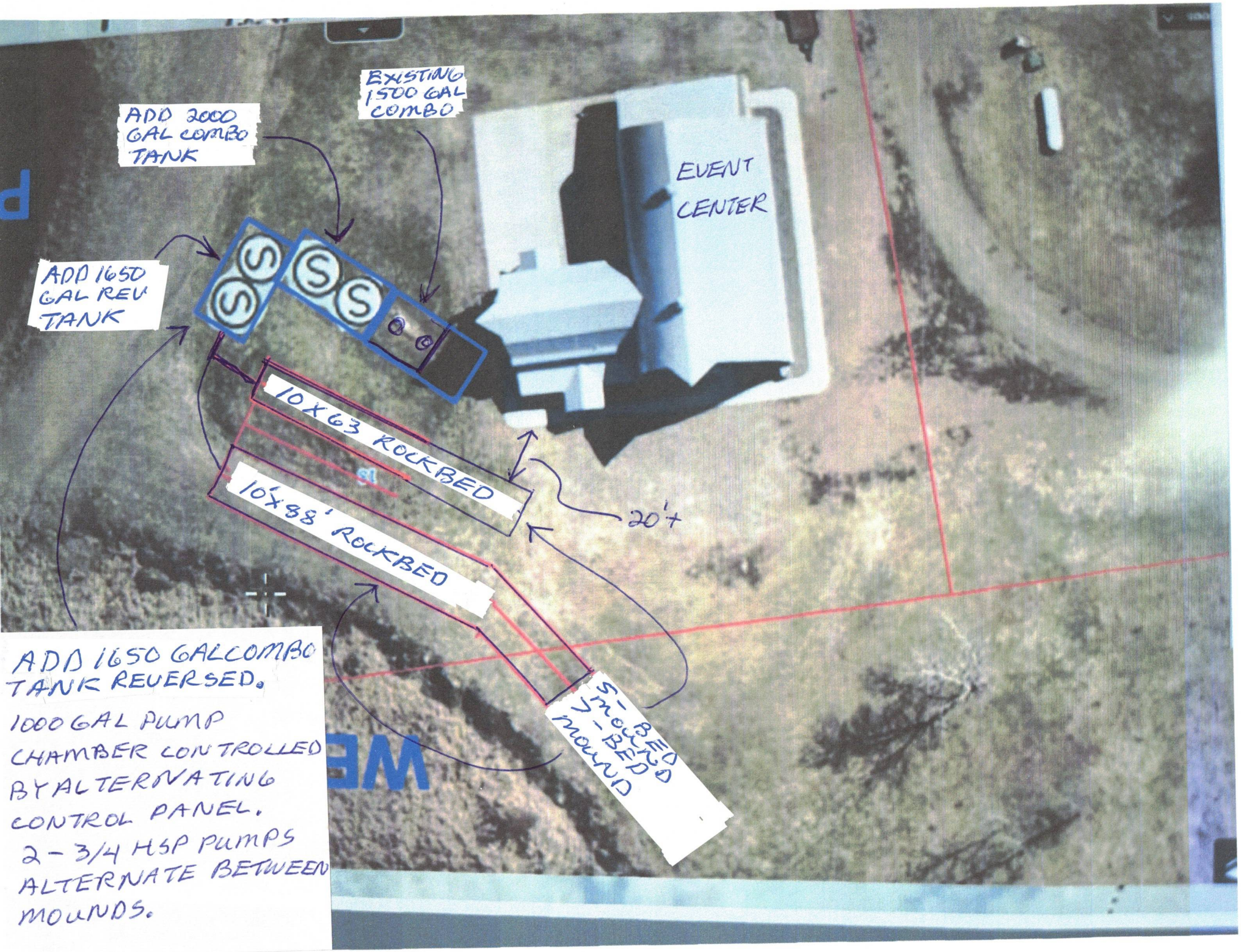
_____ Tank bottom

Pump Tank

_____ Grade

_____ inlet

_____ Tank bottom



ADD 1650 GAL COMBO TANK REVERSED.

1000 GAL PUMP CHAMBER CONTROLLED BY ALTERNATING CONTROL PANEL.

2-3/4 HSP PUMPS ALTERNATE BETWEEN MOUNDS.

U of MN Onsite Sewage Treatment Program Soil Boring Log

Client/ Address: 13584 280TH PL ISLE

Legal Description/GPS:

Date: 11/15/24

Soil Parent Material(s): Till Outwash Lacustrine Alluvium Loess Organic Matter Bedrock
(circle all that apply)

Landscape Position: Summit Shoulder Back/Side Slope Foot Slope Toe Slope
(circle one)

Vegetation: FIELD

Soil Survey Map Unit(s):

Slope (%):

Weather conditions/Time of Day:

Slope Shape:

	Depth (in)	Texture	Matrix Color(s)	Mottle Color(s)	Redox Kind(s)	Saturated Soil Indicator(s) (see back)	Structure: Shape	Structure: Grade	Consistence
PIT #1	0 - 8"	FINE SANDY LOAM	4/2 10YR		Concentrations Depletions Gleyed		Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid
	8" - 11"	SANDY LOAM	5/4 10YR	5/8 10YR	Concentrations Depletions Gleyed	MOTTLES AT 11"	Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid
PIT #2	0 - 9"	F S L	4/2 10YR		Concentrations Depletions Gleyed		Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid
	9" - 11"	S L	5/4 10YR	5/8 10YR	Concentrations Depletions Gleyed	MOTTLES AT 11"	Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid
PIT #3	0 - 10"	F S L	4/2 10YR		Concentrations Depletions Gleyed		Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid
	10" - 11"	S L	5/4 10YR	5/8 10YR	Concentrations Depletions Gleyed	MOTTLES AT 11"	Granular Platy Blocky Prismatic Single Grain Massive	Weak Moderate Strong Loose	Loose Friable Firm Extremely Firm Rigid

Comments:

Map Scale: 1:1,290 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 25, Sep 7, 2024

Soil Survey Area: Mille Lacs County, Minnesota
Survey Area Data: Version 19, Sep 7, 2024

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 13, 2021—Aug 14, 2021

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
544	Cathro muck	0.6	7.6%
685	Oesterle fine sandy loam	0.2	2.0%
1354A	Aftad fine sandy loam, 0 to 3 percent slopes	6.7	81.7%
Subtotals for Soil Survey Area		**7.5**	**91.3%**
Totals for Area of Interest		**8.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
C27A	Oesterle-Scott Lake complex, 0 to 3 percent slopes	0.7	8.7%
Subtotals for Soil Survey Area		**0.7**	**8.7%**
Totals for Area of Interest		**8.2**	**100.0%**

Aitkin County, Minnesota

1354A—Aftad fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: gjd6
Elevation: 980 to 1,640 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 120 to 140 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Aftad and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aftad

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: fine sandy loam
E,E/B - 3 to 25 inches: loamy fine sand
Bt1,Bt2,BC - 25 to 44 inches: very fine sandy loam
C - 44 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F090AY016WI - Loamy Upland
Forage suitability group: Sloping Upland, Acid (G090AN006MN)

Other vegetative classification: Sloping Upland, Acid (G090AN006MN)
Hydric soil rating: No

Minor Components

Leafriver
Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Nemadji
Percent of map unit: 3 percent
Hydric soil rating: No

Oesterle
Percent of map unit: 3 percent
Hydric soil rating: No

Omega
Percent of map unit: 3 percent
Hydric soil rating: No

Wealthwood
Percent of map unit: 3 percent
Landform: Swales
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 25, Sep 7, 2024

Soil Survey Area: Mille Lacs County, Minnesota
Survey Area Data: Version 19, Sep 7, 2024

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Septic System Management Plan for Above Grade Systems

The goal of a septic system is to protect human health and the environment by properly treating wastewater before returning it to the environment. Your septic system is designed to kill harmful organisms and remove pollutants before the water is recycled back into our lakes, streams and groundwater.

This **management plan** will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic maintainer or service provider. However, it is **YOUR** responsibility to make sure all tasks get accomplished in a timely manner.

The University of Minnesota's *Septic System Owner's Guide* contains additional tips and recommendations designed to extend the effective life of your system and save you money over time.

Proper septic system design, installation, operation and maintenance means safe and clean water!

Property Owner	EMMONS/DAVID	Email	
Property Address	13584 280TH PL ISLE MN	Property ID	13-0-029900
System Designer	R&R SEPTIC	Contact Info	320-339-1890
System Installer		Contact Info	
Service Provider/Maintainer		Contact Info	
Permitting Authority	AITKIN CTY	Contact Info	
Permit #		Date Inspected	

Keep this Management Plan with your Septic System Owner's Guide. The Septic System Owner's Guide includes a folder to hold maintenance records including pumping, inspection and evaluation reports. Ask your septic professional to also:

- Attach permit information, designer drawings and as-built of your system, if they are available.
- Keep copies of all pumping records and other maintenance and repair invoices with this document.
- Review this document with your maintenance professional at each visit; discuss any changes in product use, activities, or water-use appliances.

For a copy of the *Septic System Owner's Guide*, visit www.bookstores.umn.edu and search for the word "septic" or call 800-322-8642.

For more information see http://septic.umn.edu

Version: August 2015

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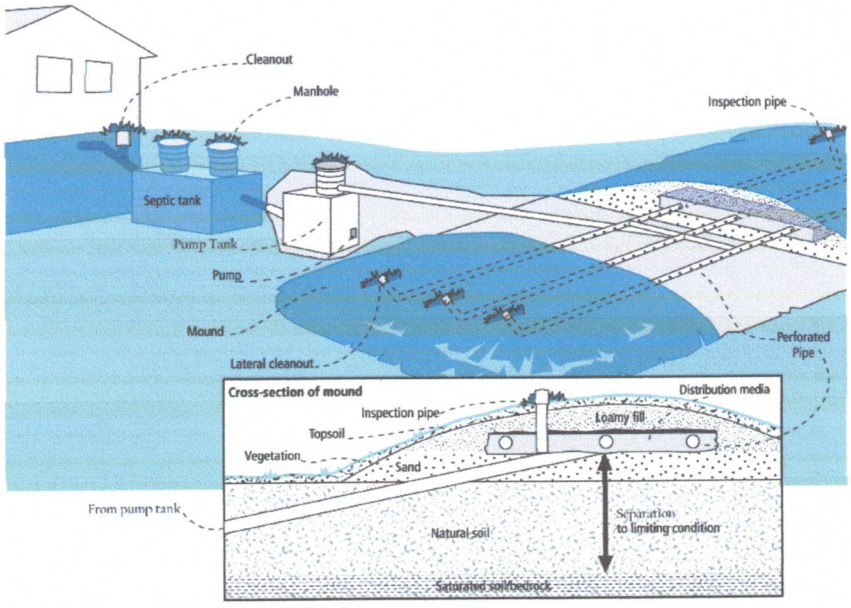
Septic System Management Plan for Above Grade Systems

Your Septic System



Septic System Specifics

System Type: ◯ I ◯ II ☒ III ◯ IV* ◯ V*

(Based on MN Rules Chapter 7080.2200 – 2400)

**Additional Management Plan required*

☐ System is subject to operating permit*

☐ System uses UV disinfection unit*

Type of advanced treatment unit _____

Dwelling Type

Number of bedrooms: 5 + 7 BED MOUND

System capacity/ design flow (gpd): 1800

Anticipated average daily flow (gpd): 1620

Comments _____

Business? : ◯ Y ◯ N What type? _____

Well Construction

Well depth (ft): _____

☐ Cased well Casing depth: _____

☐ Other (specify): _____

Distance from septic (ft): 50'+

Is the well on the design drawing? ◯ Y ◯ N

Septic Tank

1650 REVERSE

☑ First tank *Tank volume:* 1500 *gallons*

Does tank have two compartments? ☒ Y ◯ N

☑ Second tank *Tank volume:* 2000 *gallons* COMBO

☐ Tank is constructed of CONCRETE

☐ Effluent screen: ◯ Y ☒ N Alarm ◯ Y ☒ N

☑ Pump Tank USE 1000 GAL SIDE

☐ Effluent Pump *make/model:* 2-293's

Pump capacity 49 GPM

TDH 17 Feet of head

☑ Alarm location IN EVENT CENTER

Soil Treatment Area (STA)

Mound/At-Grade area (width x length): 48 ft x 103 ft & 48 x 128

Rock bed size (width x length): 10' ft x 63' ft & 10' x 88'

Location of additional STA: _____

Type of distribution media: ROCK

☐ Cleanouts

☐ Additional STA not available

Homeowner Management Tasks

These op*eration and maintenance ac*tivities are your responsibility. *Chart on page 6 can help track your activities.*

Your toilet is not a garbage can. Do not flush anything besides human waste and toilet paper. No wet wipes, cigarette butts, disposal diapers, used medicine, feminine products or other trash!

The system and septic tanks needs to be checked every 365 months

Your service provider or pumper/maintainer should evaluate if your tank needs to be pumped more or less often.

Seasonally or several times per year

- *Leaks.* Check (listen, look) for leaks in toilets and dripping faucets. Repair leaks promptly.
- *Soil treatment area.* Regularly check for wet or spongy soil around your soil treatment area. If surfaced sewage or strong odors are not corrected by pumping the tank or fixing broken caps and leaks, call your service professional. *Untreated sewage may make humans and animals sick.* Keep bikes, snowmobiles and other traffic off and control borrowing animals.
- *Alarms.* Alarms signal when there is a problem; contact your service professional any time the alarm signals.
- *Lint filter.* If you have a lint filter, check for lint buildup and clean when necessary. If you do not have one, consider adding one after washing machine.
- *Effluent screen.* If you do not have one, consider having one installed the next time the tank is cleaned along with an alarm.

Annually

- *Water usage rate.* A water meter or another device can be used to monitor your average daily water use. Compare your water usage rate to the design flow of your system (listed on the next page). Contact your septic professional if your average daily flow over the course of a month exceeds 70% of the design flow for your system.
- *Caps.* Make sure that all caps and lids are intact and in place. Inspect for damaged caps at least every fall. Fix or replace damaged caps before winter to help prevent freezing issues.
- *Water conditioning devices.* See Page 5 for a list of devices. When possible, program the recharge frequency based on *water demand (gallons)* rather than *time (days)*. Recharging too frequently may negatively impact your septic system. Consider updating to demand operation if your system currently uses time,
- *Review your water usage rate.* Review the Water Use Appliance chart on Page 5. Discuss any major changes with your service provider or pumper/maintainer.

During each visit by a service provider or pumper/maintainer

- Make sure that your service professional services the tank through the manhole. (NOT though a 4" or 6" diameter inspection port.)
- Ask how full your tank was with sludge and scum to determine if your service interval is appropriate.
- Ask your pumper/maintainer to accomplish the tasks listed on the Professional Tasks on Page 4.

Professional Management Tasks

These are the operation and maintenance activities that a pumper/maintainer performs to help ensure long-term performance of your system. At each visit a written report/record must be provided to homeowner.

Plumbing/Source of Wastewater

- Review the Water Use Appliance Chart on Page 5 with homeowner.
  Discuss any changes in water use and the impact those changes may have on the septic system.
- Review water usage rates (if available) with homeowner.

Septic Tank/Pump Tanks

- *Manhole lid.* A riser is recommended if the lid is not accessible from the ground surface. Insulate the riser cover for frost protection.
- *Liquid level.* Check to make sure the tank is not leaking. The liquid level should be level with the bottom of the outlet pipe. (If the water level is below the bottom of the outlet pipe, the tank may not be watertight. If the water level is higher than the bottom of the outlet pipe of the tank, the effluent screen may need cleaning, or there may be ponding in the soil treatment area.)
- *Inspection pipes.* Replace damaged or missing pipes and caps.
- *Baffles.* Check to make sure they are in place and attached, and that inlet/outlet baffles are clear of buildup or obstructions.
- *Effluent screen.* Check to make sure it is in place; clean per manufacturer recommendation. Recommend retrofitted installation if one is not present.
- *Alarm.* Verify that the alarm works.
- *Scum and sludge.* Measure scum and sludge in each compartment of each septic and pump tank, pump if needed.

Pump

- *Pump and controls.* Check to make sure the pump and controls are operating correctly.
- *Pump vault.* Check to make sure it is in place; clean per manufacturer recommendations.
- *Alarm.* Verify that the alarm works.
- *Drainback.* Check to make sure it is draining properly.
- *Event counter or elapsed time meter.* Check to see if there is an event counter or elapsed time meter for the pump. If there is one or both, calculate the water usage rate and compare to the anticipated use listed on Design and Page 2. Dose Volume: _____ gallons: Pump run time: _____ Minutes

Soil Treatment Area

- *Inspection pipes.* Check to make sure they are properly capped. Replace caps and pipes that are damaged.
- *Surfacing of effluent.* Check for surfacing effluent or other signs of problems.
- *Lateral flushing.* Check lateral distribution; if cleanouts exist, flush and clean at recommended frequency.
- *Vegetation* - Check to see that a good growth of vegetation is covering the system.

All other components – evaluate as listed here:

Water-Use Appliances and Equipment in the Home

Appliance	Impacts on System	Management Tips
Garbage disposal	• Uses additional water. • Adds solids to the tank. • Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area.	• Use of a garbage disposal is not recommended. • Minimize garbage disposal use. Compost instead. • To prevent solids from exiting the tank, have your tank pumped more frequently. • Add an effluent screen to your tank.
Washing machine	• Washing several loads on one day uses a lot of water and may overload your system. • Overloading your system may prevent solids from settling out in the tank. Unsettled solids can exit the tank and enter the soil treatment area.	• Choose a front-loader or water-saving top-loader, these units use less water than older models. • Limit the addition of extra solids to your tank by using liquid or easily biodegradable detergents. Limit use of bleach-based detergents and fabric softeners. • Install a lint filter after the washer and an effluent screen to your tank • Wash only full loads and think even – spread your laundry loads throughout the week.
Dishwasher	• Powdered and/or high-phosphorus detergents can negatively impact the performance of your tank and soil treatment area. • New models promote "no scraping". They have a garbage disposal inside.	• Use gel detergents. Powdered detergents may add solids to the tank. • Use detergents that are low or no-phosphorus. • Wash only full loads. • Scrape your dishes anyways to keep undigested solids out of your septic system.
Grinder pump (in home)	• Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area.	• Expand septic tank capacity by a factor of 1.5. • Include pump monitoring in your maintenance schedule to ensure that it is working properly. • Add an effluent screen.
Large bathtub (whirlpool)	• Large volume of water may overload your system. • Heavy use of bath oils and soaps can impact biological activity in your tank and soil treatment area.	• Avoid using other water-use appliances at the same time. For example, don't wash clothes and take a bath at the same time. • Use oils, soaps, and cleaners in the bath or shower sparingly.
Clean Water Uses	**Impacts on System**	**Management Tips**
High-efficiency furnace	• Drip may result in frozen pipes during cold weather.	• Re-route water directly out of the house. Do not route furnace discharge to your septic system.
Water softener Iron filter Reverse osmosis	• Salt in recharge water may affect system performance. • Recharge water may hydraulically overload the system.	• These sources produce water that is not sewage and should not go into your septic system. • Reroute water from these sources to another outlet, such as a dry well, draintile or old drainfield. • When replacing, consider using a demand-based recharge vs. a time-based recharge. • Check valves to ensure proper operation; have unit serviced per manufacturer directions
Surface drainage Footing drains	• Water from these sources will overload the system and is prohibited from entering septic system.	

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Septic System Management Plan for Above Grade Systems

Homeowner Maintenance Log

Track maintenance activities here for easy reference. See list of management tasks on pages 3 and 4.

Activity	Date accomplished									
Check frequently:										
Leaks: check for plumbing leaks*										
Soil treatment area check for surfacing**										
Lint filter: check, clean if needed*										
Effluent screen (if owner-maintained)***										
Alarm**										
Check annually:										
Water usage rate (maximum gpd _____)										
Caps: inspect, replace if needed										
Water use appliances – review use										
Other:										

*Monthly

**Quarterly

***Bi-Annually

Notes:

"As the owner of this SSTS, I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in this Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: _____ Date _____

Management Plan Prepared By: R&R SEPTIC Certification # 475

Permitting Authority: AITKIN COUNTY

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5/5

NO DELINQUENT TAXES
AND TRANSFER ENTERED
This 29 Day Mar 2017
Kirk Peysar
County Auditor
Elizabeth Harmon
Deputy

A438562

Office of the County Recorder
Aitkin County, Minnesota

I HEREBY CERTIFY THE WITHIN INSTRUMENT WAS FILED, AND/OR RECORDED ON 3/29/2017 9:00 AM

PACKAGE: 54067 REC FEE: $46.00

Michael T. Moriarty, Aitkin County Recorder

CERTIFICATE OF REAL ESTATE VALUE (✓) FILED ( ) NOT REQUIRED CERTIFICATE OF REAL ESTATE VALUE NO. 44409

(Top 3 inches reserved for recording data)

WARRANTY DEED
Individual(s) to Individual(s)

Minnesota Uniform Conveyancing Blanks
Form 10.1.1 (2016)

eCRV number: 633491

DEED TAX DUE: $ 132.00

DATE: March 27, 2017
(month/day/year)

FOR VALUABLE CONSIDERATION, Diane M. Skelnik, an unmarried widow
(insert name and marital status of each Grantor)
("Grantor"),

hereby conveys and warrants to David J. Emmons and Nancy M. Emmons
(insert name of each Grantee)
("Grantee"), as

(Check only one box.)
☐ tenants in common,
■ joint tenants,

(If more than one Grantee is named above and either no box is checked or both boxes are checked, this conveyance is made to the named Grantees as tenants in common.)

real property in Aitkin County, Minnesota, legally described as follows:

→ See attached Exhibit A for legal description.

AITKIN COUNTY DEED TAX
No. 10548 Date 3-29-17
$132.00 Deputy Paid
Lori Hess
County Treasurer
By _____ Deputy

Check here if all or part of the described real property is Registered (Torrens) ☐

together with all hereditaments and appurtenances belonging thereto, subject to the following exceptions:
Reservations, restrictions and easements of record, if any.

Check applicable box:

- [x] The Seller certifies that the Seller does not know of any wells on the described real property.
- [ ] A well disclosure certificate accompanies this document or has been electronically filed. (If electronically filed, insert WDC number: [redacted].)
- [ ] I am familiar with the property described in this instrument and I certify that the status and number of wells on the described real property have not changed since the last previously filed well disclosure certificate.

Grantor

Roger R. Wilson ATTORNEY IN FACT
(signature) Roger R. Wilson, as Attorney in Fact for
Diane M. Skelnik

State of Minnesota, County of Mille Lacs

This instrument was acknowledged before me on March 21, 2017, by Roger R. Wilson, as Attorney in Fact for
(month/day/year)

Diane M. Skelnik, an unmarried widow
(insert name and marital status of each Grantor)

(Stamp)
JANAYE LYNN JOHNSON
Notary Public
Minnesota
My Comm. Expires
Jan 31, 2019

(signature of notarial officer)

Title (and Rank): _____

My commission expires: 1-31-19
(month/day/year)

THIS INSTRUMENT WAS DRAFTED BY:
(insert name and address)

Aitkin County Abstract Company
112 3rd Street NW
Aitkin, MN 56431

TAX STATEMENTS FOR THE REAL PROPERTY DESCRIBED IN THIS INSTRUMENT SHOULD BE SENT TO:
(insert legal name and residential or business address of Grantee)

David J. Emmons and Nancy M. Emmons
1275 129th Avenue NW
Coon Rapids, MN 55448

EXHIBIT A

PARCEL A

That part of the Southwest Quarter of the Northwest Quarter (SW¼ of NW¼) of Section Eighteen (18), Township Forty-three (43), Range Twenty-four (24), Aitkin County, Minnesota, described as follows: Commencing at the Southwest corner of said Northwest Quarter; thence on an assumed bearing of North 01 degrees 12 minutes 04 seconds West, along the West line of said Section 18, a distance of 527.34 feet to the point of beginning of the parcel herein described; thence North 82 degrees 05 minutes 42 seconds East 664.54 feet to the East line of the West 660.00 feet of said Southwest Quarter of the Northwest Quarter; thence North 01 degrees 12 minutes 04 seconds West, along last said line 410.26 feet to the South line of the North 330.00 feet of said Southwest Quarter of the Northwest Quarter; thence South 85 degrees 45 minutes 17 seconds West, along last said line 660.93 feet to the said West line of Section 18, thence South 01 degrees 12 minutes 04 seconds East, along last said line 452.74 feet to the point of beginning.

AND

PARCEL B

That part of the Southwest Quarter of the Northwest Quarter (SW¼ of NW¼) of Section Eighteen (18), Township Forty-three (43), Range Twenty-four (24), Aitkin County, Minnesota, described as follows: Commencing at the Southwest corner of said Northwest Quarter; thence on an assumed bearing of North 01 degrees 12 minutes 04 seconds West, along the West line of said Section 18, a distance of 527.34 feet; thence North 82 degrees 05 minutes 42 seconds East, 407.10 feet to the point of beginning of the parcel herein described; thence South 08 degrees 24 minutes 19 seconds East, 225.88 feet; thence North 85 degrees 47 minutes 10 seconds East, 884.84 feet to the East line of said Southwest Quarter of the Northwest Quarter; thence North 01 degrees 00 minutes 09 seconds East, along last said line 986.02 feet to the North line of said Southwest Quarter of the Northwest Quarter; thence South 85 degrees 45 minutes 17 seconds West, along last said line 695.15 feet to the East line of the West 660.00 feet of said Southwest Quarter of the Northwest Quarter; thence South 01 degrees 12 minutes 04 seconds East, along last said line 740.73 feet to the intersection with a line bearing North 82 degrees 05 minutes 42 seconds East from the point of beginning; thence South 82 degrees 05 minutes 42 seconds West, 257.45 feet to the point of beginning.

Together with a 66.00 foot easement for ingress and egress over and across the Southwest Quarter of the Northwest Quarter of Section 18, Township 43, Range 24, Aitkin County, Minnesota, described as follows: Commencing at the Southwest corner of said Northwest Quarter; thence on an assumed bearing of North 01 degrees 12 minutes 04 seconds West, along the West line of said Section 18, a distance of 460.89 feet to the point of beginning of the easement herein described; thence continuing on a bearing of North 01 degrees 12 minutes 04 seconds West, along last said line 66.45 feet; thence North 82 degrees 05 minutes 42 seconds East, 407.10 feet; thence South 08 degrees 24 minutes 19 seconds East, 66.00 feet; thence South 82 degrees 05 minutes 42 seconds West, 415.43 feet to the point of beginning.

Becklin & Whitney

Consulting Engineers, Inc.
523 MAIN STREET NORTH, SUITE 1
CAMBRIDGE, MN 55008
PHONE (763) 689-5631 FAX (763) 552-5631

February 24, 2025

David Emmons
Restoration Acres

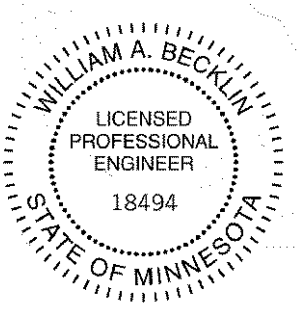
RE: Event Center
13584 280th Place
Isle, MN

To Whom It May Concern:

The Event Center has been in use for the last 3 years. The owner is applying for a CUP with Aitkin County and wants to start using the building for Public Use. Being that building is over 100 people occupancy; the building will need to be approved by Minnesota Department of Labor and Industry (DOLI).

We have attached a Code Review for the building which indicates that building would have a total occupancy of 238 people.

We have not yet reviewed the structure for structural integrity. We have reviewed many photos of the structure and talked with the owner. After we review the structure, some structural upgrades may be necessary, but we anticipate upgrades will be manageable.



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

WILLIAM A. BECKLIN, P.E.
DATE: FEBRUARY 24, 2025 LIC. NO. 18494

Building Official * Fire Marshal * Professional Engineer
Douglas K Whitney PE
612-598-4993 DWhit10351@aol.com

Project Description: Restoration Acres proposed Barn Venue Date: Saturday, 22 Feb 2025
Project Location: 13584 280th Pl, Isle, MN 56342
Construction by: Existing Architect: Owner
Engineer: Becklin & Whitney Code Study by: dkw

Upper Barn, Lower Level Parlor, Bridal Suite and Kitchen Lounge.

APPLICABLE BUILDING CODES:

- 2020 Minnesota Building Code
- 2024 Minnesota Commercial Energy Code
- 2020 Minnesota Accessibility Code
- 2020 Minnesota Mechanical and Fuel Gas Code
- 2020 Minnesota Plumbing Code
- 2020 Minnesota Fire Code
- Minnesota Electrical Code 2023 NEC
- 2020 Minnesota Building Code Administration
- 2020 Minnesota Provisions to the State Building Code
- 2020 Minnesota Conservation Code for Existing Buildings

This code study is based on the 2018 International Building Code by ICC using Plan Analyst. www.plananalyst.com

BASIC BUILDING DESCRIPTION:

Type of Construction = VB
Building does not have an automatic sprinkler system
Allowable area and height based on different uses not being separated by fire barriers. Most restrictive height and area used. (508.3.2)

Unprotected Wood Frame They often have exposed wood so there is no fire resistance.

Building and Fire Code issues considered:

1. Occupancy types: A2 and R3
2. Construction type: V-B.
3. Fire separation: None.
4. Automatic sprinkler system: Non
5. Common path of egress travel: 50 feet.
6. Maximum exit access travel distance: 50 feet.
7. Number of exits required: 2
8. Exit signs: required
9. Emergency lighting: required
10. A fire alarm system is be required. – Requirements shall be as per the Fire Marshal.

11. Smoke / CO alarms: required
12. Fire extinguishers: provide one at each exit door.
13. Door swing: Out
14. Panic hardware: Yes.
15. Minimum number of plumbing fixtures: 2 unisex.

2024 Minnesota Statutes
326B.108 PLACES OF PUBLIC ACCOMMODATION SUBJECT TO CODE.
Subdivision 1.**Definition.**

For purposes of this section, "place of public accommodation" means a publicly or privately owned facility that is designed for occupancy by 100 or more people and is a sports or entertainment arena, stadium, theater, community or convention hall, special event center, indoor amusement facility or water park, or indoor swimming pool.
Subd. 2.**Application.**

Construction, additions, and alterations to a place of public accommodation must be designed and constructed to comply with the State Building Code.
§
Subd. 3.**Enforcement.**

Effective July 1, 2017, in a municipality that has not adopted the code by ordinance under section 326B.121, subdivision 2, the commissioner shall enforce this section in accordance with section 326B.107, subdivision 1.

Subd. 4.**Fire protection systems.**

If fire protection systems regulated by chapter 299M are required in a place of public accommodation, then those plan reviews and inspections shall be conducted by the state fire marshal.

Subd. 5.**Fire sprinklers required.**

Automatic sprinkler systems for fire protection purposes are required in a place of public accommodation if, on or after August 1, 2008:
(1) the facility was constructed, added to, or altered; and
(2) the facility has an occupant load of 300 or more.

ADDRESS IDENTIFICATION:
Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Characters shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches high and not less than 0.5 inch wide. They shall be installed on a contrasting background. When required by the fire official, address numbers shall be provided in additional approved locations. When access is by a private road and the building

address cannot be view from the public way, a monument, pole or other approved sign shall be used to identify the structure. (502.1)

SITE DESCRIPTION: (506.3.2 and 202 FIRE SEPARATION DISTANCE)

The north side has a lot line. Distance to lot line = 60.0
Length of perimeter facing lot line = 60.0 This side can be accessed from a street or approved fire lane.
The east side has a lot line. Distance to lot line = 60.0
Length of perimeter facing lot line = 60.0 This side can be accessed from a street or approved fire lane.
The south side has a lot line. Distance to lot line = 60.0
Length of perimeter facing lot line = 60.0 This side can be accessed from a street or approved fire lane.
The west side has a public way. Distance to public way = 100.0 ,width = 60.0
Length of perimeter facing the public way = 60.0 This side can be accessed from a street or approved fire lane.
Perimeter of the entire building = 240.0 feet.
Perimeter which fronts a public way or accessible open space = 240.0 feet.
Weighted average of the width of public way or accessible open space = 30.0 feet. (506.3.2)
Allowable area increased 75.00% due to frontage. (506.3)

HEIGHT OF BUILDING:
Actual height of building = 32.00 ft Allowed building height = 40.00 ft The height is within the allowed height. (504.1 and Table 504.3)

BUILDING INTERIOR:
ALLOWABLE AREA AND HEIGHT:

FL	NAME	OCC	MAX FLR	AREA	ALLOWED	RATIO	STATUS
F2M	Dwelling	R3	3	200	Mezzanine area NIC (505.2)		
F2	Banquet hall	A2	1	1600	10500	0.15	OVER
F2	Dwelling	R3	3	600	10500	0.06	OK
TOTAL FOR FLOOR				2200	10500	0.21	OK
F1	Banquet hall	A2	1	1820	10500	0.17	OK
F1	Dwelling	R3	3	1080	10500	0.10	OK
TOTAL FOR FLOOR				2900	10500	0.28	OK
BUILDING TOTAL				**5100**	**21000**	**0.24**	**OK**

Notes:
Allowable area is based on Table 506.2 and Section 506.
Allowable number of stories is based on Table 504.4 and Section 504
Allowed area increased 75% for frontage increase. (506.3)
Mezzanine areas are not included in floor or building area (505.2)

EXIT REQUIREMENTS:

FL	NAME OF AREA	NUMB OF OCC	MIN NUMB EXIT	MIN EXIT WDTH	PANIC HDWR	DOOR SWNG	CORRIDOR FIRE RATING	MAX TRVL DIST	NOTES
F2M	Dwelling	1	1	.2	no	any	N/A	200	
F2	Banquet hall	107	2	21.3	YES	OUT	N/A	200	1 12
F2	Dwelling	3	1	.6	no	any	N/A	200	
	TOTAL 2nd FLOOR	111	2	22.1	YES	OUT	N/A	200	5 12
F1	Banquet hall	121	2	24.3	YES	OUT	N/A	200	1 12
F1	Dwelling	5	1	1.1	no	any	N/A	200	
	TOTAL 1st FLOOR	127	2	25.3	YES	OUT	N/A	200	5 12
BUILDING TOTAL		**238**	**2**						

FOOTNOTES:
1. Two exits are required from this area since the occupant load exceeds allowable in Table 1006.2.1
5. Number of exits from this floor is based on Section 1006.3.2
12. Panic hardware is required when the occupant load is 50 or more. (1010.1.10) Doors shall be permitted to be electrically locked in accordance with 101.1.9.9 or 1010.1.9.10

NOTES FOR EXIT TABLE:
Door swing is based on Section 1010.1.2
Occupant load is based on Section 1004 and Table 1004.5
Exit width is in inches and based on Sections 1005.3.1 and 1005.3.2
For the minimum width of stairways, see Section 1011.2.
Exits shall be continuous from the point of entry into the exit to the exit discharge. (1003.6)

DOOR SWING EXCECPTIONS:
Exception 5: Revolving doors complying with Section 1010.1.4.1
Exception 6: Horizontal sliding doors complying with Section 1010.1.4.3
Exception 7: Power-operated doors complying with Section 1010.1.4.2

EXIT WIDTH NOTES:
Exit width is in inches and based on Section 1005.2
Width shown for all areas is based on other egress components. (1005.3.2)
Width shown for 1st floor is based on other egress components. (1005.3.2)
Width shown for other floors & basements is based on stairways. (1005.3.1)
For the minimum width of doors, see Section 1010.1.1.

EGRESS CONTINUITY:
The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component. (1003.6)

EXIT SEPARATION:
In areas where 2 exits are required, the minimum separation is 1/2 of the maximum diagonal of the area or floor measured in a straight line between exits or exit access doorways. (1007.1.1)

Exception 1: Where interior exit stairways are interconnected by a 1-hour corridor, the separation shall be measured along the shortest direct travel within the corridor.
Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity by more than 50 percent. (1005.5)

MEANS OF EGRESS ILLUMINATION:
1. The means of egress serving a room or space shall be illuminated at all times that the space or room is occupied. (1008.2)
Exception: Aisle accessways in Group A.
2. The means of egress illumination shall not be less than 1 foot-candle at the walking surface level. (1008.2.1)
Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination is permitted to be reduced during performances to not less than 0.2 foot-candle, provided illumination is automatically restored upon activation of the fire alarm if provided.
3. Illumination shall be provided along the path of travel for the exit discharge for each exit to the public way. (1008.2.3)
See exceptions
See section 1008.3 for emergency power requirements.

ADDITIONAL DOORS:
Where additional doors are provided for egress purposes, they shall conform to the requirements in Section 1010. (1010.1)

LANDINGS AT DOORS:
1. There shall be a floor or landing on each side of a door. (1010.1.5)
2. Such floor or landing shall be at the same elevation on each side of the door. (1010.1.5)
3. The floor or landing shall not be more than 1/2 inch lower than the threshold. (1010.1.7)
4. Landings shall have a width not less than the width of the stairway or width of the doorway, whichever is the greater.
Where a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing dimension to less than one half of the required width. The minimum length in the direction of exit travel is 44 inches. (1010.1.6)
5. The space between two doors in series shall be 48 inches plus the width of door swinging into the space. (1010.1.8)

BOLT LOCKS:
Manually operated flush bolts and surface bolts are not permitted. (1010.1.9.5)
Exception 2: Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.
The unlatching of any door or leaf shall not require morsslee than one operation. (1010.1.9.6)
Exception 2: Where manually operated bolt locks are permitted.
Exception 3: Doors with automatic flush bolts as permitted.

LOCKS AND LATCHES:

Egress doors shall be readily openable from the egress side without the use of a key or any special knowledge or effort. (1010.1.9)

Locks and latches shall be permitted to prevent operation where any of the following exists: (1010.1.9.4)

2. The main door or doors in Group A areas with an occupant load of 300 or less are permitted to be equipped with key operating locking devices from the egress side provided:

2.1 The locking device is readily distinguishable as locked.

2.2 A readily visible durable sign is posted on the egress side stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED

3. Where egress doors are used in pairs, automatic flush bolts shall be permitted to be used, provided the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism.

STAIRWAY REQUIREMENTS:

1. The minimum width of a stairway is 44 inches. (1011.2)

> Exception 1 If the occupant load is less than 50, the minimum width is 36 inches. Check floor exit requirements above to see if minimum width is greater than 44 inches. When stairways are part of an accessible means of egress, the stairway shall have a clear width of 48 inches. (1009.3)

2. The riser heights shall not be less than 4 inches or greater than 7 inches. The minimum tread depth is 11 inches. (1011.5.2) The maximum variation is 3/8 inch between the largest and the smallest in a stairway flight. (1011.5.4) Risers shall be solid. (1011.5.5.3)

3. Provide a handrail on each side of stairways. (1011.11)

4. Handrail height, measured above stair tread nosing, shall be not less than 34 inches and not more than 38 inches. (1014.2)

Type I: Handrails with a circular cross section shall have an outside diameter of at least 1.25 inches and not greater than 2 inches or shall provide equivalent graspability. If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches and not greater than 6.25 inches with a maximum cross-section dimension of 2.25 inches. (1014.3.1)

Type II: See Section 1014.3.2 for larger handrails. Handrail-gripping surfaces shall be continuous without interruption by newel post or other obstructions. (1014.4)

Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stair flight. (1014.6)

Where handrails are not continuous between flights, the handrails shall extend horizontally at least 12 inches beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. (1014.6)

5. The minimum headroom clearance is 80 inches (6 ft.- 8 inches.) measured vertically from a line connecting the edge of the nosing. Headroom shall be continuous to the point where the line intersects the landing below. The minimum clearance shall be maintained the full width of the stairway and landing. (1011.3)

6. Enclosed usable space under the stairs is required to be protected by 1-hour fire-resistive construction or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stair enclosure. (1011.7.3)

7. There shall be a floor or landing at the top and bottom of each stairway. Every landing shall have a minimum dimension measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 48 inches where the stairway has a straight run. (1011.6)
When wheelchair spaces are required on the stairway landing, wheelchair space shall not be located in the required width of the landing.
8. A flight of stairs shall not have a vertical rise greater than 12 feet between floor levels or landings. (1011.8)

GUARDS:
1. Open sides of walking surfaces, including stairs, ramps and landings, which are located more than 30 inches above the floor or grade below are required to have a guard. (1015.2)
2. Guards shall be not less than 42 inches high measured vertically above walking surface, ramp and the line connecting the leading edges of the tread nosing. (1015.3)
3. Guards and handrails shall be adequate in strength and attachment to resists a load of 50 pounds per linear foot applied at the top and to transfer this load through the supports to the structure.(1015.2, 1607.8.1 and ASCE-7 4.5.1)
Handrails and guards shall be able to resist a single concentrated load of 200 pounds, applied in any direction at any point along the top, and transfer this load through the supports to the structure. (1015.2, 1607.8.1.1 and ASEC-7 4.5.1)
4. Intermediate rails, balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot, including openings and space between rails. Reactions due to this loading are not required to be superimposed with loads above. (1015.2, 1607.8.1.2 and ASEC-7 4.5.1)
5. The minimum height is 42 inches above the adjacent walking surfaces, adjacent fixed seating or the line connecting the leading edges of the treads. (1015.3)
Assembly guards have a minimum height of 26 inches when in the site line of immediately adjacent seating. (1029.16.3)
Guards at the end of aisles shall be a minimum of 36 inches high and shall provide a minimum 42 inches measured diagonally between the top of the rail and the nosing of the nearest tread. (1029.16.4)
6. Guards shall not have openings which allow passage of a sphere 4 inches in diameter from the walking surface to the required guard height. (1015.4)
Exception 1: From the height of 36 inches to 42 inches, guards shall not have openings which allow passage of a sphere 4 3/8 inches in diameter.
Exception 2: The triangular opening formed at the riser, tread and guardrail may be 6 inches.
Exception 5: In assembly seating areas, guards at the end of aisles shall not have openings which allow passage of a sphere 4 inches in diameter up to a height of 26 inches. From a height of 26 inches to 42 inches, guards shall not have openings which allow passage of a sphere 8 inches in diameter.

AREAS OF REFUGE:
If a stairway is part of an accessible means of egress, the stairway shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge or a horizontal exit. (1009.3)

1. Every required area of refuge shall have direct access to a stairway enclosure or an elevator complying with Section 1009.6.2
2. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 inches for each 200 occupants or portion thereof.(1009.6.3)
3. Such wheelchair spaces shall not reduce the required means of egress width. (1009.6.3)
4. A wheelchair space shall not be obstructed by more than one adjoining space. (1009.6.3)
5. Each area of refuge shall be separated from the remainder of the story by a smoke barrier or a horizontal exit. (1009.6.4)
6. Areas of refuge shall be provided with a two-way communication system. (1009.6.5)
See section 1009.8 for two-way communication requirements.

STAIRWAY ENCLOSURES:
Stairways serving only 2 stories are not required to be enclosed. (1019.3, Exception 1)
The openings into the exit enclosure are required to be 1 hour fire assemblies. (Table 716.1(2))
Openings into enclosure are limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the enclosure. (1023.4) Doors shall be self-closing or automatic closing. (716.2.6.1)
3. Exit enclosure must discharge directly to the exterior of the building. (1023.3 & 1028.1)
Exception: An exit enclosure shall be permitted to terminate at an exit passageway that terminates at an exit discharge or public way. (1023.3 Exception)
The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and capacity of the required exits. (1028.1)
Exception 1:
A maximum of 50 percent of the number and capacity may exit through areas on the level of discharge provided all of the following are met: (1028.1)
1.1 There is a free and unobstructed way to the exterior that is readily visible and identifiable from the exit enclosure.
1.3 The egress path from the enclosure and all portions of the level of discharge with access to the egress path are protected with an automatic sprinkler system or separated from the egress path as required for an exit enclosure.
1.4 Where a required interior exit stairway and an exit access stairway serve the same floor level and terminate at the same level of exit discharge, the termination of the exit access stairway and the exit discharge door shall be separated by a distance of not less than 30 feet or not less than 1/4 of the length of the maximum diagonal of the building, whichever is less.
Exception 2:
A maximum of 50 percent of the number and minimum width or required capacity may exit through a vestibule provided all of the following are met: (1028.1)
2.2 The depth from the exterior of the building is not greater than 10 feet and the length is not greater than 30 feet.
2.3 The vestibule is separated from the remainder of the level of exit discharge using a 1 hour fire partition constructed per Section 708.
2.4 The vestibule is used only for means of egress and exits directly to the outside.
4. An exit enclosure shall not be used for any purpose other than means of egress. (1023.1)
Note: Where interior exit enclosures are extended to the exterior of the building by an exit passage way, fire-resistance of the exit passage way shall be the same as the enclosure. (1023.3.1)

1. Stairways are required to be enclosed with 1 hour fire barriers. (1023.2)

1030 EMERGENCY ESCAPE AND RESCUE

1030.1 General.

In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in Group R occupancies as follows.

Basements and sleeping rooms below the fourth story above *grade plane* shall have at least one exterior *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, *emergency escape and rescue openings* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

1030.1.1 Operational constraints and opening control devices.

Emergency escape and rescue openings shall be operational from inside the room without the use of keys or tools. Window-opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required *emergency escape and rescue opening*.

INSIGHTS (1)

1030.2 Minimum size.

Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.53 m^2).

Exception: The minimum net clear opening for *grade-floor emergency escape and rescue openings* shall be 5 square feet (0.46 m^2).

1030.2.1 Minimum dimensions.

The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

1030.3 Maximum height from floor.

Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

ELEVATOR REQUIREMENTS:

An elevator may be required to connect each accessible level. (1104.4)
See exceptions.
Note: This requirement includes mezzanines.

BUILDING ACCESSIBILITY:

Accessible entrances and accessibility within the building shall comply with Sections 1104 and 1105.
On floors where drinking fountains are provided, accessible drinking fountains shall be provided. No fewer than 2 drinking fountains shall be provided. One shall comply with the requirements for people in a
wheelchair and one for standing persons. (1109.5.1)

MINIMUM NUMBER OF PLUMBING FIXTURES: (2902.1)

FL	NAME OF AREA	NUMBER OCC	WATER CLOSETS MALE	WATER CLOSETS FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	DRINKING FOUNTAINS
F2M	Dwelling	1	1	1	1	1	1
F2	Banquet hall	107	1	1	1	1	1
F2	Dwelling	3	1	1	1	1	1
TOTAL for 2nd FLOOR		111	1	1	1	1	1
F1	Banquet hall	121	1	1	1	1	1
F1	Dwelling	5	1	1	1	1	1
TOTAL for 1st FLOOR		127	1	1	1	1	1

NOTES ON THE TOTAL NUMBER OF PLUMBING FIXTURES:
The number of fixtures for a floor may not match total number of fixtures per area.
1. Fixtures for accessory areas are not included in the floor total.
2. The number of fixtures for each area are rounded up to the next whole number. Floor totals are not rounded up until the floor total is obtained.
If the fixtures only serve an area, use number shown for each area.
If the fixtures serve an entire floor, use number shown for totals.

P]2902.1.2Single-user toilet facility and bathing room fixtures.

The plumbing fixtures located in single-user toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified for use by either sex.

TABLE 2902.1MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

One service Sink

g. The minimum number of required drinking fountains shall comply with Table 2902.1 and Minnesota Rules, Chapter 1341.

h. A drinking fountain shall not be required in buildings or tenant spaces having an occupant load of less than 50.

i. Where water is served in restaurants, drinking fountains shall not be required.

FIRE-RESISTANCE REQUIREMENTS:

FIRE-RESISTANCE RATING FOR EXTERIOR WALLS:
North Side:
Group A2 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Group R3 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Combustible projections extending within 5 feet of the line used to determine the fire separation distance or located where openings are not permitted or where protection of openings are required shall be of at least 1-hour fire-resistive-rated construction, Type IV or fire-retardant-treated wood. (705.2.3)

East Side:
Group A2 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Group R3 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Combustible projections extending within 5 feet of the line used to determine the fire separation distance or located where openings are not permitted or where protection of openings are required shall be of at least 1-hour fire-resistive-rated construction, Type IV or fire-retardant-treated wood. (705.2.3)

South Side:
Group A2 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Group R3 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Combustible projections extending within 5 feet of the line used to determine the fire separation distance or located where openings are not permitted or where protection of openings are required shall be of at least 1-hour fire-resistive-rated construction, Type IV or fire-retardant-treated wood. (705.2.3)

West Side:
Group A2 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Group R3 - Bearing walls = 0-hr Nonbearing walls = 0-hr rating on the inside. (705.5, Tables 601 & 602)

Projections extending beyond the exterior wall cannot extend closer to than 20 feet to the fire separation distance line. (Table 705.2)
No limit on unprotected openings. There is no limit on protected openings. (Table 705.8)
Combustible projections extending within 5 feet of the line used to determine the fire separation distance or located where openings are not permitted or where protection of openings are required shall be of at least 1-hour fire-resistive-rated construction, Type IV or fire-retardant-treated wood. (705.2.3)

FIRE-RESISTANCE RATING REQUIREMENTS:(Table 601 except as noted)
Exterior walls . Minimum fire resistance rating = FIRE-RESISTANCE RATING FOR EXTERIOR WALLS above
Primary structural frame may be of any material. Minimum fire resistance rating = 0 hour
Interior bearing wall may be of any material. Minimum fire resistance rating = 0 hour
Interior nonbearing wall may be of any material. Minimum fire resistance rating = 0 hour
Floor/ceiling assembly may be of any material. Minimum fire resistance rating = 0 hour
Roof/ceiling assembly may be of any material. Minimum fire resistance rating = 0 hour
Shaft Enclosure may be of any material. Minimum fire resistance rating = 1 hour
Stairs may be of any material. Minimum fire resistance rating = 0 hour

MARKING AND IDENTIFICATION:
Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified. (703.7)
Identification shall be located in accessible concealed floor, floor-ceiling or attic spaces;
Be located within 15 feet of the end of each wall and at intervals not exceeding 30 feet; and
Suggested wording: 'FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS'

SHAFT REQUIREMENTS:
Openings other than those necessary for the purpose of the shaft shall not be permitted. (713.7.1)
Penetrations other than those necessary for the purpose of the shaft shall not be permitted. (713.8.1)
Exception: Membrane penetrations protected per 714.4.2 shall be permitted on the outside of shaft enclosure.
Shafts that do not extend to the bottom of the building shall:
1. Be enclosed at the lowest level with the same fire-resistance rating as the lowest floor but not less than the rating of the shaft enclosure; or

2. Terminate in a room having a use related to the purpose of the shaft. The room and openings shall have a fire-resistance rating at least equal to the shaft enclosure; or
3. Be protected by approved fire dampers installed at the lowest floor level within the shaft enclosure. (713.11)

FIRE PARTITIONS:
The following wall assemblies shall comply. (708.1)
Fire partitions shall have a fire-resistance rating of not less than 1-hour. (708.3)
See exceptions.
Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistive-rated floor/ceiling or roof/ceiling assembly above. (708.4)
See exceptions.
The supporting construction shall be protected to afford the required fire-resistance rating of the wall supported, except for tenant and sleeping unit separation wall and corridor walls.
See exceptions.

A 1-hour fire-resistive rating is required for smoke barriers. (709.3)
Smoke barriers shall form an effective membrane continuous from outside wall to outside wall and from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces. (710.4)
See Section 710.5 for opening requirements.

PENETRATIONS OF FIRE RESISTIVE ASSEMBLIES:

WALLS ASSEMBLIES:
Penetrations of walls shall comply Section 714.3.1.1 or 714.3.1.2.
FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES:
Penetrations of floor/ceiling and roof/ceiling assemblies shall comply Section 714.4.1.1 or 714.4.1.2.
DUCTS AND AIR TRANSFER OPENINGS:
Where required. (717.5) , Fire walls (717.5.1), Fire barriers (717.5.2), Shaft enclosures (717.5.3), Fire partitions (717.5.4) and Smoke barriers (717.5.5)

REQUIRED SEPARATION OF OCCUPANCIES: (508.4.4 & Table 508.4)

Uses are not separated by fire barriers. The construction of the building is based on the most restrictive use. (508.3.3)

SEPARATION OF INCIDENTAL USE AREAS: (Table 509)
Furnace rooms where any piece of equipment is over 400,000 BTU per hour input = 1 hour
Rooms with any boiler over 15 psi and 10 horsepower = 1 hour
Refrigerant machinery rooms = 1 hour
Hydrogen cut-off rooms not classified as Group H = 2 hour
Incinerator rooms = 2 hours and an automatic sprinkler system is required
Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the IFC. = 2 hour

ROOFING REQUIREMENTS:

1. The roofing on this building is required to be Class C or better. (Table 1505.1)
Roofing may be of No. 1 cedar or redwood shakes and No. 1 shingles. (Exception c)

ROOF DRAINAGE:

Where the exterior wall construction extends above the roof in such a manner that water will be entrapped if the primary drains allow build up for any reason, secondary (emergency overflow) roof drains or scuppers shall be provided. (1502.2)
1. Secondary drains or scuppers shall be located and sized to prevent the weight ponding water from exceeding the design load of the roof.
2. See section 1611.1 for design load requirements.
3. Scuppers shall not have an opening dimension of less than 4 inches. (1502.3
4. See sections 1106 and 1108 of the Plumbing code for design requirements.

DRAFTSTOPPING:

If there is combustible construction in the roof/ceiling assembly, draftstopping shall be installed so that the area of concealed space does not exceed 3,000 square feet. (718.4)
If there is combustible construction in the floor/ceiling assembly, draftstopping shall be installed so that the area of concealed space does not exceed 1,000 square feet. (718.3)
See Section 718.3.1 for approved materials.
See Section 708.4 for construction requirements.
Opening in the partitions shall be protected by self-closing doors with automatic latches constructed as required for the partitions. (718.4.1.1)

AUTOMATIC SPRINKLER SYSTEMS:

If openings are not provided in each 50 feet on at least one exterior wall or there is floor area more than 75 feet from an exterior opening, an automatic sprinkler system is required. Openings shall have a minimum dimension of 30 inches. There must be at least 20 sq. ft. of opening in every 50 lineal feet of wall or fraction thereof. The height of the bottom of the opening shall not exceed 44 inches measured from the floor. (903.2.11.1)

An automatic sprinkler system is required in the A-2 fire area when the fire area has an occupant load of 300 or more. (MS326B.108)
An automatic sprinkler system is required in the A-2 fire area when the fire area is located on a floor other than the level of exit discharge. (903.2.1.2, #3)

An automatic sprinkler system is required in fire areas containing an R-occupancy. (903.2.8)

[F] 903.2.8 Group R.

An *automatic sprinkler system* shall be installed throughout all buildings with a Group R *fire area* in accordance with Section 903.3.

Exceptions:

1. 1.A Group R-1, R-2, or combined R-1 and R-2 building where less than 4,500 square feet (418.1 m^2) of the building area consists of R-1 fire area, R-2 fire area, or a combination of R-1 and R-2 fire areas.
2. 2.A Group R-3 dwelling unit with less than 4,500 square feet (418.1 m^2) of building area, excluding garages, unless the Group R-3 dwelling unit contains a state-licensed care

facility that is required to be provided with an automatic sprinkler system as a condition of the license.

3. 3.An automatic fire sprinkler system shall not be required if additions or alterations are made to existing Group R-3 or R-4 buildings or a portion thereof that do not have an automatic sprinkler system installed, unless required by a Minnesota license.
4. 4.Group R-1 multiunit resort buildings, as defined in Minnesota Statutes, Section 157.15, and licensed by the Department of Health, with less than 9,250 square feet (859.4 m^2) of building area.

FIRE PUMPS:

When provided, fire pumps shall be located in rooms that are separated from all other areas by 2-hour fire barrier construction. (913.2.1)

PORTABLE FIRE EXTINGUISHERS:

Portable fire extinguishers are required. (906.1)
See Section 906.1 and Table 906.1 for location requirements.
See Section 906.3 for size and distribution requirements.

STANDPIPE AND HOSE SYSTEMS:

A standpipe system is not required. (905)

FIRE ALARM AND DETECTION SYSTEMS:

A manual fire alarm system that activates the occupant notification system is required. (907.2.1)
See Section 907.4 for additional information about system.

[F] 907.2.10.2 Groups R-2, R-3, R-4 and I-1.

Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of *occupant load* at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each *story* within a *dwelling unit*, including basements but not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.

[F] 907.2.10.4 Installation near bathrooms.

Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section 907.2.10.1 or 907.2.10.2.

[F] 907.2.10.5 Interconnection.

Where more than one smoke alarm is required to be installed within an individual *dwelling unit* or *sleeping unit* in Group R or I-1 occupancies, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit.

Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

[F] 907.2.10.6 Power source.
In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system in accordance with Section 2702. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.
Exception: Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system that complies with Section 2702.

[F] 907.2.10.7 Smoke detection system.
Smoke detectors listed in accordance with UL 268 and provided as part of the building *fire alarm system* shall be an acceptable alternative to single- and multiple-station *smoke alarms* and shall comply with the following:

1. 1.The *fire alarm system* shall comply with all applicable requirements in Section 907.
2. 2.Activation of a smoke detector in a *dwelling unit* or *sleeping unit* shall initiate alarm notification in the *dwelling unit* or *sleeping unit* in accordance with Section 907.5.2.
3. 3.Activation of a smoke detector in a *dwelling unit* or *sleeping unit* shall not activate alarm notification appliances outside of the *dwelling unit* or *sleeping unit*, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.6.

SECTION 915 CARBON MONOXIDE DETECTION
[F] 915.2.1 Dwelling units.
Carbon monoxide detection shall be installed in *dwelling units* outside of each separate sleeping area within 10 feet (3048 mm) of the bedrooms. Where a fuel-burning appliance is located in a bedroom or its attached bathroom, carbon monoxide detection shall be installed within the bedroom.

[F] 915.2.2 Sleeping units.
Carbon monoxide detection shall be installed in *sleeping units*.

> **Exception:** Carbon monoxide detection shall be allowed to be installed outside of each separate sleeping area within 10 feet (3048 mm) of the *sleeping unit* where the *sleeping unit* or its attached bathroom does not contain a fuel-burning appliance and is not served by a forced air furnace.

ACCESSIBLE FACILITIES:

Accessible water fountains shall comply with ICC/ANSI A117.1, see Section 602.
Toilet facilities shall comply with ICC/ANSI A117.1, see Sections 603 through 609.

ADDITIONAL TOILET REQUIREMENTS:
Customers, patrons and visitors shall be provided with public toilet facilities in spaces intended for public utilization. (2902.3)

The route to the public facilities shall not pass through kitchens, storage rooms or closets. (2902.3.1)
The path of travel to facilities shall not exceed a distance of 500 feet. (2902.3.2)
Directional signage indicating route to public facilities shall be posted. Such signage shall be located in a corridor or aisle at the entrance to the facilities. (2902.4.1)
Where a toilet is provided for use of multiple occupants, the egress door for the room shall not be lockable from the inside. (2902.3.5)
Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet,
two family/assisted-use toilet facilities shall be permitted to serve as required separate facilities. Toilet facilities shall not be required to
be identified for exclusive use by either sex. (2902.2.1)

LIGHT AND VENTILATION:

1. Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings or shall be provided with artificial light. (1204.1)
2. Buildings shall be provided with natural ventilation or mechanical ventilation per the International Mechanical Code. (1202.1)
3. Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated. (1202.5.2.1)

GLAZING REQUIREMENTS:

All glazing in hazardous locations is required to be of safety glazing material. (2406.1)
See Section 2406.4 for locations.

WALL AND CEILING FINISHES:

1. Wall and ceiling finish materials are required to comply with Sec. 803.13 and Table 803.13.
2. Textile wall and ceiling coverings shall have Class A flame spread index and shall be protected by automatic sprinklers or meet the criteria in Section 803.5, 803.6.
3. Expanded vinyl wall coverings shall comply with the requirements for textile wall and ceiling materials. (803.7)
4. Toilet room floors shall have a smooth, hard nonabsorbent surface that extends upward onto the walls at least 4 inches. (1209.2.1
5. Walls within 2 feet of urinals and water closets shall have a smooth, hard nonabsorbent surface, to a height of 4 feet above the floor. (1209.2.2)

CEILING HEIGHTS:

Occupiable spaces, habitable spaces and corridors shall have a ceiling height of not less than 7 feet 6 inches. Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall be permitted to have a ceiling height of not less than 7 feet. (1207.2)

INSULATION NOTES:

1. Insulating materials shall have a flame-spread rating of no more than 25 and a smoke developed index of not more than 450. (720.2) 'concealed installation' and Sec. 720.3 'exposed installation'

2. Where such materials are installed in concealed spaces, the flame spread and smoke developed limitations do not apply to facings, coverings and layers of reflective foil that are installed behind and in substantial contact with the unexposed surface of the ceiling, wall or floor finish. (720.2.1)

Foam plastic insulations are required to be protected. (2603)

ATTIC REQUIREMENTS:

1. Provide an access to all attic areas with a clear height over 30 inches. The minimum size is 20 inches by 30 inches. There must be 30 inches or more clear height above the access. (1208.2)
Opening may be required to be larger if mechanical equipment is located in the attic space. See the International Mechanical Code (1208.3)
2. Provide cross ventilation in all attic areas. The net free vent area shall not be less than 1/150th of the area of the attic. (1202.2)
Exception1: The cross-ventilation area may be reduced to 1/300 provided:
1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. At least 40% but not more than 50% of the required ventilating area is provided by ventilators located in the upper portion of the attic Upper ventilators shall be located not more than 3 feet below the ridge or highest point of the space measured vertically.
3. Where ceilings are applied directly to the underside of roof framing members, each separate space shall have cross ventilation. An airspace of not less than 1 inch shall be provided between the insulation and the roof sheathing. (1202.3)
4. Exterior openings shall be protected to prevent entry of birds, squirrels, rodents, snakes and other similar creatures. (1202.2.2)

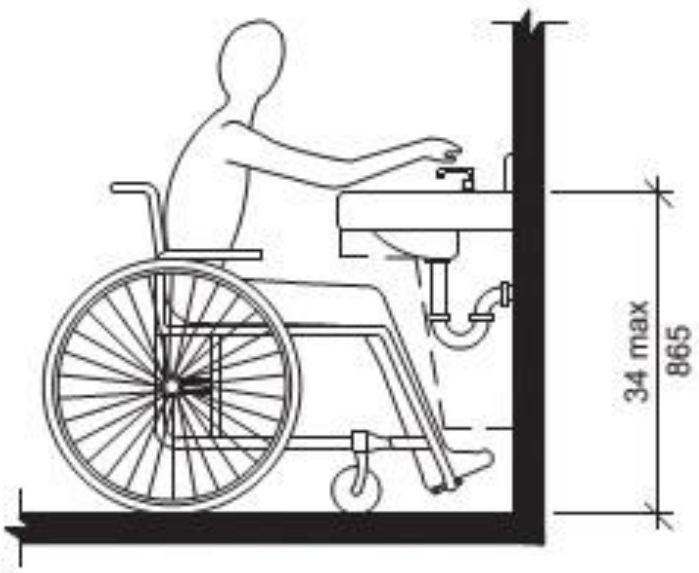
305.7Alterations affecting an area containing a primary function.

Where an *alteration* affects the accessibility to or contains an area of *primary function*, the route to the *primary function* area shall be *accessible*. The accessible route to the *primary function* area shall include toilet facilities, parking facilities, and drinking fountains serving the area of *primary function*.

Exceptions:

1. The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*.
2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets, and signs.
3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or *alteration* of fire protection systems, and abatement of hazardous materials.
4. This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of a *facility*.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

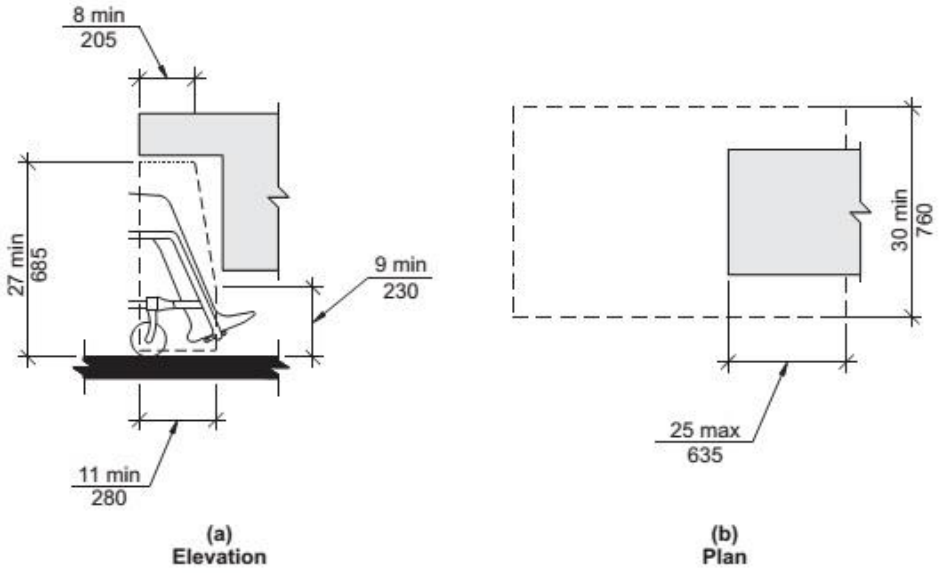
6.6. This provision does not apply to alterations undertaken by a tenant where the accessible route, toilet facilities, parking facilities, telephones, and drinking fountains are outside the tenant space



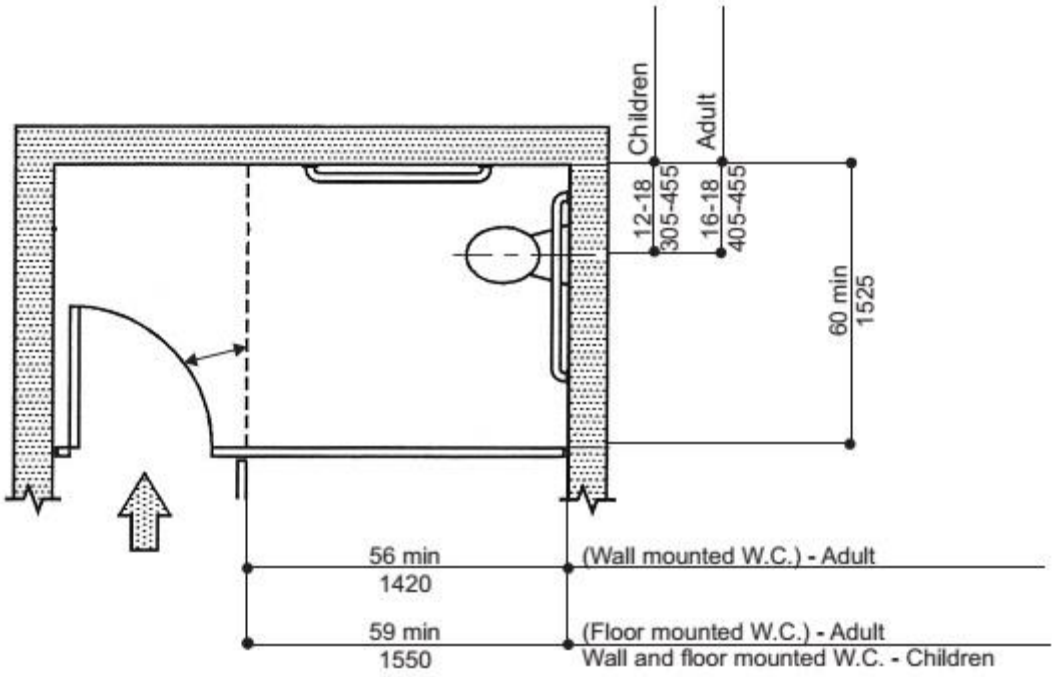
HEIGHT OF LAVATORIES AND SINKS

TABLE 603.6 MAXIMUM REACH DEPTHS AND HEIGHT

Maximum Reach Depth	0.5 inch (13 mm)	2 inches (51 mm)	5 inches (125 mm)	6 inches (150 mm)	9 inches (230 mm)	11 inches (280 mm)
Maximum Reach Height	48 inches (1220 mm)	46 inches (1170 mm)	42 inches (1065 mm)	40 inches (1015 mm)	36 inches (915 mm)	34 inches (865 mm)



CLEARANCES OF LAVATORIES AND SINKS



CLEARANCE FOR WATER CLOSET

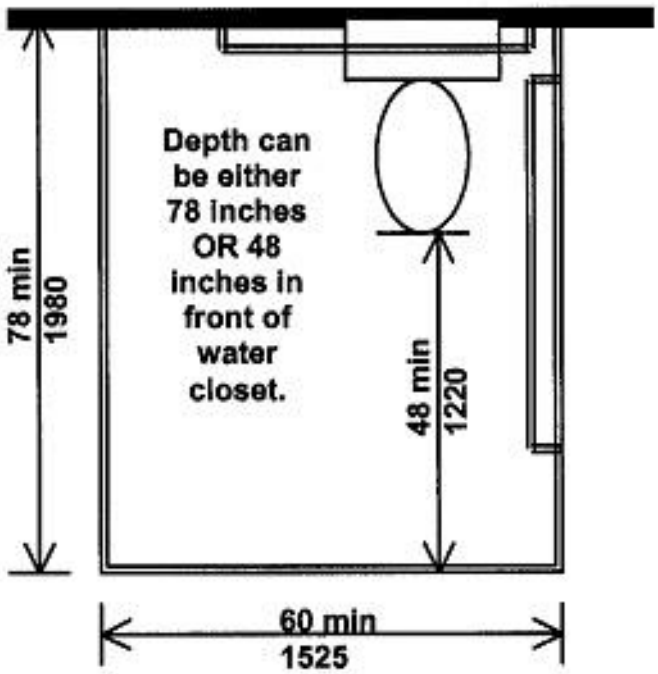
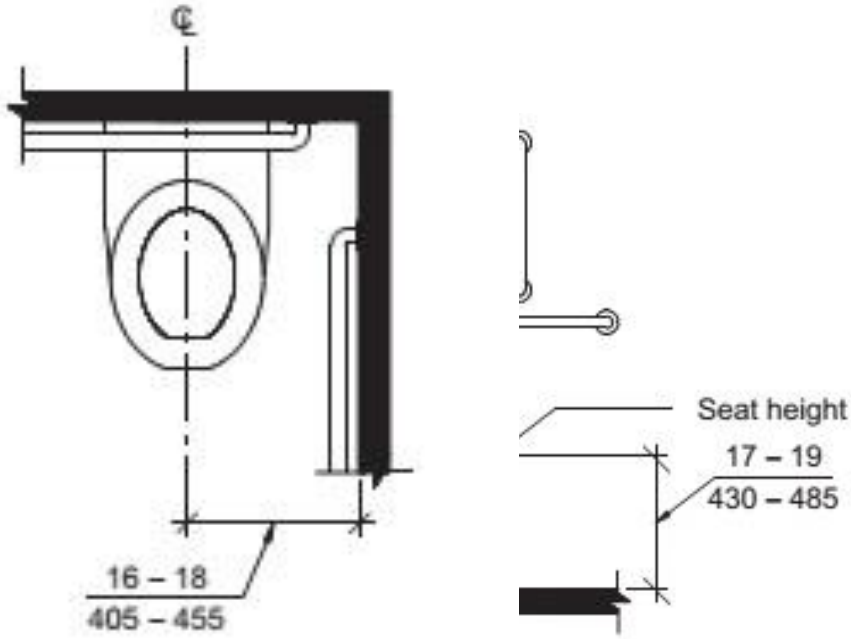
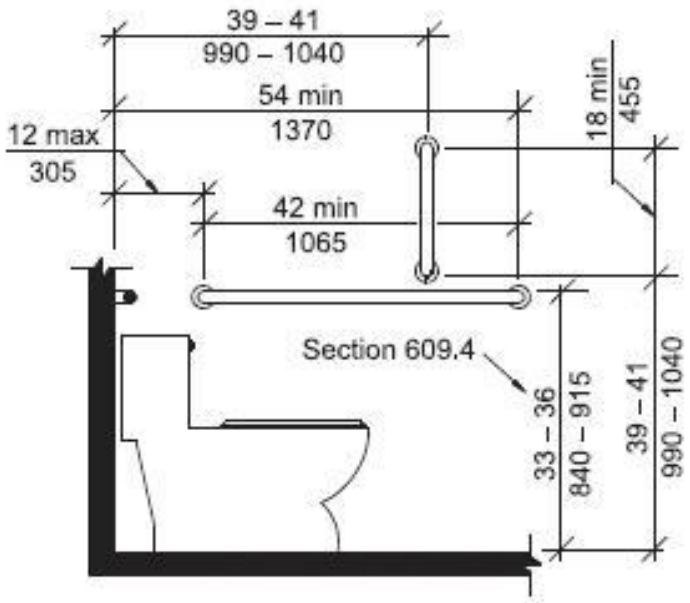


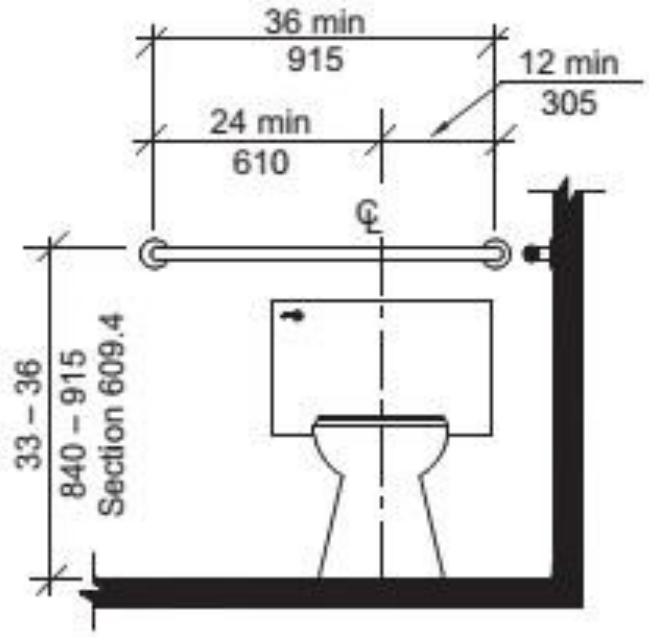
FIGURE 604.3 SIZE OF CLEARANCE FOR WATER CLOSET

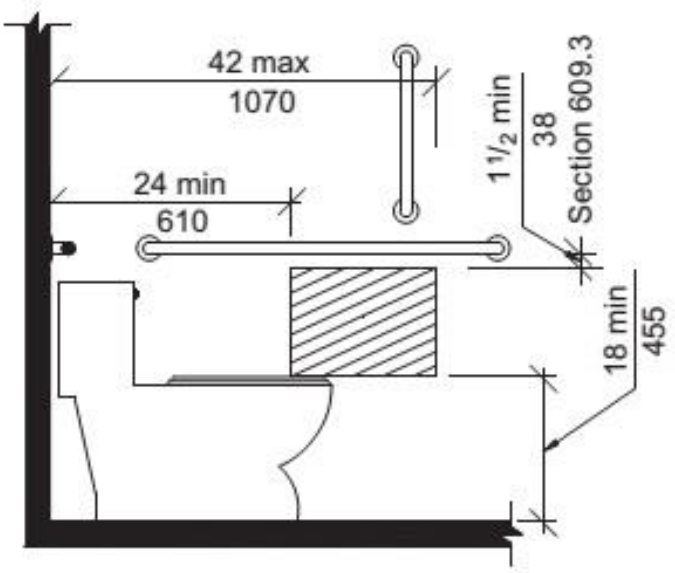


(a) Acessible Water Closets

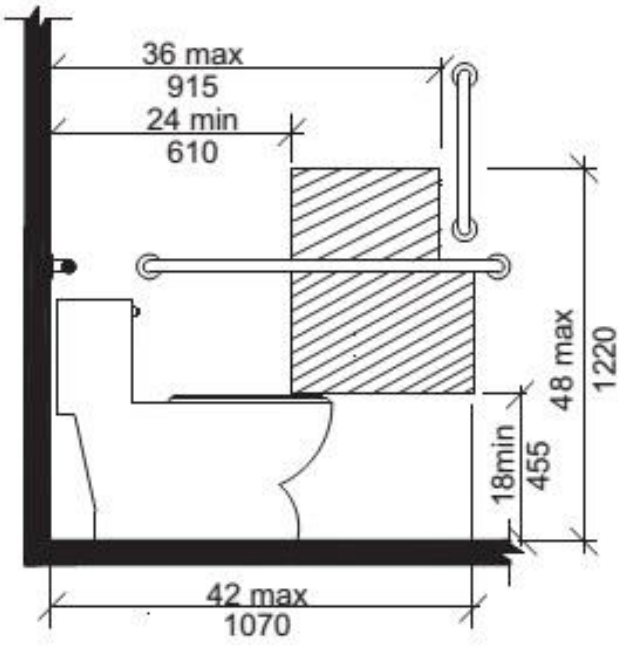


GRAB BARS FOR WATER CLOSET



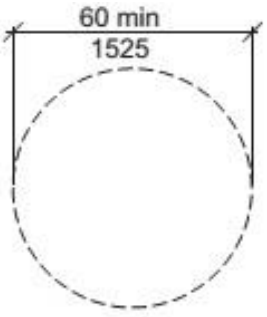


(a) Protruding Dispenser Below Grab Bar

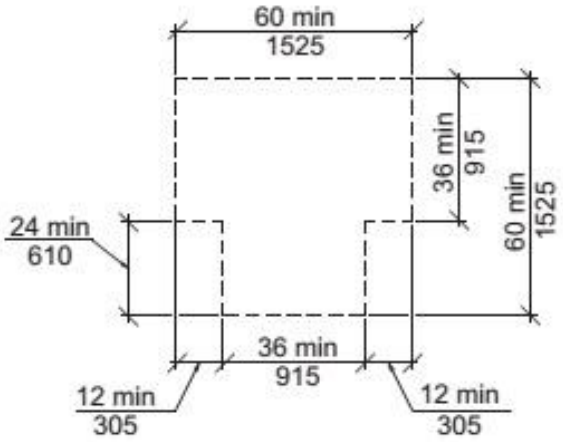


(c) Recessed Dispenser

DISPENSER OUTLET LOCATIONS



(a) Circular



(b) T-shaped

NOTE: Doors shall not swing into the clear floor space or clearance for any fixture MN Accessibility Code 603.2.21. You will need to verify that the doors for the water closet compartments will not swing into the clear floor space of the lavatories

SIZE OF TURNING SPACE

SECTION 1004 TYPE B UNITS

1004.2 Primary entrance.

The accessible primary entrance shall be on an accessible route from public and common areas. The primary entrance shall not be to a bedroom unless it is the only entrance.

1004.4.2 Changes in level.

Changes in level shall comply with Section 303.

303.3 Beveled. Changes in level greater than 1/4 inch (6.4 mm) in height and not more than 1/2 inch (13 mm) maximum in height shall be beveled with a slope not steeper than 1:2.

Exception: Where exterior deck, patio, or balcony surface materials are impervious, the finished exterior impervious surface shall be 2 inches (50 mm) maximum below the floor level of the adjacent interior spaces of the unit.

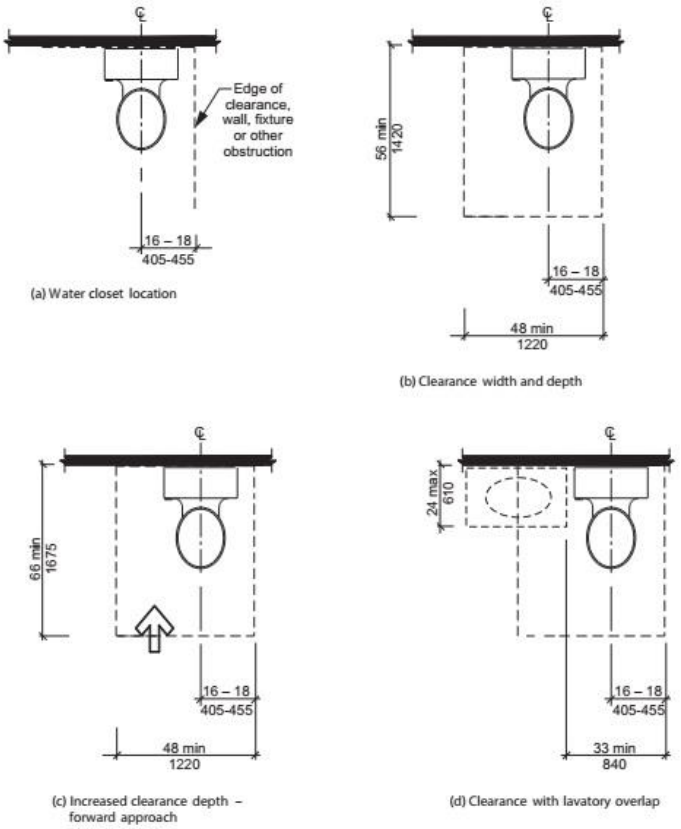


FIGURE 1004.11.3.1.2

CLEARANCE AT WATER CLOSETS IN TYPE B UNITS

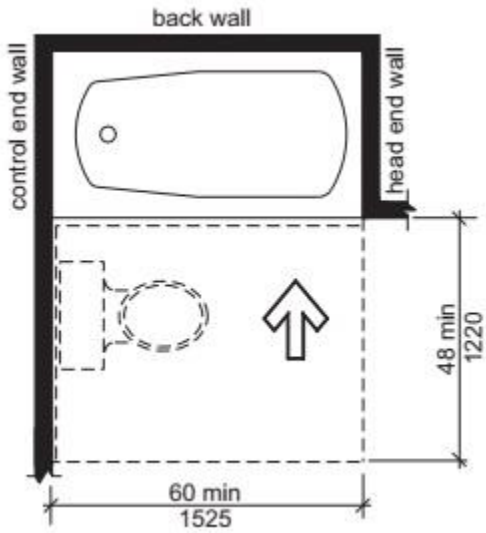


FIGURE 1004.11.3.1.3.2

FORWARD APPROACH BATHTUB IN TYPE B UNITS—OPTION A BATHROOMS

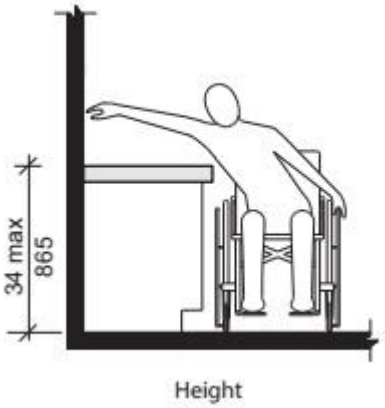


FIGURE 1004.11.3.2.1

LAVATORY IN TYPE B UNITS—OPTION B BATHROOM

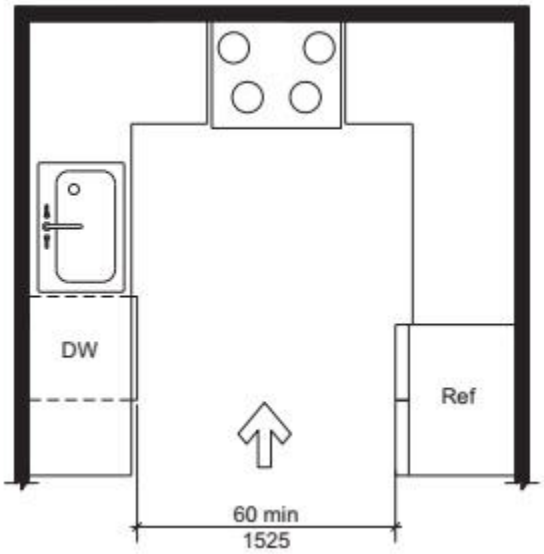


FIGURE 1004.12.1.2

U-SHAPED KITCHEN CLEARANCE IN TYPE B UNITS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DOUGLAS K. WHITNEY, P. E.
DATE: FEBRUARY 22, 2025 REG. NO. 15910
MINNESOTA BUILDING OFFICIAL NO. 1029