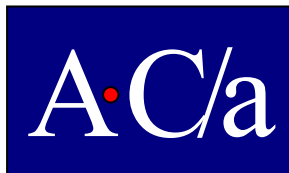


# **ATCP51 Permit Application Denmark Dairy**

**February 2025**

**Compiled by:**



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**Chapter ATCP 51**

**APPENDIX A**

**APPLICATION FORM AND WORKSHEETS**

Application for Local Approval  
*New or Expanded Livestock Facility*



Wisconsin Department of Agriculture, Trade and Consumer Protection  
2811 Agriculture Drive  
P.O. Box 8911  
Madison, WI 53708-8911  
(608) 224-4630  
[livestocksiting@wisconsin.gov](mailto:livestocksiting@wisconsin.gov)

## Introduction

Use this application form to obtain local approval for a *new* or *expanded* livestock facility (cattle, swine, poultry, sheep or goats) that will exceed 500 “animal units” (or a lower threshold established by local zoning ordinance prior to July 19, 2003).

Some local governments require local approval, but others do not. Check with your local government (county and town or municipality) to see if local approval is required in your area.

In some cases, you may need local approval from more than one local government (for example, the county and the town, or 2 towns if your livestock facility straddles the town line). But the application and approval process should be the same.

The construction of a new or altered *livestock structure* does not, by itself, constitute an “expansion” (unless there will also be an increase in *animal units*). If you already have a permit or local approval, you may not need another approval unless your planned expansion exceeds the number of animals previously authorized by your local government.

Local approval, if required, is governed by statewide uniform standards in Wisconsin Statutes s. 93.90 and Wisconsin Administrative Code chapter ATCP 51. This application documents compliance with those standards.

### The Livestock Facility

A livestock facility includes livestock, livestock structures, the land on which they are located (it does not include pastures or winter grazing areas). *Related livestock facilities* (see definition below) are treated as a single livestock facility, for purposes of local approval. However:

- A *separate species facility* (see definition below) may be treated as a separate livestock facility, even if it is owned by the same person and located on the same land parcel as another livestock facility.
- A mere acquisition of a neighboring livestock facility does not constitute an *expansion* unless more *animal units* are added to the combined facilities.

### Completing the Application

If local approval is required, complete this entire application form (including the worksheets). Follow the instructions in the application form. Attach all of the supplementary documentation required. Your application must be complete, credible and internally consistent.

The application form and worksheets ask for information to show compliance with Wisconsin livestock facility siting standards. A local government has *very limited* authority to modify the standards by local ordinance (modifications, if any, must be reflected in the local version of this application form).

As part of your application, you must specify the number of *animal units* that you will keep at a new or expanded livestock facility. If the local government approves your requested number, this will be the maximum number that you may keep for 90 days or more in any 12-month period.

A local government may require you to submit up to 4 duplicate copies of the complete application, worksheets, maps and other attachments. But you are not required to submit duplicate copies of engineering design specifications.

### Worksheets

This application includes the following worksheets:

- *Animal units* (worksheet 1)
- Odor management (worksheet 2)
- Waste and nutrient management (worksheet 3)
- Waste storage facilities (worksheet 4)
- Runoff management (worksheet 5)

Complete the worksheets following all instructions (including those on each worksheet). You may use a conve-

nient automated spreadsheet in place of Tables A and B of worksheet 2 if you prefer (results are identical). The spreadsheet is available at <http://www.datcp.state.wi.us>.

If the Wisconsin Department of Natural Resources (*DNR*) has issued a Wisconsin Pollutant Discharge Elimination System (*WPDES*) permit for your proposed livestock facility, you can check a box on worksheets 3, 4 and 5, and submit a copy of that permit with the worksheets. A *WPDES* permit does not affect the requirements for completing worksheets 1 and 2.

### **Fees**

A local government may require a fee to offset its reasonable costs to review and process this application. The fee, if any, must be established by local ordinance and may not exceed \$1,000. A local government may NOT charge any other fee, or require you to post any bond or security.

### **Local Approval Process**

If you complete the application properly, the local government **MUST APPROVE** the proposed livestock facility unless it finds, based on clear and convincing evidence in the local record, that the facility fails to meet the state standards.

Within 45 days after you submit your application, the local government must notify you whether your application is complete. If you failed to complete part of the application, you must submit the missing information. The local government must grant or deny the application within 90 days after it declares the application complete, and issue its decision in writing. The approval must include a duplicate copy of the approved application, marked “approved.” The duplicate copy shall include all the worksheets, maps, and other attachments included in the application, with the exception of the engineering design specifications. The local government must make a record of its decision making process, and the evidence supporting its decision. The record must include your application.

### **Appeal of Local Decision**

If you disagree with the local government’s decision on your application, you may appeal that decision to the Wisconsin Livestock Facility Siting Review Board (“Board”). Other “aggrieved persons” may also appeal to the Board. An “aggrieved person” includes any person who resides or owns land within 2 miles of your proposed livestock facility.

You must file your appeal within 30 days after the local government issues its decision (or, if you pursue a local administrative appeal process first, within 30 days after that appeal process is complete). The Board will review the local decision based on the evidence in the local record (it will not hold a new hearing or accept new testimony or evidence). You must file your appeal in writing at the following address:

Wisconsin Livestock Facility Siting Review Board  
c/o Secretary, Department of Agriculture, Trade and Consumer Protection  
P.O. Box 8911  
Madison, WI 53708-8911

### **Terms Used in this Application Form**

In this application form, you will see a number of ***italicized*** terms. Those terms are defined below (for more specific definitions, see *ATCP 51*):

“**Adjacent**” – Located on land parcels that touch each other, or on land parcels that are separated only by a river, stream, or transportation or utility right-of-way.

“**Affected Neighbors**” – Residences or *high-use buildings* within 2500 feet of any livestock structure at the proposed facility, other than those owned by the applicant or by persons who have agreed to exclude them from the applicant’s odor score calculation. The total odor score for a *livestock facility* depends, in part, on the proximity and density of “affected neighbors.”

“**Animal housing area**” – That portion of an animal housing structure to which animals have access, and in which manure may accumulate. “Animal housing area” includes free-stalls and travel lanes. It does NOT include holding areas, feed alleys, storage areas or milking parlors.

“**Animal lot**” – A feedlot, barnyard or other outdoor facility where livestock are concentrated for feeding or other purposes. Pastures and winter grazing areas are NOT “animal lots.” Treat multiple “animal lots” as a single “animal lot” if runoff from the “animal lots” drains to the same treatment area or if runoff from the “animal lot” treatment areas converges or reaches the same surface water within 200 feet of any of those treatment areas.

*Published under s. 35.93, Stats. Updated on the first day of each month. Entire code is always current. The Register date on each page is the date the chapter was last published.*

**“Animal units”** – Equivalent units of *livestock*. The number of animals constituting an “animal unit” varies by species. For example, one milking dairy cow equals 1.4 “animal units.” A beef animal over 600 lbs. equals 1.0 “animal units.” A pig over 55 lbs. equals 0.4 “animal units.” A laying chicken equals 0.01 “animal unit.” The number of “animal units” kept at a *livestock facility* means the largest number of “animal units” that will be at the *livestock facility* on at least 90 days in any 12-month period. Calculate “animal units” according to worksheet 1.

**“BARNY runoff model”** – The Wisconsin version of a model that is commonly used to predict nutrient runoff from *animal lots*. An Excel computer spreadsheet version is available on the DATCP website (engineering directory).

**“Certified agricultural engineering practitioner”** – A practitioner who is properly qualified under *ATCP 50.46*.

**“Cluster”** – Any group of one or more *livestock structures* within a *livestock facility*. If you wish to do so, you may calculate separate odor scores for “clusters” that are separated by more than 750 feet.

**“Complete application for local approval”** – An application that contains everything required under ss. [ATCP 51.30\(1\)](#) to (4).

**“DATCP”** – Wisconsin Department of Agriculture, Trade and Consumer Protection. The application form cites DATCP rules including Wis. Adm. Code chs. [ATCP 51](#) (livestock facility siting), *ATCP 50* (soil and water resource management) and *ATCP 17* (livestock premises registration).

**“DNR”** – Wisconsin Department of Natural Resources. The application form cites DNR rules including Wis. Adm. Code chs. [NR 243](#) (*WPDES* permits), *NR 811* (community wells) and *NR 812* (private wells).

**“Expanded livestock facility”** – The entire *livestock facility* created by an *expansion*, including new, existing and altered *livestock structures* (existing structures are subject to less rigorous standards). Your application must indicate the maximum number of *animal units* that you will keep at the “expanded livestock facility.”

**“Expansion”** – An increase in the largest number of *animal units* kept at a *livestock facility* on at least 90 days in any 12-month period. The acquisition of an existing livestock facility, by the operator of an *adjacent* facility, is not an “expansion” unless the operator increases the largest number of *animal units* kept at the combined livestock facilities on at least 90 days in any 12-month period.

**“High-use building”** – A residential building that has at least 6 distinct dwelling units; a restaurant, hotel, motel, or tourist rooming house; a school building; a hospital or licensed care facility; or a non-farm business or workplace that is open at least 40 hours a week. The odor score for your *livestock facility* depends, in part, on the proximity and density of neighboring “high-use buildings.”

**“Karst features”** – Sinkholes, fractured bedrock or like features that may result in direct pollution runoff to groundwater.

**“Livestock”** – Cattle, swine, poultry, sheep or goats.

**“Livestock facility”** – A feedlot, dairy farm, or other operation where *livestock* are or will be fed, confined, maintained, or stabled for a total of 45 days or more in any 12-month period. A “livestock facility” includes all of the tax parcels on which the facility is located, but it does NOT include a parcel used only for *pasture* or as a *winter grazing area*. *Related livestock facilities* are considered a single “livestock facility,” except a livestock operator may elect to treat a *separate species facilities* as a separate livestock facility.

**“Livestock structure”** – A building or structure such as a barn, milking parlor, feed storage facility, feeding facility, *animal lot* or *waste storage structure*. *Pastures*, *winter grazing areas* and machine sheds are NOT “livestock structures.”

**“Local approval”** – A license, permit, special zoning exception, conditional use permit, or other local authorization for a *new or expanded livestock facility*. This application form applies, regardless of the form of local approval. However, this application form does NOT cover any of the following permits (for which separate requirements may apply):

- Building, electrical or plumbing permits (if local standards are consistent with state code).
- Manure storage system permits (*see ATCP 50.56*), UNLESS construction is part of a *new or expanded livestock facility*.
- Permits required by certain local ordinances related to shoreland zoning, floodplain zoning, construction site erosion control or stormwater management.

*Published under s. 35.93, Stats. Updated on the first day of each month. Entire code is always current. The Register date on each page is the date the chapter was last published.*

**“New livestock facility”** – A *livestock facility* used for the first time, or for the first time in at least 5 years.

**“NRCS”** – The Natural Resource Conservation Service of the United States Department of Agriculture. Wisconsin livestock siting standards refer to NRCS Technical Guide standards.

**“Pasture”** – Land on which livestock graze or otherwise seek feed in a manner that maintains the vegetative cover over all of the grazing or feeding area.

**“Premises ID”** – The unique ID number assigned to your *livestock facility* under the Wisconsin Livestock Premises Registration Program (ATCP 17). Go to <http://www.datcp.state.wi.us> for more information. To register your *livestock facility*, go to <http://www.wiid.org/>.

**“Qualified nutrient management planner”** – A person, other than the applicant, who is qualified under ATCP 50.48.

**“Related livestock facilities”** – Two or more *livestock facilities* that are owned or managed by the same person and meet any of the following criteria:

- They are located on the same tax parcel or *adjacent* tax parcels.
- They use any of the same *livestock structures* to collect or store manure.
- They generate manure that is applied to the same parcel of land.

**“Separate Species Facility”** – A distinct part of a *livestock facility* that meets all of the following criteria:

- It has only one of the following types of livestock, and that type is not found in any other part of the *livestock facility*:
  - Cattle
  - Swine
  - Poultry
  - Sheep
  - Goats
- It has no more than 500 *animal units*.
- Its animal housing and manure storage structures, if any, are located at least 750 feet from *livestock structures* that are used by other parts of the *livestock facility*.

**“Substantially altered” livestock structure** – A *livestock structure* that undergoes a material change in construction or use such as:

- An increase in the capacity of a *waste storage facility*.
- The addition of a liner to a *waste storage facility*.
- An increase of more than 20% in the area or capacity of a *livestock structure* used to house, feed, or confine *livestock* or to store livestock feed.
- An increase of more than 20% in the number of *animal units* that will be kept in a *livestock structure* on at least 90 days in any 12- month period.

**“Waste storage structure”** – An embankment structure, excavated pit, dugout or fabricated structure that is used to store manure, milking center waste or other organic waste generated by a *livestock facility*. For the purposes of waste storage structure setback (application form, A-2) and worksheet 2, a “waste storage structure” does not include a structure used to collect and store waste under an animal housing facility, or a manure digester consisting of a sealed structure in which manure is subjected to managed biological decomposition.


**“Waste storage facility”** -- A *waste storage structure* and any attached piping or equipment used to load or unload the structure.

**“Winter grazing area”** – Cropland or *pasture* where *livestock* feed on dormant vegetation or crop residue, with or

without supplementary feed, during the period October 1 to April 30. “Winter grazing area” does *not* include any of the following:

- An area, other than a *pasture*, where *livestock* are kept during the period from May 1 to September 30.
- An area which at any time has an average of more than 4 *animal units* per acre.
- An area from which *livestock* have unrestricted access to navigable waters of the state.
- An area in which manure deposited by *livestock* causes nutrient levels to exceed standards in *ATCP 51.16*.


“**WPDES permit**” – Wisconsin Pollutant Discharge Elimination System permit issued by DNR for a concentrated animal feeding operation over 1000 *animal units*, or for operations of any size that discharge pollutants directly to waters of the state.

arm-lwr- 11/04 January, 2006  <b>Wisconsin Department of Agriculture, Trade and Consumer Protection</b> 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911 Phone: (608) 224-4630 or livestocksting@wisconsin.gov				
<b>Application for Local Approval</b> <b>New or Expanded Livestock Facility</b>			Wis. Statutes s. 93.90 Wis. Adm. Code ch. ATCP 51	
<b>1. Legal Name of Applicant (Business Entity):</b> Denmark Dairy, LLC				
<b>2. Type of Business Entity:</b> check one				
<input type="checkbox"/> Individual	<input type="checkbox"/> Corporation	<input type="checkbox"/> Partnership	<input type="checkbox"/> Cooperative	<input checked="" type="checkbox"/> LLC
<input type="checkbox"/> Trust	<input type="checkbox"/> Other	Describe:		
<b>3. Other names,</b> if any, under which applicant does business (list all):				
<b>4. Contact Individual:</b>	Name: Karl Kragness			
Phone: 715-556-2432		E-mail: mandersabc@hotmail.com		
<b>5. Business Address:</b> Street Address: E9275 780th Avenue				
City/Village/Town: Colfax		County: Dunn	State: WI	Zip: 54730
<b>6. Principal Owners or Officers</b> (list if applicant is an entity other than an individual):				
Name: Karl Kragness		Title: Member	Phone: 715-556-2432	
Address: E7455 County Road B		City: Colfax	State: WI	Zip: 54730
Name:		Title:	Phone:	
Address:		City:	State:	Zip:
Name:		Title:	Phone:	
Address:		City:	State:	Zip:
<b>7. Description of Proposed Livestock Facility</b>				
Check one: <input type="checkbox"/> New Livestock Facility <input type="checkbox"/> Expanded Livestock Facility			Premises ID:	
Address of Proposed Livestock Facility: E7455 County Road B				
City/Village/Town: Town of Tainter		County: Dunn	State: WI	Zip: 54730
Town # 29N	Range # (E or W) 12W	Section # 24	¼ Section # SW	

<b>Application (continued)</b>
<p><b>8. Total Animal Units</b></p> <p>Enter total <i>animal units</i> from <b>worksheet 1</b>:</p> <p><b>Total Animal Units:</b> <u>4665</u>. This is the maximum <i>livestock facility</i> size for which the applicant requests approval at this time.</p>
<p><b>9. Area Map of Livestock Facility (See Attachment A)</b></p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> and surrounding area. The map or photo must be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> <li>• All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed.</li> <li>• The area lying within 2 miles of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, and navigable waters lying within that area.</li> <li>• All residences and <i>high use buildings</i> within 2500 ft. of any <i>livestock structure</i>. Show which (if any) of those buildings are owned by the applicant, or by persons who have agreed to exclude the buildings from the applicant's odor worksheet calculations.</li> <li>• Topographic lines at 10 ft. elevation intervals.</li> <li>• Map scale and north direction indicator.</li> </ul>
<p><b>10. Site Map of Livestock Facility (See Attachment B)</b></p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> site. The map or photo shall be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> <li>• All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed.</li> <li>• The area lying within 1,000 ft. of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, navigable waters, and known <i>karst features</i> within that area.</li> <li>• Topographic lines, at 2 ft. elevation intervals, for the area within 300 feet of the <i>livestock structures</i>.</li> <li>• Map scale and north direction indicator.</li> </ul>
<p><b>11. Location of Livestock Structures</b></p> <p>The applicant certifies that:</p> <ul style="list-style-type: none"> <li>• All <i>livestock structures</i> comply with applicable local property line and road setbacks (see <i>ATCP 51.12</i>).</li> <li>• All <i>waste storage structures</i> comply with setbacks in <i>ATCP 51.12(2)</i>.</li> <li>• All <i>livestock structures</i> comply with applicable local shoreland, wetland, and floodplain zoning ordinances (copies available from local government).</li> <li>• Wells comply with the Wisconsin well code (<i>NR 811</i> and <i>812</i>). <i>New or substantially altered livestock structures</i> are separated from existing wells (including neighbors' wells) by setback distances required in <i>NR 811</i> and <i>812</i>.</li> </ul>

Application (continued)
<p><b>12. Employee Training Plan (See Attachment C)</b></p> <p>Attach an Employee Training Plan for employees who will work at the <i>livestock facility</i>. Applicant determines plan contents, as long as the plan identifies all of the following:</p> <ul style="list-style-type: none"> <li>• Training topics including, at a minimum, nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response.</li> <li>• The number and job categories of employees to be trained.</li> <li>• The form and frequency of training, which at a minimum must include a plan for at least one training per year.</li> <li>• Training presenters (these may include <i>livestock facility</i> managers, consultants or professional educators).</li> <li>• A system for taking and recording attendance.</li> </ul>
<p><b>13. Environmental Incident Response Plan (See Attachment D)</b></p> <p>Attach an Environmental Incident Response Plan for the <i>livestock facility</i>. Applicant determines plans contents, as long as the plan identifies all of the following:</p> <ul style="list-style-type: none"> <li>• Types of environmental incidents covered. These must include, at a minimum, overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints.</li> <li>• The name and business telephone number of at least one individual who will handle public questions and concerns related to environmental incidents.</li> <li>• The names and telephone numbers of first responders (e.g. DNR, fire departments, excavation contractors).</li> <li>• Incident response procedures, including emergency response, recordkeeping and reporting procedures.</li> </ul>
<p><b>14. Odor Management Plan (Optional)</b></p> <p>An applicant required to complete the odor management worksheet may attach an <i>optional</i> odor management plan. The applicant determines plan contents, as long as the plan addresses all of the following: activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals.</p>

Application (continued)
<p><b>15. Other Laws</b></p> <p>The following laws, among others, may apply to the operation of a <i>livestock facility</i>. Local approval of a <i>livestock facility</i> siting application is NOT based on these laws, except as specifically provided in <i>ATCP 51</i>. However, violations may have other legal consequences:</p> <ul style="list-style-type: none"> <li>• Soil conservation and nonpoint pollution laws (contact your county land conservation department). Livestock facilities that have 1,000 or more animal units, or that discharge pollutants directly to waters of the state, must also obtain a <i>WPDES permit</i> from <i>DNR</i>.</li> <li>• Pesticide and agricultural chemical laws administered by <i>DATCP</i>.</li> <li>• Animal disease control laws administered by <i>DATCP</i>.</li> <li>• Animal mortality laws administered by <i>DATCP</i>.</li> <li>• Vehicle weight limits and state prohibitions against spilling waste on roads.</li> <li>• Food safety and animal health licenses administered by <i>DATCP</i>. All livestock operations must register, and some (such as dairy farms) must hold a state license.</li> <li>• Air pollution control regulations administered by <i>DNR</i>.</li> <li>• Building, electrical, plumbing and sanitation codes administered by the Wisconsin Department of Safety and Professional Services. A local authority may disapprove a proposed <i>livestock facility</i> that violates a conforming local code.</li> <li>• Construction site erosion control laws administered by <i>DNR</i>.</li> <li>• Local erosion control and stormwater management ordinances.</li> <li>• Petroleum storage laws administered by the Wisconsin Department of Safety and Professional Services.</li> <li>• High capacity well regulations administered by <i>DNR</i>.</li> </ul>
<p><b>16. Worksheets</b></p> <p>Complete worksheets as required (follow instructions on each worksheet) and attach to application.</p>
<p><b>Worksheet 1 – Animal Units.</b></p>
<p><b>Worksheet 2 – Odor Management.</b></p>
<p><b>Worksheet 3 – Waste and Nutrient Management.</b> If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>
<p><b>Worksheet 4 – Waste Storage Facilities.</b> If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>
<p><b>Worksheet 5 – Runoff Management.</b> If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>

Application (continued)	
<p><b>Authorized Signature:</b></p> <p><i>I certify that the information contained in this application (including worksheets and all attachments) is complete and accurate to the best of my knowledge.</i></p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 60%;"> <p style="text-align: center;"></p> <p>Signature of Applicant or Authorized Representative</p> </div> <div style="width: 35%;"> <p style="text-align: center;"><u>1-28-25</u></p> <p>Date</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 60%;"> <p style="text-align: center;"><u>Karl Kragness</u></p> <p>Print Name</p> </div> <div style="width: 35%;"> <p style="text-align: center;"><u>Member</u></p> <p>Title</p> </div> </div>	
<b>For Office Use Only:</b>	
Application #:	
Date Application Received:	
Date Completeness Determined:	Date Notice Sent to Applicant:
Date Notice Sent to Adjacent Landowners:	
Decision Date:	
Approved or Disapproved:	
Date Appeal Filed (if any):	

arm-lwr- 11/04 January 2006

**Wisconsin Department of Agriculture, Trade and Consumer Protection**

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911

Phone: (608) 224-4630 or livestock@wisconsin.gov

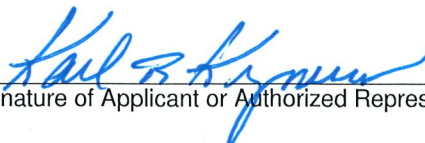
**Worksheet 1 - Animal Units**

**Instructions:** Use this worksheet to determine the number of *animal units* for which you request approval. You may request approval for a number that is large enough to accommodate current and potential future expansions. If the local government approves the requested number of *animal units*, that is the maximum number that you may keep for 90 days or more in any 12-month period. You may not exceed that number without additional approval.

To complete this worksheet:

1. Identify each type of *livestock* that you might keep at the proposed facility. Enter the maximum number of animals of each type that you might keep for at least 90 days in any 12-month period.
2. Multiply the number of animals of each type by the relevant Animal Unit Factor to obtain *animal units* of each type.
3. Sum the *animal units* for all *livestock* types to obtain the Total *Animal Units* for which you request approval.

	<b>Livestock Type</b>	<b>Animal Unit Factor</b>	<b>Animal Units For Proposed Facility</b>			
<i>Example – Milking &amp; Dry Cows</i>			1.4 x	800	=	1120 AU
<b>Dairy</b>	Milking and Dry Cows	1.4	1.4 x	3300	=	4620 AU
	Heifers (800 lbs. to 1200 lbs.)	1.1	1.1 x		=	
<b>Cattle</b>	Heifers (400 lbs. to 800 lbs.)	0.6	0.6 x		=	
	Calves (up to 400 lbs.)	0.2	0.2 x	225	=	45 AU
<b>Beef</b>	Steers or Cows (600 lbs. to market)	1.0	1.0 x		=	
	Calves (under 600 lbs.)	0.5	0.5 x		=	
	Bulls (each)	1.4	1.4 x		=	
<b>Swine</b>	Pigs (55 lbs. to market)	0.4	0.4 x		=	
	Pigs (up to 55 lbs.)	0.1	0.1 x		=	
	Sows (each)	0.4	0.4 x		=	
	Boars (each)	0.5	0.5 x		=	
<b>Poultry</b>	Layers (each)	0.01	0.01 x		=	
	Broilers (each)	0.005	0.005 x		=	
	Broilers – continuous overflow watering	0.01	0.01 x		=	
	Layers or Broilers - liquid manure system	0.033	0.033 x		=	
	Ducks – wet lot (each)	0.2	0.2 x		=	
	Ducks - dry lot (each)	0.01	0.01 x		=	
	Turkeys (each)	0.018	0.018 x		=	
<b>Sheep (each)</b>		0.1	0.1 x		=	
<b>Goats (each)</b>		0.1	0.1 x		=	
<b>Total Animal Units for Which Applicant Requests Approval</b>					=	<b>4665 AU</b>

  
Signature of Applicant or Authorized Representative

  
Date

Arm-lwr- 11/04 January 2006



**Wisconsin Department of Agriculture, Trade and Consumer Protection**  
 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911  
 Phone: (608) 224-4630 or livestocksting@wisconsin.gov

## Worksheet 2 - Odor Management

**Instructions:** This worksheet addresses odor from *livestock structures*. You are NOT required to complete this worksheet if any of the following apply (check box if applicable):

- ☐ I am requesting approval for a *new livestock facility* with fewer than 500 *animal units*.
- ☐ I am requesting approval for an *expanded livestock facility* with fewer than 1,000 *animal units*.
- ☐ All *livestock structures* will be at least 2500 ft. from the nearest affected neighbor.

If you checked any of the above boxes, just sign below and submit this page with your application. If you did NOT check any of the above boxes, you must complete this worksheet to calculate the odor score (Box 4) for your proposed *livestock facility*. To meet the odor management standard, you must have a total odor score of 500 or more.

If *livestock structures* are located in *clusters* that are separated by more than 750 feet, you may elect to complete a separate worksheet for each *cluster*. If you choose that option, each *cluster* must meet the odor management standard.

A complete worksheet must include Tables A and B. You may use a convenient automated spreadsheet in place of Tables A and B if you prefer (submit spreadsheet output instead of tables, results will be identical). However, you must still sign and submit this signature page. The spreadsheet is available at the *DATCP* website, <http://www.datcp.state.wi.us>.

### TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

**Step 1: Complete Table A to determine the Predicted Odor from your *livestock structures*. Enter the Predicted Odor in Box 3 below (NOT Box 1).**

**Step 2: Complete Table B to determine your Separation Score. Enter your Separation Score in Box 1 below. (NOT Box 2).**

**Step 3: Enter your management credits in Box 2 (maximum 100 points).** All applicants may enter 80 points for completing required incident response and employee training plans (described on page A-3). Applicants completing an optional odor management plan (described on page A-3), may add an additional 20 points. Applicants determine plan contents, as long as the plan addresses the required topics.

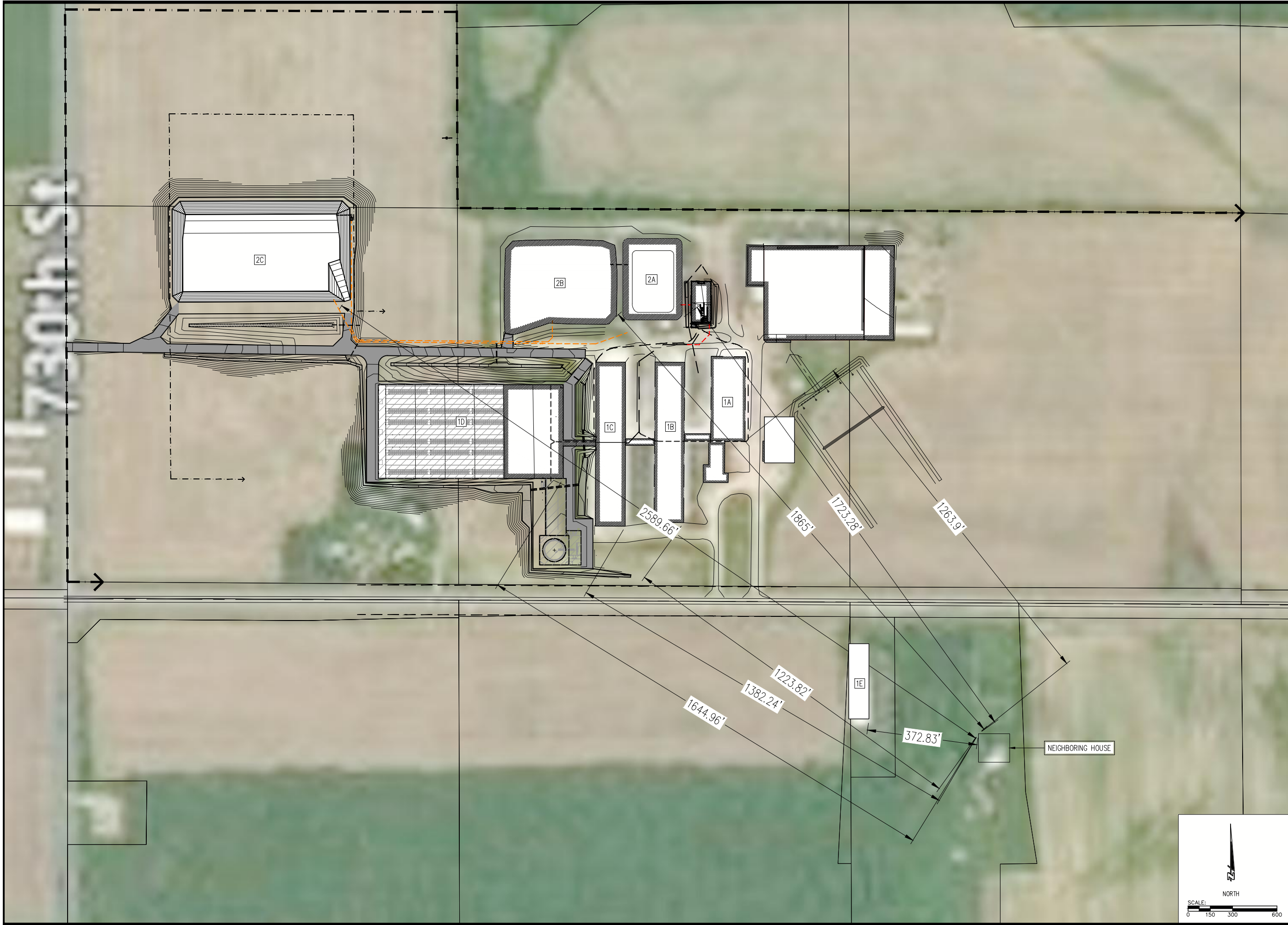
**Step 4: Add Box 1 and Box 2. Subtract Box 3 and enter the total in Box 4. This is your Odor Score.**

1,123	+	80	—	528	=	675
Box 1 Separation Score (from Step 2)		Box 2 Management Score (from Step 3)		Box 3 Predicted Odor (from Step 1)		Box 4 Odor Score

A local government must approve a *livestock facility* with an odor score of 500 or more (Box 4). You may add odor control practices to increase your odor score to 500 or more. A local government may approve, but is not required to approve, a *livestock facility* with an odor score less than 500 but not less than 470.

  
 Signature of Applicant or Authorized Representative

1-28-25  
 Date



PROJECT:  
DENMARK DAIRY  
2018 FARM IMPROVEMENTS  
TOWN OF TANTER, DUNN COUNTY, WI

ODOR

Auth•Consulting/associates

S&N Land Surveying

COMPANY OFFICE  
408 Technology Drive E.  
Suite A  
Menomonie, WI 54751  
Tel 715-232-4490  
Fax 715-232-4492

BRANCH OFFICE  
2820 Polaris Street  
Suite 101  
Hudson, WI 54016  
Tel 715-381-3277

8

N  
S

DRAWN BY: JVF

CHECKED BY: DAM

DATE: 2.8.19

DWG FILE: 619-006PLANS

REF FILE: 619-006

JOB NUMBER: 619-006

REVISION DESCRIPTION:

NAME:

DATE:

Livestock Facility:

Denmark Dairy

01/20/25

Location:

Dunn County, Wisconsin

## 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft. <sup>2</sup> )	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
1A	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	33,005	1,264	Cleaning Frequently (3 or more per day)	0.9	Diet manipulation	0.8	None	1	10
1B	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	54,325	1,224	Cleaning Frequently (3 or more per day)	0.9	Diet manipulation	0.8	None	1	16
1C	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	55,430	1,382	Cleaning Frequently (3 or more per day)	0.9	Diet manipulation	0.8	None	1	16
1D	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	197,800	1,645	Cleaning Frequently (3 or more per day)	0.9	Diet manipulation	0.8	None	1	57
1E	Bedded Pack - Dairy and Beef	2	17,360	373	Cleaning Frequently (3 or more per day)	0.9	Diet manipulation	0.8	None	1	2
1F											
1G											
1H											

## 2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft. <sup>2</sup> )	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
2A	Liquid storage - Long term (pit and tank) Open anaerobic	13	54,665	1,723	Natural Crust	0.3	None	1	None	1	21
2B	Liquid storage - Long term (pit and tank) Open anaerobic	13	109,065	1,865	None	1	None	1	None	1	142
2C	Liquid storage - Long term (pit and tank) Open anaerobic	13	203,051	2,589	None	1	None	1	None	1	264

## 3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft. <sup>2</sup> )	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
3A											
3B											
3C											
3D											

## 4. Separation Distance

Weighted Distance to Neighbor	2,147
Direction of Nearest Neighbor	Southeast
Adjusted Weighted Distance	2,576
Density (neighbors within 1,300 ft.)	Low

## 5. Management

Basic Management Plans	Required
Advanced Odor Management Plan? (optional)	No

Total Predicted Odor 528

Separation Score 1,123

Basic Management Score 80

Advanced Management Score 0

Odor Score 675

TABLE A: Predicted Odor from Livestock Structures

Worksheet 2 (continued)

**Instructions:** Complete Table A. You must measure all structures to the same affected neighbor. If the nearest neighbor is not the same for all livestock structures, you will need to complete the table once for each close neighbor. Compare the "H" Total of the table for each neighbor. The neighbor that has the lowest weighted distance is considered your nearest affected neighbor, and you should use that table to complete the odor worksheet. Enter the Column F total on page A-6 in Box 3. Enter the Column G result on page A-8 in Table B, Step 1. Add lines or use additional sheet, if needed, to list all structures.

1. Animal Housing Areas – List each

Column A Manure Management Type Enter your housing buildings and the related 4-letter code from Chart 2. You may exclude up to 1000 calf hutches and 4 structures less than the sq. footage listed in Chart 2.	Column B Odor Generation Number From Chart 2	Column C Housing Area (F <sup>2</sup> ) Use occupied animal area only. Exclude feed alleys, holding areas and milking parlors. Express in 10,000's. (Ex: 15,523 ft <sup>2</sup> = 1.55)	Column D Odor Control Practice Codes List all that apply to each housing area, from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor(ft) Measure from corner of the bldg to corner of the neighbor's bldg. Measure all to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
1A..							
1B.							
1C.							
1D.							
1E.							

2. Waste Storage Facilities – List each

Column A Waste Storage Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Exposed Surface Area Measure surface area (ft <sup>2</sup> ) when pit is filled to capacity, excluding freeboard. Enter in 10,000's. (Ex: 75,575 = 7.56)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor (ft) Measure from top inside edge to neighbor's bldg corner. Measure to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
2A.							
2B.							
2C.							
2D.							

3. Animal Lots – List each

Column A Animal Lot Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Animal Lot Area (ft <sup>2</sup> ) Enter in 10,000's (Ex: 7438 = .74)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor(ft) Measure from corner to corner. Measure all structures to the same neighbor.	Column H Weighted Distance (ft.) Multiply columns F & G
3A.							
3B.							
3C.							
					F Total	G = (H Total) ÷ (F Total)	H Total

Enter on page A-6, Box 3

Enter on page A-8, Table B, Step 1

## Worksheet 2 (continued)

Table B: Separation Score

INSTRUCTIONS		RESULTS
<b>Step 1:</b> Enter, at right, the result from Table A, Column G (page A-7).		<b>Distance (ft.) to Nearest Affected Neighbor:</b> _____
<b>Step 2:</b> Select multiplier based on the compass direction looking from the <i>live-stock facility</i> to the nearest <i>affected neighbor</i> . Enter at right.		<b>Multiplier:</b> _____
Compass Direction	Multiplier	
North	1.0	
Northeast	1.0	
East	1.1	
Southeast	1.2	
South	1.2	
Southwest	1.2	
West	1.3	
Northwest	1.1	
<b>Step 3:</b> Calculate wind-adjusted separation distance (Distance to nearest <i>affected neighbor</i> x multiplier). Enter at right.		<b>Wind-Adjusted Separation Distance (ft.)</b> _____
<b>Step 4:</b> Determine <i>affected neighbor</i> density and enter at right: <i>Low density</i> = No more than 5 residences and no <i>high-use buildings</i> within 1300 ft of each structure. <i>High density</i> = 6 or more residences or at least one <i>high-use building</i> within 1300 ft of each structure.		<b>Low or High Density?</b> _____
<b>Step 5:</b> Use results above and Chart 1 to find your Separation Score. Enter at right and on Page A-6 in <b>Box 1</b> .		<b>Separation Score</b> _____

Chart 1: Separation Score

Wind-Adjusted Separation Distance (ft.)	Low Density	High Density
0-99	505	503
100-149	506	504
150-199	511	507
200-249	516	510
250-299	521	514
300-349	527	518
350-399	534	523
400-449	541	528
450-499	548	533
500-599	560	542
600-699	577	555
700-799	595	569
800-899	615	585
900-999	636	601
1000-1099	658	619
1100-1199	681	637
1200-1299	705	657
1300-1399	730	
1400-1499	756	
1500-1599	783	
1600-1699	810	
1700-1799	839	
1800-1899	868	
1900-1999	899	
2000-2099	930	
2100-2199	962	
2200-2299	994	
2300-2399	1027	
2400-2499	1061	
2500-2749	1123	
2750-2999	1214	
3000-3249	1309	

## Worksheet 2 (continued)

Chart 2: Odor Generation Numbers

<i>Animal Housing Area Type</i>	<i>Housing/ Management Type Code</i>	<i>Manure Management Method</i>	<i>Odor Generation Number</i>	<i>Exempt Buildings Maximum Size (ft<sup>2</sup>) (May exclude up to 4)</i>
<b>Dairy Stanchion</b>	DSDC	Daily to weekly cleaning	2	7500
<b>Dairy Free Stall and Beef &amp; Dairy Heifers (Forage Ration)</b>	DBSS	Slatted floor (includes floor and pit below)	6	2500
	DBSC	Scrape	4	3500
	DBAF	Alley flush to storage	10	1500
	DBBP	Bedded pack	2	7500
<b>Beef Finishing (High Energy Ration)</b>	BFSF	Slatted floor (includes floor and pit below)	12	1000
	BFSC	Scrape	8	2000
	BFBP	Bedded pack	4	3500
<b>Pork Gestation/ Farrow/Nursery</b>	PGSF	Slatted floor (includes floor and pit below)	46	N/A
	PGPP	Pull plug to storage	22	N/A
<b>Pork Finishing</b>	PFSF	Slatted floor (includes floor and pit below)	34	N/A
	PFPP	Pull plug to storage	20	N/A
	PFSS	Scrape systems to storage	11	1500
	PFDB	Deep bedded	4	3500
<b>Poultry</b>	PBLT	Broiler (litter)	1	15000
	PDLQ	Ducks (liquid)	20	N/A
	PLAY	Layers	20	N/A
	PTDL	Turkey and Ducks (litter)	2	7500

<i>Type Codes</i>	<i>Waste Storage Facility Types</i> <i>Note: Storage under slatted floor is addressed under animal housing.</i>	<i>Odor Generation Number</i>
WSSS	Solid (stack)	2
WSLT	Long term (6 months or longer as determined in Column E of worksheet 3)	13
WSST	Short term (less than 6 months as determined in Column E of worksheet 3)	28

<i>Animal Lot Codes</i>	<i>Animal Lot Types</i>		<i>Odor Generation Number</i>
ALPV	<b>Paved</b>		4
UPDB	<b>Unpaved</b>	Dairy/Beef/Sheep/Goats	6
UPSW		Swine/Poultry	11

## Worksheet 2 (continued)

Chart 3: Odor Control Practices

Category	Practice Code	Practice Name (Practices must meet specifications on pages A-11 to A-13)	Multiplier*
<b>Animal Housing Area</b>			
<b>A</b>	A1	Diet manipulation	0.8
<b>B</b> (Choose only 1)	B1	Bio-filter	0.1
	B2	Vegetable oil sprinkling (for swine only)	0.4
	B3	Fresh water flush	0.4
	B4	Treated water flush	0.7
	B5	Air Dam (for swine only)	0.9
<b>C</b>	C1	Windbreak (includes man-made berms)	0.9
<b>D</b>	D1	Frequent cleaning of animal housing area	0.9
<b>Waste Storage Facilities</b>			
<b>E</b> (Choose only 1)	E1	Anaerobic digestion	0.2
	E2	Chemical or biological additives	0.8
	E3	Compost	0.2
	E4	Solids Separation and Reduction	0.6
	E5	Water Treatment	0.1
<b>F</b> (Choose only 1)	F1	Aeration	0.3
	F2	Bio-cover	0.4
	F3	Geotextile cover	0.5
	F4	Impermeable cover	0.1
	F5	Natural crust	0.3
	F6	Bottom fill	0.9
<b>G</b>	G1	Windbreak (includes man-made berms)	0.9
<b>Animal Lots</b>			
<b>H</b> (Choose only 1)	H1	Frequent cleaning of <i>animal lot</i>	0.4
	H2	Drag <i>animal lot</i>	0.5
<b>I</b>	I1	<i>Animal lot</i> moisture control	0.8
<b>J</b>	J1	Windbreak (includes man-made berms)	0.9

\*Smaller multiplier = more odor controlled (e.g. a multiplier of 0.4 represents a 60% control).

**Innovative Odor Control Practices (all odor sources):**

You may take credit for odor control practices not listed in Chart 3 if *DATCP* pre-approves a multiplier for each of those practices. Follow the procedure in *ATCP 51.14(5)(c)* to obtain *DATCP* approval. If you obtain *DATCP* approval, you may include the approved practice and multiplier in odor worksheet calculations in the same manner as for odor control practices listed in Chart 3 (attach *DATCP* approval to your application).

## Worksheet 2 (continued)

**Odor Control Practice Specifications**

Odor control practices identified in Chart 3 must meet the following specifications:

**Animal Housing**

**Diet manipulation (A1)** – Limit protein in animal diet by one of the following means:

- Match nutrient supply with animal requirements.
- Formulate low-protein amino acid supplemented diets.
- Add phytase enzyme ingredients.
- Process ingredients in ways that limit protein content of processed feed.
- Use phase feeding.
- Use split sex feeding.
- Minimize feed wastage.

**Bio-filter (B1)** – Vent air from *animal housing areas* through a bio-filter consisting of compost and wood chips, mixed at a rate of 30:70 to 50:50 (ratio by weight of compost to wood chips). The mixture must be at least 40% moisture by weight. The bio-filter must be 10” to 18” thick, and must have an area of at least 50 to 85 sq. ft. per 1000 cu. ft. per minute (cfm) of airflow.

**Vegetable oil sprinkling (B2)** – Sprinkle vegetable oil on floors in *animal housing areas* (swine) each day. Apply oil at start-up rate of approximately 40 milliliters per square meter per day (mL/m<sup>2</sup>-day) in the first 1-2 days of each production cycle. During the remainder of each production cycle, apply oil at maintenance rate of 5 mL/m<sup>2</sup>-day. Avoid oil applications to pens near fans, to areas near heaters, and to areas surrounding feeders.

**Fresh water flush (B3)** – Use fresh water to flush manure from floors of *animal housing areas* into collection or *waste storage structures*. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush must be adequate to remove manure solids effectively.

**Treated water flush (B4)** – Use treated manure effluent to flush manure from floors of *animal housing areas* into collection or *waste storage structures*. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush with waste storage effluent treated by one of the following means:

- *Solids Separation and Reduction (see E4 below).*
- *Aeration (see F1 below).*
- *Anaerobic digestion (see E1 below).*

**Air Dam (B5)** – Erect and maintain a wall (typically a 10-foot x 10-foot pipe frame and tarpaulin) placed at the end of a swine-finishing building, immediately downwind of the exhaust to deflect air and odor plume. Replace material used for the barriers (tarpaulins on a frame of solid wood, for example) as needed, which may be from a few years to decades, depending on the material.

**Windbreak (C1)** – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the animal housing. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

**Frequent cleaning of animal housing area (D1)** – Scrape and remove manure from *animal housing areas* at least 3 times a day.

*Published under s. 35.93, Stats. Updated on the first day of each month. Entire code is always current. The Register date on each page is the date the chapter was last published.*

## Worksheet 2 (continued)

**Waste Storage Facilities**

**Anaerobic digestion (E1)** – Subject manure to managed biological decomposition within a sealed oxygen-free container (“digester”). Anaerobic digestion must meet design and operational standards necessary to achieve adequate odor control, including requirements for solids concentration, flow rates, retention time, and minimum temperatures. Systems must meet the following:

- *Plug flow digester.* Treats manure with a total solids concentration of 8 to 14%. Must be kept in the digester for at least 20 days at a temperature of 95° to 104° F. (35° to 40° C). The digester’s ratio of flow path width to fluid depth must be between 3.5:1 and 5:1.
- *Complete mix digester.* Treats manure with a total solids concentration of 2.5 to 10%. Must be kept in the digester for at least 17 days at a temperature of 95° to 104° F. (35° to 40° C.). The digester must have appropriate mixing devices to ensure complete mixing.
- *Fixed film digester.* Treats manure with a total solids concentration of not more than 5%. Must be kept in the digester for 1 to 6 days at a temperature of 59° to 99° F (15° to 39° C). Microbial support material must have at least 3-inch openings.
- *Other systems.* Use proprietary design and performance specifications that are commonly accepted and provide adequate odor mitigation.

**Chemical or biological additives (E2)** – Apply, to stored manure, chemical or biological additives that are scientifically proven to be effective in reducing odor from that manure when applied under applicable conditions and in applicable amounts.

**Compost (E3)** – Aerobically treat solid or semi-solid manure to create compost. Compost must have a carbon: nitrogen ratio of 25:1 to 40:1, and must consist of at least 40 to 60% moisture by weight. Composted material must be held at a temperature of more than 130° F. (54° C.) for more than 5 days.

**Solids Separation and Reduction (E4)** – Reduce the solid content of stored manure to an average of less than 2% solids through separation, multi-tiered pits or other means.

**Water Treatment (E5)** – Install and use a physical, chemical or biological process that removes the majority of contaminants from the waste stream, resulting in a liquid effluent meeting surface water discharge standards. The remaining solid fraction or sludge must be accounted for based on its form, and the management it is subject to.

**Aeration (F1)** – Use aeration equipment to maintain aerobic activity in stored manure. Aeration must maintain an average of 2 milligrams of dissolved oxygen per liter of manure stored in the upper foot of manure stored in the aerated structure between April and October.

**Bio-cover (F2)** – Cover the surface of waste storage structure with an 8” to 12” thick blanket of dry wheat, barley or good quality straw. The blanket must cover nearly all of the waste surface between the months of April and October. Add to the blanket as necessary (typically every 6 weeks to 4 months) to maintain the required cover.

**Geotextile cover (F3)** – Cover the surface of waste storage structure with a geotextile membrane that is at least 2.4 mm thick. The membrane must cover nearly all of waste surface between the months of April and October.

**Impermeable cover (F4)** – Cover the surface of waste storage structure with an impermeable barrier that prevents gas from escaping. Gas must be drawn off, and either treated or burned.

**Natural crust (F5)** – Maintain a natural crust of dry manure on the surface of stored manure. The natural crust must cover a substantial amount of the surface area of the stored manure, for most of the time between the months of April and October.

**Bottom fill (F6)** – Add manure to a liquid *manure storage structure* from the bottom so as to limit disturbance to the surface of the stored manure.

## Worksheet 2 (continued)

**Windbreak (G1)** – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *waste storage facility*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

**Animal Lots**

**Frequent cleaning of animal lot (H1)** – Scrape and remove manure from *animal lot* surfaces at least once every 3 days. You may leave an undisturbed, compacted manure layer (1 to 2 inches thick) on the surface of unpaved *animal lots* to provide good surface sealing.

**Drag animal lot (H2)** – Drag manure in *animal lots* with harrow or disk at least once every 7 days during the months of April through October, to aerate and dry the manure.

**Animal lot moisture control (I1)** – Prevent runoff water from flowing onto *animal lots* from roofs and other surfaces. Use diversions or roof runoff systems identified in s. [ATCP 50.70](#) or [50.85](#). *Animal lots* must have a grade of at least one percent to promote drainage and drying.

**Windbreak (J1)** – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *animal lot*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

Arm-lwr- 11/04 January 2006



## Wisconsin Department of Agriculture, Trade and Consumer Protection

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911

Phone: (608) 224-4630 or livestocksting@wisconsin.gov

### Worksheet 3 - Waste and Nutrient Management

#### Part A. Waste Generation and Storage Summary

**Instructions:** You must complete Parts A and B of this worksheet. If your *livestock facility* will have fewer than 500 *animal units* you may be exempt from Part C, depending on results of Part B. If Part C applies, it must be signed by a *qualified nutrient management planner* (you must also sign).

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☐ I enclose a copy of my *WPDES permit* in place of Worksheet 3.

**Specify a single livestock type** (dairy, beef, swine, etc.). *Use a separate worksheet for each livestock type.*

**Livestock Type:** dairy

Description of Storage	Column A Waste Storage Capacity (Gallons or Tons)	Column B Source of Waste (Animal Waste, Wastewater, Leachate, etc.)	Column C Average Annual Volume of Waste Produced from Each Source (Gallons or Tons)	Column D Total Average Annual Volume Waste Produced (Gallons or Tons)	Column E Storage Duration in Days (Column A divided by Column D times 365 days)
Example: Unit 1 - lagoon	5,000,000 gallons	Animal waste	4,000,000 gallons	7,000,000 gallons	260 days
		Wastewater	1,000,000 gallons		
		Leachate	2,000,000 gallons		
Unit 1	2,916,691 gal	Stacking Runoff	142,725 gal	4,169,670 gal	
		Precipitation	672,245 gal		
		Feedpad Runoff	3,354,700 gal		
Unit 2	7,921,877 gal	Animal Waste	24,973,724 gal	34,230,498 gal	
		wastewater	7,920,500 gal		
		Precipitation	1,336,274 gal		
Unit 3	16,129,287gal			2,627,526 gal	
		Precipitation	2,627,526 gal		

Applicant affirms that the information provided in Part A is accurate.

TOTAL  
26,976,856 gal

TOTAL  
41,027,694 gal      240 days

Signature of Applicant or Authorized Representative

Date

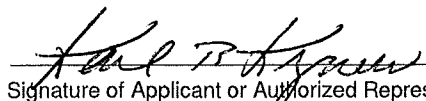
Worksheet 3 (continued)	
Arm-lwr- 11/04 January 2006	
<b>Part B – Land Base for Applying Nutrients</b>	
1. Enter total <i>animal units</i> in proposed <i>livestock facility</i> (from worksheet 1): <u>4,665</u>	
2. What percentage of the waste from the <i>livestock facility</i> will be:	
a. Applied to land: <u>100</u> %. Attach map showing where waste will be applied to land.	
b. Processed and sold as commercial fertilizer, under a fertilizer license: <u>0</u> %.	
c. Disposed of in other ways: <u>0</u> %. Describe ways: <u>na</u>	
3. Multiply the percent in line 2a by the number of <i>animal units</i> in line 1. Result (# of <i>animal units</i> ): <u>4,665</u>	
4. Total acres of cropland currently available for land application (owned, rented, or landspreading agreement): <u>5,502</u>	
5. Divide # of acres in line 4 by # of <i>animal units</i> in line 3 to obtain ratio of acres to <i>animal units</i> : <u>1.2</u>	
6. Is the ratio in line 5 equal to or greater than the applicable ratio in Table 1? <u>NO</u>	
If YES, and if the # of <i>animal units</i> in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.	

**Table 1: Acreage per Animal Unit**

Animal Type	Acres per Animal Unit*
Dairy	1.5
Beef	1.5
Swine	1.0
Chickens/Ducks	2.5
Turkeys	5.5
Sheep/Goats	2.0

\* NOTE: A *livestock facility* is NOT required to attain or exceed this ratio of acres to *animal units*. But IF your *livestock facility* will attain or exceed this ratio and will have fewer than 500 *animal units*, you need NOT complete Part C of this worksheet.

Applicant affirms that the information provided in Part B is accurate.

  
Signature of Applicant or Authorized Representative

1-21-25  
Date

Worksheet 3 (continued)		
arm-lwr-11/04 January 2006		
<b>Part C – Nutrient Management Checklist</b>		
<b>Instructions:</b> All applicants must submit this checklist unless exempted under Part A or B. The checklist is based on the NRCS Technical Guide Nutrient Management Standard 590 (September, 2005).		
County Name: <u>Dunn</u>	Date Submitted: <u>2/2025</u>	Township (T. <u>29</u> N., S.) – (R. <u>12</u> E., W.)
Cropland Acres: (owned, rented, or with manure spreading agreement) <u>5,502</u>	Name of livestock operator submitting checklist: <u>Denmark Dairy</u>	
	Yes	NA
<b>1. Are the following field features identified on maps or aerial photos?</b>		
a) Field location, soil survey map unit(s), field boundary, and field identification number.	X	
b) Areas prohibited from receiving nutrient applications: Surface water, established concentrated flow channels with perennial cover, permanent non-harvested vegetative buffer, non-farmed wetlands, sinkholes, lands where established vegetation is not removed, nonmetallic mines, and fields eroding at a rate exceeding tolerable soil loss (T).	X	
c) Areas within 50 ft of a potable drinking water well where mechanically-applied manure is prohibited.	X	
d) Areas prohibited from receiving winter nutrient applications: Slopes > 9% (12% if contour-cropped); Surface Water Quality Management Area (SWQMA) defined as land within 1,000 ft of lakes and ponds or within 300 ft of perennial streams draining to these waters, unless manure is deposited through winter gleaning/pasturing of plant residue and not exceeding the N and P requirements of this standard.	X	
e) Areas where winter applications are restricted unless effectively incorporated within 72 hours: Land contributing runoff within 200 ft upslope of direct conduits to groundwater such as a well, sinkhole, fractured bedrock at the surface, tile inlet, or nonmetallic mine.	X	
f) Sites vulnerable to N leaching: Areas within 1,000 ft of a municipal well, and soils listed in Appendix 1 of the Conservation Planning Technical Note WI-1.	X	
<b>2. Are erosion controls implemented so the crop rotation will not exceed T on fields that receive nutrients according to the conservation plan or WI P Index model?</b>	X	
<b>3. Check the methods below used to determine field soil nutrient levels:</b>		
a) Soil samples were collected and analyzed within the last 4 years according to UW Publication A2100 recommendations.	X	
b) For fields not meeting (a.) above, soil test phosphorus levels are assumed to be greater than 100 ppm soil test P.	X	
c) For fields not meeting (a.) above, preliminary estimates of soil nutrients were determined using limited soil sampling (> 5 acre per sample) but analyzed by a DATCP certified laboratory. *		X
*For fields with soil nutrient levels determined under (b) or (c), the applicant must collect and analyze soil samples meeting the requirements of A2100 within 12 months of siting approval, and revise the nutrient management plan accordingly.		
<b>4. Using the field's predominant soil series and realistic yield goals, are planned nutrient application rates, timing, and methods of all forms of N, P, and K listed in the plan and consistent with UW Publication A2809, Soil Test Recommendations for Field, Vegetable and Fruit Crops, and the 590 standard?</b>	X	
<b>5. Do manure production and collection estimates correspond to the acreage needed in the plan? Are manure application rates realistic for the calibrated equipment used?</b>	X	
<b>6. Is a single phosphorus (P) assessment of either the P Index or soil test P management strategy uniformly applied to all fields within a tract?</b>	X	
<b>7. Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?</b>	X	
<b>8. Will nutrient applications on non-frozen soil within the SWQMA comply with the following?</b>	X	
a) Unincorporated liquid manure on unsaturated soils will be applied according to Table 1 of the 590 standard to minimize runoff.	X	
b) One or more of the following practices will be used: 1) Install/maintain permanent vegetative buffers, or 2) Maintain greater than 30% crop residue or vegetative coverage on the surface after nutrient application, or 3) Incorporate nutrients leaving adequate residue to meet tolerable soil loss, or 4) Establish fall cover crops promptly following application.	X	
<b>9. Is a narrative included which describes proposed manure collection, transportation, and application methods?</b>	X	

I certify that the documentation supporting this checklist is complete and accurate:

Signature of *Qualified Nutrient Management Planner*, other than applicant: Haily Sund, CCA 359050  
(qualified by 1. NAICC-CPCC, 2. ASA-CCA, 3. ASA-Professional Agropomist, 4. SSSA-Soil Scientist)

Signature of Applicant or Authorized Representative: Paul E. Hyman

Arm-lwr- 11/04 January 2006



**Wisconsin Department of Agriculture, Trade and Consumer Protection**  
 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911  
 Phone: (608) 224-4630 or livestocksting@wisconsin.gov

### Worksheet 4 - Waste Storage Facilities

**Instructions:** This worksheet must be signed by a registered professional engineer or *certified agricultural engineering practitioner*. This worksheet must identify every *waste storage facility* in the proposed *livestock facility* (including storage structures and transfer systems).

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☒ I enclose a copy of my *WPDES permit* in place of Worksheet 4.

**New or Substantially Altered Facilities:** Design specifications for the following *new or substantially altered waste storage facilities* comply with *NRCS Technical Guide Standards 313* (November, 2004) and *634* (November, 2004). [Identify each facility and attach design specifications for each facility.] Plans for WSF3 have been submitted to DNR and Dunn Co

**Existing Facilities Retained:** The following *waste storage facilities* will continue in use without being *substantially altered*. Each facility meets one of the following:

☐ The facility (list each facility ) was constructed of concrete or steel or both, was constructed within the last 10 years according to then-existing *NRCS* technical standards, and shows no apparent signs of structural failure or significant leakage.

☐ The facility (list each facility ) was constructed within the last 3 years according to then-existing *NRCS* technical standards, and shows no apparent signs of structural failure or significant leakage.

☒ The facility (list each facility WSF1, WSF2 and existing waste transfer ) was constructed to *NRCS* technical standards that existed at the time of construction, is in good condition and repair and shows no apparent signs of structural failure or significant leakage.

☐ The facility (list each facility ) is in good condition and repair, shows no apparent signs of structural failure or significant leakage, and is located on a site at which the soils and separation distances to groundwater comply with *NRCS Technical Guide Manure Storage Facility Standard 313*, Table 1 (November, 2004).

☐ The facility (list each facility ) is in good condition and repair, shows no apparent signs of structural failure or significant leakage, is located entirely above ground, and is located on a site at which the soils comply with *NRCS Technical Guide Manure Storage Facility Standard 313*, Table 5 (November, 2004).

**Facilities To Be Abandoned:** The following *waste storage facilities* will be closed according to a closure plan that complies with *NRCS Technical Guide Standard 360* (June, 2001). [Attach closure plan for each facility.]

**Total Storage Capacity:** The *waste storage facilities* in the proposed *livestock facility* have a combined useable storage capacity of 27 mil gallons or tons (cannot include required "freeboard" in useable capacity).

David McDaniel, PE

Print Name of Engineer (include WI License No.) or Certified Agricultural Engineering Practitioner

Signature of Engineer or Practitioner

Date

ACA, 406 Technology Dr E, Menomonie, WI

Name of Firm and Address

Arm-lwr- 11/04 January 2006

**Wisconsin Department of Agriculture, Trade and Consumer Protection**

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911

Phone: (608) 224-4630 or livestock@wisconsin.gov

**Worksheet 5 - Runoff Management**

**Instructions:** This worksheet must be signed by a registered professional engineer or *certified agricultural engineering practitioner* (you must also sign). Signers attest to statements in this worksheet. You are responsible for compliance.

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☒ I enclose a copy of my *WPDES permit* in place of Worksheet 5.

**Animal Lots<sup>1</sup>**

**1. New or Substantially Altered Animal Lots:** All *new or substantially altered animal lots* will be constructed according to the attached design specifications that comply with *NRCS Technical Guide Standard 635* (January, 2002). [Identify *animal lots* and attach design specifications for each *animal lot*.]

**2. Existing Animal Lots Near Surface Waters:** The following *animal lots* are located within 300 feet of a stream<sup>2</sup> or 1,000 feet of a lake. According to the *BARNY runoff model*, each of these *animal lots* has (or with minor alterations<sup>3</sup> will have) predicted average annual phosphorus runoff of less than 5 lbs. per year (measured at the end of the treatment area). Runoff does not discharge to any direct conduit to groundwater. [Identify *animal lots* and minor alterations if any.]

**3. Other Existing Animal Lots:** The following *animal lots* are NOT located within 300 feet of a stream<sup>2</sup> or 1,000 feet of a lake. According to the *BARNY runoff model*, each *animal lot* has (or with minor alterations<sup>3</sup> will have), a treatment area that reduces phosphorus runoff to an average of less than 15 lbs. per year (measured at the end of the treatment area). Runoff does not discharge to any direct conduit to groundwater. [Identify *animal lots* and minor alterations if any.]

**Feed Storage**

**1. General.** The operator agrees to manage feed storage to prevent significant discharge of leachate or polluted runoff to waters of the state.

**2. Existing Feed Storage (High Moisture Feed).** Existing paved areas and bunkers that may be used to store or handle high moisture feed (70% or higher moisture content) will meet the following standards:

- a) Surface water runoff will be diverted from entering the paved area or bunker.<sup>4</sup>
- b) Surface discharge of leachate will be collected before it leaves any paved area or bunker, if the paved area covers more than one acre. Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state.<sup>5</sup>

<sup>1</sup> Treat multiple lots as one *animal lot* if runoff from the *animals lots* drains to the same treatment area or if runoff from the *animal lot* treatment areas converges or reaches the same surface water within 200 feet of any of those treatment areas.

<sup>2</sup> Indicated by a solid or dashed blue line on a 1:24,000 scale USGS topographic map.

<sup>3</sup> "Minor alterations" are repairs or improvements that do not result in a *substantially altered animal lot*. "Minor alterations" may include conservation practices such as runoff diversions, contouring, and planting vegetation.

<sup>4</sup> Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

<sup>5</sup> Use safe methods to dispose of collected leachate. For example, leachate may be transferred to *waste storage structures* and then applied to land at agronomic rates.

## Worksheet 5 (continued)

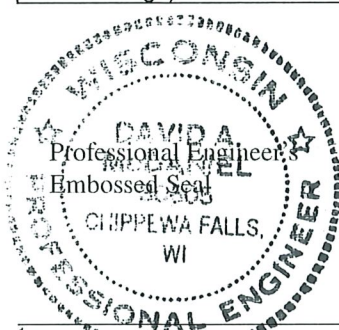
**3. New or Substantially Altered Feed Storage Structures (High Moisture Feed):** *New or substantially altered* feed storage structures (buildings, silos, bunkers or paved areas) used to store or handle high moisture feed (70% or higher moisture content) will be designed, constructed and maintained to the following standards [attach design specifications]:

- a) Surface water runoff will be diverted from entering the feed storage structure.<sup>1</sup>
- b) Surface discharge of leachate will be collected before it leaves the feed storage structure.<sup>2</sup>
- c) The top of the feed storage structure floor will be at least 3 vertical feet from groundwater and bedrock.<sup>3</sup>
- d) Any feed storage structure with an area greater than 10,000 sq. ft. will have a subsurface drainage system to collect leachate that may leak through the structure floor. The subsurface drainage system must consist of drainfill material below the surface material, a tile drainage network designed to collect the leachate and deliver it to storage, and a subliner. The tile drainage network must, at a minimum, be installed at the perimeter of the structure only on the downgradient side(s). The sub-liner must, at a minimum, consist of one of the following:
  - Two feet of soil, either in place or installed, having a minimum of 50% fine soil particles (that pass a #200 soil sieve).
  - Two feet of soil, either in place or installed, having a minimum of 30% fine soil particles (that pass a #200 soil sieve) and a minimum PI (plasticity index) of 7.
  - A 40 mil liner of HDPE, EPDM or PVC.
  - A geosynthetic clay liner.
- e) Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state.<sup>2</sup>

### Nonpoint Pollution Standards

The livestock facility will be designed, constructed and maintained to do all of the following:

1. Divert runoff from contact with *animal lots, waste storage facilities*, paved feed storage areas or manure piles within 300 ft. of a stream or 1,000 ft. of a lake.
2. Avoid having any unconfined manure pile within 300 ft. of a stream or 1,000 ft. of a lake.
3. Prevent any overflow of *waste storage facilities*.
4. Restrict livestock access to waters of the state, as necessary to maintain adequate vegetative cover on banks adjoining the water (this does not apply to properly designed, installed and maintained livestock or farm equipment crossings).



Signature of Applicant or Authorized Representative

David McDaniel, PE

Date

1-28-25

Print Name of Engineer (include WI License No.) or Certified Practitioner

David McDaniel

Signature of Engineer or Practitioner

ACA, 406 Technology Dr E, Menomonie, WI

Name of Firm and Address

Date

1-28-25

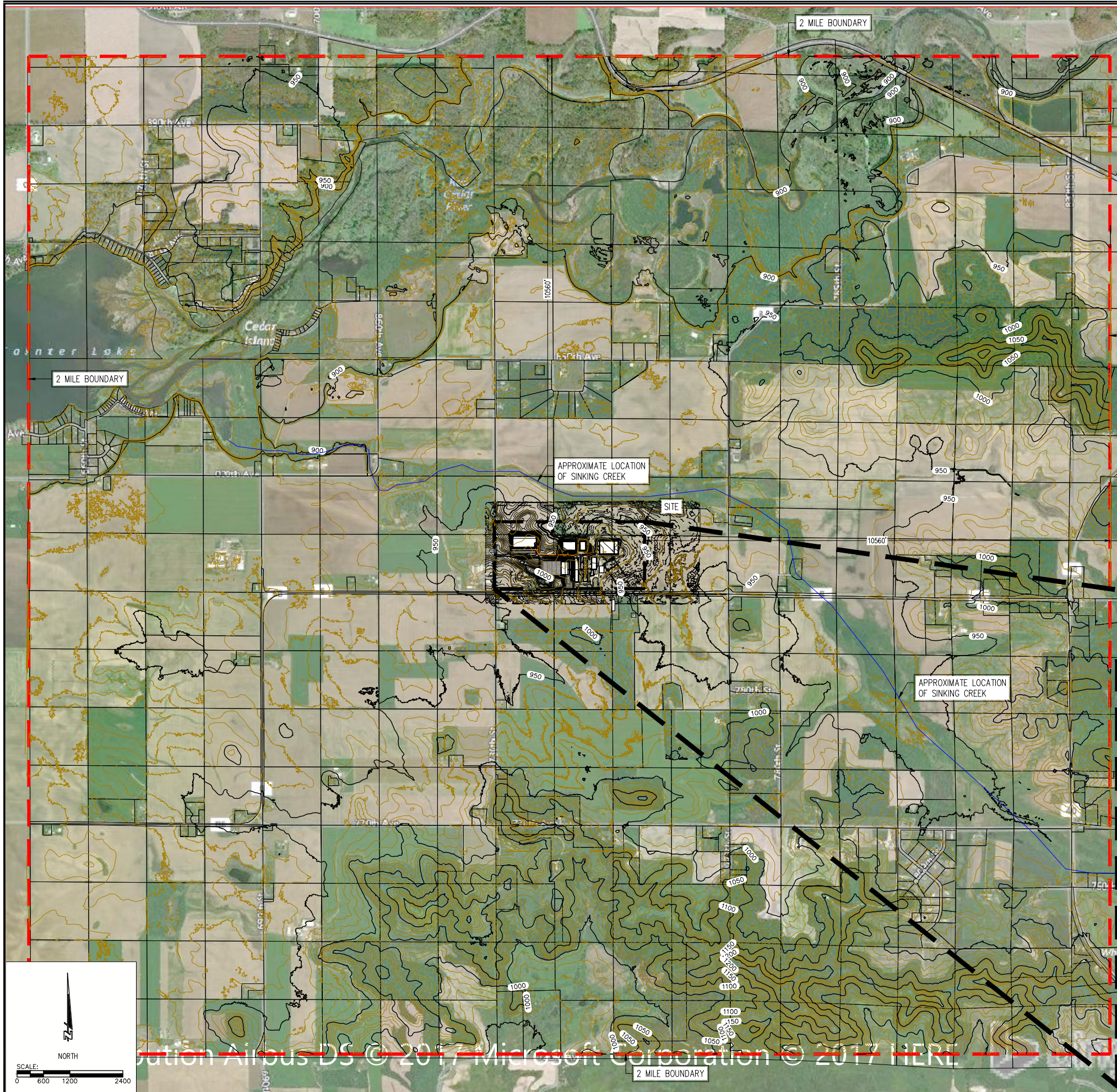
<sup>1</sup> Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

<sup>2</sup> Use safe methods to dispose of collected leachate. For example, leachate may be transferred to waste storage and then applied to land at agronomic rates.

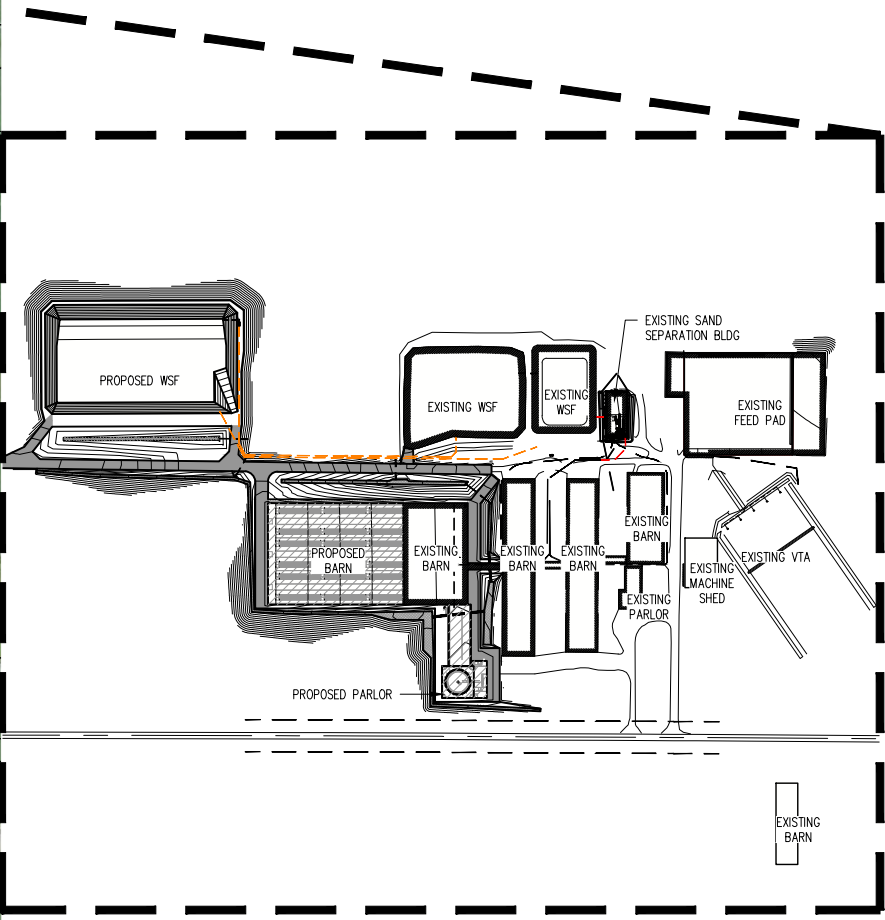
<sup>3</sup> A tile system or curtain drain may be used to intercept lateral groundwater seepage, as necessary, to achieve the required distance to groundwater.

## **Attachment A Area Map of Site**

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2 MILE BOUNDARY



PROJECT: DENMARK DAIRY  
2017 FARM IMPROVEMENTS  
TOWN OF TANTER, DUNN COUNTY, WI

AREA MAP OF LIVESTOCK FACILITY

SHEET NO. ATTACH A

**A.C/a**

**Auth-Consulting/associates**     **S&N Land Surveying**

BRANCH OFFICE  
2820 Main Street  
Suite 101  
Hudson, WI 54016  
Tel 715-381-3277  
Fax 715-381-3277

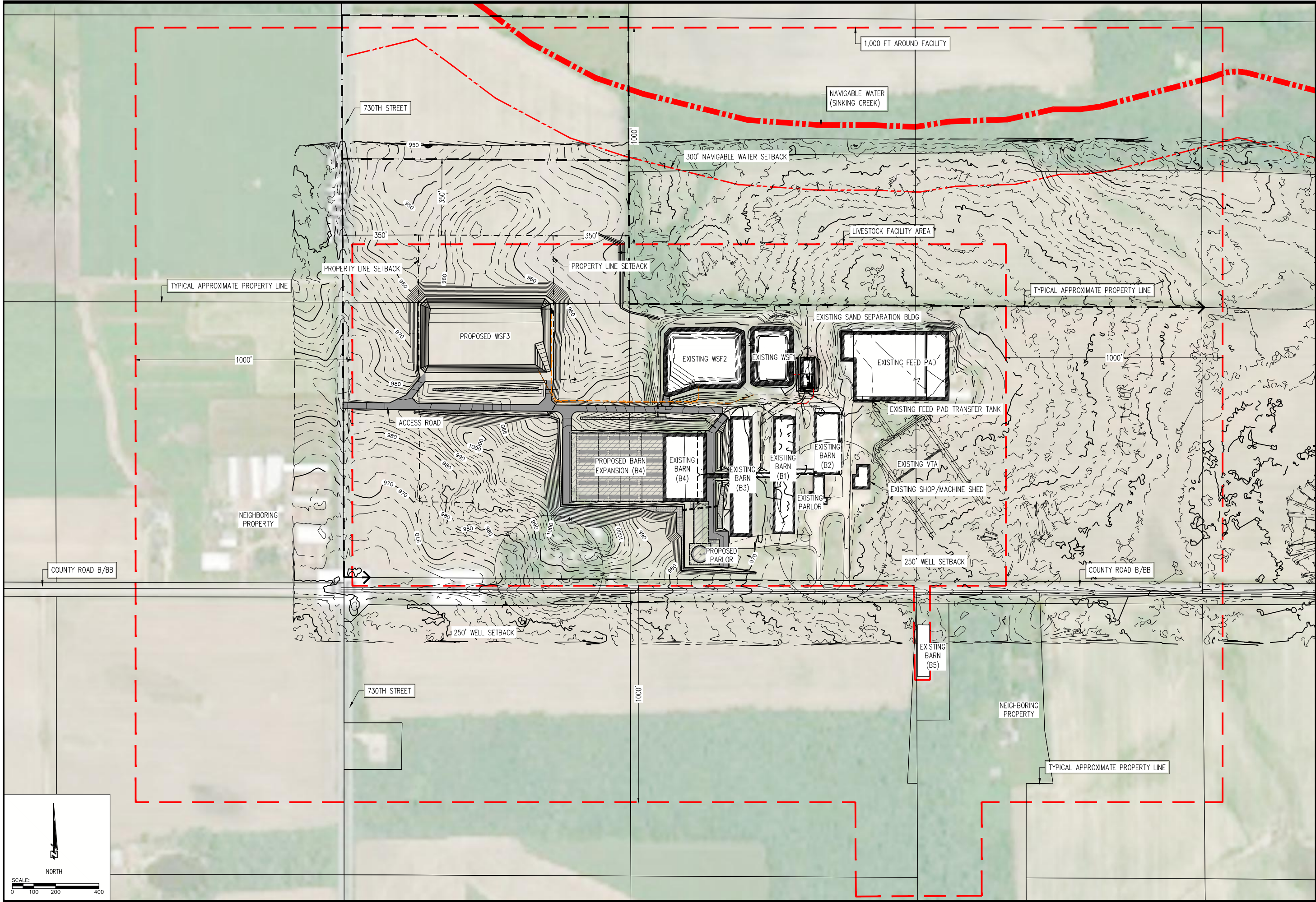
CORPORATE OFFICE  
405 Technology Drive E.  
Suite A  
Menomonee, WI 54751  
Tel 715-232-4490  
Fax 715-232-4492

DRAWN BY: JVF  
CHECKED BY: DAM  
DATE: 10.11.17  
DWG FILE: 619-006PLANS  
REF FILE: 619-006  
JOB NUMBER: 619-006

NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_

**Attachment B**  
**Site Map**

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PROJECT:		DRAWN BY: JVF	
SHEET NO.		CHECKED BY: DAM	
ATTACH B		DATE: 10.12.17	
DENMARK DAIRY		DWG FILE: 619-006PLANS	
2017 FARM IMPROVEMENTS		REF FILE: 619-006	
TOWN OF TANTER, DUNN COUNTY, WI		JOB NUMBER: 619-006	
SITE MAP OF LIVESTOCK FACILITY		REVISION DESCRIPTION:	
		NAME:	
		DATE:	



**Auth•Consulting/associates**



**S&N Land Surveying**

**CORPORATE OFFICE**  
 408 Technology Drive E.  
 Suite A  
 Menomonie, WI 54751  
 Tel 715-232-4490  
 Fax 715-232-4492

**BRANDE OFFICE**  
 2820 Polk Street  
 Suite 101  
 Hudson, WI 54016  
 Tel 715-381-3277

## **Attachment C**

### **Training Plan**

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# Employee Training Plan

## Denmark Dairy

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Training Goals, Objectives, Activities	2
Requirements, Standards, Procedures and Practices	3
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Odor Management	
Runoff Management	
Manure and Waste Handling	
Environmental Incident Response	
Employee / Work Place Safety	
Employees to be Trained	5
Frequency and Form of Training	5-6
Training Presenters	6
Record Keeping	6
Feedback, evaluation and improvement	
Example Checklists	6-7
Manure Storage Facility	
Animal Lot	
Feed Storage Facility	

## **Training Goals**

This training plan will enable employees and others to follow standards, procedures and practices to ensure that the livestock facility meets permit requirements and achieves other goals in this plan.

Specifically, training is required as part of the local permit issued in accordance with ATCP 51, Wis. Admin. Code (local siting permit), and this plan for training must include:

- Minimum content of training: nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response.
- The number and job categories of employees to be trained.
- The form and frequency of training, which at a minimum must include a plan for at least one training per year.
- Training presenters (these may include *livestock facility* managers, consultants or professional educators).
- A system for taking and recording attendance.

## **Training Objectives**

The training program will enable employees and others to:

1. Understand and follow all standards, procedures and practices related to their assigned duties and tasks.
2. Understand basic permit requirements including more stringent local standards, and follow specific standards, procedures and practices to ensure compliance with these permits.
3. Receive current, science-based information to most effectively address key management issues, with specific focus on nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response.
4. Provide feedback concerning future training needs, and participate in the design of annual training activities.

## **Training Activities**

Training activities will be designed to provide the necessary knowledge and skills tailored to specific needs of employees and others. Training approaches will be selected to ensure that information is effectively communicated, and may include classroom sessions, individual reading assignments and field exercises. Annual training activities will be customized to reflect changes in requirements, standards, procedures or practices; accommodate specific training needs; or provide new information critical to sound management of the livestock facility.

## **Requirements, standards, procedures and practices**

Employees and others will be provided training on the requirements of the local siting permit as these relate to their assigned duties and tasks. They will learn the applicable standards, procedures and practices to ensure compliance with permit requirements. They also will learn other standards, procedures and practices that apply to the livestock facility as required by this training plan.

Training will cover the use of checklists and other tools used to inspect and monitor farm operations (see attached sample checklists)

The livestock operator will make available written documentation that describes permit requirements, standards, procedures and practices.

## **Training Content**

### **Nutrient Management**

Standards, procedures and practices are in place for all forms of manure application and must be followed by all employees, farm personnel assistants, and others. Denmark Dairy's nutrient management plan is reviewed semi-annually by our crop manager and DNR representative. A copy of the plan will be available for review.

Training may include:

- Conservation planning
- Documenting manure applications – spreading logs and inspection sheets
- Recording and analyzing manure sample data
- Review soil fertility, crop rotations and yields

### **Odor Management**

Standards, procedures and practices are in place to minimize odor, and must be followed by employees, farm personnel assistants and others. Among other things, they ensure that odor control practices work properly.

Training may include:

- Overview of odor, its causes and basic control strategies
- Regular cleaning and maintenance procedures to control odor
- Step-by-step routines to implement control practices (e.g. frequent cleaning) required under a permit
- Responding to odor complaints

## **Runoff Management**

Standards, procedures and practices are in place to control runoff from animal lots and feed storage areas, and must be followed by employees, farm personnel assistants and others. For example, feed storage bunker leachate must be collected and pumped to the manure storage facility. In addition, compliance must be maintained with certain performance standards required in the local siting permit.

Training may include:

- Cleaning and regular maintenance of gutters, diversions, drains and sediment basins.
- Proper feed bunker tire and plastic placement and removal
- Leachate collection system operation, including pump operation
- Cleaning of traffic areas and pads
- Maintenance (e.g. regarding, seeding) and mowing of filter strips and other grassed areas.

## **Manure and Waste Handling**

Standards, procedures and practices are in place to ensure proper storage, transfer and hauling of manure and waste. These must be followed by employees, farm personnel assistants and others.

Training may include:

- Review schedule and procedures for inspection and monitoring of manure storage, including frequent monitoring of manure levels
- Identification and use of proper agitation points
- Routine maintenance of vegetative areas
- Review procedures for pump operation, hose placement and pickup, equipment cleanup
- Proper procedures for hauling and applying manure

## **Employee Safety**

Standards, procedures and practices are in place to ensure the health and safety of employees. These must be followed by employees, farm personnel assistants and others.

Training may include:

- Proper animal handling
- Proper equipment operations and certification where needed
- Accident reporting protocols
- Working in confined spaces
- Avoidance of dangerous conditions (including exposure to noxious gases)
- Maintaining fences, grates and protective areas

## **Environmental Incident Response**

Standards, procedures and practices are in place to ensure proper responses in the event of manure spill or other incident. These must be followed by employees, farm personnel assistants and others. A written document with response procedures and emergency contacts is readily available.

Training may include:

- Review of Environmental Incident Response Plan
- Spill reporting and intermediate action steps

## **Employees to Be Trained**

List of all employees to be trained by job category and number of employees in this category:

Manager (2)

Herdsman (1)

Feeder (1)

Milker (2)

Manure Handler (1)

## **Form and Frequency of Training**

By position, the training for employees and others may include:

### Managers

Describe the form, timing and scope of training appropriate to position's duties and functions such as training on education on nutrient management.

### Herdsman

Describe the form, timing and scope of training appropriate to position's duties and functions such as training on cattle care and handling, and loading and transportation

### Feeder

Describe the form, timing and scope of training appropriate to position's duties and functions such as training on equipment safety, and operation and maintenance

### Milker

Describe the form, timing and scope of training appropriate to position's duties and functions such as training on cattle care and handling, equipment safety, and operation and maintenance

### Manure Handler

Describe the form, timing and scope of training appropriate to position's duties and functions such as training on handling procedures and emergency response steps

### **Training Presenters**

Presenters may include:

- Managers
- Feed Consultants
- Agronomy Consultant
- University of Wisconsin Extension
- Government Agency staff
- Professional Associations

### **Recording Attendance**

For each internal training, attendance will be recorded using a signup sheet which will include the date of the training and the employees who attended. Similar methods will be used to verify other training received.

### **Monthly Manure Storage Facility Checklist**

Farm:

Facility ID:

Inspected by:

Date:

#### **Manure/Effluent Level**

Date:

Last Observation Date:

Liquid level, ft:

Depth remaining, ft:

[May add other items consistent with operation]

Other Observations	Yes	No	Corrective Action Taken/Planned
Is liquid level marker visible?			
Does adequate freeboard exist (measured from lowest point in dam, berm, or spillway to liquid level)?			
Runoff holding pond: Is sufficient volume available for runoff from 25-yr, 24-hr storm?			
Manure pump/transfer pipes functioning?			
Recycle pumps/transfer pipes functioning?			

<b>Concrete/Steel Tanks</b>	<b>Yes</b>	<b>No</b>	<b>Corrective Action Taken/Planned</b>
<b>Signs of ...</b>			
Cracks or structural damage?			
Leakage?			
Wet spots around base of tank?			
<b>Clean water diversion</b>			
Are perimeter drains plugged or blocked?			
Is roof water entering storage?			
Is field runoff entering storage?			
Are diversions/waterways maintained?			
<b>Visual appearance and safety</b>			
Is site neat and recently mowed?			
Is storage visually hidden from public?			
Are mortality or afterbirth observed?			
Are medical consumables observed?			
Is area fenced and properly marked?			
Is escape ladder available?			

### **Monthly Feed Storage Facility Checklist**

Farm:

Facility ID:

Inspected by:

Date:

% moisture of feed placed in facility:

	<b>Yes</b>	<b>No</b>	<b>Corrective Action Taken/Planned</b>
Surface water diversion is operational?			
Leachate collection system, including pump, is operational?			
Does the collection structure need to be cleaned/pumped?			
Feed is adequately covered?			
Waste feed is properly stored?			

**Attachment D**  
**Environmental Incident Response Plan**

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## Emergency Response Plan

Clean up manure spills promptly and spread manure according to your 590 plan. If the manure storage facility begins to overflow, clean up the overflow and implement the contingency plan immediately (see below). Contact the local Land Conservation District and the local WDNR office Spill Hotline (1-800-943-0003) for any additional technical assistance that might be needed for implementation of this operation and maintenance plan for the structure.

### Contingency Plan in the Event of a Spill

#### *Manure spill on farmstead or downslope from waste storage facility*

Contain spills by all means possible including blocking culverts, excavating or berming temporary storage locations and grading diversions to direct to temporary containment areas before it can enter surface water.

Prevent manure spill from entering road ditches or otherwise leaving the site.

Pump or load manure into approved structure or land  
apply manure and contaminated soils

#### *Manure spill on road*

Contain spills by blocking culverts or grading berms and diversions

Pump or load manure into approved structure or land  
apply manure and contaminated soils

Contain the spill in the road ditch before it can enter surface water.

### Report the Spill

WDNR has a 24-hour toll free number for reporting spills: 800-943-0003

## Manure Spill During Transport or Land Application Emergency

### Excavation and emergency response equipment available on site:

- Front End Loader Tractor
- Skid steer
- Large tank to transport water
- Manure Spreader/Wagon
- High Volume Pump(s)
- Baled Stalks, Straw, Hay
- Earthen Fill

## Manure Spill During Transportation Emergency Planning Information

### Recognition of potential for spill event

Evaluate the methods utilized to transport manure from the storage facility to land application site and identify potential high risk situations (Example: high pressure transfer pipelines or hauling routes located near surface waters or conduits to groundwater).

### Locations of absorbent materials and emergency fill on the farm

Identify sources of material that can be used to absorb spilled manure liquids or contain runoff including large round/square bales of other sources or bedding, hay or silage.

Identify the location(s) of any emergency earthen fill sources available on the farm or notify the excavation contractor to bring fill in.

### Manure Spill Emergency Response Actions:

1. Turn off all pumps that pressurize the manure pipeline or tanker
2. Assess situation and call for assistance
3. Notify DNR spill hotline: 1-800-943-0003
4. Stop the flow of manure from the pipeline or tanker if possible
5. Build a temporary berm to contain any large volumes of manure run off using round or big square bales of corn stalks or hay. Earthen dams can be constructed to hold back run off where earthen fill is available. NOTE: Contact landowner for permission prior to digging or moving large amount of soil on the emergency site.
6. Use absorbent material to collect manure liquids from the road surface or where small volumes of liquid have collected in the adjoining ditches.
7. Use pump(s) as necessary to load manure and any runoff for transport to a safe location. NOTE: If manure will be applied directly to agricultural land use the

NRCS Nutrient Management Practice Standard (590) to plan and document the application rate per acre.

8. Use clean water to wash remaining manure off of the road way if runoff will not cause an environmental impact (see 6. above if additional environmental protection is necessary)
9. Document your actions.

#### Follow Up Actions

Collect remaining manure and contaminated topsoil from the overflow area behind the temporary dike. Land apply these materials to fields approved for manure application in the nutrient management plan at rates established in the nutrient management plan.

Re-establish vegetative cover as needed at start of the next growing season.

#### Catastrophic Mortality Disposal Emergency

1. Notify Dunn County and Wisconsin DNR.
2. Contact local rendering company.
3. Excavate and dispose of mortalities on-site in accordance with state regulations.
4. Monitor disposal site.
5. Document your actions.

#### Odor Complaints

- Legitimate odor complaints will be evaluated and appropriate response measures will be taken.
- Farm will consider any appropriate measures including but not limited to revised manure spreading schedule and notifications.

Contact person related to environmental incidents questions:

Denmark Dairy/Karl Kragness (715) 556-2432

## Attachment E Calculations

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Denmark - South		
Proposed Animal Numbers & Waste Production		
Waste Production		Date: 12/27/2024
<i>Milking Cows (1,400 lbs average)</i>		
Head		3100 head
Manure (2.7 cu.ft./cow)	=	62,608 gal./day
Bedding (0.0 cu.ft./cow)	=	696 gal./day
<i>Dry Cows (1,400 lbs average)</i>		
Head		200 head
Manure (2.7 cu.ft./cow)	=	4,039 gal./day
Bedding (0.0 cu.ft./cow)	=	45 gal./day
<i>Heifer (1,200 lbs average)</i>		
Head		0
Manure (2.1 cu.ft./cow)	=	0 gal./day
Bedding (0.1 cu.ft./cow)	=	0 gal./day
<i>Heifer (800 lbs average)</i>		
Head 13-15mo		0
Manure (1.4 cu.ft./cow)	=	0 gal./day
Bedding (0.1 cu.ft./cow)	=	0 gal./day
<i>Heifer (600 lbs average)</i>		
Head 9-12mo		0
Manure (1.0 cu.ft./cow)	=	0 gal./day
Bedding (0.1 cu.ft./cow)	=	0 gal./day
<i>Heifer (400 lbs average)</i>		
Head 5-8mo		0
Manure (.7 cu.ft./cow)	=	0 gal./day
Bedding (0.1 cu.ft./cow)	=	0 gal./day
<i>Steers (1,000 lbs average)</i>		
Head 200-1500 lb		0
Manure (1.7 cu.ft./cow)	=	0 gal./day
Bedding (0.2 cu.ft./cow)	=	0 gal./day
<i>Calf (300 lbs average)</i>		
Head		225
Manure (.5 cu.ft./cow)	=	866 gal./day
Bedding (0.1 cu.ft./cow)	=	168 gal./day
Waste Water for Operations	=	21,700 gal./day
<b>Total Daily Waste Production</b>		<b>90,121 gal./day</b>
		<b>32,894,224 gal./year</b>
<b>Volume of Waste to Storage</b>		
Animal Waste + Bedding		<b>68,421 gal./day</b>
Waste Water		<b>21,700 gal./day</b>
<b>Total Daily Production</b>		<b>90,121 gal./day</b>
Notes:		
*Net Precipitation = surface area of lagoon(s) x net precipitation during storage duration		
*Runoff = drainage area x runoff during storage duration		
*Leachate collection is calculated to be 120% of that amount collected during the maximum 30		

## Liquid Waste Storage Volume Calculation Worksheet - Current Animals

Denmark - South

:Permittee Name

# of A.U.'s:

Dsn by:

JVF

Date:

1/21/2025

Total Annual Liquid Waste Volume (NRCS Table Values)	
Liquids Collected/Stored	Annual Gallons
Manure and Bedding	24,973,724
Parlor Wastewater	7,920,500
Feed Storage Leachate	175,780
Feed Storage Runoff Collected *	3,178,920
Feedlot Runoff*	0
Net Precipitation on Storage Surface(s) **	4,636,044
Stacking Pad Runoff Collected*	142,725
Offsite Waste	
Other	
Other	
Other	
Other	
Other	
<b>TOTAL:</b>	<b>41,027,694</b>

<b>Total Annual Liquid Waste from Hauling Logs</b>	<b>#DIV/0!</b>
--	----------------

Total Liquid Waste Storage Capacity (gallons)						
Waste Storage	Total Vol. from Settled Top to Bottom	-Solids Storage	-25-yr, 24-hr Precip. on Storage	25-yr, 24-hr Collected Runoff ***	-Freeboard Vol.	Max. Operating Level (MOL) Vol.
#1	4,144,698	152,371	168,226	529,852	377,557	2,916,691
#2	9,015,004	0	334,397	0	758,730	7,921,877
#3	18,313,187	0	657,527	0	1,526,373	16,129,287
#4	0	0	0	0	0	0
#5	0	0	0	0	0	0
#6						0
Total MOL Vol:						26,967,856
Days of Storage:						240
Meets Days of Storage Criteria:						YES

1

Total Annual Volume Source (1=NRCS Table Values; 2=Hauling Log Values)

Jan. 2018

NOTE 1: The volumes above can be calculated in the NRCS "Waste Storage Design" spreadsheet downloaded from the Wisconsin NRCS Engineering Resources website below.

NOTE 2: The NRCS "Waste Storage Design" spreadsheet can be used to calculate the days of storage as well, however it is designed to be used with only one waste storage facility. Calculations for net

NOTE 3: Formula for days of storage: (Total Storage Capacity/Annual Liquid Waste Generation)\*365 = Days of storage

\* Collected Runoff Volumes can be calculated in the NRCS "Waste Storage Design" spreadsheet Monthly Runoff Section. Set the Days of Storage to 365.

\*\* Net Precipitation on Storage Surface depth can be calculated in the NRCS "Waste Storage Design" spreadsheet and then multiplied by the storage top area to get the net annual precipitation volume.

\*\*\* 25-yr Collected Runoff Volumes can be calculated in the NRCS "Waste Storage Design" spreadsheet 25-yr Runoff section.

[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2\\_025422](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2_025422)

[illegible]

Project Name:	Denmark - South	County:	DUNN
Computed by :	JVF	Date:	12/27/2024
Checked by:	DAM	Date:	

## Ex. Waste Storage Facility 1 - Dimensions and Capacity

16 feet deep by 385 feet long by 174 feet wide

	554,104 cf
<b>Total Bottom to Top Capacity</b>	<b>4,144,698 gallons</b>

## Required Storage for Precipitation

		Surface Area (SF)	Runoff Area (SF)	
25yr,24hr Precip	5.09 in	53,022	0	168,226 gallons
8 mo Precip	27.41 in	53,022	0	905,911 gallons
Evaporation	12.24 in	53,022		404,537 gallons

<b>Total Storage Precip</b>	<b>669,601 gallons</b>
-----------------------------	------------------------

## Required Volume for Freeboard & Solids

	ft <sup>3</sup>	
12 inch Freeboard Volume	50,476	377,557 gallons
12 inch Solids	20,371	152,371 gallons

<b>Volume of Unusable Freeboard and Solids Accumulation</b>	<b>529,928 gallons</b>
---	------------------------

## Available Capacity of Storage Structure

Bottom to Top	4,144,698 gallons
Volume of Freeboard	377,557 gallons
Volume of 25yr,24hr Precip	168,226 gallons
Volume for Precip and Runoff	501,374 gallons
Volume for Accumulated Solids	152,371 gallons

<b>Available Volume for Dairy Waste</b>	<b>2,945,169 gallons</b>
---	--------------------------

Project Name:	Denmark - South	County:	DUNN
Computed by :	JVF	Date:	12/27/2024
Checked by:	DAM	Date:	

## Ex. Waste Storage Facility 2 - Dimensions and Capacity

**16** feet deep by **385** feet long by **240** feet wide

**1,205,215** cf

<b>Total Bottom to Top Capacity</b>	<b>9,015,004</b> gallons
-------------------------------------	--------------------------

## Required Storage for Precipitation

		Surface Area (SF)	Runoff Area (SF)	
25yr,24hr Precip	5.09 in	105,396	0	<b>334,397</b> gallons
<b>8</b> mo Precip	27.41 in	105,396	0	<b>1,800,750</b> gallons
Evaporation	12.24 in	105,396		<u><b>804,129</b></u> gallons

<b>Total Storage Precip</b>	<b>1,331,018</b> gallons
-----------------------------	--------------------------

## Required Volume for Freeboard & Solids

	ft <sup>3</sup>	
12 inch Freeboard Volume	101,435	<b>758,730</b> gallons
12 inch Solids	49,815	<b>0</b> gallons

<b>Volume of Unusable Freeboard and Solids Accumulation</b>	<b>758,730</b> gallons
---	------------------------

## Available Capacity of Storage Structure

Bottom to Top	<b>9,015,004</b> gallons
Volume of Freeboard	<b>758,730</b> gallons
Volume of 25yr,24hr Precip	<b>334,397</b> gallons
Volume for Precip and Runoff	<b>996,621</b> gallons
Volume for Accumulated Solids	<b>0</b> gallons

<b>Available Volume for Dairy Waste</b>	<b>6,925,256</b> gallons
---	--------------------------

Project Name:	Denmark - South	County:	DUNN
Computed by :	JVF	Date:	12/27/2024
Checked by:	DAM	Date:	

## Proposed Waste Storage Facility 3 - Dimensions and Capacity

18 feet deep by 605 feet long by 345 feet wide

2,448,287 cf

<b>Total Bottom to Top Capacity</b>	<b>18,313,187 gallons</b>
-------------------------------------	---------------------------

## Required Storage for Precipitation

		Surface Area (SF)	Runoff Area (SF)	
25yr,24hr Precip	5.09 in	207,241	0	657,527 gallons
8 mo Precip	27.41 in	207,241	0	3,540,830 gallons
Evaporation	12.24 in	207,241		<u>1,581,166 gallons</u>

<b>Total Storage Precip</b>	<b>2,617,191 gallons</b>
-----------------------------	--------------------------

## Required Volume for Freeboard & Solids

	ft <sup>3</sup>	
12 inch Freeboard Volume	204,061	1,526,373 gallons
12 inch Solids	5,683	0 gallons

<b>Volume of Unusable Freeboard and Solids Accumulation</b>	<b>1,526,373 gallons</b>
---	--------------------------

## Available Capacity of Storage Structure

Bottom to Top	18,313,187 gallons
Volume of Freeboard	1,526,373 gallons
Volume of 25yr,24hr Precip	657,527 gallons
Volume for Precip and Runoff	1,959,664 gallons
Volume for Accumulated Solids	0 gallons

<b>Available Volume for Dairy Waste</b>	<b>14,169,623 gallons</b>
---	---------------------------

### Average Annual Volume of Runoff Collected from Feed Storage Areas

Mean Number of Days per Year that Precip. Exceeds 0.01 inches =	125	
Annual Precipitation=	32.71	inches
Feed Storage Area=	160,000	square feet
Runoff You Want to Collect=	6.50	inches
Runoff Curve Number (RCN)=	98	
Annual Volume of Runoff Collected=	31.87	inches
Annual Volume of Runoff Collected=	424,989	cubic feet
Annual Volume of Runoff Collected=	3,178,920	gallons

Rainfall Event, inches	Cumulative % Less Than	Cumulative # of Events	# of Events per Category	Cumulative Precipitation, inches	RCN = 98 Runoff, inches	Collected Runoff per Event, inches	(Collected Runoff per Event) x (# of Events) inches
0.00	0	0.00	0.0000	0.00	0.00	0.00	0.00
0.02	18.64	23.30	23.3000	6.10	0.00	0.00	0.00
0.04	26.92	33.65	10.3500	8.81	0.00	0.00	0.00
0.06	32.76	40.95	7.3000	10.72	0.00	0.00	0.01
0.08	38.20	47.75	6.8000	12.50	0.01	0.01	0.04
0.10	41.92	52.40	4.6500	13.71	0.01	0.01	0.06
0.12	45.24	56.55	4.1500	14.80	0.02	0.02	0.09
0.14	47.76	59.70	3.1500	15.62	0.03	0.03	0.10
0.16	50.44	63.05	3.3500	16.50	0.04	0.04	0.15
0.18	52.52	65.65	2.6000	17.18	0.06	0.06	0.15
0.20	53.96	67.45	1.8000	17.65	0.07	0.07	0.13
0.22	56.68	70.85	3.4000	18.54	0.08	0.08	0.28
0.24	58.32	72.90	2.0500	19.08	0.10	0.10	0.20
0.26	60.00	75.00	2.1000	19.63	0.11	0.11	0.24
0.28	61.68	77.10	2.1000	20.18	0.13	0.13	0.27
0.30	64.68	80.85	3.7500	21.16	0.15	0.15	0.54
0.32	66.52	83.15	2.3000	21.76	0.16	0.16	0.37
0.34	67.92	84.90	1.7500	22.22	0.18	0.18	0.31
0.36	69.32	86.65	1.7500	22.67	0.19	0.19	0.34
0.38	70.80	88.50	1.8500	23.16	0.21	0.21	0.39

**Attachment F**  
**WPDES Permit**

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# WPDES PERMIT

*STATE OF WISCONSIN*  
*DEPARTMENT OF NATURAL RESOURCES*  
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM**


**Denmark Dairy LLC Colfax**

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a livestock operation  
located at  
E7455 County Road B, Colfax, WI 54730 (*SE 1/4 of the SW 1/4 Sec. 24 T29N R12W*)  
to  
Sinking Creek within the Wilson Creek Watershed, and groundwaters of the state

in accordance with the effluent limitations, monitoring requirements and other conditions on the management and  
utilization of manure and process wastewater set forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after  
this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis.  
Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources  
For the Secretary

By 

Clare Freix  
Agricultural Runoff Management Specialist

December 2, 2024

Date Permit Signed/Issued

**PERMIT TERM: EFFECTIVE DATE – December 01, 2024**

**EXPIRATION DATE – November 30, 2029**

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# 1 Livestock Operational and Sampling Requirements

## 1.1 Production Area Discharge Limitations

The permittee shall comply with the livestock performance standards and prohibitions in ch. NR 151. In accordance with s. NR 243.13, the permittee may not discharge manure or process wastewater pollutants to navigable waters from the production area, including approved manure stacking sites, unless all of the following apply:

- Precipitation causes an overflow of manure or process wastewater from a containment or storage structure.
- The containment or storage structure is properly designed, constructed and maintained to contain all manure and process wastewater from the operation, including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event for this location as determined under s. NR 243.04.
- The production area is operated in accordance with the inspection, maintenance and record keeping requirements in s. NR 243.19.
- The discharge complies with surface water quality standards.

A permittee may not discharge any pollutants from the production area to a 303(d) listed surface water if the pollutants discharged are related to the cause of the impairment, unless the discharge is allowed under an EPA approved TMDL.

All structures shall be designed and operated in accordance with ss. NR 243.15 and NR 243.17 to control manure and process wastewater for the purpose of complying with discharge limitations established above and groundwater standards.

The permittee may not discharge pollutants to navigable waters under any circumstance or storm event from areas of the production area, including manure stacks on cropland, where manure or process wastewater is not properly stored or contained by a structure.

NOTE: Wastewater treatment strips, grassed waterways or buffers are examples of facilities or systems that by themselves do not constitute a structure.

Production area discharges to waters of the state authorized under this permit shall comply with water quality standards, groundwater standards and may not impair wetland functional values.

## 1.2 Runoff Control

All runoff control systems shall be designed and maintained to comply with production area discharge limitations. Uncontaminated runoff shall be diverted away from manure and process wastewater storage and containment areas, raw materials storage and containment areas, and outdoor animal lots. All storage and containment structures associated with runoff control systems shall be operated in accordance with the “Proper Operations and Maintenance” section.

### 1.2.1 Non-permanent feed storage areas

All proposed non-permanent feed storage (e.g., silage bags) areas shall be submitted to the Department for approval. A permittee may not use non-permanent feed storage areas unless the permittee has obtained Department approval. Upon approval from the Department, the permittee shall comply with the following requirements, Production Area Discharge Limitations, and the table below when siting and operating non-permanent feed storage areas:

- Feed with over 75% moisture is not allowed on non-permanent areas.
- Stored feed may not be placed on bare ground and must be covered to prevent infiltration of precipitation. Significantly degraded or damaged covers shall be repaired or replaced.
- Stored feed must be moved annually to an area where feed wasn’t stored within the previous 12 months.
- The area where feed was stored must be re-vegetated after the feed is moved.
- Clean water shall be diverted away from the area where the feed is stored.

- Spilled feed shall be removed, and all working faces shall be recovered to minimize potential spillage and exposure to precipitation.

Siting Criteria	Restriction
<b>1. Hydrologic Soil Groups</b>	B, C, D
<b>2. Subsurface Separation Distance</b> <ul style="list-style-type: none"><li>- Saturation</li><li>- Bedrock</li></ul>	$\geq 3'$ $\geq 3'$
<b>3. Surface Separation Distance</b> <ul style="list-style-type: none"><li>- Wells</li><li>- Lakes</li><li>- Sinkholes, or other Karst Features</li><li>- Quarries</li><li>- Streams</li><li>- Wetlands and Surface Inlets</li><li>- Open channel flow</li><li>- Land Slope</li><li>- Floodplain (100 yr)</li></ul>	$\geq 250'$ $\geq 1,000'$ $\geq 1,000'$ $\geq 1,000'$ $\geq 300'$ $\geq 300'$ $\geq 100'$ $\leq 6\%$ $\geq 100'$

As part of the Department approval, the Department may require additional restrictions on non-permanent feed storage areas needed to protect water quality. The permittee shall manage the storage areas in compliance with the additional restrictions specified in the approval.

Storage area approvals may be rescinded by the Department based on documented impacts to waters of the state at or from the storage area, the presence of significant amounts of runoff or ponded runoff contaminated with leachate or stored feed or the permittee's failure to comply with siting and operational requirements.

NOTE: Ch. NR 429.04, Wis. Adm. Code, prohibits the burning of covers used for feed storage.

## 1.3 Manure and Process Wastewater Storage

All permittees shall have and maintain adequate storage for all manure and process wastewater generated at the operation to ensure that wastes can be properly stored and land applied in compliance with the conditions and timing restrictions of the permit, a Department approved nutrient management plan and s. NR 243.14(9).

### 1.3.1 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all manure and process wastewater facilities and systems in compliance with the conditions of this permit. The permittee shall comply with the permit and s. NR 243.17, including the following requirements:

- All liquid manure and process wastewater storage or containment facilities shall have the permanent markers specified in s. NR 243.15(3)(e) (margin of safety and maximum operating level for liquid manure and process wastewater storage and the 180-day storage marker for liquid manure storage).
- Chemicals and other pollutants may not be added to manure, process wastewater or stormwater storage facilities or treatment systems without prior Department approval.
- Liquid manure storage facilities or systems shall be emptied to the point that the 180-day level indicator is visible on at least one day between October 1 and November 30, except for liquid manure remaining due to unusual fall weather conditions prohibiting manure applications during this time period. The permittee shall record the day on which the 180-day level indicator was visible during this time period. Permittees unable to empty their storage facility to the 180-day level indicator between October 1 and November 30, shall notify the department in writing by December 5.
- The permittee shall maintain a design storage capacity of 180 days for liquid manure unless the Department approves a temporary reduction in design storage capacity to 150 days in accordance with s. NR 243.17(4).
- Prior to introducing any influent additives to a digester, other than manure, the permittee shall obtain written Department approval. If any materials other than manure are used in the digester, the permittee shall maintain daily records of the

volumes of all manure and non-manure components added to the digester influent. As part of its approval, the Department may apply additional requirements in accordance with s. NR 243.17(1). As part of the Department's review, the Department may also require amendments to the permittee's nutrient management plan and the permittee shall submit an amended plan to the Department to incorporate the additional requirements.

### **1.3.2 Discharge Prevention**

A permittee shall operate and maintain storage and containment facilities to prevent overflows and discharges to waters of the state.

- The permittee may not exceed the maximum operating level in liquid storage or containment facilities except as a result of recent precipitation or conditions that do not allow removal of material from the facility in accordance with permit conditions.
- The permittee shall maintain a margin of safety in liquid storage or containment facilities that levels of manure, process wastewater and other wastes placed in the storage or containment facility may not exceed. Materials shall be removed from the facility in accordance with the approved nutrient management plan to ensure that the margin of safety is not exceeded. Failure to maintain a margin of safety is permit noncompliance that must be reported to the Department in accordance with the timeframes specified in the Noncompliance-24 Hour Reporting subsection in the Standard Requirements.

### **1.3.3 Liquid Manure – 180-day storage**

The permittee shall demonstrate compliance with the 180-day design storage capacity requirement at all the following times:

- As part of an application for permit reissuance.
- At the time of submittal of plans and specifications for proposed reviewable facilities or systems.
- In annual reports to the department.
- When an operation is proposing, at any time, a 20% expansion in animal units or an increase by an amount of 1,000 animal units or more unless the Department has approved reductions in design storage in accordance with s. NR 243.17(4).

### **1.3.4 Facility Closure and Abandonment**

In accordance with s. NR 243.17, if the permittee plans to close or abandon structures or systems regulated by this permit, a closure or abandonment plan shall be submitted to the Department and written Department approval must be granted before closing the facility. Manure storage facilities shall be closed or abandoned in accordance with NRCS Standard 360 (December 2002). Closure or abandonment of a manure storage facility shall occur when manure has not been added or removed for a period of 24 months, unless the owner or operator can provide information to the Department that the structure is designed to store manure for a longer period of time or that the storage structure will be utilized within a specific period of time.

## **1.4 Solid Manure Stacking**

All proposed stacking of solid manure outside of a Department approved storage facility shall be submitted to the department for approval and identified in the permittee's nutrient management plan. A permittee may not stack manure on a site unless the permittee has obtained Department approval to stack. Stacking practices shall comply with requirements of s. NR 243.141. Stacking approvals may be rescinded by the Department based on documented impacts to waters of the state at or from the stacking site or runoff onto another persons land. Stacking shall comply with following requirements:

- When piled in a stack, the solid manure stack must be able to maintain its shape with minimal sloughing such that an angle of repose of 45 degrees or greater is maintained when the manure is not frozen.
- Stacking of solid manure outside of a department approved manure storage facility shall, at a minimum, meet the specifications in NRCS Standard 313, Table 9, dated December 2005. Alternatively, stacks may be placed on sites with soils in the hydrologic soil group D provided the manure has a solids content of greater than 32% and all other criteria in NRCS Standard 313, Table 9, are met.

- The permittee shall implement any necessary additional best management practices to ensure stacking areas maintain compliance with the production area requirements in s. NR 243.13. Best management practices may include upslope clean water diversions or downslope containment structures.
- The stacked manure shall have minimal leaching so that leachate from the stack is contained within the designated stacking area and does not cause an exceedance of groundwater quality standards.
- Solid manure may not be stacked in a water quality management area.
- Stacks may only be placed on cropland.

As part of the Department approval, the Department may require additional restrictions on stacking of solid manure needed to protect water quality. The permittee shall manage the stack in compliance with the additional restrictions specified in the approval.

## **1.5 Ancillary Service and Storage Areas**

The permittee may discharge contaminated storm water to waters of the state from ancillary service and storage areas provided the discharges of contaminated storm water comply with groundwater and surface water quality standards. The permittee shall take preventive maintenance actions and conduct periodic visual inspections to minimize the discharge of pollutants from these areas to surface waters. For CAFO outdoor vegetated areas, the permittee shall also implement the following practices:

- Manage stocking densities, implement management systems and manage feed sources to ensure that sufficient vegetative cover is maintained over the entire area at all times.
- Prohibit direct access of livestock or poultry to surface waters or wetlands located in or adjacent to the area unless approved by the Department.

## **1.6 Nutrient Management**

Except as provided for in s. NR 243.142(2), the permittee is responsible for ensuring that the manure and process wastewater generated by the operation is land applied or disposed of in a manner that complies with the terms of this permit, the approved nutrient management plan and s. NR 243.14.

The permittee shall land apply manure and process wastewater in compliance with the Department approved nutrient management plan, s. NR 243.14 and the terms and conditions of this permit. Land application practices shall not exceed crop nutrient budgets determined in accordance with NRCS Standard 590, this permit and s. NR 243.14 and shall be based on manure and process wastewater analyses, soil tests, as well as other nutrient sources applied to a field. The permittee shall review and amend the nutrient management plan on an annual basis to reflect any changes in operations over the previous year (including incorporation of the previous year's amendments and new soil test results) and to include projected changes for the upcoming year. Annual updates are due in accordance with the Schedules section of the permit.

The management plan may be amended at any time provided the proposed amendments are approved in writing by the Department and meet the requirements of s. NR 243.14. Changes requiring a plan amendment include, but are not limited to, changes to application rates, new spreading sites, changes in the number of livestock, changes in manure storage procedures, or changes in the type of manure spreading equipment. Unless specified in the "Special Permit Conditions" section of the permit, an amendment does not become effective and may not be implemented until the Department has reviewed and approved the amendment. In addition, all approved amendments in a given year shall be included in the Annual Update.

The permittee shall maintain daily spreading records and submit annual reports relating to land application activities in accordance with s. NR 243.19.

### **1.6.1 General Spreading Restrictions**

The permittee shall land apply manure and process wastewater in compliance with the following:

- Manure or process wastewater may not pond on the application site.
- During dry weather conditions, manure or process wastewater may not run off the application site, nor discharge to waters of the state through subsurface drains.
- Manure or process wastewater may not cause the fecal contamination of water in a well.
- Manure or process wastewater may not run off the application site nor discharge to waters of the state through subsurface drains due to precipitation or snowmelt except if the permittee has complied with all land application restrictions in NR 243 and this permit, and the runoff or discharge occurs as a result of a rain event that is equal to or greater than a 25-year, 24-hour rain event.
- Manure or process wastewater may not be applied to saturated soils.
- Land application practices shall maximize the use of available nutrients for crop production, prevent delivery of manure and process wastewater to waters of the state, and minimize the loss of nutrients and other contaminants to waters of the state to prevent exceedances of groundwater and surface water quality standards and to prevent impairment of wetland functional values. Practices shall retain land applied manure and process wastewater on the soil where they are applied with minimal movement.
- Manure or process wastewater may not be applied on areas of a field with a depth to groundwater or bedrock of less than 24 inches.
- Manure or process wastewater may not be applied within 100 feet of a direct conduit to groundwater.
- Manure or process wastewater may not be applied within 100 feet of a private well or non-community system as defined in ch. NR 812 or within 1000 feet of a community well as defined in ch. NR 811.
- Unless specified otherwise in this permit, where incorporation of land applied manure is required, the incorporation shall occur within 48 hours of application.
- Manure or process wastewater may not be surface applied when precipitation capable of producing runoff is forecast within 24 hours of the time of planned application.
- Manure or process wastewater may not be spread on surface waters, established concentrated flow channels, or non-harvested vegetative buffers.
- Fields receiving manure and process wastewater may not exceed tolerable soil loss ("T").

### **1.6.2 Non-Cropland Applications**

Manure may be applied to non-cropland if pre-approval in writing is issued by the Department. Considerations for approval may include acceptable application timing, amounts and methods.

### **1.6.3 Silurian Bedrock**

Mechanical applications of manure to cropland or pasture areas that meet the definition of Silurian bedrock under s. NR 151.015(17) shall comply with s. NR 151.075.

NOTE: This requirement applies only to applications of manure on Silurian bedrock which are areas where the bedrock consists of Silurian dolomite with a depth to bedrock of 20 feet or less. These areas comprise portions of the following counties; Brown, Calumet, Dodge, Door, Fond du Lac, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington and Waukesha.

### **1.6.4 Additional Nutrient Management Plan Requirements**

- If applicable, the permittee shall specify the method(s) of incorporation in its nutrient management plan.
- The permittee shall identify, to the maximum extent practicable, the presence of subsurface drainage systems in fields where its manure or process wastewater is applied as part of the nutrient management plan.
- In accordance with s. NR 243.14(3), the permittee shall account for 1st and 2nd year nutrient credits.
- On a field-by-field basis, the permittee shall select and implement one of the practices listed in s. NR 243.14(4) for manure and process wastewater applications in a SWQMA (defined in ch. NR 243), and include the selected practices in the nutrient management plan. Whenever manure or process wastewater is applied within a SWQMA, the permittee shall apply the material in compliance with the SWQMA practices specified in the approved nutrient management plan.
- On a field-by-field basis, the permittee shall select one of the methods specified in s. NR 243.14(5) for assessing and minimizing the potential delivery of phosphorus to surface waters, and include the selected method in the nutrient management plan. The permittee shall apply manure and process wastewater to fields in compliance with the

phosphorus methods specified in the approved nutrient management plan. On a field-by-field basis, the permittee shall select and implement one of the methods.

### 1.6.5 Frozen or Snow Covered Ground – General Spreading Restrictions

If the permittee applies manure on frozen or snow-covered ground, the permittee shall land apply the manure in compliance with all of the restrictions in s. NR 243.14(6)-(8). Some of these restrictions include:

- Any incorporation of manure on frozen or snow-covered ground must be done immediately after application.
- The permittee shall identify acceptable sites for allowable applications on frozen or snow-covered ground as part of its nutrient management plan.
- The permittee shall evaluate each field at the time of application to determine if conditions are suitable for applying manure and complying with the requirements of this permit. All surface applications of manure or process wastewater on frozen or snow-covered ground shall occur on those fields that represent the lowest risk of pollutant delivery to waters of the state and where the application results in a winter acute loss index value of 4 or less using the Wisconsin phosphorus index.
- Manure or process wastewater may not be land applied on fields when snow is actively melting such that water is flowing off the field.
- On fields with soils that are 60 inches thick or less over fractured bedrock, manure may not be applied on frozen ground or where snow is present.
- Manure may not be incorporated on areas of fields with greater than 4 inches of snow.

[NOTE: Please refer to ch. NR 243 for all requirements contained in s. NR 243.14(6)-(8).]

### 1.6.6 Frozen or Snow Covered Ground – Solid Manure (12% solids or more)

The permittee may surface apply solid manure on frozen or snow-covered ground in compliance with the following restrictions:

- Solid manure may not be surface applied on slopes greater than 9%.
- Solid manure may not be surface applied from February 1 through March 31 on areas of fields where an inch or more of snow is present or where the ground is frozen.
- The surface application shall comply with the restrictions in Table 1.

Table 1 Restrictions for Surface Applying Solid Manure on Frozen or Snow Covered Ground		
Criteria	Restrictions for fields with 0-6% slopes	Restrictions for fields with slopes > 6% and up to 9%
Required fall tillage practice prior to application	Chisel or moldboard plow, no-till or a department approved equivalent <sup>A</sup>	Chisel or moldboard plow, no-till or department approved equivalent <sup>A</sup>
Minimum % solids allowed	12%	> 20%
Application rate (cumulative per acre)	Not to exceed 60 lbs. P <sub>2</sub> O <sub>5</sub> per winter season, the following growing season's crop P <sub>2</sub> O <sub>5</sub> budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Not to exceed 60 lbs. P <sub>2</sub> O <sub>5</sub> per winter season, the following growing season's crop P <sub>2</sub> O <sub>5</sub> budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within 2.0 x SWQMA

Table 1 Restrictions for Surface Applying Solid Manure on Frozen or Snow Covered Ground		
Criteria	Restrictions for fields with 0-6% slopes	Restrictions for fields with slopes > 6% and up to 9%
Setbacks from downslope areas of channelized flow, vegetated buffers, and wetlands	200 feet	400 feet
Setbacks from direct conduits to groundwater	300 feet	600 feet
A – All tillage and farming practices shall be conducted in accordance with the following requirements; 0-2% slope = no contouring required, >2-6% slope = tillage and practices conducted along the general contour, >6% slope = tillage and farming practices conducted along the contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible. Allowances for application on no-till fields only apply to fields where no-till practices have been in place for a minimum of 3 years.		

### 1.6.7 Frozen or Snow Covered Ground – Allowances for Surface Applications of Liquid Manure (<12% solids)

The permittee is prohibited from surface applying liquid manure during February and March, and is prohibited from surface applying liquid manure on frozen or snow-covered ground except for the following conditions:

- The permittee may surface apply liquid manure on frozen or snow covered ground, including during February and March, on an emergency basis in accordance with Table 2 and s. NR 243.14(7)(d) on fields the Department has approved for emergency applications. The permittee must notify the department verbally prior to the emergency application. Unless the emergency application is necessitated by imminent impacts to the environment or human or animal health, the permittee may not apply manure to a field on an emergency basis until the department has verbally approved the application. The permittee shall submit a written description of the emergency application and the events leading to the emergency application to the department within 5 days of the emergency application.
- Liquid manure that is frozen and cannot be transferred to a manure storage facility may be surface applied on frozen or snow-covered ground, including during February and March, in accordance with the restrictions in Tables 2 and s. NR 243.14(7)(f). Surface applications of frozen liquid manure do not require prior department approval or notification provided application sites for frozen liquid manure are identified in the approved nutrient management plan. During February and March, the permittee shall notify the department if the permittee expects to surface apply frozen liquid manure more than 5 days in any one month.

Table 2 Restrictions for Surface Applications of Liquid Manure on Frozen or Snow Covered Ground		
Criteria	Restrictions for fields with 0-2% slopes	Restrictions for fields with >2-6% slopes
Required fall tillage practice prior to application	Chisel or moldboard plow or department approved equivalent <sup>A</sup>	Chisel or moldboard plow or department approved equivalent <sup>A</sup>
Application rate (cumulative per acre)	Maximum application volume of 7,000 gallons per acre per winter season, not to exceed 60 lbs. P <sub>2</sub> O <sub>5</sub> , the following growing season's crop P <sub>2</sub> O <sub>5</sub> budget taking into account nutrients already applied or other phosphorus	Maximum application volume of 3,500 gallons per acre per winter season, not to exceed 30 lbs. P <sub>2</sub> O <sub>5</sub> , the following growing season's crop P <sub>2</sub> O <sub>5</sub> budget taking into account nutrients already applied, or

Table 2 Restrictions for Surface Applications of Liquid Manure on Frozen or Snow Covered Ground		
Criteria	Restrictions for fields with 0-2% slopes	Restrictions for fields with >2-6% slopes
	application restrictions specified in a department approved nutrient management plan, whichever is less	other phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within SWQMA
Setbacks from downslope areas of channelized flow, vegetated buffers, wetlands	200 feet	200 feet
Setbacks from direct conduits to groundwater	300 feet	300 feet
A – All tillage and farming practices shall be conducted along the contour in accordance with the following requirements; 0-2% slope = no contouring required, >2-6% slope = tillage and practices conducted along the general contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible		

### 1.6.8 Frozen or Snow Covered Ground – Process Wastewater

If a permittee land applies process wastewater on frozen or snow-covered ground, the permittee shall land apply the process wastewater in compliance with s. NR 214.17(2) through (6) and the other land application restrictions in this permit, except for the restrictions in the “Frozen or Snow Covered Ground – Solid Manure (12% solids or more)” and “Frozen or Snow Covered Ground – Allowances for Surface Applications of Liquid Manure (<12% solids)” sections of this permit.

### 1.6.9 Spreading Sites Submittals

Permittee requests to amend a nutrient management plan to include landspreading sites not found in an approved management plan shall include the following information:

- The location of the site on maps and aerial photographs, and soil survey maps.
- A unique site identification number
- Information used to verify the site meets locational requirements of the permit,
- A nutrient budget for the site consistent with permit requirements. This includes a completed worksheet outlining the process in determining appropriate spreading rates for each additional site, including a crop history identifying the previous season’s crops and future cropping plans for each site and estimated nutrient uptake.
- A demonstration that the field(s) in question meets tolerable soil loss rate.
- Maps that show where land application is prohibited or restricted on a map or aerial photograph of the site.
- Soil samples if available for one-time applications. If the permittee wishes to use the site for subsequent applications, soil samples shall be submitted prior to additional landspreading.

## 1.7 Monitoring and Sampling Requirements

The permittee shall comply with the monitoring and sampling requirements specified below for the listed sampling point(s), and the following conditions.

### **1.7.1 Monitoring and Inspection Program**

As specified in the Schedules section of this permit, the permittee shall submit a monitoring and inspection program designed to determine compliance with permit requirements. The program shall be consistent with the requirements of this section and shall identify the areas that the permittee will inspect, the person responsible for conducting the inspections and how inspections will be recorded and submitted to the department.

Visual inspections shall be completed by the permittee or designee in accordance with the following frequencies:

- Daily inspections for leakage of all water lines that potentially come into contact with pollutants or drain to storage or containment structures or runoff control systems, including drinking or cooling water lines.
- Weekly inspections to ensure proper operation of all storm water diversion devices and devices channeling contaminated runoff to storage or containment structures.
- Weekly inspections of liquid storage and containment structures. For liquid storage and containment facilities, the berms shall be inspected for leakage, seepage, erosion, cracks and corrosion, rodent damage, excessive vegetation and other signs of structural weakness. In addition, the level of material in all liquid storage and containment facilities shall be measured and recorded in feet or inches above or below the margin of safety level.
- Quarterly inspections of the production area, including outdoor animal pens, barnyards and raw material storage areas. CAFO outdoor vegetated areas shall be inspected quarterly.
- Periodic inspections and calibration of landspreading equipment to detect leaks and ensure accurate application rates for manure and process wastewater. An initial calibration of spreading equipment shall be followed by additional calibration after any equipment modification that may impact application of manure or process wastewater or after changes in product or manure or process wastewater consistency. Spreading equipment for both liquid and solid manure shall be inspected just prior to the hauling season, and equipment used for spreading liquids shall be inspected at least once per month during months when hauling occurs.
- Inspections of fields each time manure or process wastewater is surface applied on frozen or snow-covered ground to determine if applied materials have run off the application site. Inspections shall occur during and shortly after application.

The permittee shall take corrective actions as soon as practicable to address any equipment, structure or system malfunction, noncompliance, failure or other problem identified through monitoring or inspections. If the permittee fails to take corrective actions within 30 days of identifying a malfunction, noncompliance, failure or other problem, the permittee shall contact the Department immediately following the 30-day period and provide an explanation for its failure to take action.

### **1.7.2 Sampling Requirements**

The permittee shall collect and analyze representative samples of land applied manure and process wastewater for the parameters outlined in the monitoring requirements for each sample point. The permittee shall also collect and analyze soils from fields used for manure or process wastewater applications at least once every four years. Sampling of manure, process wastewater and soils shall be done in accordance with s. NR 243.19(1)(c).

### **1.8 Sampling Point(s)**

The permittee is authorized to use only the facilities identified below, in accordance with the conditions specified in this permit. The permittee may not install or use new facilities or structures or land apply manure or other process wastewaters from these facilities unless written Department approval is received. A new facility is any facility that is not specifically identified in this permit. If a new facility is approved in writing by the Department, the conditions in the corresponding 'New Facility' sampling point (e.g. Manure Storage Facilities, Runoff Control Systems) will apply.

### **1.8.1 Manure and Process Wastewater Storage Facilities - Sampling Required**

In accordance with the Production Area Discharge Limitations subsection, manure and process wastewater storage facilities shall be operated and maintained to prevent discharges to navigable waters and to comply with surface water quality standards. In addition, manure and process wastewater storage facilities shall be operated and maintained to minimize leakage for the purpose of complying with groundwater standards. Unless specifically approved and designated by the Department as a sampling point, in-field unconfined storage of manure (manure stacking) is prohibited. The permittee is authorized to use facilities identified below, in accordance with the conditions specified in this permit.

<b>Sampling Point Designation</b>	
<b>Sampling Point Number</b>	<b>Sampling Point Location, System Description (including capacity, legal location, and action needed as applicable), and Treatment Description</b>
001	WSF 1 (East) - Sample point 001 is for liquid waste storage facility one (WSF 1). WSF 1 is a HDPE lined waste storage facility that was constructed in 2006. WSF 1 is located directly east of WSF 2 (sample point 002) and has an approximate maximum operating level capacity of 2,916,691 gallons. WSF 1 primarily accepts leachate and feed storage runoff (process wastewater) from the feed storage area (sample point 008) as well as contaminated runoff from the solid manure stacking pad (sample point 004). WSF 1 also accepts liquid manure on occasion which overflows from WSF 2 (sample point 002) through a connecting transfer pipe when WSF 2 approaches capacity. An engineering evaluation of WSF 1 shall be completed in accordance with the schedules section of the permit (permit section 2.4).
002	WSF 2 (Middle) - Sample point 002 is for liquid waste storage facility two (WSF 2). WSF 2 is a HDPE lined waste storage facility with a concrete floor and is located directly west of WSF 1 (sample point 001) and will also be located east of proposed WSF 3 (sample point 003). WSF 2 has an approximate maximum operating level capacity of 7,921,877 gallons and will accept liquid manure directly from WSF 3 (sample point 003) once WSF 3 is constructed. Until WSF 3 has been constructed and is operational, liquid manure and wastewater generated within the freestall barns and milking parlor is transferred to the separation building (sample point 005) where it is then transferred to WSF 2 after sand and manure solids are separated out. Plans and specifications for WSF 2 were approved by the Department in 2013 and construction was completed the same year.
003	WSF 3 (West) - Sample point 003 is for proposed liquid waste storage facility three (WSF 3). WSF 3 is a concrete lined waste storage facility that will be located west of WSF 2 (sample point 002). WSF 3 is expected to have an approximate maximum operating level capacity of 16,129,287 gallons. Liquid manure and wastewater generated within the freestall barns and milking parlor is transferred to the separation building (sample point 005) where it will then be transferred to WSF 3 after sand and manure solids are separated out. Plans and specifications for WSF 3 were approved by the Department in 2022, and in part were submitted and approved to provide additional storage capacity needed to accommodate the proposed upgrades to the feed storage runoff control system (sample point 008). The Department's plan approval expired prior to construction of WSF 3 having commenced and updated plans and specifications for WSF 3 shall be submitted for Department approval in accordance with the schedules section of the permit (permit section 2.3). Construction of WSF 3 shall also be completed as approved by the Department in accordance with the schedules section of the permit (permit section 2.3).
004	Solid Stacking Pad - Sample point 004 is for the solid manure stacking pad located on the south side of WSF 1 (sample point 001). The solid stacking pad accepts solid calf manure generated within the calf barn along with other miscellaneous sources of solid manure. The stacking pad is a concrete lined pad with concrete walls surrounding the outer perimeter of the pad. The stacking pad and surrounding concrete area are sloped toward WSF 1 so that leachate and contaminated runoff flow into WSF 1. Plans and specifications for upgrades to the feed storage runoff control system (sample point 008) were approved by the Department in 2022 and included a proposed concrete transfer swale which runs through the solid manure stacking pad that surface flows directly into WSF 1. The proposed transfer swale will also serve as a runoff control system for the stacking pad to better direct contaminated runoff from the stacking pad into WSF 1. The approved plans also included modifications to the stacking pad to increase the height of the concrete walls around the perimeter of the pad. The Department's approval for the plans which included the transfer swale and modifications to the stacking pad walls expired prior to construction having commenced and updated plans and specifications shall be submitted for Department approval in accordance with the schedules section of the permit (permit section 2.6). Construction of the runoff transfer swale and modifications to the stacking pad walls shall also be

	completed as approved by the Department in accordance with the schedules section of the permit (permit section 2.6).
005	Separated Solids - Sample point 005 is for manure solids and sand bedding that are separated out and staged within the solid separation building. Separated sand is returned to the freestall barns to be reused for bedding and remaining liquids are transferred to WSF 3 (sample point 003). Representative samples shall be taken for separated manure solids, manure laden bedding, or recycled sand which are directly land applied from the separation building. Plans and specifications for the separation building were approved by the Department in 2014 and construction was completed the same year.
006	Misc. Solids - Sample point 006 is for miscellaneous sources of solid manure, separated manure solids, solids removed from liquid waste storage facilities, manure laden bedding, recycled sand, waste feed, etc. which are directly land applied. Representative samples shall be taken for each solid source that is directly land applied.
007	Headland Stacking Sites - Sample point 007 is for solid manure land applied from approved headland stacking sites. Representative samples shall be taken from each stacking site prior to land application. Stacking sites are defined as part of the production area and therefore are subject to the Production Area Discharge Limitations section of the permit. Weekly inspections of stacking sites are required and shall be recorded according to the Monitoring and Inspection Program.

**Manure and Process Wastewater Storage Facilities - Action Needed:** For manure and process wastewater storage facilities that are to be installed, evaluated or abandoned (as indicated in the above table), see the Schedules section herein for actions required. Although this permit may require actions for installing permanent facilities, or controls, or modifications to existing facilities, interim measures shall be immediately implemented to prevent discharges of pollutants to navigable waters. Specifically, if monitoring or inspection reports indicate discharges to navigable waters from a storage facility in violation of the Production Area Discharge Limitations subsection, the permittee shall immediately install interim control measures to contain the discharges. Plans and specifications for permanent facilities must be submitted to the Department for review and approval in accordance with Chapter 281.41, Wis. Statutes, and Chapter NR 243, Wis. Adm. Code.

### 1.8.2 Runoff Control System(s) - No Sampling Required

In accordance with the Production Area Discharge Limitations subsection, the permittee shall control contaminated runoff from all elements of the livestock operation to prevent a discharge of pollutants to navigable waters and to comply with surface water quality standards and groundwater standards.

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, System Description (including capacity, legal location, and action needed as applicable), and Treatment Description
008	Feed Storage Area & Runoff Controls - Sample point 008 is for visual monitoring and inspection of the feed storage area and associated runoff control system. The feed storage area was initially constructed around 2006 without a runoff control system in place. Plans and specifications for a feed storage runoff control system were later approved by the Department in 2012 and construction was completed in 2013. Plans and specifications for a feed storage expansion were approved by the Department in 2017, with a condition that the existing runoff control system be upgraded, and the expansion was completed the same year. Plans and specifications for upgrades to the feed storage runoff control system were later approved by the Department in 2022. The Department's plan approval for the feed storage runoff control system upgrades expired prior to construction having commenced and updated plans and specifications shall be submitted for Department approval in accordance with the schedules section of the permit (permit section 2.5). The proposed upgraded runoff control system is designed for total containment of leachate and feed storage area runoff for a minimum of a 25 year 24 hour storm event.

	Leachate and feed storage runoff will be captured within a reception tank at the southwest corner of the feed storage. The contents of the reception tank will then be pumped to a concrete transfer swale that will run through the solid manure stacking area (sample point 005) and surface flow directly into WSF 1 (sample point 001). Proper operation and maintenance are required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to the Monitoring and Inspection Program. Construction of the runoff control system upgrades, along with the actions to permanently discontinue use of the existing vegetated treatment area that will no longer be part of the upgraded runoff controls, shall also be completed as approved by the Department in accordance with the schedules section of the permit (permit section 2.5).
009	Storm Water Runoff Controls - Sample point 009 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutters and downspout structures, drainage systems, storm water ponds, grassed waterways and any other diversion systems which transport uncontaminated storm water. Proper operation and maintenance are required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to the Monitoring and Inspection Program.

**Runoff Control System(s) - Action Needed:** For runoff control systems that are to be installed, evaluated or abandoned (as indicated in the above table), see the Schedules section herein for actions required. Although permanent control measures may be required by this permit, interim measures shall be implemented to prevent discharges of pollutants to navigable waters. Specifically, if monitoring or inspection reports indicate discharges to navigable waters from a runoff control facility or practice in violation of the Production Area Discharge Limitations subsection, the permittee shall immediately install interim control measures to contain the discharges. Plans and specifications for permanent runoff controls must be submitted to the Department for review and approval in accordance with Chapter 281.41, Wis. Statutes, and Chapter NR 243, Wis. Adm. Code.

### 1.8.3 Sampling Point 001 - WSF 1 (East); 002- WSF 2 (Middle); 003- WSF 3 (West)

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limits and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total		lb/1000gal	2/Month	Grab	
Nitrogen, Available		lb/1000gal	2/Month	Calculated	
Phosphorus, Total		lb/1000gal	2/Month	Grab	
Phosphorus, Available		lb/1000gal	2/Month	Calculated	
Solids, Total		Percent	2/Month	Grab	

**Reporting:** Sampling test results shall be submitted with the Annual Report. Sampling is only required when land application has actually occurred.

<b>Daily Log Requirements</b>	
The permittee shall document all discharge and monitoring activities on daily log report form 3200-123A or a Department approved equivalent log sheet. Originals of the daily log reports shall be kept by the permittee as described under Record Keeping and Retention in the Standard Requirements section, and if requested, made available to the Department.	
<b>Parameters</b>	<b>Units</b>
Date of Application	Date
Field ID	Number/Name
Acres Applied	Number of Acres
Manure/Process Wastewater Source	Specify Storage Facility or Barn
Spreader Volume	Tons or Gallons
Number of Loads	Number
Soil Conditions	Dry, Wet, Frozen, Snow Covered
Temperature During Application	°F
Precipitation During Application	Describe Precipitation
Application Method	Surface Applied, Injected, Incorporated

<b>Annual Report</b>		
The permittee shall submit an Annual Report, including Form 3200-123 or a Department approved equivalent, that summarizes all landspreading activities and includes the information identified below, the lab analyses of the manure and other waste landspread, the "T" compliance worksheet for all fields, and the soil test frequency in the past four years. The Annual Report is due each year by the date specified in the Schedules section of this permit. Nitrogen and phosphorus from all sources applied to a given field, including commercial fertilizers, shall be included in the "Total Nitrogen" and "Total Phosphorus" sections of the Annual Report.		
<b>Parameters</b>	<b>Units</b>	<b>Sample Type</b>
Date of Application	Date	-
Field ID	Number/Name	-
Acres Applied	Number of Acres	-
Slope	Percent	-
Soil Test P Ave.	ppm	-
Manure Source	-	Composite
Current Crop	-	-
Crop Nitrogen Needs (per soil test)	Pounds/Acre	-
Crop P <sub>2</sub> O <sub>5</sub> Needs (per soil test)	Pounds/Acre	-
Manure/Process Wastewater Analysis: Available Nitrogen	Pounds/1000 Gallons	Calculated

<b>Annual Report</b>		
The permittee shall submit an Annual Report, including Form 3200-123 or a Department approved equivalent, that summarizes all landspreading activities and includes the information identified below, the lab analyses of the manure and other waste landspread, the "T" compliance worksheet for all fields, and the soil test frequency in the past four years. The Annual Report is due each year by the date specified in the Schedules section of this permit. Nitrogen and phosphorus from all sources applied to a given field, including commercial fertilizers, shall be included in the "Total Nitrogen" and "Total Phosphorus" sections of the Annual Report.		
<b>Parameters</b>	<b>Units</b>	<b>Sample Type</b>
Manure/Process Wastewater Analysis: Available P <sub>2</sub> O <sub>5</sub>	Pounds/1000 Gallons	Calculated
Manure/Process Wastewater Application Rate	Gallons/Acre	-
Manure/Process Wastewater Applied: Nitrogen	Pounds/Acre	-
Manure/ Process Wastewater Applied: P <sub>2</sub> O <sub>5</sub>	Pounds/Acre	-
Previous Crop	-	-
Legume Nitrogen Credit	Pounds/Acre	-
Second Year Manure Credit	Pounds/Acre	-
Additional Fertilizer: Nitrogen	Pounds/Acre	-
Additional Fertilizer: P <sub>2</sub> O <sub>5</sub>	Pounds/Acre	-
Total Nitrogen Applied	Pounds/Acre	-
Total P <sub>2</sub> O <sub>5</sub> Applied	Pounds/Acre	-
Soil Conditions	Dry, Wet, Frozen, Snow Covered	-
Application Method	Surface Applied, Injected, Incorporated	-
Banked	Yes/No	-
Field Restrictions	Per Nutrient Management Plan	-

#### 1.8.4 Sampling Point 004 - Solid Stacking Pad; 005- Separated Solids; 006- Misc. Solids; 007- Headland Stacking Sites

<b>Monitoring Requirements and Limitations</b>					
<b>Parameter</b>	<b>Limit Type</b>	<b>Limits and Units</b>	<b>Sample Frequency</b>	<b>Sample Type</b>	<b>Notes</b>
Nitrogen, Total		lbs/ton	Quarterly	Grab	
Nitrogen, Available		lbs/ton	Quarterly	Calculated	
Phosphorus, Total		lbs/ton	Quarterly	Grab	
Phosphorus,		lbs/ton	Quarterly	Calculated	

Available					
Solids, Total		Percent	Quarterly	Grab	

**Reporting:** Sampling test results shall be submitted with the Annual Report. Sampling is only required when land application has actually occurred.

<b>Daily Log Requirements</b>	
The permittee shall document all discharge and monitoring activities on daily log report form 3200-123A or a Department approved equivalent log sheet. Originals of the daily log reports shall be kept by the permittee as described under Record Keeping and Retention in the Standard Requirements section, and if requested, made available to the Department.	
<b>Parameters</b>	<b>Units</b>
Date of Application	Date
Field ID	Number/Name
Acres Applied	Number of Acres
Manure/Process Wastewater Source	Specify Storage Facility or Barn
Spreader Volume	Tons or Gallons
Number of Loads	Number
Soil Conditions	Dry, Wet, Frozen, Snow Covered
Temperature During Application	°F
Precipitation During Application	Describe Precipitation
Application Method	Surface Applied, Injected, Incorporated

<b>Annual Report</b>		
The permittee shall submit an Annual Report, including Form 3200-123 or a Department approved equivalent, that summarizes all landspreading activities and includes the information identified below, the lab analyses of the manure and other waste landspread, the "T" compliance worksheet for all fields, and the soil test frequency in the past four years. The Annual Report is due each year by the date specified in the Schedules section of this permit. Nitrogen and phosphorus from all sources applied to a given field, including commercial fertilizers, shall be included in the "Total Nitrogen" and "Total Phosphorus" sections of the Annual Report.		
<b>Parameters</b>	<b>Units</b>	<b>Sample Type</b>
Date of Application	Date	-
Field ID	Number/Name	-
Acres Applied	Number of Acres	-
Slope	Percent	-
Soil Test P Ave.	ppm	-
Manure Source	-	Composite

<b>Annual Report</b>		
The permittee shall submit an Annual Report, including Form 3200-123 or a Department approved equivalent, that summarizes all landspreading activities and includes the information identified below, the lab analyses of the manure and other waste landspread, the "T" compliance worksheet for all fields, and the soil test frequency in the past four years. The Annual Report is due each year by the date specified in the Schedules section of this permit. Nitrogen and phosphorus from all sources applied to a given field, including commercial fertilizers, shall be included in the "Total Nitrogen" and "Total Phosphorus" sections of the Annual Report.		
<b>Parameters</b>	<b>Units</b>	<b>Sample Type</b>
Current Crop	-	-
Crop Nitrogen Needs (per soil test)	Pounds/Acre	-
Crop P <sub>2</sub> O <sub>5</sub> Needs (per soil test)	Pounds/Acre	-
Manure Analysis: Available Nitrogen	Pounds/Ton	Calculated
Manure Analysis: Available P <sub>2</sub> O <sub>5</sub>	Pounds/Ton	Calculated
Manure Application Rate	Tons/Acre	-
Manure/Process Wastewater Applied: Nitrogen	Pounds/Acre	-
Manure/ Process Wastewater Applied: P <sub>2</sub> O <sub>5</sub>	Pounds/Acre	-
Previous Crop	-	-
Legume Nitrogen Credit	Pounds/Acre	-
Second Year Manure Credit	Pounds/Acre	-
Additional Fertilizer: Nitrogen	Pounds/Acre	-
Additional Fertilizer: P <sub>2</sub> O <sub>5</sub>	Pounds/Acre	-
Total Nitrogen Applied	Pounds/Acre	-
Total P <sub>2</sub> O <sub>5</sub> Applied	Pounds/Acre	-
Soil Conditions	Dry, Wet, Frozen, Snow Covered	-
Application Method	Surface Applied, Injected, Incorporated	-
Banked	Yes/No	-
Field Restrictions	Per Nutrient Management Plan	-

## 2 Schedules

### 2.1 Emergency Response Plan

Required Action	Due Date
<b>Develop Emergency Response Plan:</b> Develop a written Emergency Response Plan within 30 days of permit coverage, available to the Department upon request.	12/31/2024

### 2.2 Monitoring & Inspection Program

Required Action	Due Date
<b>Proposed Monitoring and Inspection Program:</b> Consistent with the Monitoring and Sampling Requirements subsection, the permittee shall submit a proposed monitoring and inspection program within 60 days of the effective date of this permit.	01/30/2025

### 2.3 Waste Storage Facility - Installation

Applicable to WSF 3 (sample point 003) and the associated waste transfer system. Department plan approval for WSF 3 under DNR Project # R-2022-0077 has expired and updated plans & specifications must be submitted and approved prior to construction.

Required Action	Due Date
<b>Plans &amp; Specifications:</b> Submit updated plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code for the proposed manure storage facility to provide additional storage capacity needed to permanently correct adverse runoff conditions. (See Standard Requirements for plan content information.)	01/01/2025
<b>Construction &amp; Post Construction Documentation:</b> Complete construction of the manure storage facility that provides additional storage capacity needed to permanently correct adverse runoff conditions in concurrence with and approval by the Department by the specified date due. Submit post construction documentation within 60 days of completion of the project.	08/31/2025

### 2.4 Waste Storage Facility - Engineering Evaluation

Applicable to WSF 1 (Sample Point 001).

Required Action	Due Date
<b>Engineering Evaluation:</b> Submit a written report evaluating the existing manure storage facility's ability to meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	08/31/2025
<b>Plans &amp; Specifications:</b> Submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code to permanently correct any adverse manure storage conditions. (See Standard Requirements for plan content information.)	08/31/2026

<b>Construction &amp; Post Construction Documentation:</b> Complete construction of the improvements to the manure storage facility that permanently correct any adverse conditions in concurrence with and approval by the Department by the specified date due. Submit post construction documentation within 60 days of completion of the project.	08/31/2027
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## 2.5 Feed Storage - Runoff Control Upgrades & Vegetated Treatment Area (VTA) Closure

Applicable to the Feed Storage Runoff Controls (sample point 008). Department plan approval for runoff control upgrades and actions to discontinue use of the VTA under DNR Project # R-2022-0077 has expired and updated plans & specifications must be submitted and approved prior to construction.

Required Action	Due Date
<b>Plans &amp; Specifications:</b> Submit updated plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code for the proposed runoff control system upgrades to permanently correct adverse runoff conditions along with the proposed actions to permanently discontinue use of the existing Vegetated Treatment Area. (See Standard Requirements for plan content information.)	01/01/2026
<b>Construction &amp; Post Construction Documentation:</b> Complete construction of the upgrades to the feed storage area runoff control system that permanently correct adverse runoff conditions in concurrence with and approval by the Department by the specified date due. Submit post construction documentation within 60 days of completion of the project.	08/31/2026
<b>Permanent Closure (VTA):</b> Complete the necessary actions as approved by the Department to permanently discontinue use of the existing Vegetated Treatment Area and submit documentation within 60 days of completion.	08/31/2026

## 2.6 Manure Stacking Pad - Modifications

Applicable to the solid manure stacking pad (sample point 004). Department plan approval for modifications to the stacking pad under DNR Project # R-2022-0077 has expired and updated plans & specifications must be submitted and approved prior to construction.

Required Action	Due Date
<b>Plans &amp; Specifications:</b> Submit updated plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code for the proposed modifications to increase the height of the solid manure stacking pad walls to address potential adverse runoff conditions. (See Standard Requirements for plan content information.)	01/01/2026
<b>Construction &amp; Post Construction Documentation:</b> Complete construction of the modifications to increase the height of the solid manure stacking pad walls to address potential adverse runoff conditions in concurrence with and approval by the Department by the specified date due. Post construction documentation shall be submitted within 60 days of completion of the project.	08/31/2026

## 2.7 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements.

Required Action	Due Date
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<b>Submit Annual Report #1:</b> To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2025
<b>Submit Annual Report #2:</b> To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2026
<b>Submit Annual Report #3:</b> To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2027
<b>Submit Annual Report #4:</b> To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2028
<b>Submit Annual Report #5:</b> To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2029
<b>Ongoing Annual Reports:</b> Continue to submit Annual Reports until permit reissuance has been completed.	

## 2.8 Nutrient Management Plan

Submit annual Nutrient Management Plan (NMP) updates by March 31st of each year. Note, in addition to NMP updates, submit NMP amendments and substantial revisions to the department for written approval prior to the implementation of any changes to the NMP.

Required Action	Due Date
<b>Submit NMP Update #1:</b> To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2025
<b>Submit NMP Update #2:</b> To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2026
<b>Submit NMP Update #3:</b> To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2027
<b>Submit NMP Update #4:</b> To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2028
<b>Submit NMP Update #5:</b> To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2029
<b>Ongoing NMP Annual Updates:</b> Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed.	

## 2.9 Submit Permit Reissuance Application

Required Action	Due Date
<b>Reissuance Application:</b> Submit a complete permit reissuance application 180 days prior to permit expiration.	06/01/2029

## 3 Standard Requirements

### 3.1 General Conditions

**NR 205, Wisconsin Administrative Code:** The conditions in s. NR 205.07(1), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in s. NR 205.07(1).

#### 3.1.1 Duty to comply

The permittee shall comply with all conditions of the permit. Any permit noncompliance is a violation of the permit and is grounds for enforcement action; permit termination, revocation and reissuance or modification; or denial of a permit reissuance application. If a permittee violates any terms of the permit, the permittee is subject to the penalties established in ch. 283, Wis. Stats.

#### 3.1.2 Permit Actions

As provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing the permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

#### 3.1.3 Property Rights

The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

#### 3.1.4 Schedules

Reports of compliance or noncompliance with interim and final requirements contained in any schedule of the permit shall be submitted in writing within 14 days after the schedule date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken and an estimate of the effect of the noncompliance on the permittee's ability to meet the remaining schedule dates.

#### 3.1.5 Inspection and Entry

The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to:

- enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are required under the conditions of the permit;
- have access to and copy, at reasonable times, any records that are required under the conditions of the permit;
- inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and
- sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

#### 3.1.6 Transfers

A permit is not transferable to any person except after notice to the Department. In the event of a transfer of control of a permitted facility, the prospective owner or operator shall file a new permit application and shall file a stipulation of permit acceptance with the Department WPDES permit section. The Department may require modification or

revocation and reissuance of the permit to change the name of the permittee and to reflect the requirements of ch. 283, Stats.

### **3.1.7 Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

### **3.1.8 Duty to Provide Information**

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking or reissuing the permit or to determine compliance with the permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by the permittee.

### **3.1.9 Recording of Results-Sampling**

For each manure, process wastewater or soil sample taken by the permittee, the permittee shall record the following information:

- The date, exact place, method and time of sampling or measurements,
- The individual or lab that performed the sampling or measurements,
- The date of the analysis was performed,
- The individual who performed the analysis,
- The analytical techniques or methods used
- The results of the analysis.

### **3.1.10 Recording of Results-Inspections**

For each inspection conducted by the permittee, the permittee shall record the following information:

- The date and name of the person(s) performing the inspection,
- An inspection description, including components inspected,
- Details of what was discovered during the inspection,
- Recommendations for repair or maintenance,
- Any corrective actions taken.

### **3.1.11 Spill Reporting**

The permittee shall notify the Department in in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations or restrictions established in this permit, or the spill or accidental release of the material that is unregulated in this permit, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code, and the “Noncompliance - 24 Hour Reporting,”section of this permit.

### **3.1.12 Planned Changes**

The permittee shall report to the Department any facility or operation expansion, production increase or process modifications which will result in new, different or increased amount of manure or process wastewater produced or handled by the permittee or which will result in new, different or increased discharges of pollutants to waters of the state. The report shall either be a new permit application, or if the new discharge will not violate the conditions of this

permit, a written notice of the planned change. The report shall contain a description of the planned change, an estimate of the new, different or increased discharge of pollutants and a description of the effect of change will on current manure and process wastewater handling practices. Changes cannot be implemented prior to reporting changes to the Department. Following receipt of this report, the Department may require that the permittee submit plans and specifications, or modify its nutrient management plan to address the planned change. Changes requiring Department action or approval may not be initiated prior to Department action or approval.

### **3.1.13 Submittal of Plans and Specifications**

In accordance with s. NR 243.15, the permittee shall submit plans and specifications for proposed new or upgraded reviewable facilities or systems to the Department for approval prior to construction. Post construction documentation for these projects shall be submitted within 60 days of completion of the project, or as otherwise specified by the Department.

### **3.1.14 Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the department, it shall promptly submit such facts or correct information to the department.

### **3.1.15 Reporting Requirements – Alterations or Additions**

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

### **3.1.16 Noncompliance - 24 Hour Reporting**

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. This includes any upset which exceeds any effluent limitation in the permit, or violations of the discharge limitations listed in the permit.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the permit. The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at **1-800-943-0003**.

### **3.1.17 Reports and Submittal Certification**

Signature(s) on reports required by this permit shall certify to the best of the permittee's knowledge the reports to be true, accurate and complete. All reports required by this permit shall be signed by:

- a responsible executive officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or
- a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code.

## **3.2 Livestock Operation General Requirements**

### **3.2.1 Responsibility for Manure and Process Wastewater**

The permittee is responsible for the storage, management and land application of all manure and process wastewater generated by the operation. The permittee is also responsible for any manure or process wastewater received from non-permitted operations that are accepted by the permittee for storage, management or land application.

### **3.2.2 Distribution of Manure and Process Wastewater**

All manure and process wastewater generated by the permittee is the responsibility of the permittee and shall be stored and applied in compliance with the terms and conditions of this permit and the approved nutrient management plan, except if the manure or process wastewater is distributed to another person in accordance with s. NR 243.142 and the Department has approved the transfer of responsibility in writing.

To transfer responsibility for handling, storage and application of manure or process wastewater, a permittee shall submit a written request to the Department. At minimum the request shall indicate how the permittee will comply with all conditions identified in ch. NR 243.142(3), Wis. Adm. Code. If approved, the permittee will be responsible for the following recordkeeping and reporting:

- Update the nutrient management plan to include the estimated amount of manure and process wastewater to be transferred, and record the actual amount transferred at the time of transfer.
- Maintain records that identify the name and address of the recipient of the manure or process wastewater, quantity, and dates of transfer.
- Provide the recipient with written information regarding the nutrient content (nitrogen and phosphorus at minimum) of the manure and process wastewater.
- Submit transfer reports to the Department with the annual report.
- Records shall be maintained for at least 5 years.

Upon written approval from the Department, the permittee is not responsible for the land application, use or disposal of distributed manure or process wastewater if the manure or process wastewater is distributed in compliance with the conditions of the Department approval and s. NR 243.142.

### **3.2.3 Emergency Response Plans**

Within 30 days of the effective date of the permit, the permittee shall develop a written emergency response plan, or update an existing plan if necessary, in accordance with s. NR 243.13(6). The plan shall be made available to the Department upon request. The emergency response plan shall be reviewed and, if appropriate or necessary, amended whenever the operation undergoes significant expansions or other changes that affect the volume or location of potential unauthorized spills or discharges. The plan shall be amended as needed to reflect changes in available equipment, available clean-up contractors or procedures to address unauthorized spills or discharges, or amended in accordance with comments provided by the department. The plan shall be retained at the production area and the permittee shall notify all employees involved in manure and process wastewater handling of the location of the plan.

### **3.2.4 Mortality Management**

Animal carcasses may not be disposed of in a manner that results in a discharge of pollutants to surface waters, violates groundwater standards or impairs wetland functional values. Animal carcasses may not be disposed of directly into waters of the state. In addition, carcasses may not be disposed of in liquid manure or process wastewater

containment, storage or treatment facilities unless the containment, storage or treatment facility is adequately designed to contain and treat carcasses and the facility has been approved by the department for that use.

The permittee shall record the date and method of carcass disposal.

[NOTE: The permittee should be aware that there are additional restrictions on the disposal of animal carcasses in ch. 95, Stats., and ATCP 3, Wis. Adm. Code. Furthermore, there may be local regulations regarding disposal of carcasses. If a carcass is disposed of off-site, the disposal may be subject to the requirements in ch. NR 502.12 or 518, Wis. Adm. Code]

### **3.2.5 Department Review of Nutrient Management Plans**

The Department reserves the right to review the Nutrient Management Plan at any time for application rates and cover crop nutrient removal rates, as well as the timing and methods of application. If the Department determines that a landspreading site is no longer acceptable for manure and process wastewater applications, the permittee shall modify the Nutrient Management Plan to remove the site from the plan. In addition, if the Department determines application rates need to be adjusted for individual fields, the permittee shall modify the Nutrient Management Plan. All Department initiated modifications shall be completed by the permittee within 3 months of written notification from the Department.

### **3.2.6 Existing Manure Storage Facilities Evaluation**

The following information shall be included in any required written report evaluating existing manure storage facilities:

- a narrative providing general background and operational information on the existing storage facility(s);
- the adequacy of each facility's linings to prevent exfiltration of manure contaminants to groundwater, and the facility's ability to permanently meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections;
- the proximity of bedrock and the water table to the floors of the facility(s);
- scaled drawings showing the locations of each storage unit, any surface water, water supply wells, property boundaries, and other pertinent information;
- any post construction documentation available, including the date and materials of construction;
- an assessment of the ability of the facility to meet the design requirements for manure storage in s. NR 243.15; and
- any proposed actions to address issues identified as part of the evaluation.

### **3.2.7 Manure Storage Facility, Composting and Compost Leachate Containment Systems - Installation Plan Requirements**

New construction of manure storage/composting facilities shall be in accordance with s. NR 243.15. Exemptions to the design criteria may be given on a case-by-case basis. Prior written approval is required. The following (minimum) information shall be included in the plans and specifications submitted for the new construction of a manure storage facility(s) or composting system(s) (three complete copies are required):

- a narrative describing the proposed facility(s)/system(s);
- a written management and site assessment;
- an operation and maintenance plan;
- an assessment of the ability of the facility(s)/system(s) to meet the applicable design requirements in s. NR 243.15;
- the adequacy of each facility's proposed linings to prevent exfiltration of manure and other contaminants to groundwater and the facility's ability to permanently meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections;
- the proximity of bedrock and the water table to the proposed elevation of each facility's floors verified through on-site soil test borings or pits;
- scaled drawings showing the design details and locations of each proposed storage unit, any surface water, water supply wells, property boundaries, and other pertinent information;
- details concerning the proposed materials of construction; and
- relevant engineering calculations.

### **3.2.8 Runoff Control Systems - Installation Plan Requirements**

New construction of runoff control systems shall be in accordance with s. NR 243.15. Exemptions to the design criteria may be given on a case-by-case basis. Prior written approval is required. The following (minimum) information shall be included in the plans and specifications submitted for the new construction of a runoff control system(s) (three complete copies are required):

- a narrative describing the proposed system including a full description of the system's proposed components;
- a written management and site assessment;
- an operation and maintenance plan;
- an assessment of the ability of the system(s) to meet the applicable design requirements in s. NR 243.15;
- the adequacy of each proposed system to permanently meet the conditions in the Production Area Discharge Limitations and Runoff Control subsections;
- the proximity of bedrock and the water table to the proposed elevation of each system's floors verified through on-site soil test borings or pits;
- scaled drawings showing the design details and locations of each proposed system, any surface water, water supply wells, property boundaries, and other pertinent information;
- details concerning the proposed materials of construction; and
- relevant engineering calculations.

### **3.2.9 Record Keeping and Retention**

The permittee shall keep records associated with production area and land application activities in accordance with s. NR 243.19(2). The permittee shall retain these records and copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 5 years from the date of the sample, measurement, report or application. The Department may request that this period be extended by issuing a public notice to modify the permit to extend this period. These records shall be made available to the Department upon request.

**Note:** A form for recording daily land application activities (Form 3200-123A) can be obtained at regional offices of the Department or the Department's Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

### 3.2.10 Reporting Requirements

The permittee shall submit the following reports in accordance with s. NR 243.19(3)

- **Corrective Actions:** If the permittee fails to take corrective action within 30 days of identifying a malfunction, failure, permit noncompliance or other identified problem, the permittee shall contact the Department immediately following the 30-day period and provide an explanation for its failure to take action.
- **Quarterly Reports:** The permittee shall summarize the results of inspections conducted at the production area in a written quarterly report. The permittee shall maintain the quarterly reports onsite until the quarterly report is submitted to the Department as part of the annual report.
- **Annual Reports:** The permittee shall submit written annual reports to the department by the date specified in the Schedules section of permit for all manure and other process wastewater that is generated by the permittee. These annual reports shall cover quarterly reports, annual spreading activities and other information required in s. NR 243.19(3) for the previous calendar year or cropping year, as specified in this permit.

**Note:** Form 3200-123 (Annual Spreading Report) can be obtained at regional offices of the department or the department's Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

### 3.2.11 Duty to Maintain Permit Coverage

The permittee shall submit a reissuance application in accordance with s. NR 243.12(2)(b) at least 180 days prior to the expiration date of its current WPDES permit, unless the permittee submits a letter to the Department documenting all of the following:

- That the permittee has ceased operation or is no longer defined as a large CAFO under s. NR 243.03(28).
- That the permittee has demonstrated to the Department's satisfaction that it has no remaining potential to discharge of manure or process wastewater pollutants to waters of the state that was generated while the operation was a CAFO.

## 4 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Emergency Response Plan -Develop Emergency Response Plan	December 31, 2024	18
Monitoring & Inspection Program -Proposed Monitoring and Inspection Program	January 30, 2025	18
Waste Storage Facility - Installation -Plans & Specifications	January 1, 2025	18
Waste Storage Facility - Installation -Construction & Post Construction Documentation	August 31, 2025	18
Waste Storage Facility - Engineering Evaluation -Engineering Evaluation	August 31, 2025	18
Waste Storage Facility - Engineering Evaluation -Plans & Specifications	August 31, 2026	18
Waste Storage Facility - Engineering Evaluation -Construction & Post Construction Documentation	August 31, 2027	19
Feed Storage - Runoff Control Upgrades & Vegetated Treatment Area (VTA) Closure -Plans & Specifications	January 1, 2026	19
Feed Storage - Runoff Control Upgrades & Vegetated Treatment Area (VTA) Closure -Construction & Post Construction Documentation	August 31, 2026	19
Feed Storage - Runoff Control Upgrades & Vegetated Treatment Area (VTA) Closure -Permanent Closure (VTA)	August 31, 2026	19
Manure Stacking Pad - Modifications -Plans & Specifications	January 1, 2026	19
Manure Stacking Pad - Modifications -Construction & Post Construction Documentation	August 31, 2026	19
Annual Reports -Submit Annual Report #1	January 31, 2025	20
Annual Reports -Submit Annual Report #2	January 31, 2026	20
Annual Reports -Submit Annual Report #3	January 31, 2027	20
Annual Reports -Submit Annual Report #4	January 31, 2028	20
Annual Reports -Submit Annual Report #5	January 31, 2029	20
Annual Reports -Ongoing Annual Reports	See Permit	20
Nutrient Management Plan -Submit NMP Update #1	March 31, 2025	20
Nutrient Management Plan -Submit NMP Update #2	March 31, 2026	20
Nutrient Management Plan -Submit NMP Update #3	March 31, 2027	20
Nutrient Management Plan -Submit NMP Update #4	March 31, 2028	20
Nutrient Management Plan -Submit NMP Update #5	March 31, 2029	20
Nutrient Management Plan -Ongoing NMP Annual Updates	See Permit	20
Submit Permit Reissuance Application -Reissuance Application	June 1, 2029	20

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any (1) plans and specifications for proposed new, modified or upgraded reviewable facilities or systems, (2) evaluations of constructed facilities or systems, (3) nutrient management plan modifications, updates and annual reports, and (4)

WPDES permit reissuance or modification applications, shall be submitted online through the Department's ePermitting System. This system is accessed through the Water Permit Applications web portal page located at <http://dnr.wi.gov/permits/water>. All other submittals required by this permit shall be submitted to:  
West Central Region, 1300 W. Clairemont Ave, Eau Claire, WI 54701

## **Plan Sheets**

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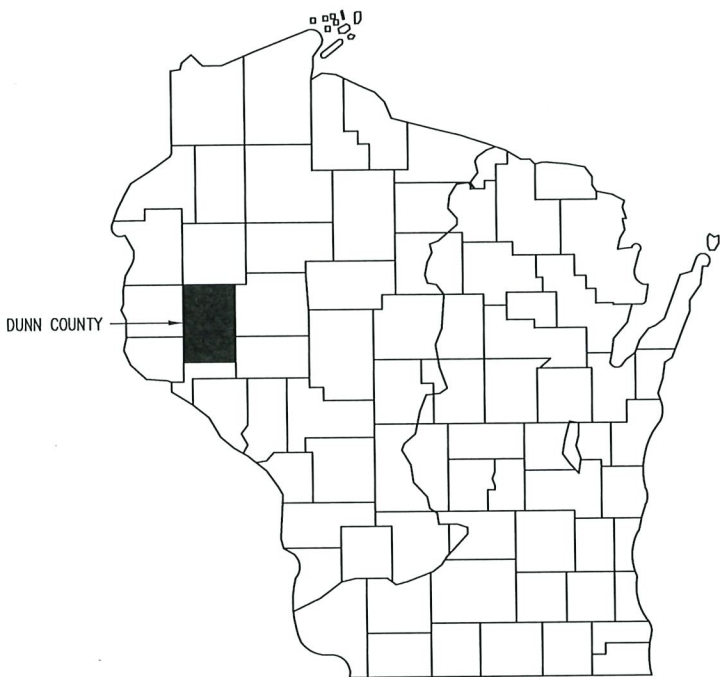
- 1.0-Title Sheet/Location Map
- 2.0-Construction Notes
- 3.0-Overall Site & Erosion Plan
- 3.1-Site Plan – Waste Storage Facility
- 4.0-Grading Plan – Waste Storage Facility
  - 4.1-Plan & Profile – Waste Storage
  - 4.2-Plan & Profile – Waste Storage
  - 4.3-Plan & Profile – Feedpad Transfer
  - 4.4-Plan & Profile – Waste Transfer
- 5.0-5.3-Sections & Details
- 6.0-6.1- Erosion Control Details

Complete facility plans and specifications are included in "Project Manual-Denmark Dairy Farm-2025 Farm Improvements" dated December 2025, prepared by ACA and submitted separately to Dunn County.

# DENMARK DAIRY

## 2025 FARM IMPROVEMENTS

### TOWN OF TAINTER, DUNN COUNTY, WISCONSIN



PRACTICE: WASTE STORAGE FACILITY & WASTE TRANSFER

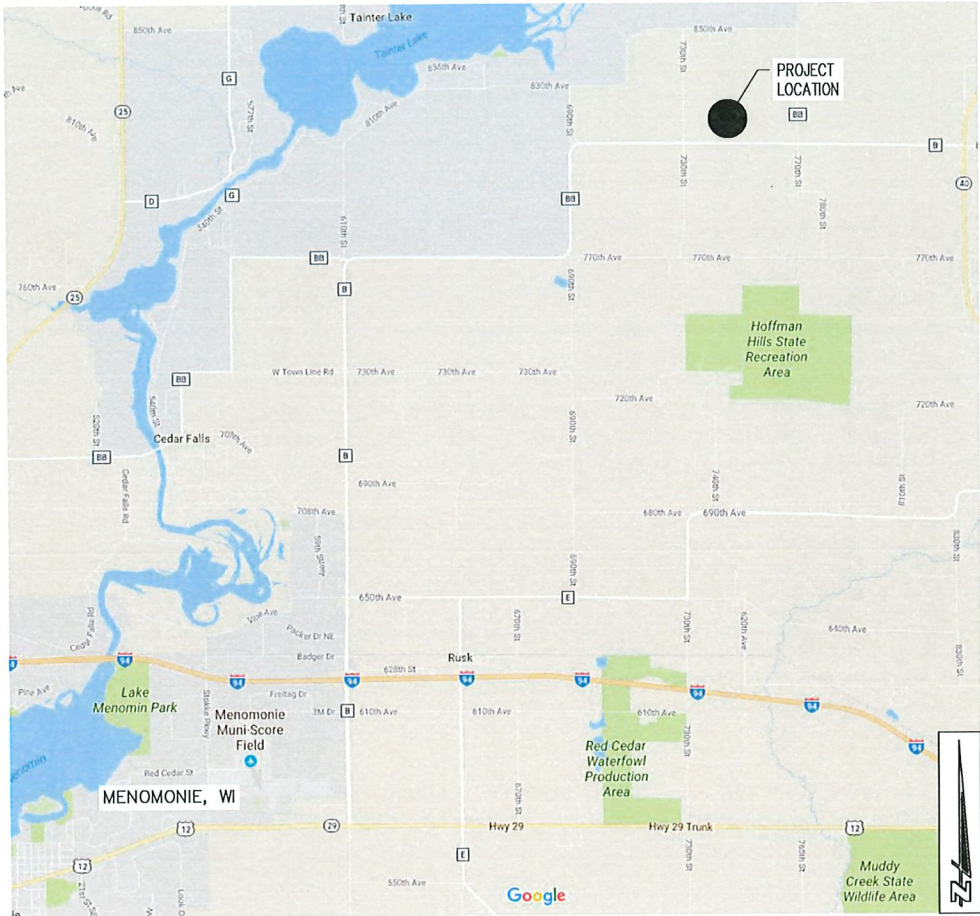
OWNER: DENMARK DAIRY

ADDRESS: E7455 COUNTY ROAD B

ADDRESS: COLFAX, WI 54730

TOWNSHIP NAME: TAINTER

T/S/R: SECTION 24, T29N, R12W



LOCATION MAP – DUNN COUNTY  
N.T.S.



THIS PROJECT HAS BEEN DESIGNED PER THE UNITED STATES NATURAL RESOURCES CONSERVATION SERVICES STANDARDS AND ACI 350, APPENDIX H

- 313 – WASTE STORAGE FACILITY (OCTOBER 2017)
- 342 – CRITICAL AREA PLANTING (JANUARY 2018)
- 382 – FENCE (JANUARY 2014)
- 484 – MULCHING (JUNE 2016)
- 522 – POND SEALING OR LINING, CONCRETE (JUNE 2021)
- 634 – WASTE TRANSFER (JANUARY 2014)

AND WILL BE CONSTRUCTED DURING THE 2025 CONSTRUCTION SEASON

THIS PROJECT SHALL BE CONSTRUCTED ACCORDING TO THE FOLLOWING WISCONSIN NATURAL RESOURCES CONSERVATION SERVICES CONSTRUCTION SPECIFICATIONS

- 002 – EXCAVATION (MAY 2018)
- 003 – EARTHFILL (MAY 2020)
- 004 – CONCRETE (MAY 2021)
- 004 WS – EMBEDDED OR EXPANSIVE WATERSTOP (OCTOBER 2020)
- 010 – FENCES (MAY 2018)
- 204 – EARTHFILL FOR WASTE STORAGE FACILITIES (SEPTEMBER 2018)
- 634 – WASTE TRANSFER PIPE (AUGUST 2016)

#### CONSTRUCTION NOTES

- CONTRACTOR/OWNER SHALL INSTALL ALL EROSION CONTROL MATERIALS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL SALVAGE AND REPLACE TOPSOIL IN ALL DISTURBED AREAS.
- ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY UPON COMPLETION.
- DISTURBED AREAS AND EMBANKMENTS SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH NRCS, FOTG STANDARD 342, CRITICAL AREA PLANTING.
- CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL ITEMS DURING THE DURATION OF THE PROJECT.
- ANY PERCHED WATER POCKETS ENCOUNTERED DURING CONSTRUCTION WILL BE DRAINED, EXCAVATED, & INCORPORATED INTO THE SITE GRADING.
- NO SINKHOLES OR DEPRESSIONS WERE ENCOUNTERED DURING INITIAL SITE SURVEY.

#### REFERENCE BENCHMARK

THE ELEVATIONS SHOWN ARE ON NAVD 1988 DATUM DERIVED FROM LIDAR AND GPS OBSERVATIONS.

#### SHEET INDEX

SHEET	SHEET DESCRIPTION
1.0	TITLE SHEET/LOCATION MAP
2.0	CONSTRUCTION NOTES
3.0	OVERALL SITE & EROSION CONTROL PLAN
3.1	SITE PLAN – WASTE STORAGE FACILITY
4.0	GRADING PLAN – WASTE STORAGE FACILITY
4.1	PLAN & PROFILE – WASTE STORAGE
4.2	PLAN & PROFILE – WASTE STORAGE
4.3	PLAN & PROFILE – FEEDPAD TRANSFER
4.4	PLAN & PROFILE – WASTE TRANSFER
5.0-5.3	SECTIONS & DETAILS
6.0-6.1	EROSION CONTROL DETAILS

PROJECT: DENMARK DAIRY  
2025 FARM IMPROVEMENTS  
TOWN OF TAINTER, DUNN COUNTY, WI

SHEET NO. 1.0

Auth: Consulting/associates

S&N Land Surveying

BRANCH OFFICE  
2000 Foster Street  
Suite 100  
Menomonie, WI 54751  
Tel: 715-301-5277  
Fax: 715-301-9492

DATE: 12.27.24

DWG FILE: 619-012

REF FILE: 619-012

JOB NUMBER: 619-012

RELEASED FOR REVIEW  
REVISION DESCRIPTION:

JVF  
NAME:

12.27.24  
DATE:

EPOXY DOWEL/REBAR INSTALLATION GENERAL NOTES

CONCRETE PLACEMENT IN HOT WEATHER  
(SEE W CONSTRUCTION SPEC 4)

CONCRETING IN COLD WEATHER  
(SEE W CONSTRUCTION SPEC 4)

THE FOLLOWING INFORMATION INCLUDES THE MINIMUM REQUIREMENTS FOR INSTALLATION OF EPOXY DOWELS (POST INSTALLED DOWEL BAR BONDED TO CONCRETE WITH AN EPOXY ADHESIVE DESIGNED FOR SUCH USE). FOLLOW ALL MANUFACTURER'S SPECIFIC REQUIREMENTS FOR INSTALLATION. WHERE CONFLICTS ARISE BETWEEN THE MANUFACTURER'S INSTRUCTIONS AND THE INFORMATION PROVIDED BELOW, THE MANUFACTURER'S INSTRUCTIONS SHALL APPLY. THE EPOXY ADHESIVE SHALL BE A TWO PART EPOXY MEETING THE REQUIREMENTS OF ASTM C881, TYPE IV, GRADE 3, CLASS A, B, C. CLASS A IS FOR USE WHEN THE HARDENED CONCRETE IS BELOW 40° F WITH THE LOWEST ALLOWABLE TEMPERATURE AS DEFINED BY THE MANUFACTURER OF THE PRODUCT. CLASS B IS FOR USE BETWEEN 40° AND 60° F AND CLASS C IS FOR USE ABOVE 60° F WITH THE HIGHEST ALLOWABLE TEMPERATURE AS DEFINED BY THE MANUFACTURER.

1. DRILL HOLE TO REQUIRED DEPTH. GENERALLY 1/16-INCH LARGER IN DIAMETER THAN THE DIAMETER OF THE DOWEL, HOWEVER FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR HOLE SIZE.
2. CONCRETE SHALL BE A MINIMUM OF 21 DAYS OLD PRIOR TO INSTALLATION UNLESS SPECIFICALLY STATED OTHERWISE BY THE MANUFACTURER.
3. HAVE EXTRA DRILL BITS AVAILABLE AS THEY DULL QUICKLY IF THEY ENCOUNTER REBAR OR VERY HARD AGGREGATE.
4. CLEAN HOLE SEVERAL TIMES WITH A BRUSH OF APPROPRIATE DIAMETER AND COMPRESSED AIR. IT GENERALLY TAKES ABOUT 3 REPETITIONS TO REMOVE ALL DUST FROM THE HOLE. AN EXTENSION FOR THE AIR NOZZLE MAY BE NEEDED TO REACH THE BACK OF THE HOLE.
5. INSERT 2-PART EPOXY ADHESIVE PACK INTO APPROPRIATE DISPENSER.
6. INSTALL MIXER NOZZLE TO 2-PART EPOXY ADHESIVE. EXTRA NOZZLES ARE ADVISED SINCE THEY ARE UNUSABLE IF THE MATERIAL HARDENS IN THE NOZZLE.
7. DISCARD THE FIRST AMOUNT DISPENSED UNTIL THE MATERIAL IS WELL MIXED COMING OUT OF THE NOZZLE.
8. INJECT EPOXY ADHESIVE FROM THE BACK OF THE HOLE WITHOUT FORMING AIR VOIDS. SLOWLY WITHDRAW THE MIXER WITH EACH TRIGGER PULL. FILL HOLES APPROXIMATELY 2/3 FULL, OR AS REQUIRED TO ENSURE THAT THE ANNULAR GAP BETWEEN THE DOWEL AND THE CONCRETE IS COMPLETELY FILLED WITH EPOXY ADHESIVE ALONG THE ENTIRE DEPTH OF THE HOLE. AFTER INJECTION IS COMPLETE, DEPRESSURIZE THE DISPENSER TO PREVENT FURTHER DISCHARGE FROM THE MIXER.
9. INSERT CLEAN DOWEL/REBAR INTO HOLE. BE SURE THE DOWEL IS DRY AND FREE OF OIL AND OTHER CONTAMINANTS. TO EASE INSTALLATION, THE DOWELS MAY BE SLOWLY TWISTED AS THEY ARE INSERTED. AFTER INSTALLATION, THE ANNULAR GAP MUST BE COMPLETELY FILLED WITH EPOXY ADHESIVE.
10. OBSERVE THE MANUFACTURER'S GEL TIME, WHICH VARIES ACCORDING TO TEMPERATURE OF THE BASE MATERIAL. MINOR ADJUSTMENTS TO THE DOWEL/REBAR POSITION MAY BE PERFORMED DURING THE GEL TIME.
11. ONCE THE GEL TIME HAS ELAPSED, DO NOT DISTURB THE DOWEL UNTIL THE CURING TIME HAS ELAPSED. DOWELS SHALL BE FIRMLY SUPPORTED DURING THE CURING TIME.
12. APPLY TORQUE AFTER THE CURE TIME HAS PASSED AND THE FIXTURE TO BE ATTACHED HAS BEEN POSITIONED (IF BOLTING ON AN ITEM TO THE DOWEL).

MINIMUM SPLICE LENGTHS		
	GRADE 40	GRADE 60
#3 THROUGH #6 BARS TOP BARS ALL OTHER BARS	27 BAR DIAMETERS 21 BAR DIAMETERS	41 BAR DIAMETERS 32 BAR DIAMETERS
#7 AND LARGER BARS TOP BARS ALL OTHER BARS	34 BAR DIAMETERS 26 BAR DIAMETERS	51 BAR DIAMETERS 40 BAR DIAMETERS

USE OF EXPANSIVE WATERSTOP MATERIALS IN WASTE MANAGEMENT PRACTICES  
(SEE W CONSTRUCTION SPEC 004-WS EMBEDDED OR EXPANSIVE WATERSTOP)

MATERIAL

EXPANSIVE WATERSTOPS SHALL CONSIST OF PREFORMED STRIPS OR MASTIC (CAULK) MADE OF HYDROPHILIC MATERIALS THAT EXPAND WHEN SUBJECTED TO MOISTURE OR THE MATERIAL BEING STORED. THEY SHALL NOT CONTAIN BENTONITE.

THE CONTRACTOR SHALL PROVIDE THE SPECIFICATIONS FOR THE MATERIAL TO BE USED FOR APPROVAL SEVEN (7) DAYS PRIOR TO USE. THE SPECIFICATIONS SHALL INCLUDE THE APPLICABILITY OF THE MATERIAL FOR THE USE INTENDED.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/SPECIFICATIONS FOR APPROVAL SEVEN (7) DAYS PRIOR TO USE.
2. EXPANSIVE WATERSTOP SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE DRAWINGS.
3. THE EXPANSIVE WATERSTOP SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS, INCLUDING BUT NOT LIMITED TO:
  - A. CLEANING OF SURFACES
  - B. SURFACE PREPARATION
  - C. APPLICATION OF ADHESIVES (AND CURING) OR MECHANICAL FASTENING
  - D. APPLICATION OF EXPANSIVE WATERSTOP
  - E. CURING OF EXPANSIVE WATERSTOP
4. REQUIRED ADHESIVE OR OTHER FORMS OF MECHANICAL FASTENING TO EXISTING CONCRETE SHALL FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
5. ADHESIVE FOR PREFORMED EXPANSIVE WATERSTOP AND THE MASTIC FOR CAULK TYPE EXPANSIVE WATERSTOP SHALL BE ALLOWED TO CURE FOR THE DURATION AS INDICATED BY THE MANUFACTURER PRIOR TO PLACING CONCRETE OVER THE WATERSTOP. THE REQUIRED CURING TIME WILL BE TEMPERATURE DEPENDENT.
6. MASTIC (CAULK) SHALL BE PLACED TO THE BEAD SIZE AS RECOMMENDED BY THE MANUFACTURER BASED ON THE AMOUNT OF CONCRETE COVER PROVIDED.
7. THE EXPANSIVE WATERSTOP SHALL NOT BE ALLOWED TO BECOME WET PRIOR TO PLACING CONCRETE OVER THE WATERSTOP. MATERIAL THAT HAS EXPANDED PRIOR TO CONCRETE PLACEMENT SHALL BE REMOVED AND REPLACED FOLLOWING ALL OF THE INITIAL INSTALLATION REQUIREMENTS.

THE PLACEMENT OF CONCRETE IN HOT WEATHER SHALL BE AS APPROVED BY THE TECHNICIAN. UNLESS PROVISIONS ARE MADE IMMEDIATELY, THE QUALITY OF FRESHLY MIXED OR HARDENED CONCRETE WILL RESULT IN DETRIMENTAL RESULTS BECAUSE OF THE ACCELERATED THE RATE OF MOISTURE LOSS AND RATE OF CEMENT HYDRATION.

WHEN CONDITIONS AT THE TIME OF PROPOSED PLACEMENT EXIST THAT:

1. YIELD A RATE OF EVAPORATION GREATER THAN 0.10 LB./FT2/HOUR (FORMULA BELOW) OR
2. WHEN TWO OR MORE OF THE FOLLOWING FACTORS ARE EXCEEDED
  - a. AMBIENT TEMPERATURE GREATER THAN 80 DEGREES FAHRENHEIT
  - b. RELATIVE HUMIDITY LESS THAN 60 PERCENT
  - c. WIND VELOCITY(AVERAGE) GREATER THAN 10 MPH

THE TIME BETWEEN THE INTRODUCTION OF THE MIXING WATER TO THE CEMENT AND AGGREGATES AND DISCHARGE SHALL NOT EXCEED 45 MINUTES UNLESS A SET-RETARDING ADMIXTURE IS USED MEETING THE REQUIREMENTS IN SECTION 3 OF WCS-4. CONCRETE SURFACES SHALL NOT BE ALLOWED TO DRY AFTER PLACEMENT AND DURING THE CURING PERIOD. MEASURES SHALL BE TAKEN TO IMMEDIATELY PROTECT AND CURE THE CONCRETE DUE TO RAPID DRYING CONDITIONS.

RECOMMENDED ACTIONS TO REDUCE SURFACE MOISTURE LOSS AND RATE OF CEMENT HYDRATION:

- PLAN PLACEMENT TO EARLY MORNING, LATE AFTERNOON OR EVENING
- USE A FOG SPRAY TO RAISE THE RELATIVE HUMIDITY OF THE AMBIENT AIR.
- MOIST CURE THE CONCRETE SURFACE AS SOON AS THE SURFACES ARE FINISHED AND CONTINUE FOR AT LEAST 24 HOURS.
- SCHEDULE MIXER TRUCKS TO AVOID WAITING TIME SO THE CONCRETE WILL NOT BEGIN TO SET.
- SUSPEND PLACEMENT UNTIL CONDITIONS IMPROVE.

CONCRETE PLACEMENT SHALL BE SUSPENDED WHEN:

1. THE RATE OF EVAPORATION IS GREATER THAN 0.25 LB./FT2/HOUR (FORMULA BELOW) OR
2. WHEN ALL OF THE FACTORS ARE EXCEEDED
  - a. THE AMBIENT TEMPERATURE IS GREATER THAN 80 DEGREES FAHRENHEIT
  - b. RELATIVE HUMIDITY LESS THAN 40 PERCENT
  - c. WIND VELOCITY (AVERAGE) GREATER THAN 15 MPH

FORMULA: THE RATE OF EVAPORATION IS CALCULATED WITH THE FOLLOWING FORMULA OR OTHER PUBLISHED CHARTS/CALCULATORS: (NOMO-GRAPH LOCATED IN PCA DESIGN AND CONTROL OF CONCRETE MIXTURES 14TH EDITION PAGE 235-236). THEY SHOULD BE OBTAINED AT THE TIME OF PROPOSED PLACEMENT OF THE CONCRETE.

$$E = (T_a^{2.5} - rT_a^{2.5})(1 + 0.4V) \times 10^{-6}$$

WHERE:

E = EVAPORATION RATE, lb/ft<sup>2</sup>/hr  
T<sub>c</sub> = CONCRETE TEMPERATURE, °F  
T<sub>a</sub> = AIR TEMPERATURE, °F  
r = RELATIVE HUMIDITY PERCENT/100  
V = WIND VELOCITY, MPH

NEARBY REPORTING STATIONS CAN BE USED AS THE DATA SOURCE. MEASURED ON-SITE CONDITIONS CAN BE USED IN LIEU OF NEARBY REPORTING STATIONS AS APPROVED BY THE TECHNICIAN. (WIND SPEEDS AT REPORTING STATION ARE TAKEN ABOVE THE GROUND SURFACE, SO V = AVERAGE REPORTED WIND SPEEDS \* 0.66)

\*EVAPORATION FORMULA REFERENCE: PAGE 368 OF ACI MATERIALS JOURNAL, JULY-AUGUST 1998, "PLASTIC SHRINKAGE CRACKING AND EVAPORATION FORMULAS", BY PAUL J UNO, TITLE NO. 95-M34

(I) THE FOLLOWING PROVISIONS SHALL APPLY WHEN THE MINIMUM AIR TEMPERATURE AT THE LOCAL JOB SITE IS LESS THAN 35 DEGREES FAHRENHEIT (THE FORECASTED TEMPERATURE, WHICH SHALL BE VERIFIED WITH A MAXIMUM/MINIMUM THERMOMETER AT THE START OF THE MORNING JOB SHIFT)

- (I) NO CONCRETE SHALL BE PLACED WITHOUT THE REQUIRED THERMOMETERS AT THE JOB SITE.
- (II) THE CONTRACTOR SHALL FURNISH THE TECHNICIAN A RECORD OF DAILY TEMPERATURE DATA INCLUDING:
  - OUTSIDE AIR MAXIMUM AND MINIMUM TEMPERATURES AT THE LOCAL JOB SITE, AND
  - TEMPERATURES OF THE AIR ADJACENT TO THE SURFACE OF THE CONCRETE, AT SEVERAL POINTS ALONG THE CONCRETE SURFACE FOR ALL CONCRETE CURING PERIODS.

(III) WHEN THE CEMENT IS INITIALLY ADDED TO THE MIX, THE TEMPERATURE OF THE MIXING WATER SHALL NOT EXCEED 100 DEGREES FAHRENHEIT NOR SHALL THE TEMPERATURE OF THE AGGREGATE EXCEED 100 DEGREES FAHRENHEIT.

(IV) THE TEMPERATURE OF THE CONCRETE AT THE TIME OF PLACEMENT SHALL BE NOT LESS THAN 55 DEGREES FAHRENHEIT OR AT NO TIME DURING ITS PRODUCTION OR TRANSPORT MORE THAN 90 DEGREES FAHRENHEIT.

(V) PLACED CONCRETE MAY BE PROTECTED BY COVERING, HOUSING, INSULATING OR HEATING CONCRETE STRUCTURES.

(VI) THE MINIMUM AIR TEMPERATURE ADJACENT TO THE SURFACE OF THE CONCRETE SHALL BE MAINTAINED ABOVE 40 DEGREES FAHRENHEIT FOR A PERIOD OF AT LEAST 7 ACCUMULATED DAYS. THESE 7 DAYS MUST OCCUR DURING THE FIRST 10 DAYS AFTER THE CONCRETE IS PLACED. AT NO TIME, DURING THE FIRST 10 DAYS AFTER CONCRETE IS PLACED, SHALL THE MINIMUM AIR TEMPERATURE ADJACENT TO THE SURFACE OF THE CONCRETE BE LESS THAN 32 DEGREES FAHRENHEIT UNLESS TYPE III CEMENT OR AN APPROVED ACCELERATING ADMIXTURE IS USED (SEE ITEM (VII) BELOW).

(VII) THE CURING PERIOD MAY BE REDUCED FROM 7 CUMULATIVE DAYS TO 3 CONSECUTIVE DAYS WHEN TYPE III CEMENT OR AN APPROVED ACCELERATING ADMIXTURE IS USED. THE ACCELERATING ADMIXTURE SHALL BE USED AT THE PROPORTIONS RECOMMENDED BY THE MANUFACTURER. THE MINIMUM AIR TEMPERATURE ADJACENT TO THE SURFACE OF THE CONCRETE SHALL BE MAINTAINED ABOVE 40 DEGREES FAHRENHEIT FOR THE 3 DAY CURING PERIOD.

(VIII) COMBUSTION HEATERS SHALL HAVE EXHAUST FLUE GASES VENTED OUT OF THE CONCRETE PROTECTION ENCLOSURE. THE HEAT FROM HEATERS AND DUCTS SHALL BE DIRECTED IN SUCH A MANNER AS TO NOT OVERHEAT OR DRY THE CONCRETE IN LOCALIZED AREAS OR TO DRY THE EXPOSED CONCRETE SURFACE.

(IX) AT THE END OF THE CURING PERIOD, THE CONCRETE SHALL BE ALLOWED TO COOL GRADUALLY. THE MAXIMUM TEMPERATURE DECREASE AT THE CONCRETE SURFACE IN A 24-HOUR PERIOD SHALL NOT EXCEED 40 DEGREES.

FORM REMOVAL AND CONCRETE REPAIR  
(SEE W CONSTRUCTION SPEC 4)

(I) FORM REMOVAL

(I) FORMS SHALL BE REMOVED WITHOUT DAMAGE TO THE CONCRETE. SUPPORTS SHALL BE REMOVED IN A MANNER THAT PERMITS THE CONCRETE TO TAKE THE STRESSES DUE TO ITS OWN WEIGHT UNIFORMLY AND GRADUALLY. THE MINIMUM PERIOD FROM COMPLETION OF THE CONCRETE PLACEMENT TO THE REMOVAL OF THE FORMS SHALL BE BASED ON EITHER STRENGTH TESTS OR CUMULATIVE TIMES.

•THE STRENGTH OF THE IN-PLACE CONCRETE IS DETERMINED BY TESTING CONCRETE CYLINDERS SPECIFICALLY CAST FOR THIS PURPOSE AND CURED ADJACENT TO THE MEMBER IN ACCORDANCE WITH THE ASTM C 31 METHODS FOR DETERMINING REMOVAL TIME. UNLESS OTHERWISE SPECIFIED, FORMS SUPPORTING THE WEIGHT OF THE CONCRETE MEMBER MAY BE REMOVED AFTER THE CONCRETE STRENGTH IS 70 PERCENT OF THAT SPECIFIED FOR THE 28-DAY COMPRESSIVE STRENGTH.

•THE TOTAL ACCUMULATED TIME, NOT NECESSARILY CONTINUOUS, THAT THE AIR ADJACENT TO THE CONCRETE IS ABOVE 50 DEGREES FAHRENHEIT WILL BE DETERMINED BY THE CONTRACTOR AND ACCEPTED BY THE TECHNICIAN. THE FORMS MAY BE REMOVED AFTER THE TOTAL ACCUMULATED TIME SHOWN IN THE FOLLOWING TABLE:

FORM REMOVAL

FORMS		TIME
SIDE OF SLABS OR BEAMS WITHOUT WATERSTOP		12 HOURS
SIDES OF SLABS OR BEAMS WITH WATERSTOP		16 HOURS
UNDERSIDES OF SLABS OR BEAMS	CLEAR SPAN < 10 FEET	4 DAYS
	10-20 FEET	7 DAYS
	>20 FEET	14 DAYS
SIDES OF WALLS OR COLUMNS	HEIGHT OF FORMS <20FT	24 HOURS
	>20 FEET	72 HOURS

(II) FOR STRUCTURES WHICH ARE NOT REQUIRED TO STORE LIQUID, FORM TIES SHALL BE REMOVED FLUSH WITH OR BELOW THE CONCRETE SURFACE. FOR STRUCTURES WHICH ARE TO BE STORE LIQUID, FORM TIES SHALL BE REMOVED TO A MINIMUM DEPTH OF ½ INCH. ALL CAVITIES OR DEPRESSIONS RESULTING FROM FORM TIE REMOVAL SHALL BE PATCHED IN ACCORDANCE WITH J.(2)(IV).

(III) FORMS SHALL BE REMOVED AND THE CONCRETE INSPECTED BY THE TECHNICIAN BEFORE WALLS ARE BACKFILLED. CONCRETE LOADING SHALL BE IN ACCORDANCE WITH SECTION N, LOADING NEW REINFORCED CONCRETE STRUCTURES.

PROJECT:

DENMARK DAIRY  
2025 FARM IMPROVEMENTS  
TOWN OF TANTER, DUNN COUNTY, WI

SHEET NO.

2.0

CONSTRUCTION NOTES



CORPORATE OFFICE

408 Technology Drive B

Suite A

Menomonee, WI 54751

Tel 715-232-5490

Fax 715-232-8492

BRANCH OFFICE

2820 Pulse Street

Suite 101

Hudson, WI 54016

Tel 715-381-8277



Auth-Consulting/associates S&N Land Surveying

DRAWN BY:

JVF

CHECKED BY:

DAM

DATE:

12.27.24

DWG FILE:

619-012

REF FILE:

619-012

JOB NUMBER:

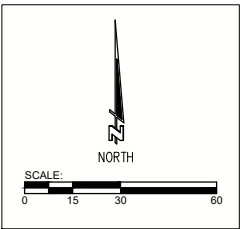
619-012

NAME:

DATE:

12.27.24





SCALE:  
0 15 30 60

NORTH

PERIMETER SAFETY FENCE  
W/ SIGNAGE (TYPICAL)  
(SEE DETAIL 3&5/5.1)

PERIMETER SAFETY FENCE  
W/ SIGNAGE (TYPICAL)  
(SEE DETAIL 3&5/5.1)

PERIMETER SAFETY FENCE  
W/ SIGNAGE (TYPICAL)  
(SEE DETAIL 3&5/5.1)

6" THICK CONCRETE FLOOR AND  
RAMP AND 5" THICK CONCRETE SIDE  
SLOPES (NON TRAFFIC AREAS)

#4 @ 8" O.C. (GRD 60)  
EACH WAY (TYPICAL)  
UNLESS NOTED OTHERWISE  
(SEE DETAIL 2/5.1)

#4 @ 8" O.C. (GRD 60)  
EACH WAY (TYPICAL)  
UNLESS NOTED OTHERWISE  
(SEE DETAIL 2/5.1)

WSF LINER:  
REDUCED SEEPAGE CONCRETE WITH  
WATERSTOP.

#4 GRADE 60 REBAR AT 8" ON CENTER  
EACH WAY

SEPARATION DISTANCES:  
2.5 FEET TO SUBSURFACE SATURATION  
2.5 FEET TO BEDROCK

PER WI NRCS SPEC 313 AND 522 & ACI  
350 (APPENDIX H)

Slab Thickness Design by PCA in Concrete Floor on Ground (2005)		DATE: 12/27/24
PROJECT: DENMARK DAIRY	COUNTY: DUNN	DATE: 12/27/24
DRAWN BY: JVF	CHECKED BY: DAM	DATE: 12/27/24
COMMENTS: Waste Storage Facility - Hazardous and Corrosive Waste		

Equipment Weight	
Weight of Equipment (empty)	30,000 lbs
Maximum Load	50,000 lbs
Total Weight	80,000 lbs

Load per Area	
Area 1	17,420 lbs
Area 2	17,420 lbs
Area 3	17,420 lbs
Total	52,260 lbs

The design will be based on a 22,450 lb load

Tires Specifications	
Tire Width	20.1 inch
Tire Air Pressure	86 psi
Effective Contact Area per Tire	25.19 sq ft
Tire Contact Length	33.36 inch
Center to Center Tire Spacing	80 inch

Typical range of 10 to 20 inches.

Farm equipment tire pressure vary greatly, typically from 20 to 100 psi. Pressure can be reduced to 10 psi for 10 to 150 psi. Tire contact area pressure range from 80 to 150 psi.

Dual Tires have an effective contact area greater than the actual contact area of the two individual tires. A conservative estimate of this effective contact area can be made using the contact area of the two tires and the area between the contact area. It is not known whether the vehicle will have dual wheels or what the wheel spacings are. There is no single conservative load and contact area can be used conservatively (ACI 308R-06, Section 4.2)

Concrete	
Concrete Compressive Strength	4,000 psi
MOR, Modulus of Rupture	609.2 psi
Factor of Safety	1.5
Allowable Stress	392.8 psi
Stress per 1,000 lbs. of Axial Load	13.3 psi

Substrate	
UNSC Classification	SP
Modulus of Subgrade Reaction - k	200 psi per inch
California Bearing Ratio - CBR	10

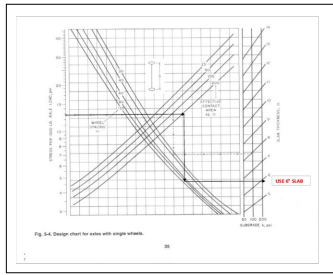
Unified Soil Classification System, ASTM D-2487

Based on Fig. 3.3 of ACI 308R-06

Based on Fig. 3.3 of ACI 308R-06

Use the following results in the PCA design chart for slabs with single wheels:	
Stress per 1,000 lbs. of Axial Load	13.3 psi
Effective Contact Area	25.19 sq ft
Center to Center Tire Spacing	80 inch
Modulus of Subgrade Reaction - k	200 psi per inch (psi)

Slab Thickness: 6 inch



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PROJECT: DENMARK DAIRY  
2025 FARM IMPROVEMENTS  
TOWN OF TANTER, DUNN COUNTY, WI

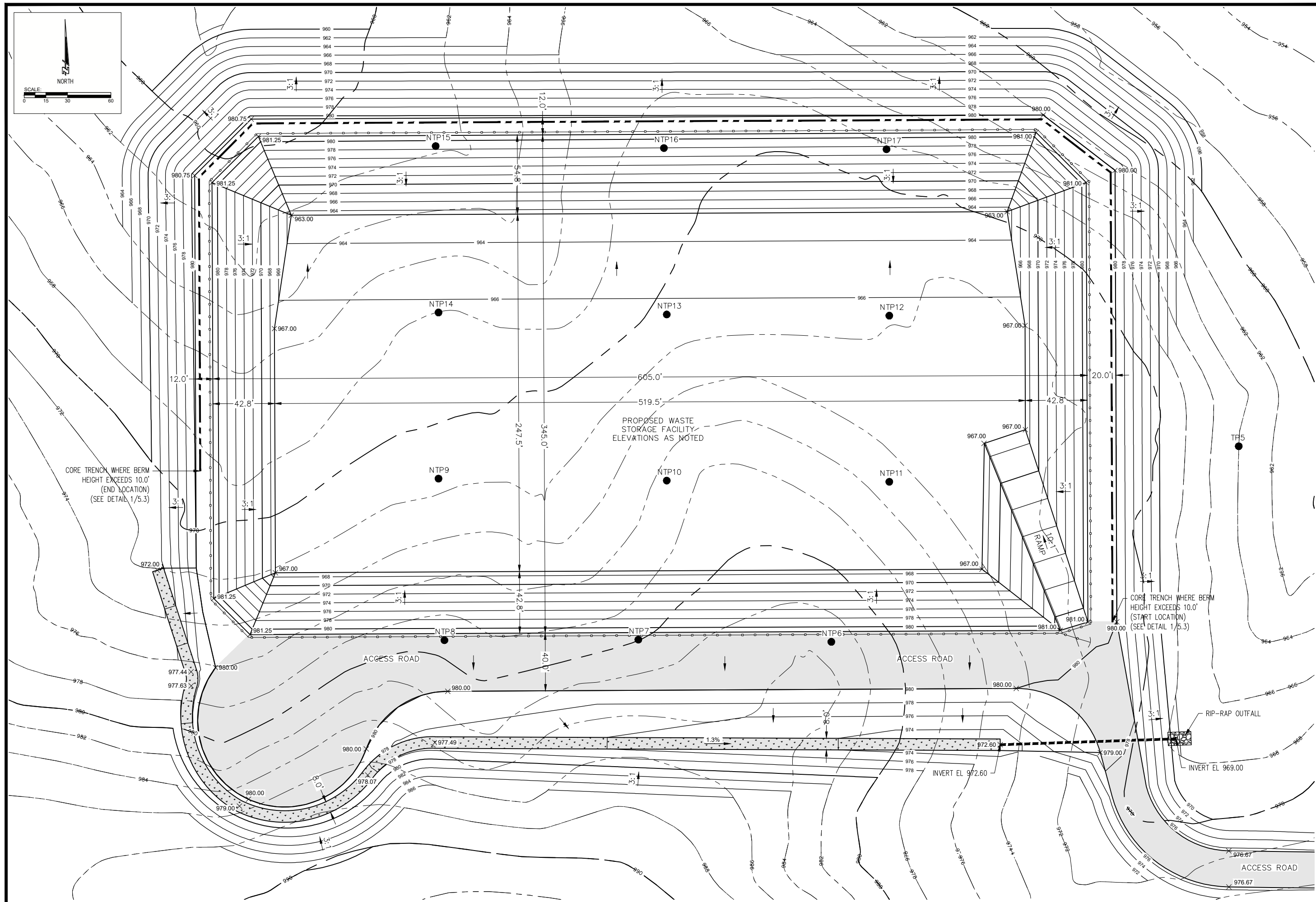
SITE PLAN - WASTE STORAGE FACILITY

SHEET NO.  
3.1

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JOB NUMBER: 619-012

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NAME: JVF  
DATE: 12/27/24

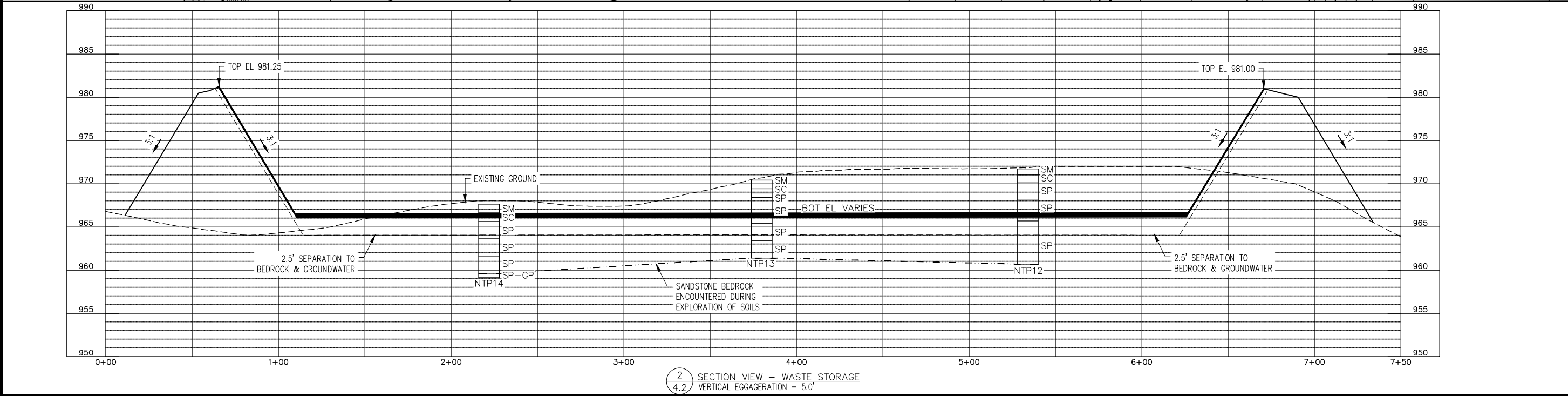
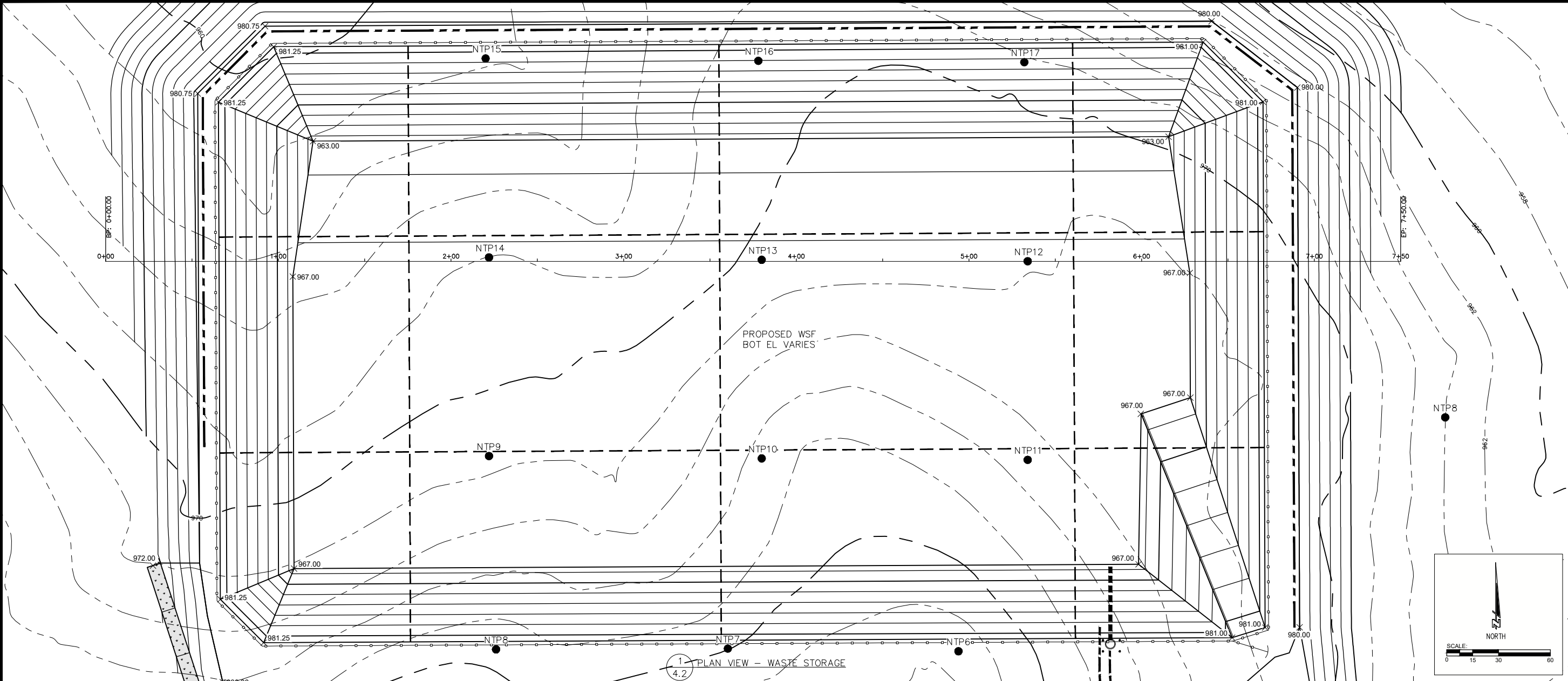
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2025 FARM IMPROVEMENTS										DATE: 12.27.24									
TOWN OF TAINTER, DUNN COUNTY, WI										DWG FILE: 619-012									
GRADING PLAN—WASTE STORAGE FACILITY										REF FILE: 619-012									
SHEET NO.										RELEASED FOR REVIEW									
4.0										REVISION DESCRIPTION:									
										NAME:									
										DATE:									
										12.27.24									

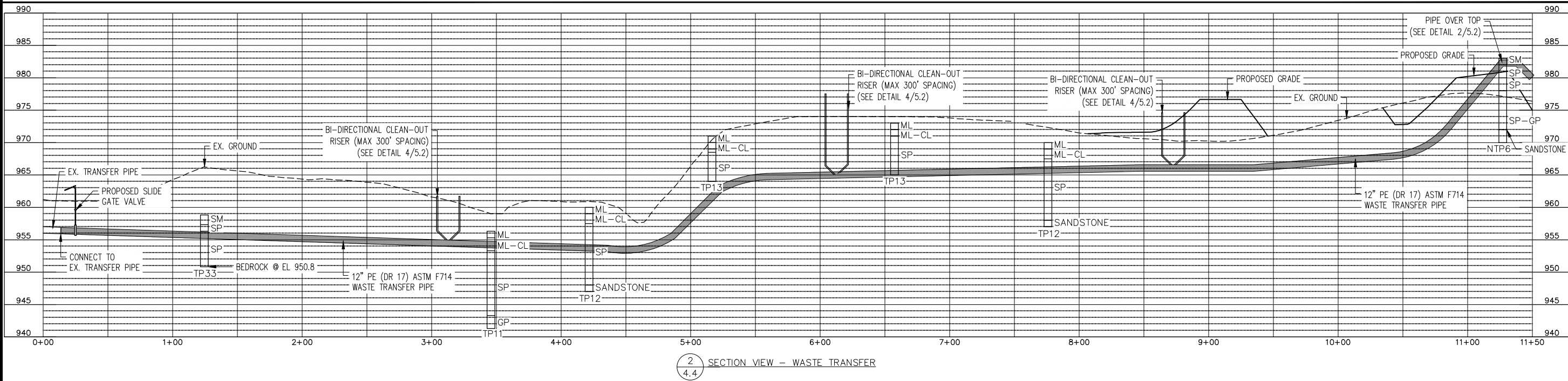
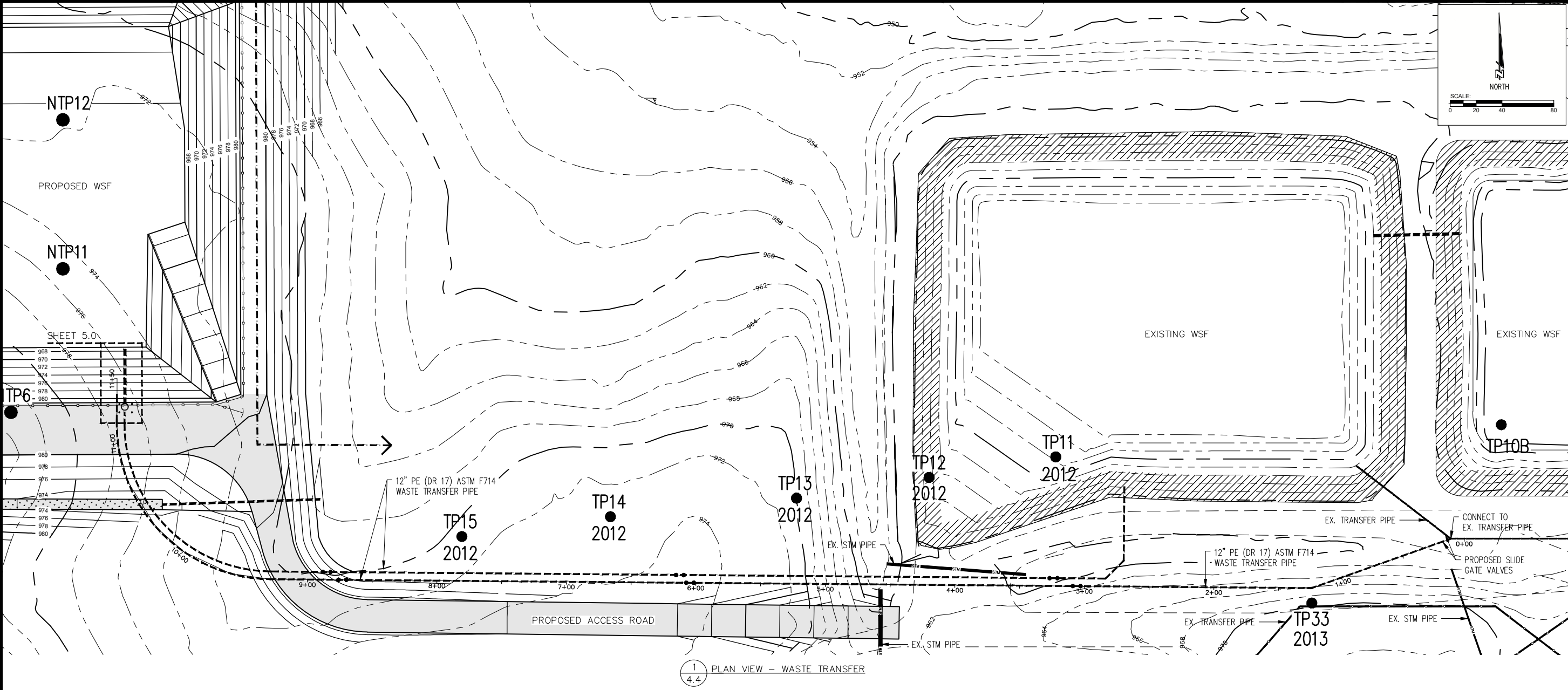
			
CORPORATE OFFICE 406 Technology Drive E. Suite 101 Menomonee, WI 54751 Tel 715-232-8490 Fax 715-232-8492		BRANCH OFFICE 2320 Racine Street Suite 101 Hudson, WI 54016 Tel 715-381-5277	
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PROJECT:		DENMARK DAIRY 2025 FARM IMPROVEMENTS TOWN OF TAINTER, DUNN COUNTY, WI	
SHEET NO.		4.2	
PLAN & PROFILE - WASTE STORAGE		Auth-Consulting/associates S&N Land Surveying	
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DATE: 12-27-24		DATE: 12-27-24	
DWG FILE: 619-012		DWG FILE: 619-012	
REF FILE: 619-012		REF FILE: 619-012	
JOB NUMBER: 619-012		JOB NUMBER: 619-012	
RELEASED FOR REVIEW		RELEASED FOR REVIEW	
NAME:		NAME:	
DATE: 12-27-24		DATE: 12-27-24	






PROJECT:		DENMARK DAIRY 2025 FARM IMPROVEMENTS TOWN OF TANTER, DUNN COUNTY, WI	
SHEET NO.		4.4	
DRAWN BY:		JVF	
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JOB NUMBER:		619-012	
RELEASED FOR REVIEW		JVF 12-27-24	
REVISION DESCRIPTION:		NAME:	



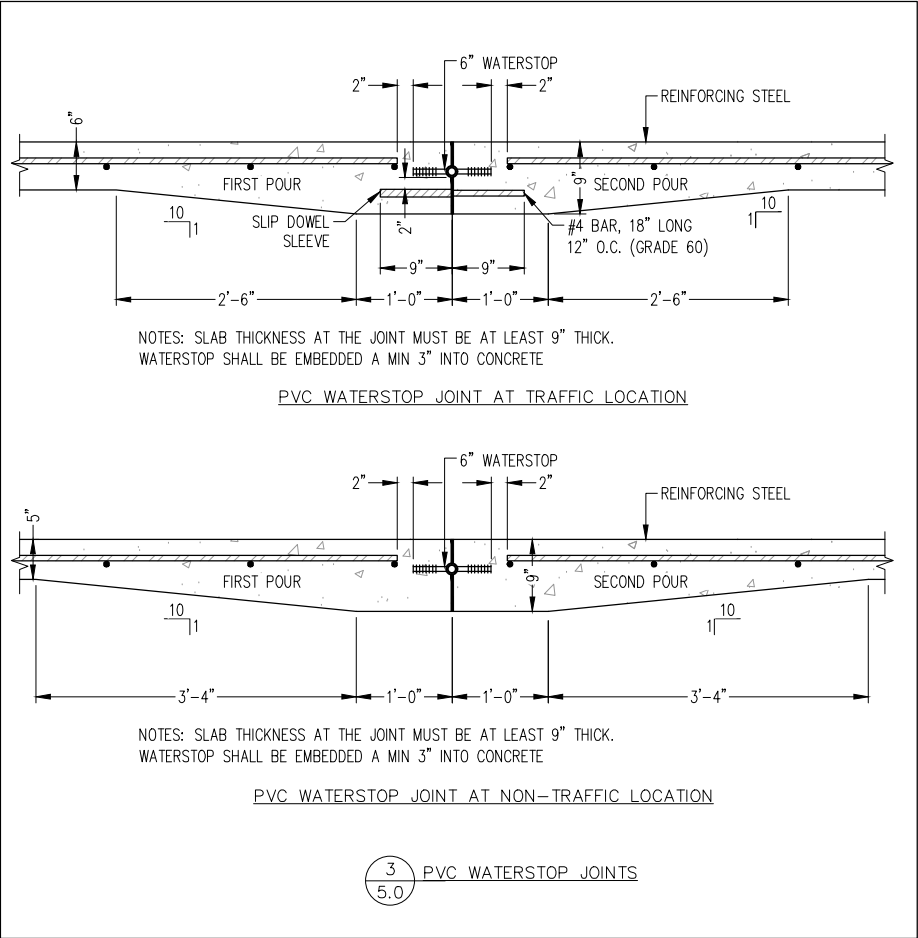
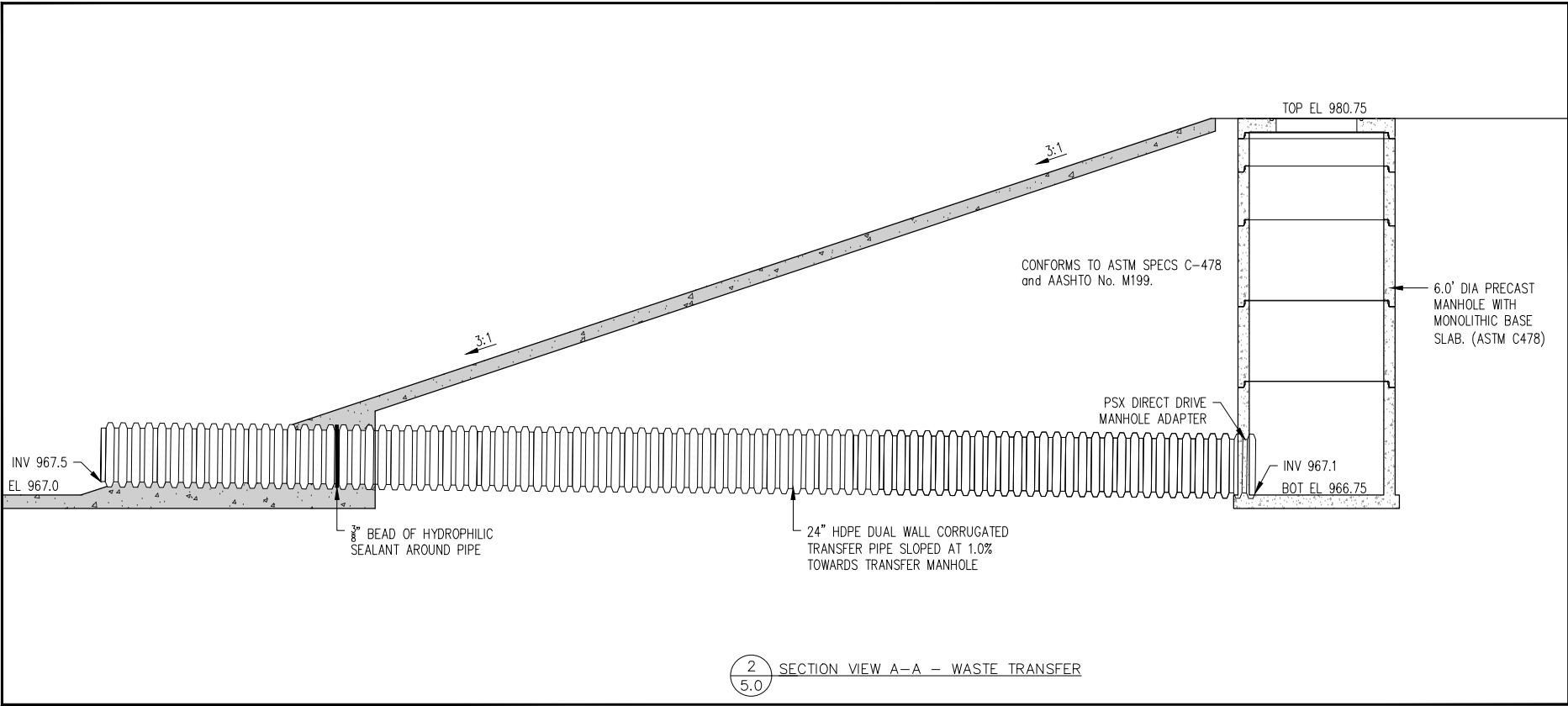
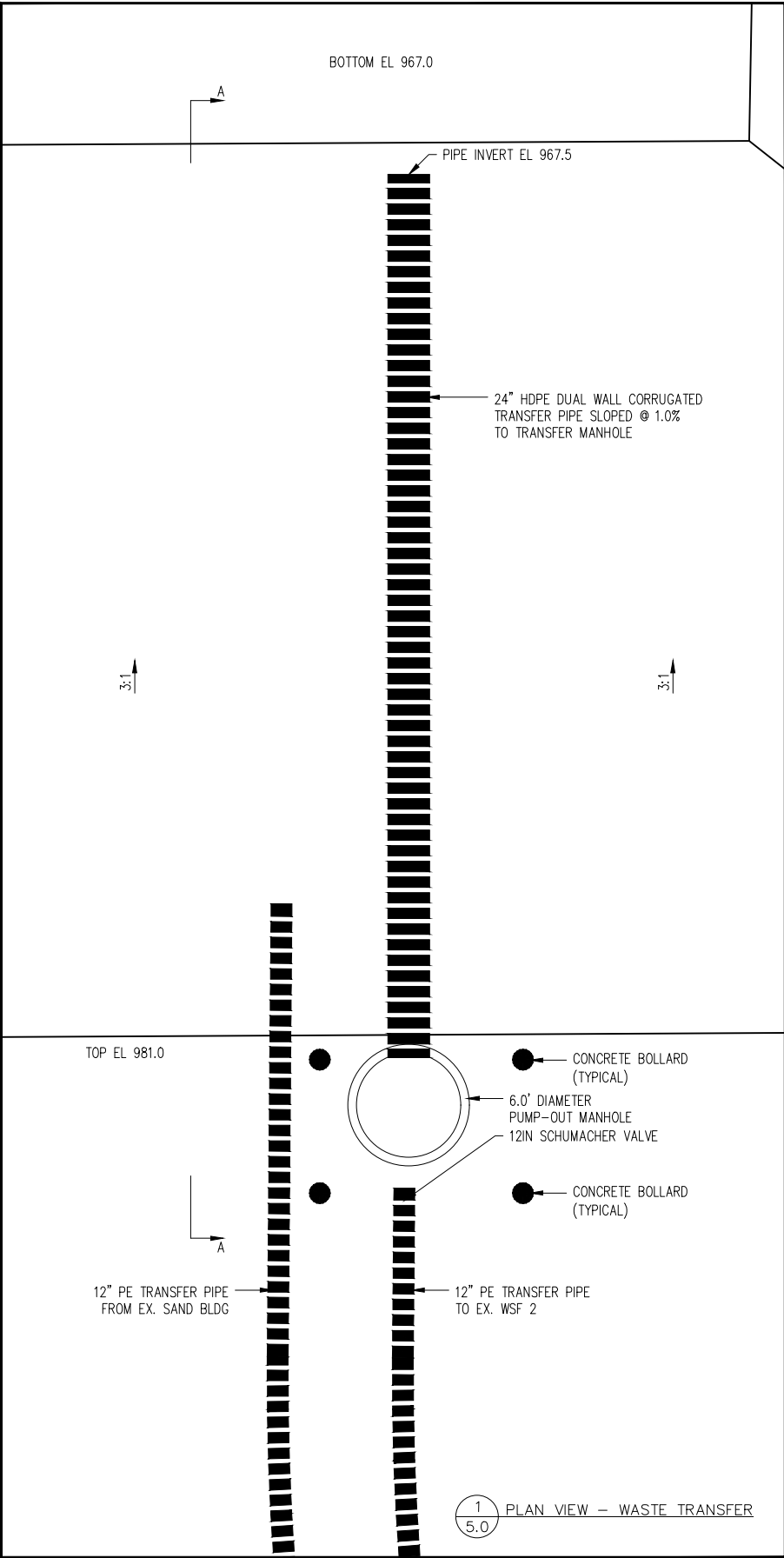
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Fax 715-232-8482

**BRANCH OFFICE**  
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Tel 715-381-8277



PROJECT:

DENMARK DAIRY  
2025 FARM IMPROVEMENTS  
TOWN OF TAINTER, DUNN COUNTY, WI

SHEET NO.

5.0

12-27-24

DATE:

JVF

NAME:

RELEASED FOR REVIEW

REVISION DESCRIPTION:

619-012

JOB NUMBER:

619-012

REF FILE:

619-012

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12-27-24

DATE:

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CHECKED BY:

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A.C/a

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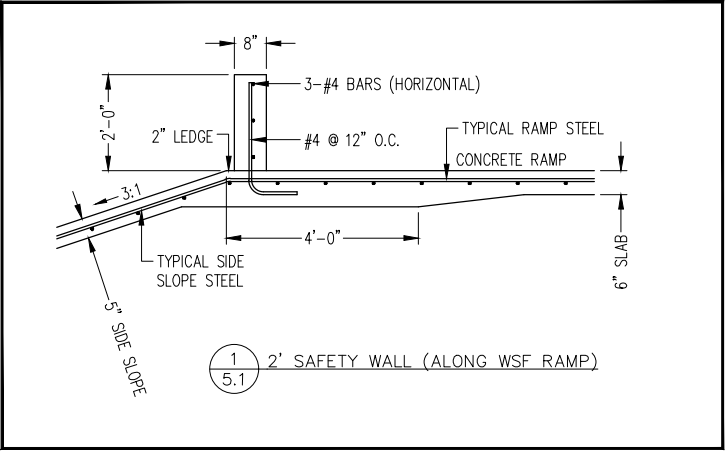
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Fax 715-232-8482

SECTIONS & DETAILS



SAFETY SIGNS ARE TO BE PLACED ON ALL FOUR SIDES OF THE WASTE STORAGE FACILITY.

THE FOLLOWING SIGNS COULD BE UTILIZED:

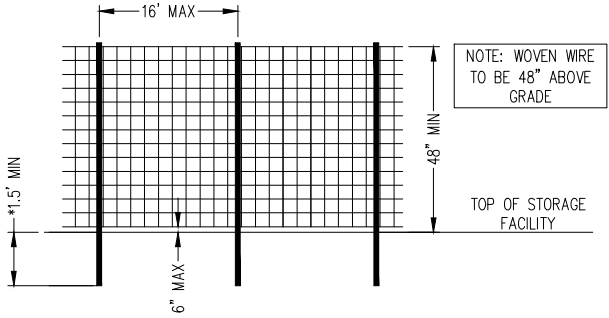
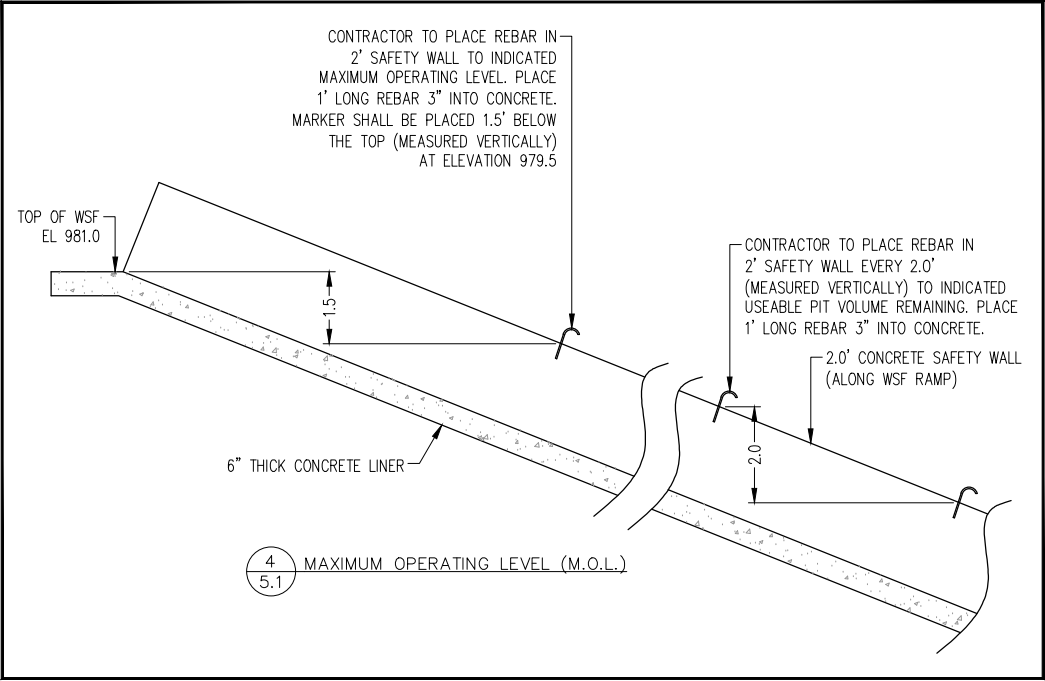
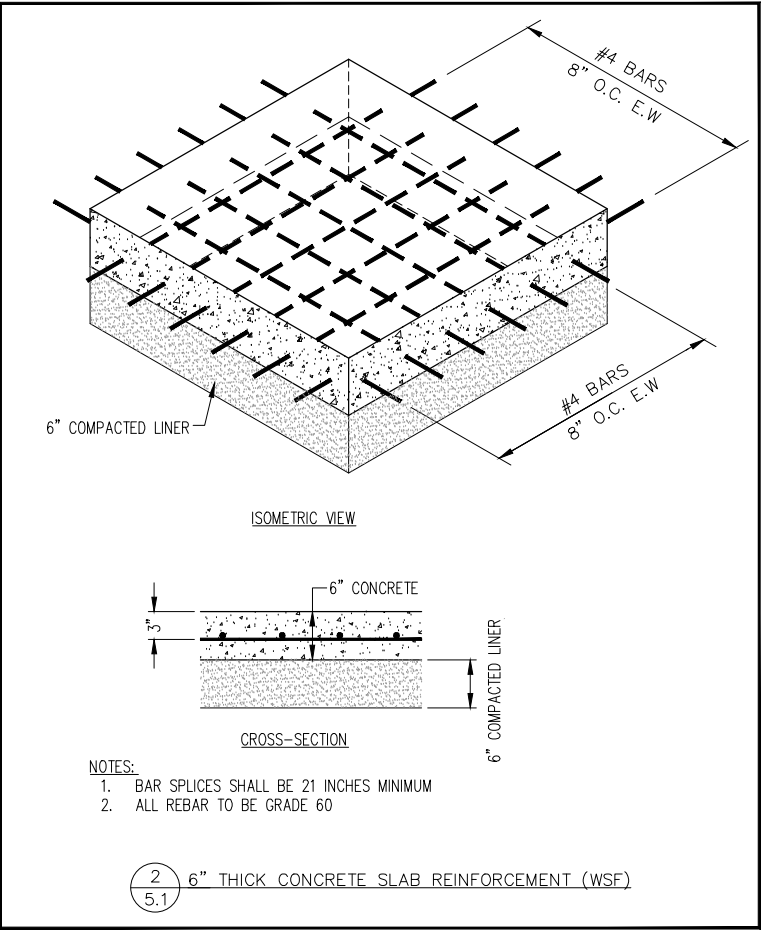
14"x10" HIGH-DENSITY .055 GAUGE POLYETHYLENE GEMPLER'S ITEM #219080 OR APPROVED EQUIVALENT.

**DANGER/PELIGRO**  
**CONFINED SPACE**  
ESPACIO LIMITADO

10"x14" HIGH-DENSITY .055 GAUGE POLYETHYLENE GEMPLER'S ITEM #219141 OR APPROVED EQUIVALENT.

**DANGER**  
LIQUID MANURE STORAGE  
**PELIGRO**  
ALMACENAJE DE ESTIERCOL LIQUIDO

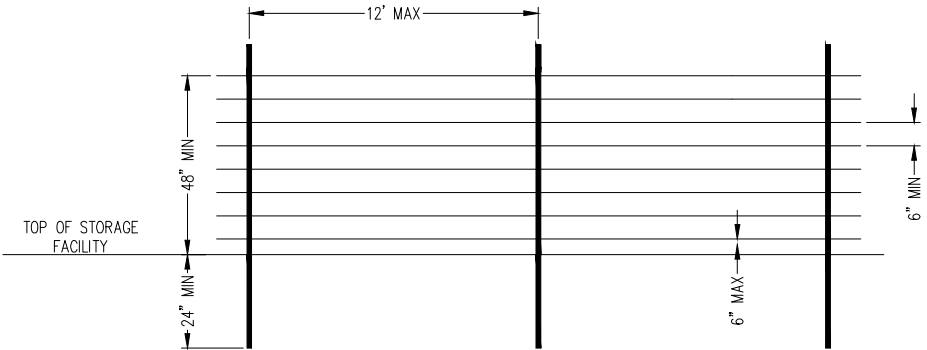
3 SIGNAGE  
5.1



**WOVEN WIRE SAFETY FENCE DETAIL**  
N.T.S.

**NOTES:**

- WOOD POSTS ARE TO BE TREATED PINE (MIN. 4" DIA.) ACCORDING TO CONSTRUCTION SPEC 10 FENCE.
- STEEL POSTS TO BE AT LEAST 1.375"x1.375x0.125" THICK HOT ROLLED CARBON STEEL. THEY SHALL BE PAINTED, ENAMELED AND BAKED; OR THEY MAY BE HOT DIP GALVANIZED. THEY SHALL BE STUDDED TO AID IN WIRE ATTACHMENT.
- STEEL POSTS TO HAVE MINIMUM LENGTH OF 6.0' WITH A MINIMUM DEPTH OF 1.5.
- WOOD POSTS TO HAVE MINIMUM LENGTH OF 7.0' WITH A MINIMUM DEPTH OF 2'
- STANDARD WOVEN WIRE FENCE SHALL MEET NRCS WI SPECIFICATION AND ASTM STANDARD A 116.
- TOP AND BOTTOM WIRES IN WOVEN WIRE TO BE 10 GAUGE OR HEAVIER.
- INTERMEDIATE WOVEN WIRE TO BE 14 GAUGE OR HEAVIER.
- FASTENERS FOR WOOD POSTS TO BE 9-GUAGE, CLASS 3 GALVANIZED STEEL STAPLES. THEY MUST BE 1.75" LONG FOR PINE POSTS OR 1" FOR OAK POSTS.
- FASTENERS FOR STEEL POSTS TO BE 14-GAUGE, CLASS 3 GALVANIZED WIRE.
- ADDED BARBED WIRE IS TO BE TWO TWISTED STRANDS OF 12 1/2 GAUGE OR HEAVIER. BARBS TO BE 14 GAUGE OR HEAVIER AND ON APPROXIMATELY 5" CENTERS.
- EVERY HORIZONTAL WIRE TO BE FASTENED TO EACH VERTICAL POST.
- FENCING TO BE ON OUTSIDE OF POSTS ALONG CURVES AND AREAS BEING PROTECTED.
- FENCE SHALL NOT ALLOW PASSAGE OF A 6" SPHERE BETWEEN ANY FENCE MEMBER.



**HIGH TENSILE WIRE SAFETY FENCE DETAIL**  
N.T.S.

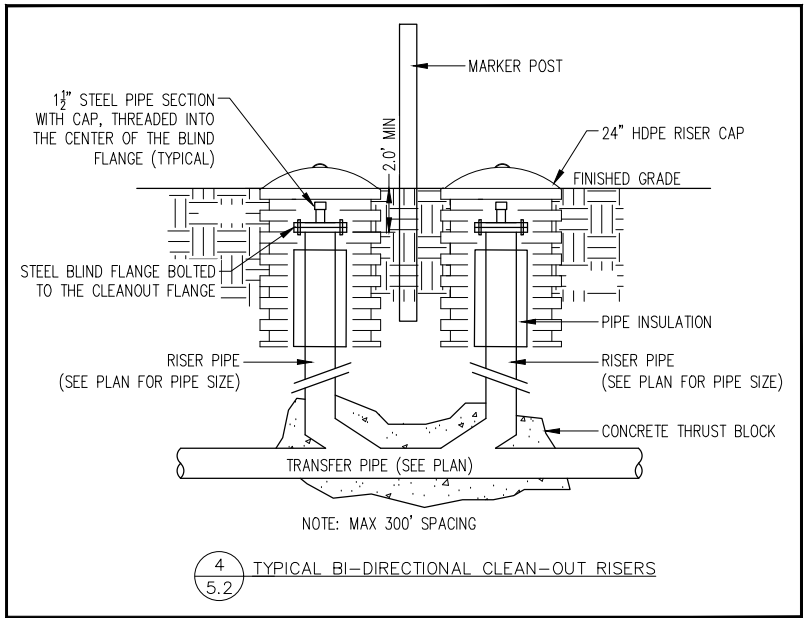
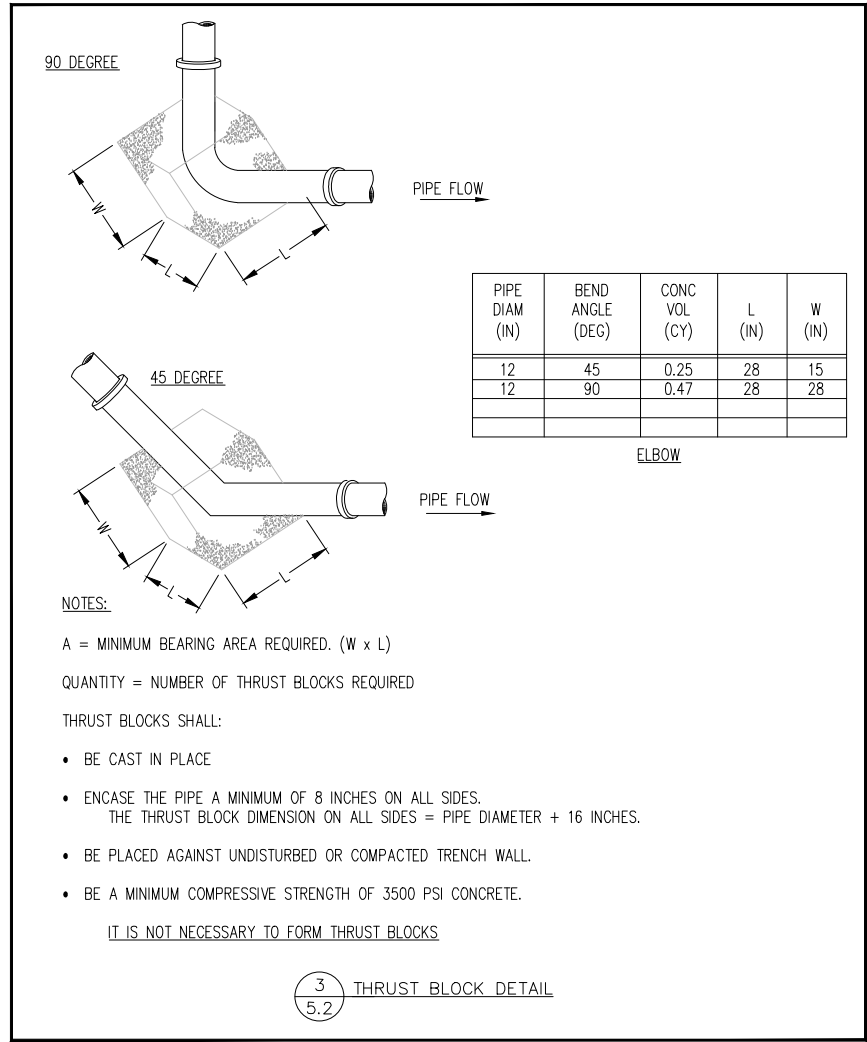
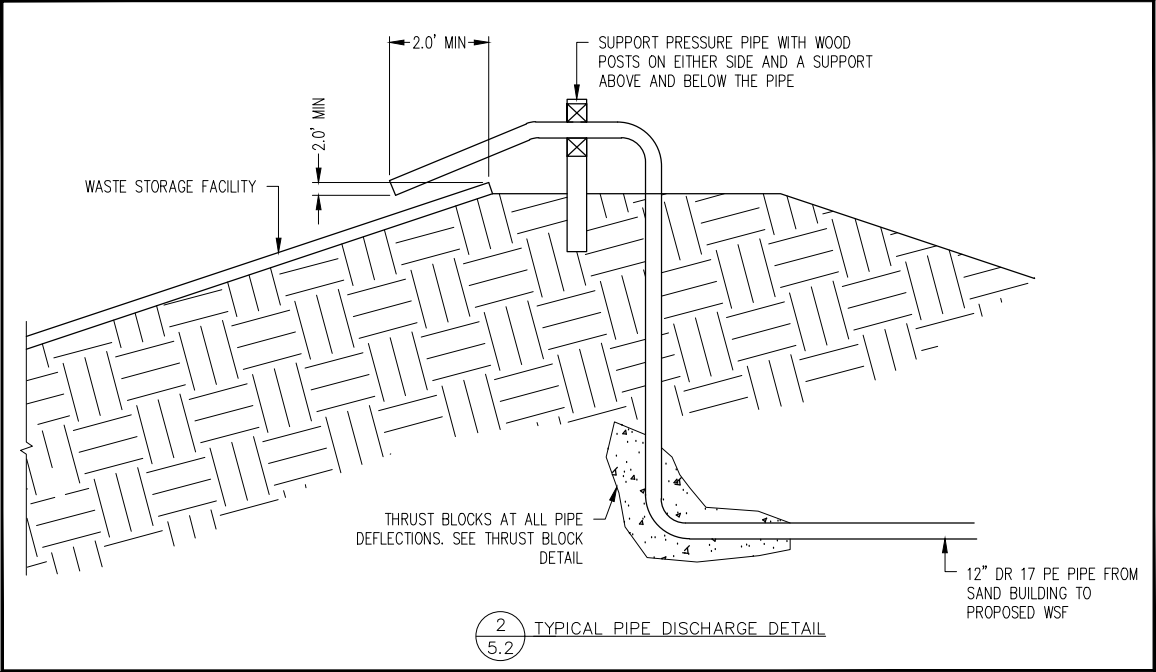
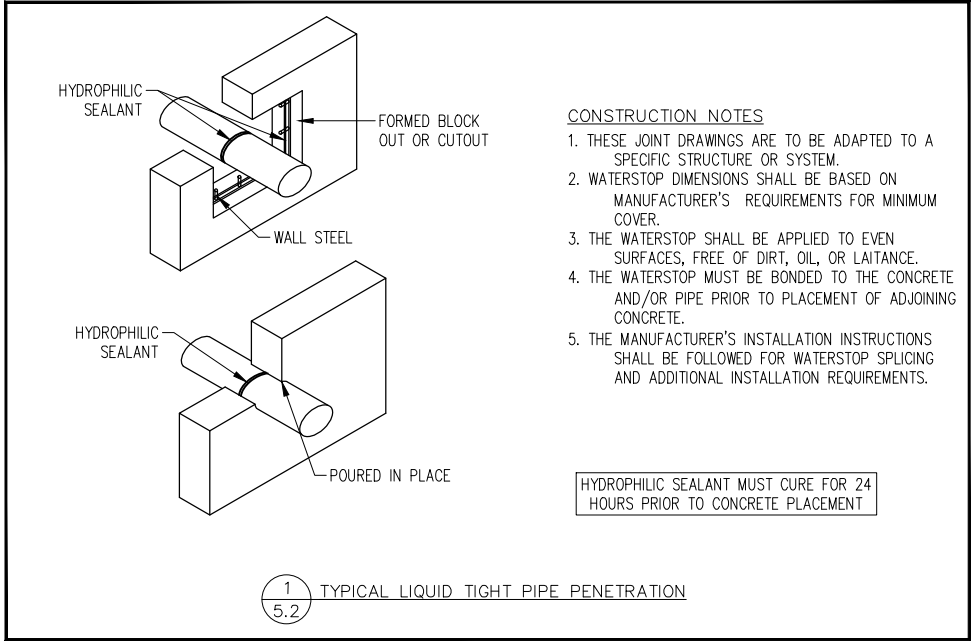
SEE WISCONSIN NRCS CONSTRUCTION SPECIFICATION, (10 FENCES), FOR ADDITIONAL FENCING REQUIREMENTS.

**GENERAL FENCING NOTES:**

- WOOD POSTS ARE TO BE TREATED PINE (MIN. 4" DIA.) ACCORDING TO CONSTRUCTION SPEC 10 FENCE.
- STEEL POSTS TO BE AT LEAST 1.375"x1.375x0.125" THICK HOT ROLLED CARBON STEEL. THEY SHALL BE PAINTED, ENAMELED AND BAKED, OR THEY MAY BE HOT DIP GALVANIZED THEY SHALL BE STUDDED TO AID IN WIRE ATTACHMENT.
- HIGH TENSILE PERMANENT (NON ELECTRIC) WIRE TO MEET ASTM A 854. IT SHALL BE GALVANIZED SMOOTH HIGH TENSILE CLASS III STEEL, MIN. OF 12.5-GAUGE WITH A TYPE 1 ZINC COATING (GALVANIZED)
- FASTENERS FOR WOOD POSTS TO BE 9-GUAGE, CLASS 3 GALVANIZED STEEL STAPLES. THEY MUST BE 1.75" LONG FOR PINE POSTS OR 1" FOR OAK POSTS.
- FASTENERS FOR STEEL POSTS TO BE 14-GAUGE, CLASS 3 GALVANIZED WIRE.
- EVERY WIRE IS TO BE FASTENED TO EACH VERTICAL POST.
- FENCING TO BE ON OUTSIDE OF POSTS ALONG CURVES AND AREAS BEING PROTECTED.
- FENCE SHALL NOT ALLOW PASSAGE OF A 6" SPHERE BETWEEN ANY FENCE MEMBER.
- STEEL POSTS TO HAVE MINIMUM LENGTH OF 6.0' WITH A MINIMUM DEPTH OF 1.5'.
- WOOD POSTS TO HAVE MINIMUM LENGTH OF 7.0' WITH A MINIMUM DEPTH OF 2'.

**5 PERIMETER SAFETY FENCE**  
5.1

PROJECT:	DENMARK DAIRY 2025 FARM IMPROVEMENTS TOWN OF TAINTER, DUNN COUNTY, WI	SECTION & DETAILS	DATE: 12-27-24
SHEET NO.	5.1		NAME: JVF
A.C/a		Auth-Consulting/associates	S&N Land Surveying
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DATE:	12-27-24	DWG FILE:	619-012
REF FILE:	619-012	JOB NUMBER:	619-012
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SEEDING DATES		NORTH		
TIME PERIOD		DATES		TYPE OF SEEDING
Spring	May 1	through	June 15	Permanent
Summer	June 16	through	see WI-710ss pg 2	Temporary *
Late Summer	July 15	through	August 10	Permanent
Fall	August 11	through	see WI-710ss pg 2	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	Snow Cover	through	April 30	Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K2O) per acre. Apply two tons / acre of 80-89 lime or equivalent. (See page 2 for equivalent)

\* Seed a temporary cover crop of Annual Ryegrass at 20 #/ac ( 0.8 bu/ac) A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)<sup>1</sup> RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX (DESIGN)	6	LOCATION: ACRES	SITE 4.00	SEEDING MIX (AS-BUILT)	LOCATION ACRES	
SPECIES		RATE	POUNDS	SPECIES	RATE	POUNDS
Smooth Bromegrass		7.1	28.6			
Timothy		2.0	8.2			
Creeping Red Fescue		1.0	4.1			
Kentucky Bluegrass		1.0	4.1			
Perennial Ryegrass		3.1	12.2			
Red Clover		3.1	12.2			
** Annual Ryegrass		6.0	24.0			

<sup>1</sup> PLS lbs. = (total % Germination / 100 \* % Purity / 100) \* Net Weight (lbs.) ADDITIONAL SEED PERCENT: 2 %

\*\*\* Companion Crop Mulching Required Yes

Total % Germination may also be termed Total % Viable Seed on a tag. If a tag only shows % Germination, the user must include percentage of the seed that germinated during the lab test (% Germination) plus the percentage of hard and/or dormant seed. Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These addition are allowed.

Seed mixture shall meet all requirements of the WI weed laws.

Species identified as restricted or prohibited by law shall not be planted.

Certified seed shall be used, and the seeding rates will be based on pure live seed.

For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.

Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates less than 1/4 inch deep.

Figure 1. Planing Zones

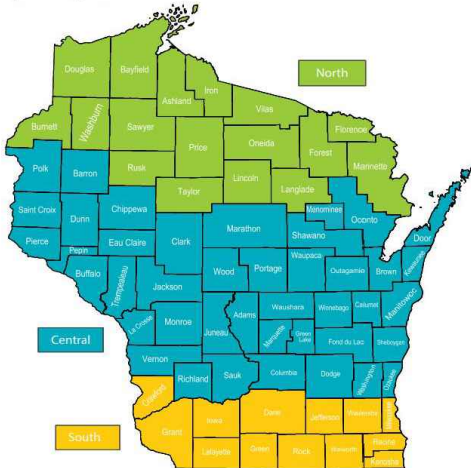


Table 1. Seeding Date/Ranges for Native Mixtures and Companion Crops

Zone	Spring Seeding
Northern	Thaw - 7/15
Central	Thaw - 6/30
Southern	Thaw - 6/30

GENERAL SEEDING NOTES (REFER TO WI NRCS PRACTICE STANDARD 342 – CRITICAL AREA PLANTING)

SEEDBED PREPARATION

A MINIMUM OF 4 INCHES OF FRIABLE SOIL MATERIAL OR TOPSOIL SHALL BE ADDED AND MIXED TO EXPOSED ROCKY, SANDY, GRAVELLY, SHALE MATERIAL, OR EXTREMELY FINE TEXTURED SUBSOIL. ALL GULLIES AND DEEP RILLS WILL BE FILLED AND LEVELED DURING SEEDBED PREPARATION. PRIOR TO PLANTING INTO CROPLAND FIELDS, VERIFY THAT HERBICIDES PREVIOUSLY APPLIED TO THE SITE WILL NOT "CARRY OVER" AND DAMAGE THE NEW SEEDING. SITE PREPARATION SHALL BE ADEQUATE TO ASSURE WEED SUPPRESSION AND TO PROMOTE GERMINATION AND GROWTH OF THE SPECIES PLANTED. PLANTING EQUIPMENT TYPE, USE, AND TIMING SHALL BE APPROPRIATE FOR THE SITE CONDITIONS, SOIL CHARACTERISTICS, AND TYPE OF SEEDS (SIZE, ETC.) SELECTED TO ASSURE UNIFORM PLACEMENT AND GERMINATION. REFER TO WISCONSIN AGRONOMY TECHNICAL NOTES 5 AND 6 FOR DETAILED GUIDANCE FOR SPECIFIC SITUATIONS.

MULCHING, TEMPORARY COVER, AND COMPANION CROP

PLANTINGS SHALL BE MULCHED AS NECESSARY TO ENSURE ESTABLISHMENT. OTHER DISTURBED AREAS SHALL BE MULCHED AS NECESSARY TO PREVENT EROSION. MULCHING, TEMPORARY COVER, AND COMPANION CROPS ARE VITAL PRACTICES UTILIZED TO SUPPORT THE ESTABLISHMENT OF A CRITICAL AREA PLANTING. TEMPORARY COVER AND COMPANION CROPS SUPPRESS WEED GROWTH AND LIMIT SOIL EROSION DURING THE ESTABLISHMENT PERIOD. USE DEPENDS ON THE SITE CONDITIONS, METHOD OF PLANTING, AND SEED MIXTURE. FOR FURTHER DETAILS ON MULCHING, TEMPORARY COVER AND COMPANION CROP RECOMMENDATIONS, REFER TO WISCONSIN AGRONOMY TECHNICAL NOTES 5 AND 6.

CRITERIA FOR SEED MIXTURE DEVELOPMENT

SEEDING RATES ARE BASED ON SEEDS PER SQUARE FOOT OF PURE LIVE SEEDS. REFER TO WISCONSIN AGRONOMY TECHNICAL NOTES 5 AND 6 FOR THE RECOMMENDED SPECIES AND SEEDING RATES. APPROVED SPECIES FOR CRITICAL AREA PLANTING CAN BE FOUND IN WISCONSIN AGRONOMY TECHNICAL NOTES 5 AND 6. SPECIES NOT LISTED IN THE TECHNICAL NOTES MUST BE APPROVED IN ADVANCE BY THE STATE AGRONOMIST. INTRODUCED GRASS AND LEGUME PLANTINGS ON CRITICAL SITES. CUSTOM AND STANDARD MIXTURES WILL CONTAIN AT LEAST 50 PERCENT GRASS SEED OF WHICH 25 PERCENT WILL BE SOD FORMING (NOT BUNCH) GRASS. A MINIMUM OF 160 SEEDS PER SQUARE FOOT IS REQUIRED FOR EITHER A SOLID STAND OF GRASSES OR A COMBINATION OF GRASSES AND LEGUMES. INCREASE SEEDING RATE BY 15 PERCENT WHEN DORMANT SEEDING OCCURS. REFER TO TABLE 8 OF AGRONOMY TECHNICAL NOTE 6 FOR SUGGESTED SEED MIXES.

NATIVE HERBACEOUS PLANTINGS ON CRITICAL SITES

NATIVE SPECIES ARE GENERALLY NOT RECOMMENDED FOR CRITICAL AREA PLANTINGS DUE TO THEIR SLOW ESTABLISHMENT AND BECAUSE THEY ARE CLUMP GRASSES RATHER THAN SOD FORMING. ONLY SOD FORMING GRASSES ARE PERMITTED IN CONCENTRATED FLOW CHANNELS. COMPETITION AND POOR ESTABLISHMENT OF SOME SPECIES. SEEDS PER SQUARE FOOT SHOULD NOT EXCEED 25 PERCENT OF THE MINIMUM REQUIREMENT, WITH THE EXCEPTION OF MIXTURES DESIGNED FOR WET MESIC AND WET SITES.

Table 2. Seeding Date/Ranges for Introduced Grasses, Legumes, and Companion Crops

Planting Zone	Spring	Late Summer	Dormant
North	5/1 - 6/15	7/15 - 8/10	11/1 - Freeze Up
Central	4/15 - 6/1	8/1 - 8/21	11/1 - Freeze Up
South	4/1 - 5/15	8/7 - 8/29	11/1 - Freeze Up

STORMWATER RUNOFF CONTROL (WI NRCS PRACTICE STANDARD 570)

THE STORMWATER PLAN IS INTENDED TO REDUCE THE IMPACTS OF STORMWATER RUNOFF FROM THE SITE BASED ON AN ASSESSMENT OF THE DOWNSTREAM AREA. AS APPLICABLE INCLUDED IN THIS PLAN ARE PRACTICES OR MANAGEMENT ACTIVITIES THAT WILL REDUCE ON-SITE EROSION, REDUCE OFF-SITE IMPACTS FROM SEDIMENTATION, REDUCE THE QUANTITY OF STORMWATER LEAVING THE SITE TO LEVELS THAT WILL NOT ADVERSELY AFFECT DOWNSTREAM RECEIVING CHANNEL, IMPROVE THE QUALITY O RUNOFF LEAVING THE SITE AND LEAVE THE SITE IN A STABLE CONDITION AFTER CONSTRUCTION.

VEGETATIVE MEASURES

WHERE APPROPRIATE, STABILIZE ALL AREAS DISTURBED BY CONSTRUCTION WITH VEGETATION AS SOON AS POSSIBLE AFTER CONSTRUCTION. REFER TO WI NRCS CPS, CRITICAL AREA PLANTING (CODE 342), FOR ESTABLISHMENT OF VEGETATION. IF VEGETATION IS NOT APPROPRIATE FOR THE SITE, USE OTHER MEASURES TO STABILIZE THE AREA.

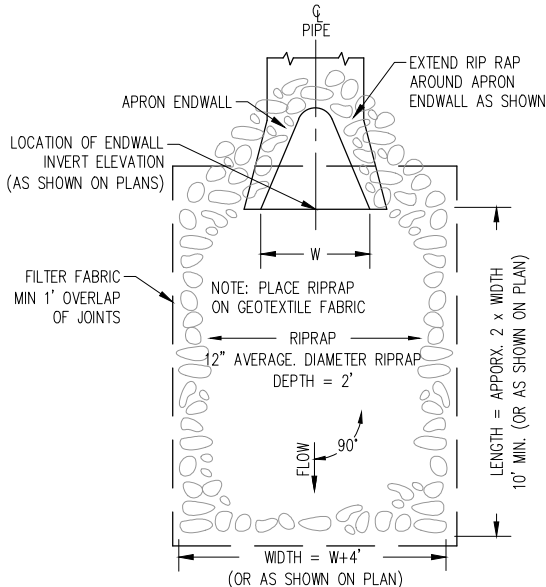
SAFETY

DETENTION PONDS AND OTHER AREAS WHERE WATER IS DETAINED OR FLOWS SWIFTLY, CAN PRESENT HAZARDS TO THE PUBLIC. WHERE NECESSARY, INCLUDE APPROPRIATE SAFETY FEATURES TO WARN OF POTENTIAL DANGERS OR DETER ENTRY TO HAZARDOUS AREAS SUCH AS FENCES, GATES AND WARNING SIGNS.

TEMPORARY SEDIMENT BARRIERS

STRAW BALE SEDIMENT BARRIERS

STRAW BALE SEDIMENT BARRIERS SHOULD ONLY BE USED IN SITUATIONS WHERE A LIFE SPAN OF LESS THAN 3 MONTHS IS REQUIRED. STRAW BALE SEDIMENT BARRIERS SHALL BE INSTALLED ON THE CONTOUR, EXCEPT THAT THE ENDS SHALL BE EXTENDED UPSLOPE TO PREVENT WATER FROM BYPASSING THE ENDS. THE MAXIMUM LENGTH OF UNCONTROLLED SLOPE UPSTREAM FROM A STRAW BALE SEDIMENT BARRIER SHOULD BE 100 FEET. BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE BALE, NO THE TOP AND BOTTOM OF THE BALES. THE STRAW BALES MUST BE ENTRENCHED AT LEAST 4 INCHES INTO THE GROUND AND ANCHORED WITH TWO STAKES DRIVEN THROUGH THE BALE AND AT LEAST 12 INCHES INTO THE GROUND. THE STAKES SHALL BE 2"X 2" (NOMINAL) WOODEN STAKES, STANDARD STEEL FENCE POSTS, OR ½-INCH DIAMETER STEEL REINFORCING BARS. SOIL SHALL BE COMPACTED AGAINST THE UPSTREAM BASE OF THE BALES TO PREVENT UNDERMINING BY RUNOFF. GAPS BETWEEN BALES MUST BE FILLED BY WEDGING THEM FULL OF LOOSE STRAW OR EQUIVALENT MATERIAL TO PREVENT WATER FLOW BETWEEN THE BALES. STRAW BALE SEDIMENT BARRIERS SHALL NOT BE USED IN CHANNELS OR OTHER AREAS OF CONCENTRATED FLOW. STRAW BALE SEDIMENT BARRIERS SHALL BE REMOVED ONCE THE DISTURBED AREA IS PERMANENTLY STABILIZED AND NO LONGER SUSCEPTIBLE TO EROSION.



LAY GEOTEXTILE FABRIC AT 90° TO FLOW. START FABRIC AT LOW END OF AREA AND OVERLAP SECTIONS AS WORK PROCEEDS UPHILL.

RIPRAP AT CULVERT ENDWALL  
N.T.S.

PROJECT:

DENMARK DAIRY  
2025 FARM IMPROVEMENTS  
TOWN OF TANTER, DUNN COUNTY, WI

SHEET NO.

6.1

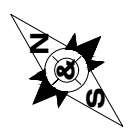
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EROSION CONTROL DETAILS

Auth-Consulting/associates

S&N Land Surveying

DRAWN BY: JVF

CHECKED BY: DAM

DATE: 12-27-24

DWG FILE: 619-012

REF FILE: 619-012

JOB NUMBER: 619-012

RELEASED FOR REVIEW

REVISION DESCRIPTION:

NAME:

JVF

12-27-24

DATE: