

PLANNING AND ZONING ADVISORY COMMISSION AGENDA

Date: February 27, 2023

Time: Following the adjournment of the Nicollet County Board of Adjustments and Appeals Meeting (doors open at 6:45)

Location: Nicollet County Board Room, 501 S. Minnesota Avenue, St. Peter, MN

Copies of the meeting agenda and packet are available on the Nicollet County website at:

<https://mn-nicolletcounty.civicplus.com/AgendaCenter>

Questions or comments regarding the meeting can be directed to Spencer Crawford, Deputy Zoning Administrator, at 507-934-7071, or spencer.crawford@co.nicollet.mn.us.

1. Call to Order
2. Roll Call
3. Review of Cancellations and Additions
4. Approval of Minutes: *January 23, 2023*
5. **PUBLIC HEARING: PLN23-03**
Applicant: W W Blacktopping, Inc.
Landowner: Mark & Susan Kendall
Request: Three-year mineral extraction Conditional Use Permit review
Location: Southwest ¼ of the Southwest ¼, Section 33-111-26 in Lake Prairie Township
Parcel Number: 07.133.0200
6. **PUBLIC HEARING: PLN23-04**
Applicant: Annexstad Dairy Farms Inc.
Landowner: Annexstad Dairy Farms Inc.
Request: Conditional Use approval for the expansion of a dairy feedlot
Location: Northeast ¼ of the Northeast ¼, Section 28-111-27 in Lake Prairie Township
Parcel Number: 07.028.0415
7. Review Permits
8. Old Business
9. Other Business
10. Communications
11. Adjourn

Mission Statement

Providing efficient services
with innovation and
accountability.

Vision Statement

Setting the standard for providing superior and efficient county
government services through leadership, accountability and
innovation to a growing and diverse society.

Core Values

Leadership. Integrity.
Accountability.
Efficiency. Innovation.



PLANNING & ZONING ADVISORY COMMISSION

MINUTES	JANUARY 23, 2023	7:40 PM	NICOLLET COUNTY BOARD ROOM
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ROLL CALL	COMMISSIONERS PRESENT	COMMISSIONERS ABSENT EXCUSED	NICOLLET COUNTY STAFF PRESENT
	☒ Dave Ubel ☒ Jon Thoreson ☒ Marie Dranttel, Commissioner ☒ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☒ Randy Schwab	☐ Dave Ubel ☐ Jon Thoreson ☐ Marie Dranttel, Commissioner ☐ Lloyd Hoffmann ☒ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab	☒ Spencer Crawford, Deputy Zoning Administrator (DZA) ☒ Loria Rebuffoni, Property Services Supervisor (PSS) ☒ Roxann Klein, Assistant County Attorney (ACA) ☒ Crystal Madden, Recording Secretary ☐ Other Staff: ☐ Other Staff:

ELECTIONS	MOTION	2 ND
COMMISSION NOMINATES DAVE UBEL FOR CHAIR	☐ Dave Ubel ☐ Jon Thoreson ☐ Marie Dranttel, Commissioner ☒ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab	☐ Dave Ubel ☐ Jon Thoreson ☐ Marie Dranttel, Commissioner ☐ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☒ Randy Schwab
VOTE TO ADOPT CHAIR NOMINATION	☒ PASS ☐ FAIL	VOTE: 5 - 0
COMMISSION NOMINATES JON THORESON FOR VICE CHAIR	☐ Dave Ubel ☒ Jon Thoreson ☐ Marie Dranttel, Commissioner ☐ Lloyd Hoffmann ☒ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☒ Randy Schwab	☐ Dave Ubel ☐ Jon Thoreson ☐ Marie Dranttel, Commissioner ☒ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab
VOTE TO ADOPT VICE CHAIR NOMINATION	☒ PASS ☐ FAIL	VOTE: 5 - 0

APPROVAL OF NOVEMBER 21, 2022 MINUTES	MOTION	2 ND
☒ APPROVE ☐ APPROVE WITH REVISIONS	☐ Dave Ubel, Chair ☒ Jon Thoreson, Vice Chair ☐ Marie Dranttel, Commissioner ☐ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab	☐ Dave Ubel, Chair ☐ Jon Thoreson, Vice Chair ☐ Marie Dranttel, Commissioner ☒ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab
VOTE TO APPROVE MINUTES	☒ PASS ☐ FAIL	VOTE: 5 - 0

PUBLIC HEARINGS

NO PUBLIC HEARINGS

ADDITIONAL ITEMS

OLD BUSINESS	None.		
OTHER BUSINESS	Discuss legal training. PSS Rebuffoni noted an upcoming legal training hosted by the Association of Minnesota Counties on March 1, 2023. Commissioner Dranttel stated it was a beneficial training.		
COMMUNICATIONS	None.		
MOTION TO ADJOURN MEETING	MOTION		2 ND
07:49 PM	☐ Dave Ubel, <i>Chair</i> ☒ Jon Thoreson, <i>Vice Chair</i> ☐ Marie Dranttel, Commissioner ☐ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab		☐ Dave Ubel, <i>Chair</i> ☐ Jon Thoreson, <i>Vice Chair</i> ☐ Marie Dranttel, Commissioner ☒ Lloyd Hoffmann ☐ Justin Laven ☐ Terry Morrow, Alt. Commissioner ☐ Randy Schwab
VOTE TO ADJOURN MEETING	☒ PASS	☐ FAIL	VOTE: 5 - 0

DAVE UBEL, CHAIR		DATE	2/27/2023
SPENCER CRAWFORD, DEPUTY ZONING ADMINISTRATOR		DATE	2/27/2023

DRAFT



CONDITIONAL USE PERMIT

MINERAL EXTRACTION PERMIT RENEWAL

W W Blacktopping, Inc.

PLN23-03

**NICOLLET COUNTY
PLANNING & ZONING ADVISORY COMMISSION**

SUBJECT:	Three year review of a mineral extraction Conditional Use Permit, PLN23-03
APPLICANT:	W W Blacktopping, Inc.
LANDOWNER:	Mark & Susan Kendall
LOCATION:	Southwest ¼ of the Southwest ¼, Section 33-111-26 in Lake Prairie Township
PARCEL NO:	07.133.0200
EXISTING ZONING:	Conservancy District
HEARING DATE:	02/27/2023
COUNTY BOARD DATE:	03/14/2023
60 DAYS FROM REQUEST:	03/24/2023

REQUEST

The applicant is requesting a three year review of their mineral extraction Conditional Use Permit to mine, crush, and stockpile gravel along with operating a hot mix plant.

PROJECT DESCRIPTION

Site History:

The gravel operation, known as the Kendall Pitt, was originally permitted 35 years ago in 1988. The permit covered both the current location and the adjacent pit to the south, which is now owned and operated by Geldner Brothers Sand & Gravel, LLC. The permit was amended to cover only the Kendall Pit during the 2011 renewal.

Operations:

According to the applicant, a total of five acres are actively being mined with 4,866 tons of material removed over the past three years. Production varies considerably depending on product demand, with a range of 0 to 1,000 tons produced daily. Equipment employed in the operation includes a front end loader, dozer, excavator, fuel truck, and haul trucks. A crusher is brought in, as needed.

Appearance:

The facility is generally not visible from the Minnesota River or U.S. Highway 14.

Access:

The site has an existing direct access point onto the southbound lane of U.S. Highway 169.

Blasting:

No blasting occurs on site.

Operating Times:

Mining occurs seasonally depending on the weather, from April to November. Typical hours of operation are between 7 am and 7 pm.

Dust, Noise, & Odor Control:

Access roads are treated with water to control dust when necessary. The applicant states noise and odor are within normal bounds.

Bond:

The Kendall Pit has a valid bond in the amount of \$12,500 which expires on June 29th, 2023. This meets the old Zoning Ordinance bond standard of \$2,500 an acre when the site was permitted. The required bond was increased to \$5,000 an acre in 2014 by a text amendment to the Zoning Ordinance, but the Kendall Pit would only need to meet the current standard if the parameters of the operation are changed.

Waste Disposal/ Hazardous Waste:

Per the applicant, no hazardous substances such as engine oil, hydraulic oil, anti-freeze, or other maintenance fluids are stored on-site. Waste is hauled out as needed.

State Standards:

The applicant maintains permit MNG490000 through the Minnesota Pollution Control Agency for nonmetallic mining and associated activities. The permit was issued July 1st, 2022 and expires on May 31st, 2027.

Reclamation Plan:

The applicant has not made any changes to the existing end use plan. Slopes will be graded inward starting from the western and southern property lines, going from an elevation of 880 feet to about 770 feet. The plan shows the graded area aligning with the natural slope on the eastern side of the

property, which will not be altered as it contains a dwelling. Topsoil is being stored on-site for future reclamation.

ORDINANCE AND CONDITIONAL USE PERMIT STANDARDS

The request does not meet the following Zoning Ordinance, Solid Waste Ordinance, and Conditional Use Permit Standards:

Nicollet County Zoning Ordinance 724.5 (20) *Unauthorized Storage:*

Vehicles, equipment, or materials not associated with the mineral extraction facility, or not in operable condition, shall not be kept or stored on the site.

Nicollet County Zoning Ordinance 729.1 *Refuse:*

No inoperable or junk vehicles, or recreational vehicles shall be stored outside in any district for more than seven (7) days. It shall be unlawful to create or maintain a junkyard or vehicle dismantling yard except as herein provided.

Nicollet County Zoning Ordinance 703.4 *All Districts:*

Existing structures meeting the definition of “manufactured home, derelict” as stated in Section 302, shall be removed from the premises and properly disposed. Existing derelict manufactured homes shall not be converted or used as storage structures.

Nicollet County Solid Waste Ordinance Article IV Section 2.02 *Storage:*

No person shall place or store upon the open areas of any commercial site no more than two (2) inoperable/unlicensed motor vehicles nor machinery, appliances, fixtures or equipment so damaged, deteriorated or obsolete such that there is no substantial potential further use consistent with its usual function or reasonable reuse. Nothing in this section is designed to restrict activities of automobile, scrap iron, and metal recycling or salvage businesses that are operating in accordance with state, County, and municipal or township laws, rules and regulations.

Conditional Use Permit PLN20-03, Condition 7:

The storage of solid waste is prohibited on the property referenced in this conditional use permit.

Staff found several inoperable vehicles, solid waste, and a derelict manufactured home during a site visit conducted on January 18th, 2022. The property owner and W W Blacktopping, Inc. were made aware of these violations during the site visit. Additionally, the property owner was mailed Solid Waste and Zoning Ordinance violation notices. The property owner is required to provide an update on compliance by April 14th, 2023 to prevent escalation of enforcement.

To address these concerns, staff is recommending a condition that all current Zoning and Solid Waste Ordinance violations be resolved by June 1st, 2023. Staff is also recommending a condition that the property remain free of solid waste or derelict manufactured homes. With these conditions, the permit can be brought back before the board for a revocation hearing if needed.

SURROUNDING LAND USE

The Kendall Pit is situated between the bluff and U.S Highway 169 in the Minnesota River Valley. There are other mineral extraction operations to the south and west; forested bluff to the north; and undeveloped floodplain along the highway to the east.

NEIGHBOR NOTIFICATION

Property owners were notified of the request per the standards of Section 505.3 of the Zoning Ordinance and Minnesota State Statute 394.26.

STAFF RECOMMENDATIONS

1. The applicant undertakes the project according to the plans and specifications submitted to the County with the application.
2. The permit will be periodically reviewed by the County to assure compliance with the permit and permit conditions.
3. The County may enter onto the premises at reasonable times and in a reasonable manner to insure the permit holder is in compliance with the conditions and all other applicable statutes, rules, and ordinances.
4. The Conditional Use Permit to mine, crush, and stockpile gravel is reviewed in February of 2026.
5. The bond shall be amended as needed to cover the amount of actively mined acres. The bond must be kept in force during the time of operation.
6. A continuation certificate of the bond shall be sent to Property Services with no lapse in time during the course of this permit.
7. All Zoning and Solid Waste Ordinance violations existing on the property as of January 18th, 2023 shall be resolved to the satisfaction of the Property Services Director by June 1st, 2023. This includes, but is not limited to, the removal of junked or inoperable vehicles, solid waste, and the derelict manufactured home per the standards of the Nicollet County Solid Waste and Zoning Ordinance.
8. The storage of solid waste is prohibited on the property referenced in this Conditional Use Permit.

9. Dust control measures shall be implemented as needed.
10. The applicant shall maintain a National Pollutant Discharge Elimination System / State Disposal System Permit with the MPCA that will cover the entire project area.

Applicant: W W Blacktopping, Inc.
Landowner: Mark & Susan Kendall

PLN23-03

ATTACHMENT A	Application
ATTACHMENT B	Documents Submitted by Applicant
ATTACHMENT C	Location Map
ATTACHMENT D	Aerial Map
ATTACHMENT E	Site Photographs
ATTACHMENT F	Neighbor Notification List
ATTACHMENT G	Criteria for Conditional Use Permit



PROPERTY SERVICES DIVISION
501 SOUTH MINNESOTA AVENUE, SAINT PETER MN 56082
507-934-7070

PLANNING & ZONING ADVISORY COMMISSION
APPLICATION

Total Fees: \$

Map#: 0833300002
Parcel#: 071330200
Permit#: [PLN23-03](#)
Date: January 20, 2023

Applicant: Mitch Wolff, , 700 Industrial Rd, Mankato MN 56001
Phone: 507 387 1518
Owner: KENDALL MARK & SUSAN KENDALL, 39956 US HIGHWAY 169, SAINT PETER MN 56082
Property Address: 39956 US HIGHWAY 169, ST PETER MN 56082
Abbreviated Legal Description: PT OF SW 1/4 OF SW 1/4 ACRES 9.90
Township: Lake Prairie Township

Record Type: Conditional Use
Category: Mineral Extraction
Project Description: 3 Year mineral extraction Conditional Use Permit renewal for the Kendall Pitt- WW Blacktopping.

Planning Commission Hearing Date: 02/27/2023
Board of Commissioners Date: 03/14/2023

Mitchell Wolff
Mitchell Wolff (Jan 23, 2023 07:55 CST)

APPLICANT SIGNATURE

Jan 23, 2023

DATE

ATTACHMENT A
Application

Created:	2023-01-20
By:	Spencer Crawford (Spencer.Crawford@co.nicollet.mn.us)
Status:	Signed
Transaction ID:	CBJCHBCAABAAINQYKGETFSfUbADFjlaFg1mbn0hLnjsH

"App" History

-  Document created by Spencer Crawford (Spencer.Crawford@co.nicollet.mn.us)
2023-01-20 - 9:36:32 PM GMT
-  Document emailed to mitch@wwblacktopping.com for signature
2023-01-20 - 9:37:21 PM GMT
-  Email viewed by mitch@wwblacktopping.com
2023-01-23 - 1:53:05 PM GMT
-  Signer mitch@wwblacktopping.com entered name at signing as Mitchell Wolff
2023-01-23 - 1:55:01 PM GMT
-  Document e-signed by Mitchell Wolff (mitch@wwblacktopping.com)
Signature Date: 2023-01-23 - 1:55:03 PM GMT - Time Source: server
-  Agreement completed.
2023-01-23 - 1:55:03 PM GMT





MINERAL EXTRACTION CHECKLIST

The following information is required to be provided for a conditional use permit application. Additional information may be required, as determined necessary by the Zoning Administrator and per Section 724 of the Zoning Ordinance.

NUMBER OF ACRES AS FOLLOWS:

5 Acres being mined or used for mining purposes (stockpiles, equipment storage, haul roads, etc).
0 Acres permitted and remaining to be mined in future phases.
0 Acres where land reclamation has occurred.
5 Acres not permitted to be mined (non-mining related acres).
10 Total acreage of property.

TONNAGE OF MATERIAL REMOVED:

4866 Tons of material removed from site over the past three (3) years, or since last permit renewal date.

Include a copy of the renewed **BOND** or **LETTER OF CREDIT** for the site. Continuation letters must to be sent to the Property Services Office on years when the permit is not scheduled for renewal.

PLEASE PRINT:

Property Owner: Mark Kendall

Owner's Address: 39732 US Highway 169

Contractor working the site: W.W. Blacktopping Inc

Contractor's address: 700 Industrial Road Mankato MN 56001

Contractor's phone number: 507-387-1518

Date: Jan 9th 2023

Applicant (Landowner or Contractor) Signature: Mitchell W. J. [Signature]

Parcel No. 08-33-300-002 Map No. 07-133-0200

Revised 11-29-18 JH

Mission Statement
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with innovation and accountability.

Leadership. Efficiency.
Accountability. Innovation.
Integrity.

Vision Statement
Setting the standard for providing superior and
efficient county government services through
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growing and diverse society.



CONDITIONAL USE PERMIT APPLICANT QUESTIONNAIRE
PROJECT DESCRIPTION

Name of Applicant: W/W Backstopping Tree

Date: 1-11-2023

Please describe the specific details related to your request. If your request is approved, you will be **held** to the plans and specifications submitted to the County with your application.

We request your consideration of renewing
the conditional use permit for the
Mark Kendall property.

Our intentions are to mine gravel,
stockpile, screen + crush products to be
used for construction activities.

We would also stockpile suitable topsoil
on site for future reclamation purposes.



CUP APPLICANT FINDINGS OF FACT CRITERIA

Name of Applicant: _____ Date: _____

Request: _____

In granting a conditional use permit, the County Board shall consider the advice and recommendation of the Planning Commission and the effect of the proposed use upon the health, safety, morals, and general welfare of the community. Among other things, the County Board shall make the following findings where applicable.

Why do you feel the request meets the following criteria?

1. Given the nature of the land, the requested use is compatible with public health, safety, and general welfare.

2. The requested use will not create an unreasonably excessive burden on the existing roads or other utilities.

3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.

4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.

5. The requested use is consistent with the County Zoning Ordinance.

(Continued onto back)

6. The requested use is not in conflict with the County Comprehensive Plan.

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

8. The requested use is reasonably related to the existing land use and environment.

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

10. The requested use will/will not have an adverse effect upon public health, safety, and welfare due to the following other factors.

***A MAJORITY OF THE CUP CRITERIA MUST BE MET
IN ORDER FOR THE REQUEST TO BE APPROVED.***

**W W BLACKTOPPING, INC
700 INDUSTRIAL ROAD
MANKATO MN 56001
507-387-1518 OFFICE
507-387-2228 FAX**

January 11, 2023

CUP FACT CRITERIA:

- #1 We feel it meets the question asked based on the MNG Permit that we are in compliance with. Permit MNG 490184.**
- #2 The exiting road is used by the land owner and the applicant and also maintained by both parties as needed.**
- #3 The existing gravel pit is joined by two property owners that is also being used to mine the aggregates.**
- #4 There is no unreasonable adverse effect due to the fact that the property has a berm on the east side which blocks the view from Highway 169 .**
- #5 We have been in compliance with the County Ordinance in maintaining the property each year for the past several years and if and when there has been an issue we have addressed this immediately.**
- #6 We do not feel that we are in conflict with the County Comprehensive Plan based on existing and past usage.**
- #7 We do not leave the property in an adverse effect due to the fact that each and every time that we are in the gravel pit we leave in an orderly manner.**

#8 Yes we feel that we are in compliance with with this statement.

#9 No we do not feel that this is a concern to the public when mining for aggregates.

#10 Only way something like this would happen is if an act of God should take place and there should be an abnormal amount of rain fall then there would be some run off that would need to be addressed at the time.

Site Plan

07.133.0100

07.133.0405

07.132.1505

Acres
Bays mined

07.133.0200

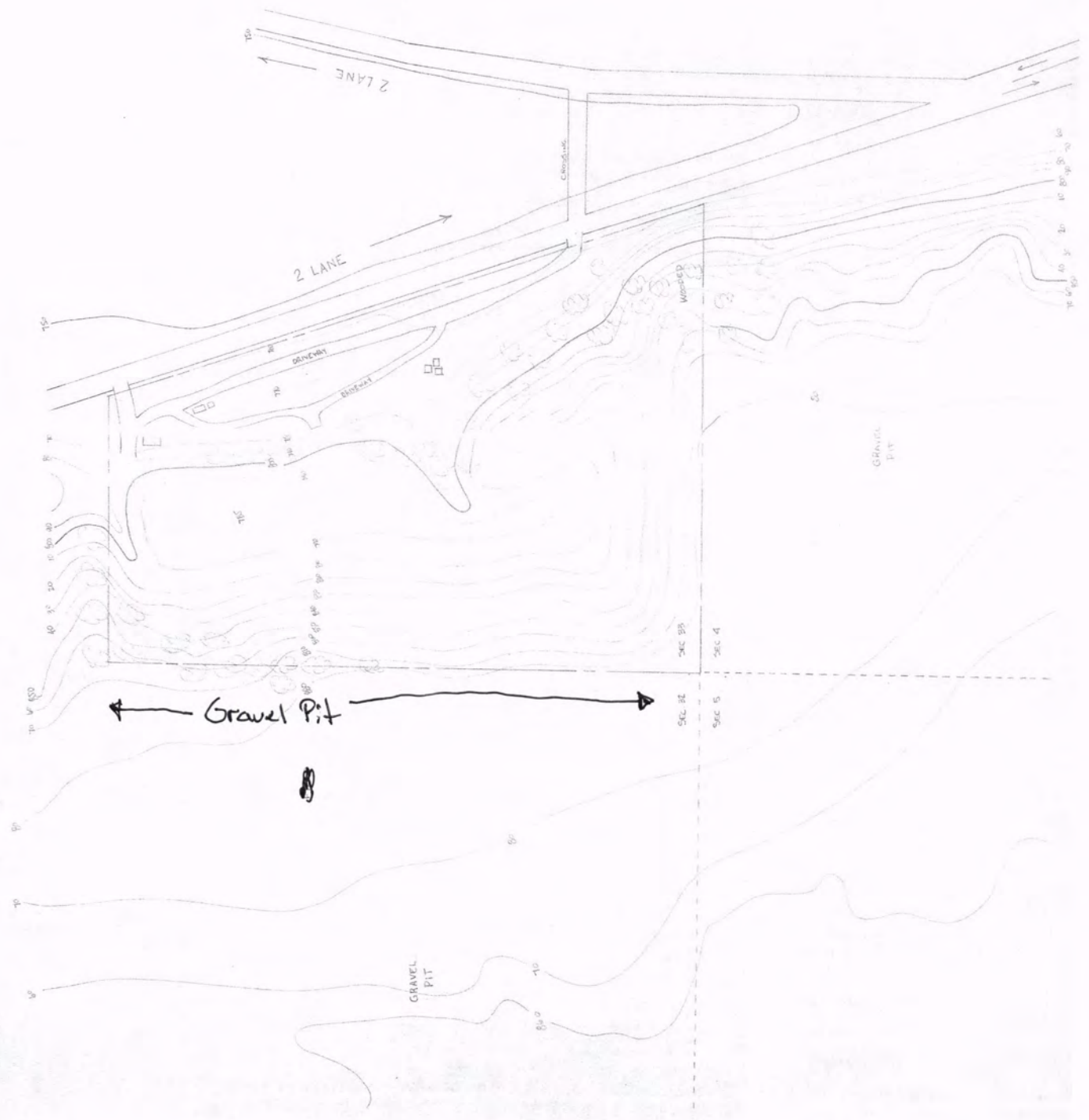
07.133.0300





SCALE 1" = 100'

MAP C END USE PLAN



MERCHANTS BONDING COMPANY™

MERCHANTS BONDING COMPANY (MUTUAL) P.O. BOX 14498, DES MOINES, IOWA 50306-3498
PHONE: (800) 678-8171 FAX: (515) 243-3854

COPY

CONTINUATION CERTIFICATE

(to be filed with the obligee)

MN 25770	\$12,500	Surface or Strip Mining - Sand and Gravel
BOND NO.	AMOUNT	DESCRIPTION
OBLIGEE	Nicolett County Environmental Services	

MERCHANTS BONDING COMPANY (MUTUAL) hereby continues in force Bond for:

PRINCIPAL W W Blacktopping, Inc.

DBA _____

All liability under this Continuation Certificate is effective 06/29/2022 and terminates midnight 06/29/2023

This continuation is executed upon the express condition that the Company's liability under said Bond and this and all continuations thereof shall not be cumulative and shall in no event exceed in the aggregate the largest single amount named in the Bond, the endorsement attached thereto, or any continuation certificate.

Witness the signature of its President under the corporate seal on February 25, 2022

Attest:

William Warner Jr.
Secretary



MERCHANTS BONDING COMPANY (MUTUAL)

Larry Taylor
President

CERTIFICATION

I hereby certify that the following is a true and correct copy of Section 1(b) and Section 1(d) of Article VI of the Bylaws of Merchants Bonding Company (Mutual) duly adopted and recorded to-wit: Section 1(b) "The President, Secretary, or Treasurer or any Assistant Treasurer or any Assistant Secretary shall have power and authority to execute on behalf of the Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof," and Section 1(d) "The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

I further certify that the following are duly elected officers of the Company: Larry Taylor, President; and William Warner, Jr., Secretary.

IN TESTIMONY WHEREOF, I have hereunto set my hand as President and affix the Corporate Seal of the MERCHANTS BONDING COMPANY (MUTUAL)

this 25th day of February 2022

Attest:

William Warner Jr.
Secretary



MERCHANTS BONDING COMPANY (MUTUAL)

Larry Taylor
President

On this 25th day of February 2022 before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of the MERCHANTS BONDING COMPANY (MUTUAL), the corporation described in the foregoing instrument, and that the Seal affixed to the said instrument is the Corporate Seal of the said Corporation and that the said instrument was signed and sealed in behalf of said Corporation by authority of its Board of Directors.

Witnessed to and subscribed by me on February 25, 2022

Polly Mason
Notary Public



POLLY MASON
Commission Number 750576
My Commission Expires
January 07, 2023

SUP 0012 (2/17)

July 1, 2022

WW Blacktopping Inc
ATTN: Mitchell Wolff
700 Industrial Rd
Mankato, MN 56001

ec COPY

RE: Notice of Coverage for WW Blacktopping Inc
Nonmetallic Mining and Associated Activities General Permit
Your permit number: **MNG490184**

Dear Mitchell Wolff:

Thank you for submitting your NPDES/SDS permit application. Effective July 1, 2022, you are covered by the MNG490000 permit and allowed to discharge in accordance with the terms and conditions of the permit. This coverage extends through May 31, 2027. Your facility is covered for the eligible activities at each authorized site(s) listed in the Summary of Stations in Section 1 of the attached permit.

Staying in compliance with your permit

You are responsible for reading your entire permit and following all its terms and conditions. Below are some key requirements:

- Develop a Pollution Prevention Plan for each site. Train staff on the plan. A Plan template can be found here: <https://www.pca.state.mn.us/sites/default/files/wq-wwprm7-73.docx>.
- Inspect each site and document results at least once a month when the site is active. Complete one inspection per year during a runoff and snowmelt event. See requirement 5.6.131 Inspection Reports.
- Repair or replace Best Management Practices (BMPs) if they are found to be broken or inadequate.

If the facility has indicated in the permit application all stormwater and/or process wastewater is contained and/or infiltrates on site, the site is prohibited from discharging to surface waters. The site will be assigned a Land Application (LA) designation in lieu of a Surface Discharge (SD) designation. Discharge Monitoring Reports (DMRs) will not be required for sites with only LA designations.

- For sites with stormwater discharge only (e.g. stormwater that runs offsite): Sample and analyze stormwater twice a year, in spring and the fall, when the site is active. Report results annually in a Discharge Monitoring Report (DMR).
- See the Limits and Monitoring in section 4 of the attached permit.

- If you filed a Monitoring Waiver Request Form and it was approved by the MPCA, your permit will not contain monitoring requirements in section 4.
- For sites with pit dewatering: Each calendar quarter, sample and analyze dewatering flows that discharge to surface water, when the site is active. Report results quarterly.
- See the Limits and Monitoring in section 4 of the attached permit.
 - See section 5.6.153, Mine Dewatering to Surface Waters – Effluent Limit Monitoring, of the Permit to find out what to do if no discharge occurs and further detail on dewatering monitoring.
- If a sample is missed explain why in the comments section of the DMR.
- Meet all discharge limits. See the Limits and Monitoring in section 4 of the attached permit.
- If the site is permitted for stormwater or dewatering discharge: Submit your discharge monitoring results on the electronic Discharge Monitoring Reports. Sample values are not required to be submitted for MNG49 Permittees. See the following website for instructions: <https://www.pca.state.mn.us/water/how-complete-your-discharge-monitoring-report-dmr>
- Indicate in the comments section of the DMR if the site is inactive or temporarily inactive.
- Update your Pollution Prevention Plans annually at a minimum. See section 2 of the permit, requirement 5.6.114.
- Submit a permit application for reissuance by December 2, 2026. You will be sent a reminder notification prior to this deadline.
- If you dewater, sample for additional parameters listed in requirement 5.6.159 and submit with permit application.

Please refer to our website at <http://www.pca.state.mn.us/iryp90f> for additional information on the general permit.

If you have any questions regarding the terms and conditions of this general Permit, please visit our website and then contact the staff listed on the cover page of your permit.

Sincerely,

Elise M. Doucette

Elise M Doucette, Supervisor
Water Section
Industrial Division

KJ/ED:bg



National Pollutant Discharge Elimination System/State Disposal System

MNG490184

Permittee: WW Blacktopping Inc, WW Blacktopping Inc
Facility name: WW Blacktopping Inc
City or Township: Mankato, **County:** Blue Earth
Issuance date: July 1, 2022
Expiration date: May 31, 2027

The state of Minnesota, on behalf of its citizens through the Minnesota Pollution Control Agency (MPCA), authorizes the Permittee to operate a disposal system at the facility named above and in accordance with the requirements of this permit.

The goal of this permit is to reduce pollutant levels in point source discharges and protect water quality in accordance with the U.S. Clean Water Act, Minnesota statutes and rules, and federal laws and regulations.

This permit is effective on the issuance date identified above. This permit expires at midnight on the expiration date identified above.

Signature: *Elise M. Doucette*

This document has been electronically signed.

Elise M. Doucette, Supervisor
Water Section
Industrial Division

for the Minnesota Pollution Control Agency

Submit eDMRs

Submit via the MPCA e-Services at

https://rsp.pca.state.mn.us/TEMPO_RSP/Orchestrate.do?initiate=true

Submit WQ reports to:

Electronically: wq.submittals.mPCA@state.mn.us

Include *Water quality submittals form*:

<https://www.pca.state.mn.us/sites/default/files/wq-wwprm7-71.docx>

Or, by mail:

Attention: WQ Submittals Center
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Whole Effluent Testing (WET) and Pretreatment Annual Reports must be mailed to the WQ Submittals Center

Questions on this permit?

- For eDMR and other permit reporting issues, use the directory listed at the bottom of the DMR page:
<https://www.pca.state.mn.us/water/discharge-monitoring-reports>
- For specific permit requirements, contact your compliance staff: <https://www.pca.state.mn.us/water/wastewater-compliance-and-enforcement-staff-contacts>
- Wastewater Permit Program general questions, contact: MPCA, 651-282-6143 or 1-800-657-3938

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Permit issued: July 1, 2022
Permit expires: May 31, 2027

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1. Summary of stations and station locations

Station	Type of station	Local name	PLS location
LA 001	MNG49 Wastewater	WWBT (D1-2951, J2-1422)	T109N, R26W, S32, NW Quarter
LA 002	MNG49 Wastewater	Kendall Pit (J1-1442)	T111N, R26W, S33, SW Quarter
LA 004	MNG49 Wastewater	Tonn Pit (J1-1442)	T109N, R23W, S19, SW Quarter

2. Permit requirements

MNG490184	WW Blacktopping Inc	
		Non-Metallic Mining and Associated Activities General Permit Requirements
	2.1.1	Applicability. [Minn. R. 7001]
	2.1.2	This permit authorizes stormwater discharges associated with the following industrial activities: A. Construction sand and gravel (Standard Industrial Classification [SIC] Code 1442) and industrial sand mining areas (SIC Code 1446) - hereinafter Subsector J1. B. Dimension stone (SIC Code 1411), crushed and broken limestone (SIC Code 1422), crushed and broken granite (SIC Code 1423), crushed and broken stone (not elsewhere classified, SIC Code 1429) mining and quarrying areas - Subsector J2. C. Asphalt production areas, also known as asphalt paving mixtures and blocks (SIC Code 2951), including portable asphalt plants - Subsector D1. D. Concrete block and brick (SIC Code 3271), concrete products other than block and brick (SIC Code 3272), and ready-mix concrete (SIC Code 3273), including portable concrete plants - Subsector E2. E. Recycling and storage of materials approved in Minn. R. 7035.2860 (Beneficial Use of Solid Waste) at sites engaged in facility activities associated with all SIC Codes listed in A. through D. above. F. Activities associated with the above facilities noted, including maintenance activities and facilities, unless otherwise prohibited in this permit. This Permit authorizes stormwater discharges associated with construction activity and small construction activity, as defined in 40 CFR parts 122.26(b)(14)(x) and (b)(15), respectively. The Permittee shall comply with the "Stormwater Discharge Design Requirements" chapter and the "Construction Activity Requirements" chapter of the MPCA Construction Stormwater (CSW) NPDES general permit (https://www.pca.state.mn.us/sites/default/files/wq-strm2-68a.pdf) when conducting construction activity and small construction activity. Earth disturbing activities conducted as a normal part of post-construction use of the permitted facility do not trigger the need for CSW permit coverage. The earth disturbing activity has to be part of a project to build, demolish, or replace a structure (e.g., building, road, pad, pipeline, transmission line) to trigger the need to comply with the CSW permit. Earth disturbance that is a normal part of the long-term use or maintenance of the property is not "active construction" and does not trigger the need for CSW permit coverage. [Minn. R. 7001]
	2.1.3	This permit authorizes non-stormwater discharges to surface waters of the state from dewatering of mine or quarry areas at J1 and J2 Subsectors that meet the effluent limits and requirements in this permit. "Mine Pit Dewatering" means any water that is impounded or that collects in the mine and is pumped from the mine through the efforts of the mine operator. Uncontaminated groundwater and stormwater collecting in a low area in which there is a stormwater outlet for stormwater/seepage/drainage by gravity overflow shall not be considered mine pit dewatering. However, if a mine is also used for treatment of process generated wastewater, discharges of commingled water from the facilities shall be deemed discharge of process generated wastewater and is not authorized under this permit. [Minn. R. 7001]
	2.1.4	This permit authorizes non-stormwater discharges that do not discharge to a surface water of the state provided these discharges are not already authorized in a separate NPDES/SDS permit. Non-stormwater that co-mingles with stormwater is considered a non-stormwater discharge (wastewater) and must be managed compliant with this Permit. To be authorized under this permit, the following discharges must be collected, contained or infiltrate into the ground and Best Management Practices must be implemented to prevent contamination of groundwater: A. Aggregate wash water from Subsector J1 and J2 facilities. B. Dredging operations from Subsector J1 and J2 facilities. C. Installation, construction, and operation of wet scrubbers at asphalt production areas, including portable asphalt plants (Subsector D1). D. Washing trucks, mixers, transport buckets, forms and/or other equipment at concrete block and brick, concrete products other than block and brick, and ready-mix concrete facilities (Subsector E2).

	E. Uncontaminated scale deck wash water that does not use detergents, solvents, or degreasers. F. Stormwater and deck wash water collected in holding tanks under scales. G. Wash water associated with cleaning of mobile equipment that does not use detergents, solvents, or degreasers. H. Waters used for sawing stone or dust control on crushers, conveyors, associated equipment, stockpiles, and site roadways. I. Boiler blowdown and reverse osmosis reject. J. Low or high pressure steam curing. K. Noncontact cooling water used for dryer, pump, and air compressor cooling. For wastewater discharges listed above, see the Technology Based Effluent Limits - Non-Stormwater Discharges section of this permit for Wastewater Basin Design and Construction Requirements for newly constructed basins as of the issuance date of this permit. [Minn. R. 7001]
2.1.5	This permit authorizes non-stormwater discharges provided these discharges are not already authorized in a separate NPDES/SDS permit and that appropriate Best Management Practices are utilized to minimize erosion and the discharges of sediment when necessary: A. Emergency fire-fighting activities. B. Fire hydrant and fire suppression system flushing. C. Potable water line flushing. D. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids. E. Landscape watering provided all pesticides, herbicides and fertilizers have been applied in accordance with manufacturer's instructions. F. Pavement wash waters where no detergents are used and no spills or leaks of potential pollutants such as fertilizers, salts, or toxic and hazardous materials have occurred unless all spilled material has been removed. G. Routine external building wash down that does not use detergents, solvents, or degreasers. H. Uncontaminated groundwater or spring water. I. Foundation or footing drains where flows are not contaminated. J. Incident windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g. 'piped' cooling tower blowdown or drains). [Minn. R. 7001]
2.1.6	Not all activities covered by this permit will be conducted at each site covered under this permit. Therefore, only those provisions of this permit that address activities occurring at a particular site are applicable to that site. [Minn. R. 7001]
2.1.7	Activities Not Covered/Limitations on Coverage. [Minn. R. 7001]
2.1.8	This permit does not authorize the discharge from the following activities except as authorized in the Applicability Section of this permit: A. Dewatering of mine or quarry areas other than those under Subsector J1 and J2. B. Surface water discharges of scrubber or other air emissions control wastewater, cooling or boiler wastewater, floor drains from process areas, equipment/vehicle washing, cleaning and maintenance wastewaters, and sewage. C. Contaminated groundwater discharges. D. Petroleum refinement. E. Manufacturing of asphalt or asphalt emulsions. F. Industrial sand mines (SIC 1446) that utilize HF flotation. G. Dredging or filling of wetlands or other surface waters of the state. H. Discharges of hazardous substances, lubricants, fuel leaks, or fuel spills. I. Sites for which Environmental Assessment Worksheets or Environmental Impact Statements are required by Minn. R. ch. 116D and/or 42 U.S.C. Sec 4321 - 4370f, until that environmental review is completed. [Minn. R. 7001]
2.1.9	This permit does not authorize new or expanded discharges that the MPCA determines are or may be discharged at a level which will cause, have thereasonable potential to cause, or contribute to a violation of water quality standards consistent with the requirements of 40 CFR 122.4(i) and

	122.44(d)(1)(i). This includes the discharge to groundwater where pollutants in the discharge reach surface waters and have reasonable potential to exceed applicable surface water quality standards. [40 CFR pt. 122, 4(i)]
2.1.10	This permit does not authorize existing discharges that the MPCA determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to a violation of water quality standards consistent with the requirements of 40 CFR 122.44. This includes the discharge to groundwater where pollutants in the discharge reach surface waters and have reasonable potential to exceed applicable surface water quality standards. [40 CFR pt. 122, 44]
2.1.11	This permit does not authorize discharges that adversely impact or contribute to adverse impacts on a listed endangered or threatened species or adversely modify a designated critical habitat. This permit does not replace or satisfy any review requirements for endangered or threatened species, from new or expanded discharges that adversely impact or contribute to adverse impacts on a listed endangered or threatened species or adversely modify a designated critical habitat. The owner must conduct any required review and coordinate with appropriate agencies for any project with the potential of affecting endangered or threatened species, or their critical habitat. [Minn. R. 7001]
2.1.12	This permit does not authorize discharges which adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered archeological sites. This permit does not replace or satisfy any review requirements for historic places or archeological sites, from new or expanded discharges which adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered archeological sites. The owner must be in compliance with the National Historic Preservation Act and conduct all required review and coordination related to historic preservation, including significant anthropological sites and any burial sites, with the Minnesota Historic Preservation Officer. [Minn. R. 7001]
2.1.13	Facilities located within the exterior boundaries of an Indian reservation must apply to the U.S. EPA for coverage under the multi-sector general permit or for an individual permit. Note: "Indian country is defined under 18 USC Â§1151 and includes all lands within the exterior boundaries of federally recognized Indian reservations and on lands held in federal trust status. Facilities that currently do not have storm water discharge permit coverage and are located within Indian Country shall contact the United States Environmental Protection Agency (EPA) to apply for permit coverage. For existing discharges covered under a NPDES permit from EPA, discharges will continue to be covered by a NPDES permit. Dischargers that previously held permit coverage under previous versions of this permit after September 30, 2001, are no longer eligible for coverage under this permit and must contact EPA to apply for permit coverage." [Minn. R. 7001]
2.1.14	This permit does not authorize discharges to calcareous fens listed in Minn. R. 7050.0335. [Minn. R. 7007.0335]
2.1.15	Mine site dewatering discharges from Subsectors J1 and J2 that discharge directly to the following receiving waters are not authorized by this permit: A. Outstanding Resource Value Waters (ORVWs) as defined by Minnesota Rules 7050.0335 and as listed in Minnesota Rules 7050.0470; B. Department of Natural Resources (DNR)-designated trout waters (trout waters are designated in Minn. R. 6264.0050, subp. 2 and 4); and C. DNR-posted fish-spawning areas. [Minn. R. 6264.0125]
2.1.16	Authorization. [Minn. R. 7001]
2.1.17	Permit Application. Owners and operators of a site or sites with covered facility activities identified in this permit, and who provide a complete and approvable application for a permit, are eligible for coverage under this permit for those activities. [Minn. R. 7001]
2.1.18	Notice of Coverage. [Minn. R. 7001]
2.1.19	Permittees requesting initial coverage are covered under this permit when the MPCA notifies them in writing of this coverage. [Minn. R. 7001]
2.1.20	Additional sites may be covered under this permit provided that the new site(s) meet all applicability criteria of this permit and that all information required by the Site Inventory Report Form is submitted to the MPCA at least 10 days prior to initiation of land-disturbing activities at the new site(s) or initiation of operation at a previously developed site. [Minn. R. 7001]

2.1.21	Requiring an Individual Permit. [Minn. R. 7001]
2.1.22	If the MPCA finds that the facility site of a permit applicant or a Permittee covered under this permit would be more appropriately covered under an individual permit, the MPCA may require an individual permit for the applicant or the Permittee, in accordance with Minn. R. 7001.0210, subp. 6. In considering whether it is appropriate to issue an individual permit for a site, the MPCA will consider whether the site is contributing, or may contribute, to a water quality standard violation. Any interested person may petition the MPCA commissioner to take action under 40 CFR Â§ 122.28(b)(3)(i) to require a facility covered by the general permit to apply for and obtain an individual permit. [Minn. R. 7001.0210, subp. 6]
2.1.23	This general permit does not cover activities or discharges covered under a pre-existing individual permit unless the MPCA has specifically revoked or terminated that individual permit. [Minn. R. 7001]
2.1.24	This general permit does not cover industrial sand mining activities (SIC Code 1446) that: A. Meet or exceed the thresholds for mandatory environmental review and the MPCA determines the operations, emissions, activities, discharges, or facilities of the permit applicant or permittee have characteristics creating the potential for significant environmental effects; or B. The MPCA determines the need for site-specific permit requirements including, but not limited to, groundwater monitoring, additional surface discharge monitoring, hydrogeological study, etc. which are beyond those contained in this permit in order to protect waters of the state. If the MPCA determines that A or B apply, a permit applicant or Permittee shall obtain coverage under an individual permit for the facility site. Sites that are required to obtain individual permit coverage, at the Permittee's request, may be reviewed for general permit eligibility following the first full term of individual permit coverage. [Minn. R. 7001]
2.1.25	Notice of Temporarily Inactive Site(s). [Minn. R. 7001]
2.1.26	The Permittee(s) must ensure that permanent stormwater Best Management Practices (BMPs) are in place if the site is temporarily inactive. [Minn. R. 7001]
2.1.27	During the temporarily inactive period, intervention limit monitoring is not required, but the Permittee must indicate on the Comments field of the Discharge Monitoring Report the inactivity. Should the site become active, the Permittee is required to sample in accordance with the Monitoring Requirements section of the permit for the calendar year the site becomes active. [Minn. R. 7001]
2.1.28	Notice of Inactive Site(s). [Minn. R. 7001]
2.1.29	The Permittee(s) must ensure stabilization of the site upon cessation of mining activities. Stabilization shall be initiated immediately after the termination of the mining operation and upon completion the area shall be restored to its intended state. [Minn. R. 7001]
2.1.30	The Permittee(s) must complete the following to achieve final stabilization: A. The drainage ways that leave the site must be stabilized to prevent erosion with riprap or other protective material. B. All soils must be stabilized by a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions. C. Temporary BMPs for erosion prevention, such as synthetic liners and silt fences, must be removed. BMPs designed to decompose on site (such as some compost logs) may be left in place. D. All sediment must be removed from conveyances and from temporary sedimentation basins that are to be used as permanent water quality management basins in order to sufficiently return the basin to design capacity. Sediment must be stabilized to prevent it from being washed back into the basin, conveyances or drainage-ways discharging off-site or to surface waters. E. Other BMPs as necessary must be implemented so as to prevent erosion from the site excavation areas and stockpiles that have been used by the Permittee. [Minn. R. 7001]
2.1.31	In order to have permit coverage terminated and have the Permittee released from inspection, recording and reporting requirements, the Permittee shall ensure and certify on the Site Inventory Form for site(s) where the Permittee no longer conducts the activities authorized by this permit that: A. The site closure achieves final stabilization requirements; or B. There is no longer a discharge of pollutants to waters of the state, including groundwater, from

	activities covered by this permit; or C. The Permittee supplies the name and contact information for the owner or operator that is responsible for the site. [Minn. R. 7001]
2.1.32	Water Quality Based Effluent Limits. [Minn. R. 7001]
2.1.33	A wastewater discharge shall not cause or contribute to a violation of water quality standards unless the discharge meets all requirements of 40 CFR 122.44. [40 CFR pt. 122, 44]
2.1.34	The Permittee shall operate and maintain the facility and shall control runoff, including stormwater, from the facility to prevent the exceedance of water quality standards specified in Minnesota Rules, chs. 7050 and 7060. [Minn. R. 7050, Minn. R. 7060]
2.1.35	The Permittee shall limit and control the use of materials at the facility that may cause exceedances of surface water and groundwater standards specified in Minnesota Rules, chs. 7050 and 7060. These materials include, but are not limited to, detergents and cleaning agents, solvents, chemical dust suppressants, lubricants, fuels, drilling fluids, oils, fertilizers, explosives and blasting agents. [Minn. R. 7050, Minn. R. 7060]
2.1.36	The MPCA may modify this permit, require corrective actions or take other actions if it determines that a discharge authorized by this permit is causing or contributing to a violation of water quality standards. [Minn. R. 7001]
2.1.37	Floating solids or visible foam shall not be discharged in other than trace amounts. [Minn. R. 7001]
2.1.38	Oil or other substances shall not be discharged in amounts that create a visible color film. [Minn. R. 7001]
2.1.39	Any outlet pipe, culvert or hose outlets for the discharge shall be located at ground level. The Permittee shall install and maintain outlet protection measures, such as properly sized riprap, splash pads or gabions at the discharge stations (outlets) to prevent erosion. [Minn. R. 7001]
2.1.40	All water from dewatering or basin draining activities must be discharged in a manner that does not cause nuisance conditions, flooding on nearby properties, erosion in receiving channels or on downslope properties, or inundation in a wetland causing adverse impact to the wetland. [Minn. R. 7001]
2.1.41	Special Requirements. [Minn. R. 7001]
2.1.42	For stormwater discharges with a discharge location that flows to and is within one mile of Outstanding Resource Value Waters (ORVWs) as defined in Minn. R. 7050.0335, subp. 1, 2, 3, and 4 (not including calcareous fens listed in Minn. R. 7050.0335 & Minn. R. 7050.0470) and trout waters as listed in Minn. R. 6264.0050, subp. 2 and 4: A. The Permittee shall develop and implement stormwater control measures, including BMPs that restrict the facility industrial stormwater discharges to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an Outstanding Resource Value Water. In addition, a stormwater intervention limit value of 65 mg/L for Solids, Total Suspended (TSS) applies to the discharge at a stormwater monitoring location, instead of 100 mg/L as specified in the 'Stormwater Limits and Monitoring Intervention Limits' section of this Permit. If the Permittee has a waiver from the requirements to conduct benchmark monitoring in accordance with the Technology Based Effluent Limits - Stormwater Discharges section of this permit, the benchmark value does not apply. B. If the discharge is to a trout stream, BMPs shall also be designed and implemented to protect the water quality from excess temperature increases. C. If the discharge is to a trout lake, BMPs shall also be designed and implemented to protect the water quality from excess phosphorus increases. D. If the discharge is to a wetland, the Permittee shall also comply with the requirements of Minn. R. 7050.0186 WETLAND STANDARDS AND MITIGATION. [Minn. R. 7050]
2.1.43	If the site has any stormwater discharges with the potential for significant adverse impacts to a wetland (e.g., conversion of a natural wetland to a stormwater pond), the Permittee must demonstrate that the wetland mitigative sequence has been followed prior to the impacts to the wetland. [Minn. R. 7001]
2.1.44	If the potential adverse impacts to a wetland on a specific site have been addressed by permits or other approvals from an official statewide program (U.S. Army Corps of Engineers 404 program, Minnesota Department of Natural Resources, or the State of Minnesota Wetland Conservation Act) specifically for the site, the Permittee may use that permit or other determination issued by these agencies to show

	that the potential adverse impacts have been addressed. For the purposes of this permit, de minimis actions are determinations by the permitting MPCA that address the site impacts, whereas a non-jurisdictional determination does not address site impacts. [Minn. R. 7001]
2.1.45	If there are impacts from the site that are not addressed in one of the permits addressed in the Special Requirements section of this permit or other determinations (e.g., permanent inundation or flooding of the wetland, significant degradation of water quality, excavation, filling, draining), the Permittee must minimize all adverse impacts to wetlands by utilizing appropriate measures. Measures used must be based on the nature of the wetland, its vegetative community types and the established hydrology. These measures include in order of preference: A. Avoid all significant adverse impacts to wetlands from site discharges. B. Minimize any unavoidable impacts to wetlands from site discharges. C. Provide compensatory mitigation when the Permittee determines that there is no reasonable and practicable alternative to having a significant adverse impact on a wetland. For compensatory mitigation, wetland restoration or creation shall be of the same type, size, and whenever reasonable and practicable in the same watershed as the impacted wetland. [Minn. R. 7001]
2.1.46	If a site discharges to a water of the state that appears on the current U.S. Environmental Protection MPCA (USEPA) approved list of impaired waters under Section 303 (d) of the Clean Water Act (33 U.S.C. Sec 303 (d)), the Permittee must review whether changes may be warranted in the site's Pollution Prevention Plan (Plan) to reduce the impact of the discharge. If a USEPA approved Total Maximum Daily Load (TMDL) has been developed, the Permittee must review the adequacy of the Plan to meet the TMDLs Waste Load Allocation. [Minn. R. 7001]
2.1.47	Technology Based Effluent Limits - Stormwater Discharges. [Minn. R. 7001]
2.1.48	Stormwater Management Devices. [Minn. R. 7001]
2.1.49	The Permittee is authorized to use industrial stormwater ponds, sedimentation basins, and/or infiltration devices for stormwater management. [Minn. R. 7001]
2.1.50	Industrial stormwater ponds, sedimentation basins, and/or infiltration devices shall not be located in areas that receive direct discharges from permanent or stationary vehicle fueling tanks (aboveground or underground storage tanks) and maintenance activity areas (shops), except where adequate secondary containment is provided as required under the SPCC Rule, and/or the basin is designed specifically to satisfy the federal SPCC Rule. Spill prevention and response BMPs shall be implemented in areas where mobile refuelers transfer product. [Minn. R. 7001]
2.1.51	When wastewater from authorized activities is co-mingled with stormwater, it is considered wastewater, and a surface water discharge is not authorized under this permit. This does not include stormwater co-mingling with mine dewatering from Subsector J1 and J2 facilities, which is approved for a surface water discharge under this permit. [Minn. R. 7001]
2.1.52	If the Permittee provides documentation to MPCA that the stormwater management device was designed by a registered professional engineer to control a 10-year, 24-hour storm event (based on National Oceanic and Atmospheric Administration Atlas 14, Volume 8 (NOAA Atlas 14, Volume 8)), then no sampling of a discharge is required upon MPCA approval. If the stormwater management device is already in place at an existing facility, the sizing of the device shall be confirmed by a registered professional engineer before the sampling requirement is waived. This does not include unauthorized non-stormwater discharges to surface waters. This waiver is for monitoring only; effluent limits still apply to the discharge and Permittees must maintain compliance with the limits. This waiver is only effective for the term of the permit. Permittees must reapply for the waiver every permit term. [Minn. R. 7001]
2.1.53	Erosion and Sediment Control Practices. [Minn. R. 7001]
2.1.54	Sediment control practices must be established on all down-gradient perimeters and be located up-gradient of any buffer zones. The perimeter sediment control practice must be in place before any up-gradient land disturbing activities begin. Use a range of erosion controls within the broad categories of flow diversion (e.g. swales, berms) and structural controls (e.g. sediment traps, dikes, silt fences). These practices shall remain in place until the site has been stabilized. [Minn. R. 7001]
2.1.55	The Permittee shall re-install all sediment control practices that have been adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity has been completed. Short-term activities shall be completed as quickly as

	possible. Re-installation of sediment control practices shall be completed no later than before the next precipitation event, even if the short-term activity is not complete. [Minn. R. 7001]
2.1.56	The Permittee(s) shall plan for and implement appropriate BMPs such as construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion. The location of areas not to be disturbed shall be delineated (e.g. with flags, stakes, signs, silt fence etc.) on the project site before work begins. [Minn. R. 7001]
2.1.57	Temporary stockpiles or stripping/overburden stored outside the pit shall have sediment control mechanisms in place until the material is completely removed. Materials shall not be placed in any natural buffers, surface water, or stormwater conveyances such as curb and gutter systems, or conduits and ditches. [Minn. R. 7001]
2.1.58	Vehicle Tracking. Vehicle tracking of sediment onto paved surfaces from the site or operation must be minimized by BMPs such as stone pads, concrete or steel wash racks, or equivalent systems. Street sweeping must be used if such BMPs are not adequate to prevent sediment from being tracked onto the street within 24 hours of discovery. The MPCA Vehicle Tracking factsheet may be used as guidance in BMP development: http://www.pca.state.mn.us/index.php/view-document.html?gid=7419 . [Minn. R. 7001]
2.1.59	Good Housekeeping. Permittees conducting the industrial activities described in this permit shall keep exposed areas that may contribute pollutants to stormwater sufficiently clean to reduce or eliminate contaminated stormwater runoff. [Minn. R. 7001]
2.1.60	BMP Maintenance. [Minn. R. 7001]
2.1.61	The Permittee shall maintain all BMPs identified in the Pollution Prevention Plan (Plan) and implemented at the facility, to ensure BMP effectiveness. [Minn. R. 7001]
2.1.62	The Permittee shall develop a schedule for preventive maintenance of all BMPs. The schedule shall be stored with the Plan. [Minn. R. 7001]
2.1.63	If the Permittee identifies BMPs that are not functioning properly, the Permittee shall replace, maintain, or repair the BMPs within seven (7) calendar days of discovery. If BMP replacement, maintenance, or repair cannot be completed within seven (7) calendar days, the Permittee shall implement effective backup BMPs (temporary or permanent) until the effectiveness of the original BMPs can be restored. The Permittee shall document the justification for an extended replacement, maintenance, or repair schedule of the failed BMPs, and maintain it with the Plan. [Minn. R. 7001]
2.1.64	The Permittee shall record dates of all maintenance and repairs. The Permittee shall maintain these records with the Plan. [Minn. R. 7001]
2.1.65	All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/2 of the height of the device. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access. [Minn. R. 7001]
2.1.66	If sediment escapes the facility, off-site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets). For sediment releases to surface waters, the release must be reported to the MPCA/DNR. The sediment shall be removed from the surface water if approved by the DNR. [Minn. R. 7001]
2.1.67	Temporary and permanent sedimentation basins must have the sediment removed once the depth of sediment collected in the basin reaches 1/2 the storage volume. Removal must be completed within 72 hours of discovery, or as soon as field conditions allow access. [Minn. R. 7001]
2.1.68	Spills and Leaks. [Minn. R. 7001]
2.1.69	The Permittee shall develop and implement a spill prevention and response procedure. If the site already has a separate plan (e.g. Prevention and Response Plan as required by Minn. Stat. 115E, or Spill Prevention Control and Countermeasure Plan as required by Federal Law), that plan can be incorporated by reference into the Pollution Prevention Plan (Plan). In either case, a minimum of the following components shall be included with the Plan, or in a separate document: A. The Permittee shall report and document spills or leaks (as defined in Minn. Stat. Section 115.061) that occur in exposed areas, or that drain to a monitoring location. B. Material handling procedures, storage requirements, and cleanup equipment/materials and procedures necessary to recover as rapidly and thoroughly as possible spills or leaks pursuant to Minn. Stat. Section 115.061. All methods and procedures must be made available to appropriate site

	personnel. C. Contact information for individuals and emergency and regulatory agencies that must be notified in the event of a spill. When a spill or discharge of a potentially polluting material occurs, the Permittee shall immediately notify the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (metro area) per Minn. Stat. Section 115.061. [Minn. Stat. ch. 115]
2.1.70	Subsector D1 - Asphalt Production - Additional Spills and Leaks Requirements. [Minn. R. 7001]
2.1.71	In addition to the requirements in this Section, the Permittee shall use drip pans and splash guards where spills frequently occur at Subsector D1 facilities. [Minn. R. 7001]
2.1.72	Subsector E2 - Ready-Mix and Other Concrete Operations - Additional Spills and Leaks Requirements. [Minn. R. 7001]
2.1.73	In addition to the requirements in this Section, the Permittee shall prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, or settled dust from paved portions of the facility that are exposed to stormwater at Subsector E2 facilities. [Minn. R. 7001]
2.1.74	The Permittee shall determine the frequency of sweeping or equivalent by the amount of industrial activity occurring at Subsector E2 facilities and the frequency of exposure to stormwater, but it shall be performed at least once per week if cement, aggregate, kiln dust, fly ash, or settled dust are being handled or processed and materials are present on paved surfaces. [Minn. R. 7001]
2.1.75	The Permittee shall also prevent the exposure of fine granular solids (cement, fly ash, kiln dust, etc.) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, buildings, and under other coverings. [Minn. R. 7001]
2.1.76	The Permittee shall include measures in the Plan to ensure that process wastewater resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with applicable parts of this permit for Subsector E2 facilities. [Minn. R. 7001]
2.1.77	Technology Based Effluent Limits - Non-Stormwater Discharges. [Minn. R. 7001]
2.1.78	Wastewater Basin Design and Construction Requirements. [Minn. R. 7001]
2.1.79	When constructing new (as of the issuance date of this permit) containment basins to infiltrate authorized non-stormwater discharges, not including uncontaminated scale deck wash water that does not use detergents, solvents, or degreasers, wash water associated with cleaning of mobile equipment that does not use detergents, solvents, or degreasers and/or waters used for sawing stone or dust control on crushers, conveyors, associated equipment, stockpiles, and site roadways, of this permit from Subsector J1 and J2 activities, it shall: A. Have at least sufficient capacity to contain all wastewater discharges so as to prevent overflow. B. Be constructed to contain the bounce from precipitation and stormwater runoff resulting from a 10-year, 24 hour storm event. Any overflow of the basin shall not discharge to surface water or any storm sewer system. C. Not be constructed in areas that receive direct discharges from permanent or stationary vehicle fueling tanks (underground or aboveground storage tanks) and maintenance activity areas (shops). Spill prevention and response BMPs shall be implemented in areas where mobile refuelers transfer product. [Minn. R. 7001]
2.1.80	When constructing new (as of the issuance date of this permit) containment basins to infiltrate authorized non-stormwater discharges from Subsector E2 activities, it shall: A. Be designed consistent with accepted engineering practices. Designs shall be approved by a professional engineer or other licensed professional. B. Be constructed and maintained to allow for infiltration of wastewater. Long term soil infiltration rates for new infiltration devices shall not be greater than 1.63 inches per hour unless pretreatment practices are implemented prior to infiltration. C. Be constructed to allow for maximum separation distance from groundwater with a minimum of 3 feet between the bottom of the impoundment and the seasonal high water table. D. Have at least sufficient capacity to contain all wastewater discharges so as to prevent overflow. E. Be constructed to contain the bounce from precipitation and stormwater runoff resulting from a 10-year, 24 hour storm event. Any overflow of the basin shall not discharge to surface water or any storm sewer system. F. Not be constructed in areas with standing water or areas that receive direct discharges from permanent or stationary vehicle fueling tanks (underground or aboveground storage tanks) and

	maintenance activity areas (shops). Spill prevention and response BMPs shall be implemented in areas where mobile refuelers transfer product. The Permittee shall maintain design documentation to demonstrate containment basins meet the requirements of (A) through (F). [Minn. R. 7001]
2.1.81	If a Permittee has indicated all stormwater and/or process wastewater is contained and/or infiltrates on site, the site is prohibited from discharging to surface waters and will not be required to submit Discharge Monitoring Reports (DMRs). The site will be assigned a Land Application (LA) designation in lieu of a Surface Discharge (SD) designation. [Minn. R. 7001]
2.1.82	Karst Topography. [Minn. R. 7001]
2.1.83	New Basins. New infiltration devices for authorized non-stormwater discharges are prohibited within 1000 feet up-gradient or 100 feet downgradient of active karst features. [Minn. R. 7001]
2.1.84	Existing Basins. The design and construction of containment basins shall include additional or different measures as necessary (e.g. impervious liner in pond bottom) to assure compliance with surface and groundwater standards in Minn. R. chs. 7050 and 7060 and to ensure protection of drinking water supply management areas (see Minn. R. 4720.5100, subp. 13). These measures shall be identified in the Pollution Prevention Plan. [Minn. R. 7001]
2.1.85	Subsector J1 and J2 - Mine Pit Dewatering to Surface Waters. [Minn. R. 7001]
2.1.86	Permittees are authorized to discharge mine site dewatering flow to surface waters if the following conditions are met: A. Discharges only from Subsector J1 and J2 facilities. B. Discharges meet the effluent limits applied in this permit. C. The dewatering discharges do not co-mingle with other process wastewater. D. The dewatering discharges are not to ORVWs, DNR-designated trout waters, and/or DNR-posted fish-spawning areas. E. The Permittee has documented in their Pollution Prevention Plan location and initial flow estimates for surface discharge stations. [Minn. R. 7001]
2.1.87	Dewatering or basin draining must be discharged to a control device on the project site whenever possible, such as a temporary or permanent sedimentation basin or infiltration device. Discharge from the control device must be visually checked to ensure adequate treatment is obtained and that nuisance conditions (see Minn. R. 7050.0210, subp. 2) will not result from the discharge. [Minn. R. 7001]
2.1.88	If the water cannot be discharged to a control device prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners. [Minn. R. 7001]
2.1.89	The Permittee(s) must ensure that discharge points are adequately protected from erosion and scour. The discharge must be dispersed over natural riprap, sand bags, plastic sheeting, or other accepted energy dissipation measures. Adequate sedimentation control measures are required for discharge water that contains suspended solids. [Minn. R. 7001]
2.1.90	Any inlet pipe, culvert or hose for the discharge shall be raised above the ground so that the discharge flow does not draw in and transport solids from the sump area. [Minn. R. 7001]
2.1.91	Subsector D1 -Asphalt - BMPs for Wet Scrubber Wastewater. [Minn. R. 7001]
2.1.92	This permit authorizes stormwater discharges from asphalt production areas (SIC Code 2951) and/or stormwater discharges from the installation, construction, and/or operation of wet scrubbers at asphalt production plants. This permit does not authorize the discharge of asphalt production wet scrubber wastewater to surface waters or to groundwater. Any discharge to surface water will require an individual NPDES permit. [Minn. R. 7001]
2.1.93	Wastewater from asphalt production wet scrubbers shall be held within pipes, aboveground tanks or lined impoundments. Pipes and tanks shall be operated and maintained to prevent leaks. Cracks or other failures in pipes or tanks shall be repaired immediately. If pipes are buried, or pipes or tanks are in contact with the land surface, they shall be inspected at least once before each operating year to locate and repair cracks or other failures. [Minn. R. 7001]

2.1.94	An impoundment for containment of wet scrubber wastewater shall meet the design criteria specified in this section. Impoundments that do not meet the criteria in this part may be authorized if requested in writing by the Permittee, and approved in writing by the MPCA, at least 90 days before construction of the impoundment begins. [Minn. R. 7001]
2.1.95	Construction of impoundments in close proximity to drinking water supplies and other areas subject to contamination should be avoided. A minimum separation of four feet between the top of the impoundment seal and the seasonal high water table shall be maintained. Drain tile under the impoundment shall not be used to permanently lower the water table. A minimum separation of ten feet between the top of the impoundment seal and bedrock formations shall be maintained. Impoundments shall not be constructed on locations with karst topography. [Minn. R. 7001]
2.1.96	Impoundments shall be constructed utilizing at least a 30-mil-thick continuous Polyvinyl Chloride (PVC) or High Density Polyethylene (HDPE) liner, or a reinforced Portland cement concrete liner. A PVC or HDPE liner, not replaced on an annual basis, shall be covered with at least one-foot depth of finely textured soil. Liquid depths for impoundments shall be designed for a maximum of six feet. [Minn. R. 7001]
2.1.97	PVC and HDPE liner systems shall be designed and installed in general accordance with the most recent version of MPCA guidance documents High Density Polyethylene Liner Guidance (June 2011) or Polyvinyl Chloride Liner Guidelines (May 2011). [Minn. R. 7001]
2.1.98	No PVC or HDPE liner panels shall be used at more than one site without the prior written approval of the MPCA. The Permittee shall remove and properly dispose of used PVC and HDPE liner materials in accordance with applicable solid waste statutes and rules. [Minn. R. 7001]
2.1.99	The subsoil bed for a PVC or HDPE liner shall be sufficiently prepared to ensure that all holes, rocks, stumps and other debris are eliminated. The subsoil shall be sieved or the area raked after grading to provide a smooth, flat surface free of stones and other sharp objects. The subsoil bed shall be sloped at least 1% upward toward the dike, so as to reduce gas and hydrostatic pressures, and to facilitate pumping of the impoundment. [Minn. R. 7001]
2.1.100	PVC and HDPE liner panels shall be laid out to minimize seams, with an overlap of four to six inches. The PVC or HDPE liner anchor trench shall have a minimum six inch depth and be placed at least nine to twelve inches beyond the slope break at the dike. PVC and HDPE liners shall be installed under the direct supervision of a person experienced in the proper installation of such liners. This person shall inspect all seams on-site for their acceptability prior to the construction certification. [Minn. R. 7001]
2.1.101	The design of a reinforced Portland cement concrete liner shall be in accordance with the American Concrete Institute (ACI) Manual of Concrete Practice. [Minn. R. 7001]
2.1.102	The Permittee shall inspect each impoundment for cracks or other failures, at least once each operating year. This inspection shall be conducted after the spring thaw and before the start of the asphalt plant operating season. In addition: A. PVC and HDPE lined impoundments shall complete a water balance test annually after the spring thaw and before the start of the asphalt plant operating season. The water balance test shall be completed in accordance with the MPCA "Prefill and Water Balance Criteria" (December 2010). B. Concrete lined impoundments shall complete water tightness testing at least once per 5 years (once per permit cycle). Water tightness testing for concrete impoundments shall be completed in accordance with the most recent version of ACI 350.1 "Specification for Tightness Testing of Environmental Engineering Concrete Containment Structures." Impoundments that do not pass the water balance or tightness testing may not be placed into service until a passing result is achieved; this may require identifying and repairing problem areas of the impoundment and repeating the testing. The inspector shall prepare a written report of each water balance and inspection. Any cracks or other failures shall be repaired immediately, and certified by an engineer registered in Minnesota. [Minn. R. 7001]
2.1.103	The Permittee shall keep signed copies of the impoundment design plans and specifications, construction certifications, water balance and inspection reports, and repair certifications with the asphalt plant at all times. [Minn. R. 7001]
2.1.104	The Permittee shall divert surface water runoff around impoundments, prevent erosion, and protect the structural integrity of exterior embankments from failure. [Minn. R. 7001]

2.1.105	The Permittee shall maintain impoundments during the winter so that ice layers and frost action do not damage the liner effectiveness and integrity. [Minn. R. 7001]
2.1.106	Sediments that accumulate in asphalt production wet scrubber wastewater containment structures shall be removed in a manner so as to not damage the integrity and effectiveness of the containment structure. The Permittee may dispose of these sediments at a permitted sanitary landfill, through use as road base or subgrade, or through blending into the paving asphalt mixture. The Permittee may use one of the following options for sediment disposal if the MPCA authorizes this specific in writing: A. Leave in-place; B. Use as clean fill; or C. Land spread. The Permittee shall record in writing the volume of sediments removed from asphalt production scrubber disposal systems, and the method and location of the disposal of such materials. [Minn. R. 7001]
2.1.107	The Permittee may dispose of asphalt production wet scrubber wastewater for the purposes of roadbed preparation or dust control, and in accordance with the following requirements: A. Wastewater may be applied to the surface of unpaved roads or roadbeds only if the asphalt plant is in the process of relocating, has ceased operation for the remainder of the year, or if alterations to the impoundment are needed. B. Wastewater may be applied to the surface of unpaved roads or roadbeds only if that road or roadbed is dry. C. Application to haul roads shall be conducted in such a manner to prevent runoff or prolonged ponding. D. Only the amount of water needed to control or prevent a dust problem may be applied. E. Wastewater used for dust control shall not enter any road ditch, surface water, or wetland. F. Wastewater shall not be applied at a rate greater than one gallon per square yard per year. [Minn. R. 7001]
2.1.108	Asphalt Ingredients, Burner Fuels and Chemical Additives. If the Permittee proposes to use asphalt ingredients, burner fuels and/or chemical additives other than those designated below, at an asphalt production plant with a wet scrubber, the Permittee shall apply in writing to the MPCA for such approval, no later than 60 days before the planned date of utilization of the non-designated material. The Permittee may use these non-designated materials only with the written approval of the MPCA. The designated materials are: A. Clay, silt, sand, gravel and crushed stone produced from naturally occurring geologic formations, and without chemical additives. B. Recycled asphalt. C. Recycled asphalt saturated felt materials. D. Natural gas, butane, propane and methane. E. Gasoline, kerosene, diesel fuel, jet fuel and fuel oils (No. 1, No. 2, No. 3, No. 4, No. 5, No. 6). F. Petroleum derived waste oil as defined in Minn. R. 7045.0020. G. On-specification used oil fuel, as defined in Minn. R. pt. 7045.0020, except that total halogens shall not exceed 1,000 parts per million in the used oil fuel. H. Asphalt cement (AC). I. Hydrated lime. J. Anti-stripping agents approved by the MPCA under this permit. K. Aluminum chloride flocculants. L. Freemont 8201 and anionic polyacrylamide flocculants of similar chemical composition. M. Any mixture of the materials listed in subitems (A) through (L). N. Portland cement concrete. O. Recycled sediments from asphalt plant scrubber operations. P. Fines from asphalt fabric filter operations. Q. Silicone. [Minn. R. 7001]
2.1.109	Subsector E2 - Ready-Mix and Other Concrete Operations Discharges to Groundwater. [Minn. R. 7001]

2.1.110	This permit section is intended to cover process wastewater discharges from concrete product operations. Authorized discharges to groundwater specified in the Applicability Section of this permit are covered under this permit. Any discharge to surface water will require an individual NPDES permit. Wastewater discharges from facilities described by the following Standard Industrial Classification (SIC) codes are authorized: A. Concrete Block and Brick (SIC 3271) B. Concrete Products, N.E.C. (Not Elsewhere Covered) (SIC 3272) C. Ready-Mix Concrete (SIC 3273). [Minn. R. 7001]
2.1.111	Containment basins shall be constructed in compliance with this permit. [Minn. R. 7001]
2.1.112	Authorized E2 activity discharge to new containment basins (as of the issuance date of this permit) must meet the following conditions: A. be constructed to allow for maximum separation distance from groundwater with a minimum of 3 feet between the bottom of the impoundment and the seasonal high water table, B. If the wastewater pH of authorized discharges from E2 activities is outside the range of 6.0-9.0 Standard Units (SU), the wastewater must also be passed through an extra soil zone, mixed with other authorized process waters or rinse waters, or held in a lined or sealed basin to prevent infiltration in order to bring the pH within the range of 6.0-9.0 SU before the wastewater mixes with groundwater. [Minn. R. 7001]
2.1.113	Authorized E2 activity discharge to existing containment basins must meet the following conditions: A. If the wastewater pH of authorized discharges from E2 activities is outside the range of 6.0-9.0 Standard Units (SU), the wastewater must also be passed through a soil zone, mixed with other authorized process waters or rinse waters, or held in a lined or sealed basin to prevent infiltration in order to bring the pH within the range of 6.0-9.0 SU before the wastewater mixes with groundwater. [Minn. R. 7001]
2.1.114	Pollution Prevention Plan (Plan). [Minn. R. 7001]
2.1.115	The Permittee shall develop and implement a Pollution Prevention Plan (Plan) to address the specific conditions at the site. The goal of the Plan is to eliminate or minimize contact of stormwater with significant materials that may result in pollution of the runoff, as well as identify and correctly manage non-stormwater discharges. Minnesota Guide to Pollution Prevention Planning: https://www.pca.state.mn.us/quick-links/minnesota-guide-pollution-prevention-planning. [Minn. R. 7001]
2.1.116	A Plan shall be developed, implemented, and maintained for each site authorized by this permit. A Plan shall be prepared and maintained in an appropriate and functional manner in accordance with relevant manufacturer specifications and accepted engineering practices. [Minn. R. 7001]
2.1.117	A Plan shall be completed prior to submitting the permit application for authorization of activities by this permit. Permittees authorized under the previous version of this permit shall modify the Plan to comply with the requirements of this permit prior to submitting the permit application. [Minn. R. 7001]
2.1.118	A Plan shall be used by the Permittee to document all BMPs used to comply with all control measures required in the Technology Based Effluent Limits sections of this permit. BMPs shall be designed and implemented to address the potential pollutants associated with the activities and materials identified by the Permittee. The documentation shall include a list of all structural and non-structural BMPs designed and implementation at the site. [Minn. R. 7001]
2.1.119	The Plan shall include documentation of an assessment and inventory/list of materials handled and activities conducted at the site that can potentially be a source of pollutants to stormwater discharges. The assessment shall include but is not limited to the materials and activities identified below: A. Excavation. B. Crushing/Screening. C. Overburden, waste and products stockpiles. D. Raw material and final product storage. E. Waste products. F. Sediment washing. G. Material loading/unloading. H. Areas where spills and leaks may potentially contribute pollutants to stormwater. I. Vehicle and equipment maintenance, washing, and fueling.

	J. Chemical additives/dust suppressant use. [Minn. R. 7001]
2.1.120	The Plan for each site shall include an inventory of all chemical additives currently used to treat wastewater and/or stormwater including chemical dust suppressants. This inventory shall include: A. The name of the additive. B. The process for which the additive will be used. C. The proposed method of application, application frequency, and daily average and maximum rates of use. D. The date of MPCA approval. MPCA approval is required for any additives that are new, increasing in usage, or not previously approved. See the Total Facilities Requirements section of this permit and go to the chemical additive webpage at http://www.pca.state.mn.us/index.php/water/water-types-and-programs/wastewater/wastewater-technical-assistance/chemical-additive-approvals.html to find the documents necessary to complete the approval process. [Minn. R. 7001]
2.1.121	The Plan for each site shall include a site map, which does not need to be a surveyed map, at least to the level of detail indicated on a 7.5-minute U.S. Geological Survey quadrangle map, which identifies: A. Location of the site in relation to surface waters (including the name of the surface water; if the name is not known, indicate that on the map). B. Location of all impaired waters within one mile. The Permittee shall include the name of the impaired water and the impairment (e.g. impaired for biota fish, turbidity, nutrients, etc.). C. Location of all ORVWs, designated trout waters, and wetlands within one mile of the site (Minn. R. 7050.0335, 6264.0050, and 7050.0420). D. Directions of stormwater flow indicated by arrows (including stormwater that is contained/infiltrated on site). E. Location of all discharge points. F. Location of all overflow points from control devices. G. Topography of the area. H. Location of all activities and materials. I. Location of all structural BMPs. J. Location and description of any non-stormwater discharges. K. Dewatering points. L. Water supply wells. M. Surface water supply intakes. Portable sites can meet the requirements of (G) through (M) above by developing general plant configuration maps. [Minn. R. 7001]
2.1.122	The Permittee shall review the Plan at least annually and modify the Plan, if: A. There is construction or a change in design, operation, or maintenance at the facility that affects stormwater and wastewater management or compliance with this permit. B. The Permittee has identified a monitoring location from which the discharge flows to, and is within one mile of, an impaired water. C. A routine inspection, compliance evaluation, or visual inspection identified deficiencies in the Plan and/or BMP. D. Additional stormwater and/or wastewater control measures and BMPs are necessary to meet applicable water quality standards or to address exceedances of intervention limits. E. There is an unauthorized discharge from the facility. If the Plan modification is based on a release or unauthorized discharge, include in the modified Plan a description and date of the release, the circumstances leading to the release, actions taken in response to the release, and measures to prevent the recurrence of such releases. Unauthorized releases and discharges are subject to the reporting requirements in the Total Facilities Requirements section of this permit. [Minn. R. 7001]
2.1.123	The Plan must be kept at the site when the site is active. If there is no office located on-site, electronic access of the Plan is acceptable. The Plan must be available to the MPCA within 72 hours of a request for review. [Minn. R. 7001]
2.1.124	The Plan shall identify the individual(s) responsible for managing, implementing, maintaining,

		modifying, and ensuring compliance with the site's Plan, as well as personnel responsible for managing and implementing the Plan. [Minn. R. 7001]
2.1.125		The Permittee must develop and implement an employee training program to inform appropriate personnel of the components and goals of the Plan. The Plan must also identify periodic dates for such training. [Minn. R. 7001]
2.1.126		Records of all inspections conducted in accordance with permit requirements shall be maintained within the Plan. [Minn. R. 7001]
2.1.127		Subsector D1 - Asphalt - Additional Plan Requirements. [Minn. R. 7001]
2.1.128		Asphalt facilities (Subsector D1) must also identify: A. Petroleum storage. B. Fuel Storage. C. Recycled Asphalt Pavement Storage. D. Aggregate Storage. E. Recycled concrete, concrete block and brick crushing and storage. F. Cold Patch Storage. G. Release agent storage and application. [Minn. R. 7001]
2.1.129		Subsector E2 - Ready-Mix Operations - Additional Plan Requirements. [Minn. R. 7001]
2.1.130		Ready-Mix Operations (Subsector E2) must also identify: A. Bag house or other dust control device. B. Recycle/sediment pond, clarifier, or other device used for the treatment of process wastewater. C. The areas that drain to the treatment device. D. Description of multiple locations of ready-mix and other concrete operations, if applicable. [Minn. R. 7001]
2.1.131		Inspection Reports. [Minn. R. 7001]
2.1.132		The Permittee shall develop and implement an inspection schedule that includes a minimum of one site inspection per calendar month that the site is an active site and staffed. A minimum of one inspection per calendar year shall be conducted during a runoff event. [Minn. R. 7001]
2.1.133		If the site is Inactive and unstaffed, Temporarily Inactive and unstaffed as defined, or is a site undergoing final stabilization, the Permittee is waived from the requirement to conduct monthly site inspections, but BMPs must be maintained. [Minn. R. 7001]
2.1.134		All inspections and resulting maintenance must be recorded and retained within the Plan. Records of each inspection and maintenance activity shall include: A. Date and time of inspections. B. Name of person(s) conducting inspections. C. An evaluation of the facility to determine that the Plan accurately reflects conditions as described in the Pollution Prevention Plan. At a minimum, the Permittee shall inspect storage tank areas, waste disposal areas, maintenance areas, loading/unloading areas, and raw material, intermediate product, by-product and final product storage areas. D. An evaluation of all structural and non-structural BMPs to determine effectiveness and proper function. E. An evaluation of the facility to determine whether new exposed significant materials or activities have been added to the site since completion of the Plan. F. Findings of inspections, including recommendations for corrective actions. G. Corrective actions taken (including dates, times, and party completing maintenance activities). [Minn. R. 7001]
2.1.135		In addition to the inspection requirements of this Section, separately from the required annual runoff event inspection, the Permittee shall ensure that one of the required monthly inspections occurs during a snow melt event. The inspection shall include a visual assessment of the runoff to identify any visible sheens or films that indicate the presence of oil or grease in the discharge. If sheens are present in surface discharges, corrective actions to prevent sheen shall be implemented and documented in the Plan. [Minn. R. 7001]
2.1.136		Subsector D1 - Asphalt - Additional Inspection Reports Requirements. [Minn. R. 7001]
2.1.137		The operator of an Asphalt Facility shall also inspect the following areas: A. Material storage and handling areas;

		B. Liquid storage tanks; C. Hoppers and silos; D. Vehicle and equipment maintenance, cleaning, and fueling areas; and E. Material handling vehicles, equipment, and processing areas. Ensure that appropriate action is taken in response to the inspection by using follow-up procedures. Document in the Plan the inspections and follow up actions. [Minn. R. 7001]
2.1.138		Subsector E2 - Ready-Mix and Other Concrete Operations - Additional Inspection Reports Requirements. [Minn. R. 7001]
2.1.139		Dust collection and containment systems shall be included in the site inspections. [Minn. R. 7001]
2.1.140		Monitoring Requirements. [Minn. R. 7001]
2.1.141		Stormwater Monitoring. [Minn. R. 7001]
2.1.142		The Permittee shall monitor each outfall for all parameters specified in the Limits and Monitoring Section of this permit during stormwater runoff from active site operations. The Permittee shall submit the results of intervention limit monitoring required by this permit on the Discharge Monitoring Report form provided by the MPCA. The information must be recorded in the specified areas on the form and in the unit specified. [Minn. R. 7001]
2.1.143		Two samples shall be collected at each monitoring outfall and analyzed for each intervention limit parameter in a calendar year in order to determine an annual average concentration for each intervention limit parameter. The two samples shall be collected on two separate runoff events, one in the spring and one in the fall, if possible, each calendar year the Permittee is authorized to discharge under this permit. At the Permittee's discretion, more than two samples may be taken during separate runoff events and used to determine the annual average intervention limit(s). [Minn. R. 7001]
2.1.144		If the Permittee is unable to obtain a minimum of two samples, less than two samples may be used to determine the annual average intervention limit(s) for the discharges during the year. However, for each sample that could not be obtained due to weather conditions and/or soil characteristics, the Permittee shall provide an explanation in the Comments section of the Discharge Monitoring Report and submit it to the MPCA. [Minn. R. 7001]
2.1.145		Samples shall be collected during the first 30 minutes of a measurable runoff event at a monitoring outfall and sampling events shall be at least 72 hours apart, to the extent feasible. [Minn. R. 7001]
2.1.146		The intervention limit monitoring location(s) selected by the Permittee shall be in a location that: A. Is below the most down-gradient BMP from the source of industrial activity or significant materials, but prior to discharging from the Permittee's operational control. B. Minimizes or eliminates sampling of stormwater from off-site sources (run-on). C. Yields a sample that best represents the contribution of pollutants the Permittee is required to monitor for in accordance with this permit and that receives discharge from an area of industrial activities, processes, and significant materials exposed to stormwater. [Minn. R. 7001]
2.1.147		If the Permittee has identified multiple, but separate, stormwater discharges and each area of discharge is substantially similar in terms of exposure, BMPs, and pollutants discharged, the Permittee may choose one intervention limit monitoring location that is most representative and best allows for obtaining a sample. This is applicable to a single site only. Multiple sites may only choose a substantially similar outfall at a single site. [Minn. R. 7001]
2.1.148		An exceedance of an applicable annual average intervention limit does not constitute a violation under this permit. However, the Permittee is required to perform any necessary corrective action(s) to address stormwater control measures, including the maintenance or implementation of BMPs, when an exceedance of an applicable intervention limit occurs as described below. Failure to respond to an intervention limit exceedance is a violation of the permit. If an exceedance of an intervention limit occurs, modify the Plan and document all corrective actions, including improvements to BMPs, necessary to meet the applicable intervention limits. Modifications and upgrades of the Plan and BMPs shall be initiated immediately, but no later than 14 days beyond discovery of an intervention limit exceedance. The Permittee must install a new or modified control and make it operational as soon as possible.

		If it is infeasible to complete the installation of a new or modified BMP within 14 calendar days, the Permittee must document why it is infeasible to complete the installation or repair within the 14-day timeframe. The Permittee must also outline a schedule for completing the work, and documentation must be completed as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If 45 days is infeasible, the Permittee must complete the installation or repair as soon as practicable and document the reason for delay. All documentation shall be contained within or as an attachment to the Plan. [Minn. R. 7001]
2.1.149		If the site is Temporarily Inactive during a monitoring period, intervention limit monitoring is not required, but the Permittee shall indicate on their DMR the inactivity and indicate that permanent stormwater BMPs remain in place. Should the site become active, the Permittee is required to sample in accordance with this Section of the permit for the year the site became active. [Minn. R. 7001]
2.1.150		If stormwater does not discharge to surface waters, no monitoring is required. If there is no discharge during the sampling period, the Permittee shall check the "No Flow" box and note the conditions on the Discharge Monitoring Report Form. [Minn. R. 7001]
2.1.151		If the Permittee submits documentation in compliance with this permit and receives approval from MPCA, discharges from the mine dewatering control devices are not required to be sampled. This shall include overflows caused solely by direct rainfall and groundwater seepage. [Minn. R. 7001]
2.1.152		Stormwater Limits and Monitoring Intervention Limits A. Subsectors J1, J2, D1, and E2: Total Suspended Solids, 100 mg/L. B. Subsector E2: Iron, 1.0 mg/L. [Minn. R. 7001]
2.1.153		Mine Dewatering to Surface Waters - Effluent Limit Monitoring. [Minn. R. 7001]
2.1.154		If dewatering flows do not discharge to surface waters, no monitoring will be required. If there is no discharge during the sampling period, the Permittee shall check the "No Flow" box and note the conditions on the Discharge Monitoring Report Form. [Minn. R. 7001]
2.1.155		If the Permittee submits documentation in compliance with this permit and receives approval from MPCA, overflows from the mine pit dewatering control devices are not required to be sampled. This shall include overflows caused solely by direct rainfall and groundwater seepage. [Minn. R. 7001]
2.1.156		One sample shall be collected quarterly from each monitoring outfall identified and analyzed for each required effluent limit parameters specified in the Limits and Monitoring Section of this permit. The sample(s) shall be collected each calendar quarter the Permittee is authorized to discharge under this permit. [Minn. R. 7001]
2.1.157		For active mine dewatering, samples shall be representative of the discharge and collected during any measurable event at an outfall. Flow monitoring shall be monitored using a continuous flow monitor or pump-run times. [Minn. R. 7001]
2.1.158		If the discharge event is an overflow caused by a rainfall event, the sample(s) shall be collected within the first 30 minutes of the measurable runoff event. If it is not possible to collect the sample(s) within the first 30 minutes, the sample(s) shall be collected as soon as practicable after the first 30 minutes and documentation must be included with the Comments field of the Discharge Monitoring Report Form that explains why it was not possible to collect the sample(s) within the first 30 minutes. [Minn. R. 7001]
2.1.159		Mine Dewatering to Surface Waters - Monitoring for Permit Reissuance. The following parameters shall be sampled and analyzed prior to permit expiration and submitted with the application for permit re-issuance. Samples shall be representative of mine dewatering discharge activity, and must comply with the Total Facilities Requirements section of this permit: A. Total Dissolved Solids. B. Hardness. C. Oil & Grease and surfactants. D. Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc. E. Aluminum, barium, boron, cobalt, iron, magnesium, manganese, molybdenum, total tin, and total aluminum. [Minn. R. 7001]
2.1.160		Total Facilities Requirements. [Minn. R. 7001]
2.1.161		Definitions. Refer to the 'Permit Users Manual' found on the MPCA website (www.pca.state.mn.us) for standard definitions. [Minn. R. 7001]

2.1.162	Incorporation by Reference. The following applicable federal and state laws are incorporated by reference in this permit, are applicable to the Permittee, and are enforceable parts of this permit: 40 CFR pts. 122.41, 122.42, 136, 403 and 503; Minn. R. pts. 7001, 7041, 7045, 7050, 7052, 7053, 7060, and 7080; and Minn. Stat. ch. 115 and 116. [Minn. R. 7001]
2.1.163	Permittee Responsibility. The Permittee shall perform the actions or conduct the activity authorized by this permit in compliance with the conditions of the permit and, if required, in accordance with the plans and specifications approved by the MPCA. [Minn. R. 7001.0150, subp. 3(E)]
2.1.164	Toxic Discharges Prohibited. Whether or not this permit includes effluent limitations for toxic pollutants, the Permittee shall not discharge a toxic pollutant except according to 40 CFR pts. 400 to 460 and Minn. R. chs. 7050, 7052, 7053 and any other applicable MPCA rules. [Minn. R. 7001.1090, subp. 1(A)]
2.1.165	Nuisance Conditions Prohibited. The Permittee's discharge shall not cause any nuisance conditions including, but not limited to: floating solids, scum and visible oil film, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, aquatic habitat degradation, excessive growths of aquatic plants, acutely toxic conditions to aquatic life, or other adverse impact on the receiving water. [Minn. R. 7050.0210, Subpt. 2]
2.1.166	Property Rights. This permit does not convey a property right or an exclusive privilege. [Minn. R. 7001.0150, subp. 3(C)]
2.1.167	Liability Exemption. In issuing this permit, the State and the MPCA assume no responsibility for damage to persons, property, or the environment caused by the activities of the Permittee in the conduct of its actions, including those activities authorized, directed, or undertaken under this permit. To the extent the State and the MPCA may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act. [Minn. R. 7001.0150, subp. 3(O)]
2.1.168	The MPCA's issuance of this permit does not obligate the MPCA to enforce local laws, rules, or plans beyond what Minnesota statutes authorize. [Minn. R. 7001.0150, subp. 3(D)]
2.1.169	Liabilities. The MPCA's issuance of this permit does not release the Permittee from any liability, penalty, or duty imposed by Minnesota or federal statutes or rules or local ordinances, except the obligation to obtain the permit. [Minn. R. 7001.0150, subp. 3(A)]
2.1.170	The issuance of this permit does not prevent the future adoption by the MPCA of pollution control rules, standards, or orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards, or orders against the Permittee. [Minn. R. 7001.0150, subp. 3(B)]
2.1.171	Severability. The provisions of this permit are severable and, if any provisions of this permit or the application of any provision of this permit to any circumstance are held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. [Minn. R. 7001]
2.1.172	Compliance with Other Rules and Statutes. The Permittee shall comply with all applicable air quality, solid waste, and hazardous waste statutes and rules in the operation and maintenance of the facility. [Minn. R. 7001]
2.1.173	Inspection and Entry. When authorized by Minn. Stat. ch. 115.04, 115B.17, subd. 4, and 116.091, and upon presentation of proper credentials, the Permittee shall allow the MPCA, or an authorized employee or agent of the MPCA, to enter at reasonable times upon the property of the Permittee to examine and copy books, papers, records, or memoranda pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit; and to conduct surveys and investigations, including sampling or monitoring, pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit. [Minn. R. 7001.0150, subp. 3(I)]
2.1.174	Control Users. The Permittee shall regulate the users of its facility to prevent the introduction of pollutants or materials that may result in the inhibition or disruption of the conveyance system, treatment facility or processes, or disposal system that would contribute to the violation of the conditions of this permit or any federal, state, or local law or regulation. [Minn. R. 7001.0150, subp. 3(F)]
2.1.175	Sampling. [Minn. R. 7001]

2.1.176	Representative Sampling. The Permittee shall conduct samples and measurements required by this permit as specified in this permit and shall be representative of the discharge or monitored activity. [Minn. R. 7001.0150, subp. 2(B)]
2.1.177	Additional Sampling. If the Permittee monitors more frequently than required, they shall report the results and the frequency of monitoring on their eDMR for that reporting period. [Minn. R. 7001.1090, subp. 1(E)]
2.1.178	Certified/Accredited Laboratory. A laboratory accredited by the Minnesota Department of Health [Minn. R. 4740.2010 through Minn. R. 4740.2120] and/or certified by the MPCA [Minn. R. 7001.4310 through Minn. R. 7001.4390] shall conduct analyses required by this permit, unless approved in writing by the MPCA. A certified/accredited laboratory does not need to complete analyses of dissolved oxygen, pH, temperature, specific conductance, and total residual oxidants (chlorine, bromine). Those analyses shall comply with 40 CFR pt. 136. Dissolved oxygen, pH, and total residual oxidants must be performed on-site. Follow the manufacturer's specifications for equipment maintenance and use. [Minn. R. 4740.2010-4740.2120, Minn. R. 7001.4310-7001.4390]
2.1.179	Sample Preservation and Procedure. Sample preservation and test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and Minn. R. 7041.3200. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7041.3200]
2.1.180	Equipment Calibration. The Permittee shall check and/or calibrate flow meters, pumps, flumes, lift stations, or other flow monitoring equipment used for purposes of determining compliance (within plus or minus ten percent of the true flow values) with permit requirements at least twice annually. [Minn. R. 7001.0150, subp. 2(B & C)]
2.1.181	Maintain Records. The Permittee shall keep the records required by this permit for at least three years, including any calculations, original recordings from automatic monitoring instruments, and laboratory sheets. The Permittee shall extend these record retention periods upon request of the MPCA. The Permittee shall maintain records for each sample and measurement. The records shall include the following information: A. The exact place, date, and time of the sample or measurement; B. The date of analysis; C. The name of the person who performed the sample collection, measurement, analysis, or calculation; D. The analytical techniques, procedures, and methods used; and E. The results of the analysis. [Minn. R. 7001.0150, subp. 2(C)]
2.1.182	Completing Reports. The Permittee shall submit the results of the required sampling and monitoring activities on the forms provided, specified, or approved by the MPCA. The Permittee shall record the information in the specified areas on those forms and in the units specified. Required forms may include a Sample Values Form. If required, the Permittee shall record individual values for each sample and measurement on the Sample Values Form provided by the MPCA. The Permittee shall submit Sample Values Form with the appropriate eDMRs. The Permittee may design and use their own Sample Values Form; however, the Permittee shall not use their form until the MPCA reviews and approves the form. Note: The Permittee shall also record required summary information on their eDMR. Permittee submitted summary information contained only on the Sample Values Form does not comply with reporting requirements. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.1090, subp. 1(D)]
2.1.183	Submitting Reports. The Permittee shall submit eDMRs, Sample Values Forms, and other supplemental attachment forms via MPCA e-Services after the MPCA approves their authorization request. The Permittee shall electronically submit eDMRs, Sample Values Forms, and other supplemental attachment forms by the 21st day of the month following the sampling period or otherwise as specified in this permit. The Permittee shall complete eDMR submittal on or before 11:59 PM of the 21st day of the month following the sampling period or as otherwise specified in this permit. The Permittee shall submit an eDMR for each required station even if no discharge occurred during the reporting period.

	The Permittee shall submit other reports required by this permit electronically or by mail. The Permittee shall submit reports by the date specified in this permit. For electronic submittals, the Permittee shall submit on or before 11:59 PM on the date specified in this permit. For mailed submittals, the Permittee shall ensure that submittals via U.S. Postal Service or other hand delivery method contain postmarks by the date specified in this permit. Electronically: wq.submittals.mPCA@state.mn.us Include Water quality submittals form: www.pca.state.mn.us/sites/default/files/wq-wwprm7-71.docx Or by mail: Attention: WQ Submittals Center Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, MN 55155-4191. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(H)]
2.1.184	Incomplete or Incorrect Reports. The Permittee shall immediately submit an electronically amended report or eDMR to the MPCA upon discovery by the Permittee or notification by the MPCA that it has submitted an incomplete or incorrect report or eDMR. The amended report or eDMR shall contain the missing or corrected data along with a comment on the eDMR explaining the circumstances of the incomplete or incorrect report. If it is impossible to amend the report or eDMR electronically, the Permittee shall immediately notify the MPCA and the MPCA will provide direction for the amendment submittals. [Minn. R. 7001.0150, subp. 3(G)]
2.1.185	Required Signatures. The Permittee or the duly authorized representative of the Permittee shall sign all eDMRs, forms, reports, and other documents submitted to the MPCA per Minn. R. 7001.0150, subp. 2(D). The person or persons who sign the eDMRs, forms, reports, or other documents shall certify that he or she understands and complies with the certification requirements of Minn. R. chs. 7001.0070 and 7001.0540, including the penalties for submitting false information. A registered professional engineer shall certify technical documents, such as design drawings and specifications, and engineering studies submitted as part of a permit application or by permit conditions. [Minn. R. 7001.0540]
2.1.186	Reporting Limit (RL). The Permittee shall report monitoring results below the RL of a particular instrument as "<" the value of the RL. For example, if an instrument has a RL of 0.1 mg/L and a parameter is not detected at a value of 0.1 mg/L or greater, the Permittee shall report the concentration as "< 0.1 mg/L." The Permittee shall not use "non-detected," "undetected," "below detection limit," or "zero" when reporting results. The MPCA considers these terms as permit reporting violations. Where sample values are less than the RL and the permit requires reporting of an average, the Permittee shall calculate the average as follows: A. If some values are less than (<) the RL, substitute zero for all non-detectable values to use in the average calculation; B. If all values are less than (<) the RL, calculate the average and report as < the RL average concentration; and C. To calculate a mass loading with a less than (<) the RL concentration, use the RL value in the calculation and then add the "<" to the product of the concentration and the volume. [Minn. R. 7001.0150, subp. 2(B)]
2.1.187	Records. The Permittee shall, when requested by the MPCA, submit within a reasonable time the information and reports that are relevant to the control of pollution regarding the construction, modification, or operation of the facility covered by the permit or regarding the conduct of the activity covered by the permit. [Minn. R. 7001.0150, subp. 3(H)]
2.1.188	Confidential Information. Except for data determined to be confidential according to Minn. Stat. ch. 116.075, subd. 2, all reports required by this permit are available for public inspection. The MPCA does not consider effluent data confidential. To request the MPCA maintain data as confidential, the Permittee shall follow Minn. R. 7000.1300. [Minn. R. 7000.1300]
2.1.189	Noncompliance and Enforcement. [Minn. R. 7001]

2.1.190	Subject to Enforcement Action and Penalties. Noncompliance with a term or condition of this permit subjects the Permittee to penalties provided by federal and state law set forth in section 309 of the Clean Water Act; United States Code, title 33, section 1319, as amended; and in Minn. Stat. ch. 115.071 and 116.072, including monetary penalties, imprisonment, or both. [Minn. R. 7001.1090, subp. 1(B)]
2.1.191	Criminal Activity. The Permittee shall not knowingly make a false statement, representation, or certification in a record or other document submitted to the MPCA. A person who falsifies a report or document submitted to the MPCA, or tampers with, or knowingly renders inaccurate a monitoring device or method that requires maintenance under this permit is subject to criminal and civil penalties provided by federal and state law. [Minn. R. 7001.0150, subp. 3(G), Minn. R. 7001.1090, subp. 1(G & H), Minn. Stat. ch. 609.671, subd. 1]
2.1.192	Noncompliance Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR 122.41(c)]
2.1.193	Effluent Violations. If sampling by the Permittee indicates a violation of any discharge limitation specified in this permit, the Permittee shall immediately make every effort to verify the violation by collecting additional samples, if appropriate, investigate the cause of the violation, and take action to prevent future violations. If the Permittee discovers that noncompliance with a condition of the permit occurred and that the noncompliance could endanger human health, public drinking water supplies, or the environment, the Permittee shall within 24 hours of the discovery of the noncompliance orally notify the Commissioner and submit a written description of the noncompliance within five days of the discovery. If the Permittee discovers other noncompliance that does not explicitly endanger human health, public drinking water supplies, or the environment, the Permittee shall report the description of noncompliance within 30 days of the discovery. If no eDMR is required within 30 days, the Permittee shall submit a written report including the description of noncompliance within 30 days of the discovery of the noncompliance. This description shall include the following information: A. A description of the event including volume, duration, monitoring results, and receiving waters; B. The cause of the event; C. The steps taken to reduce, eliminate, and prevent reoccurrence of the event; D. The exact dates and times of the event; and E. Steps taken to reduce any adverse impact resulting from the event. [Minn. R. 7001.0150, subp. 3(K)]
2.1.194	Upset Defense. In the event of temporary noncompliance with applicable effluent limitation(s) resulting from an upset at the Permittee's facility due to factors beyond the control of the Permittee, the Permittee has an affirmative defense to an enforcement action brought by the MPCA as a result of the noncompliance if the Permittee demonstrates by a preponderance of competent evidence: A. The specific cause of the upset; B. That the upset was unintentional; C. That the upset resulted from factors beyond the reasonable control of the Permittee and did not result from operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or increases in production which are beyond the design capability of the treatment facilities; D. That at the time of the upset the facility was being properly operated; E. That the Permittee properly notified the Commissioner of the upset in accordance with Minn. R. 7001.1090, subp. 1(I); and F. That the Permittee implemented the remedial measures required by Minn. R. 7001.0150, subp. 3(J). [Minn. R. 7001.1090]
2.1.195	Release. [Minn. R. 7001]
2.1.196	Unauthorized Releases of Wastewater Prohibited. This permit prohibits overflows, discharges, spills, or other releases of wastewater or materials to the environment, whether intentional or not, except for discharges from outfalls specifically authorized by this permit. The MPCA will consider the Permittee's compliance with permit requirements, frequency of release, quantity, type, location, and other relevant factors when determining appropriate action. [40 CFR 122.41, Minn. Stat. ch. 115.061]

2.1.197	Discovery of a Release. Upon discovery of a release, the Permittee shall: A. Take all reasonable steps to immediately end the release; B. Notify the Minnesota Department of Public Safety Duty Officer at 1(800)422-0798 or (651)649-5451 (metro area) immediately upon discovery of the release. The Permittee may contact the MPCA during business hours at 1(800)657-3864 or (651)296-6300 (metro area); and C. Recover as rapidly and as thoroughly as possible all substances and materials released or immediately take other action as may be reasonably possible to minimize or abate pollution to waters of the state or potential impacts to human health caused thereby. If the Permittee cannot immediately or completely recover the released materials or substances, the Permittee shall contact the MPCA. If directed by the MPCA, the Permittee shall consult with other local, state, or federal agencies (such as the Minnesota Department of Natural Resources and/or the Wetland Conservation Act authority) for implementation of additional clean up or remediation activities in wetland or other sensitive areas. [Minn. R. 7001.1090]
2.1.198	Sampling of a Release. Upon discovery of a release, the Permittee shall: A. Collect representative samples of the release. The Permittee shall sample the release for permitted effluent parameters and other parameters of concern immediately following discovery of the release. The Permittee may contact the MPCA during business hours to discuss the sampling parameters and protocol. In addition, the Permittee shall collect fecal coliform bacteria samples where the Permittee determines that the release contains or may contain sewage. If the Permittee cannot immediately stop the release, the Permittee shall consult with the MPCA regarding additional sampling requirements. The Permittee shall collect samples at least, but not limited to, two times per week for as long as the release continues; and B. Submit the sampling results on the Release Report located on the MPCA's website at https://www.pca.state.mn.us/water/discharge-monitoring-reports. The Permittee shall submit the Release Report to the MPCA with the next eDMR or within 30 days, whichever is sooner. [Minn. R. 7001.1090]
2.1.199	Bypass. [Minn. R. 7001]
2.1.200	Anticipated Bypass. The Permittee may allow any bypass to occur that does not cause effluent limitation exceedances, but only if the bypass is for essential maintenance to assure efficient operation of the facility. The Permittee shall submit prior notice to the MPCA at least ten days before the date of the bypass, if possible. The notice of the need for an anticipated bypass shall include the following information: A. The proposed date and estimated duration of the bypass; B. The alternatives to bypassing; and C. A proposal for effluent sampling during the bypass. Any bypass wastewater shall enter waters of the state from outfalls specifically authorized by this permit. Therefore, the Permittee shall collect samples at the frequency and location identified in this permit or two times per week for as long as the bypass continues, whichever is more frequent. [40 CFR 122.41(m)(2 & 3), Minn. R. 7001.1090, subp. 1(J)]
2.1.201	This permit prohibits all other bypasses. The MPCA may take enforcement action against the Permittee for a bypass, unless the specific conditions described in Minn. R. 7001.1090 subp. 1(K) and 40 CFR 122.41(m)(4)(i) are met. In the event of an unanticipated bypass, the Permittee shall: A. Take all reasonable steps to immediately end the bypass; B. Notify the Minnesota Department of Public Safety Duty Officer at 1(800)422-0798 or (651)649-5451 (metro area) immediately upon commencement of the bypass. The Permittee may contact the MPCA during business hours at 1(800)657-3864 or (651)296-6300 (metro area); C. Immediately take action as may be reasonably possible to minimize or abate pollution to waters of the state or potential impacts to human health caused thereby. If directed by the MPCA, the Permittee shall consult with other local, state, or federal agencies for implementation of abatement, clean up, or remediation activities; and D. Only allow bypass wastewater as specified in this section to enter waters of the state from outfalls specifically authorized by this permit. The Permittee shall collect samples at the frequency and location

		identified in this permit or two times per week for as long as the bypass continues, whichever is more frequent. The Permittee shall also follow the reporting requirements for effluent violations as specified in this permit. [40 CFR 122.41(m)(4)i, Minn. R. 7001.1090, subp. 1(K), Minn. Stat. ch. 115.061]
2.1.202		Operation and Maintenance. [Minn. R. 7001]
2.1.203		The Permittee shall at all times properly operate and maintain the facilities and systems of treatment and control, and the appurtenances related to them which are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. The Permittee shall install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit and, for all permits other than hazardous waste facility permits, if these backup or auxiliary facilities are technically and economically feasible. [Minn. R. 7001.0150, subp. 3(F)]
2.1.204		In the event of a reduction or loss of effective treatment of wastewater at the facility, the Permittee shall control production or curtail discharges to the extent necessary to maintain compliance with the terms and conditions of this permit. The Permittee shall continue this control or curtailment until they restore facility treatment processes or until the Permittee provides an alternative method of treatment. [Minn. R. 7001.1090, subp. 1(C)]
2.1.205		Solids Management. The Permittee shall properly store, transport, and manage biosolids, septage, sediments, residual solids, filter backwash, screenings, oil, grease, and other substances so that pollutants do not enter surface waters or groundwaters of the state. The Permittee shall manage solids in accordance with local, state, and federal requirements. [40 CFR 503, Minn. R. 7041]
2.1.206		Scheduled Maintenance. The Permittee shall schedule maintenance of the treatment works during non-critical water quality periods to prevent water quality degradation, except where the facility requires emergency maintenance to prevent a condition that would be detrimental to water quality or human health. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(F)]
2.1.207		Control Tests. The Permittee shall conduct in-plant control tests at a frequency adequate to ensure compliance with the conditions of this permit. [Minn. R. 7001.0150, subp. 2(B), Minn. R. 7001.0150, subp. 3(F)]
2.1.208		Changes to the Facility or Permit. [Minn. R. 7001]
2.1.209		Permit Modifications. Except as provided under Minn. Stat. ch. 115.07, subd. 1 and 3, no person required by statute or rule to obtain a permit may construct, install, modify, or operate the facility to be permitted, nor shall a person commence an activity for which a permit is required by statute or rule until the MPCA issues a written permit for the facility or activity. Permittees that propose to make changes to the facility or discharge that requires permit modification shall follow Minn. R. 7001.0190. If the Permittee cannot determine whether the proposed changes require a permit modification, the Permittee shall contact the MPCA prior to any action. The MPCA recommends that Permittees submit the application for permit modification to the MPCA at least 180 days prior to the planned change. [Minn. R. 7001.0300]
2.1.210		This permit does not require plans, specifications, and MPCA approval when maintenance dictates the need for installation of new equipment, provided the equipment is the same design size and has the same design intent. For instance, Permittees can replace a broken pipe, lift station pump, aerator, or blower with the same design-sized equipment without MPCA approval. If this permit does not expressly authorize the Permittee proposed construction, the MPCA may require a permit modification. If the proposed construction project requires an Environmental Assessment Worksheet under Minn. R. 4410, no construction shall begin until the MPCA issues a negative declaration and the Permittee receives or implements all approvals. [Minn. R. 7001.0030]
2.1.211		Report Changes. The Permittee shall give advance notice as soon as possible to the MPCA of any substantial changes in operational procedures, activities that may alter the nature or frequency of the discharge, and/or material factors that may affect compliance with the conditions of this permit. If a permittee who indicated on their application that their site does not have stormwater discharge but that changes, the Permittee is required to submit an application for permit modification to indicate the

	change in status and meet the monitoring and reporting requirements of the permit. [Minn. R. 7001.0150, subp. 3(M)]
2.1.212	Chemical Additives. The Permittee shall receive prior written approval from the MPCA before increasing the use of a chemical additive authorized by this permit, or using a chemical additive not authorized by this permit, in quantities or concentrations that have the potential to change the characteristics, nature, and/or quality of the discharge. The Permittee shall request approval for an increase or new use of a chemical additive at least 60 days, or as soon as possible, before the proposed increase or new use. The Permittee shall include at least the following information for the proposed additive as instructed in the chemical additive approvals section on the MPCA website at https://www.pca.state.mn.us/water/wastewater-additional-guidance-and-information: A. The process for which the additive will be used; B. Safety Data Sheet (SDS) which shall include aquatic toxicity, human health, and environmental fate information for the proposed additive. The aquatic toxicity information shall include at minimum the results of: a) a 48-hour LC50 or EC50 acute study for a North American freshwater planktonic crustacean (either Ceriodaphnia or Daphnia sp.) and b) a 96-hour LC50 acute study for rainbow trout, bluegill, or fathead minnow or another North American freshwater aquatic species other than a planktonic crustacean; C. A complete product use and instruction label; D. The commercial and chemical names and Chemical Abstract Survey (CAS) number for all ingredients in the additive (If the SDS does not include information on chemical composition, including percentages for each ingredient totaling to 100%, the Permittee shall contact the supplier to have this information provided); and E. The proposed method of application, application frequency, concentration, and daily average and maximum rates of use. Upon review of the information submitted regarding the proposed chemical additive, the MPCA may require additional information be submitted for consideration. This permit may be modified to restrict the use or discharge of a chemical additive and include additional influent and effluent monitoring requirements. Approval for the use of an additive shall not justify the exceedance of any effluent limitation nor shall it be used as a defense against pollutant levels in the discharge causing or contributing to the violation of a water quality standard. [Minn. R. 7001.0170]
2.1.213	MPCA Initiated Permit Modification, Suspension, or Revocation. The MPCA may modify or revoke and reissue this permit pursuant to Minn. R. 7001.0170. The MPCA may revoke without reissuance of this permit pursuant to Minn. R. 7001.0180. [Minn. R. 7001.0170, Minn. R. 7001.0180]
2.1.214	Total Maximum Daily Load (TMDL) Impacts. The MPCA may require facilities that discharge to an impaired surface water, watershed, or drainage basin to comply with additional permits or permit requirements. These requirements can include additional restriction or relaxation of limits and monitoring as authorized by the CWA 303(d)(4)(A) and 40 CFR ch. 122.44(l)(2)(i), necessary to ensure consistency with the assumptions and requirements of any applicable EPA approved wasteload allocations resulting from TMDL studies. [40 CFR 122.44(l)(2)(i)]
2.1.215	Permit Transfer. This permit is not transferable to any person without the express written approval of the MPCA after compliance with the requirements of Minn. R. 7001.0190. A person who receives permit transference shall comply with the conditions of this permit. [Minn. R. 7001.0150, subp. 3(N)]
2.1.216	Facility Closure. The Permittee is responsible for closure and post-closure care of the facility. The Permittee shall notify the MPCA of a significant reduction or cessation of the activities described in this permit at least 180 days before the reduction or cessation. The MPCA may require the Permittee to provide a Facility Closure Plan to the MPCA for approval. The MPCA may require a permit modification or reissuance for facility closure that could result in a potential long-term water quality concern, such as the ongoing discharge of wastewater to surface or groundwater.

		The MPCA may require the Permittee to establish and maintain financial assurance to ensure performance of certain obligations under this permit, including closure, post-closure care, and remedial action at the facility. If the MPCA requires financial assurance, the MPCA shall approve the amount and type of financial assurance, and proposed modifications to previously MPCA-approved financial assurance. [Minn. Stat. ch. 116.07, subd. 4]
2.1.217		Permit Reissuance. If the Permittee desires to continue permit coverage beyond the date of permit expiration, the Permittee shall submit an application for permit reissuance : Due by 180 days prior to permit expiration. [Minn. R. 7001.0040]
2.1.218		If the Permittee does not intend to continue the activities authorized by this permit after the expiration date of this permit, the Permittee shall notify the MPCA in writing at least 180 days before permit expiration. If the Permittee has submitted a timely application for permit reissuance, the Permittee may continue to conduct the activities authorized by this permit, in compliance with the requirements of this permit, until the MPCA takes final action on the application, unless the MPCA determines any of the following: A. The Permittee is not in substantial compliance with the requirements of this permit, or with a stipulation agreement or compliance schedule designed to bring the Permittee into compliance with this permit; B. The MPCA, as a result of an action or failure to act by the Permittee, has been unable to take final action on the application on or before the expiration date of the permit; or C. The Permittee has submitted an application with major deficiencies or has failed to properly supplement the application in a timely manner after being informed of deficiencies. [Minn. R. 7001.0040, Minn. R. 7001.0160]
2.1.219		Termination of General Permit Coverage. Upon reclamation and stabilization of all permitted sites, the covered applicant shall submit a request for termination of general permit coverage using the Notification of Permit Termination e-services. Guidance is available on the MPCA website at: https://www.pca.state.mn.us/sites/default/files/p-gen1-18.pdf . [Minn. Stat. ch. 116.07]
2.1.220		All discharges shall cease before a termination request form is submitted to the MPCA. Any discharge of pollutants to surface or groundwaters or land on or after the date of submittal shall be considered a violation of the Clean Water Act unless authorized by another NPDES permit. All land disturbances or alterations that are a result of the activities covered under this permit must be stabilized prior to submittal for closure, or the closure of those areas must have coverage under another NPDES permit. [Minn. Stat. ch. 116.07]
2.1.221		The terms and conditions of the General Permit remain in full force and effect including the payment of the annual fee, until General Permit coverage has been formally terminated by the MPCA. [Minn. R. 7002]
2.1.222		Permit Specific Definitions. [Minn. R. 7001]
2.1.223		"Active Facility" means a place where work or other activity related to the production of asphalt and ready-mix / concrete products and extraction, removal, or recovery of nonmetallic minerals is being conducted. For surface mines, this definition does not include any land where grading has returned the earth to desired contour and stabilization has begun. This definition is derived from the definition of 'active mining area' found at 40 CFR pt. 440.132(a). [40 CFR 440.132(a), State Definitions]
2.1.224		"Asphalt cement" means fluxed or unfluxed asphalt specially prepared for direct use in the manufacture of asphalt pavements. [State Definitions]
2.1.225		"Asphalt Emulsion" means a mixture of asphalt cement, chemical, and water solution. Asphalt emulsions are produced by adding an emulsifying agent to asphalt and water. [State Definitions]
2.1.226		"Asphalt pavement" means a mixture of asphalt cement (asphalt binder), aggregate, and other additives; may also be referred to as asphalt concrete (AC), bituminous mix (BM), and sometimes asphaltic concrete (HMAC). [State Definitions]
2.1.227		"Effluent Monitoring Location" for the purposes of this permit means the location(s) within the boundary of the facility where the Permittee will collect mine dewatering and/or authorized non-stormwater discharges. The effluent monitoring location(s) selected by the Permittee shall be in a location that: A. Is immediately below the most down-gradient BMP from the specific industrial activity that has a

	numeric effluent limit, but prior to where the discharge co-mingles with stormwater from other sources. B. Yields a sample that represents the contribution of the pollutants for which the Permittee is required to monitor. [State Definitions]
2.1.228	"Energy Dissipation" means methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to: concrete aprons, riprap, splash pads, and gabions that are designed to prevent erosion. [State Definitions]
2.1.229	"Facility" for the purposes of this permit, means land that shares a common border and that has a stormwater discharge associated with industrial activity as defined by 40 CFR Part 122.26(b)(14) with the discharge having a common owner/operator. [40 CFR pt. 122, 26(b)(14), State Definitions]
2.1.230	"Impaired Water" means waters identified as impaired by the MPCA, and approved by the USEPA, pursuant to section 303(d) of the Clean Water Act (33 U.S.C. Section 303(d)). [CWA Sect. 303.d, State Definitions]
2.1.231	"Impoundments" mean topographic depressions designed to hold liquid. [State Definitions]
2.1.232	"Inactive Facility" means a site or portion of a site where nonmetallic mineral mining and/or milling, asphalt production and ready-mix concrete production occurred in the past but is not an Active Facility. The Permittee does not anticipate mining and/or associated activities to occur in the foreseeable future and has requested the permit coverage at this inactive portion be terminated, and the inactive portion is no longer covered by an active mining permit. [State Definitions]
2.1.233	"Infeasible" means not technologically possible or not economically practicable and achievable in light of the best industry practices. [State Definitions]
2.1.234	"Infiltration Device" for purposes of this permit, means a device to which industrial stormwater runoff is diverted, collected, or conveyed for the purpose of infiltration. This includes all man-made and natural infiltration areas to which runoff are diverted. An infiltration device does not include the parts of the system that diverts, collects, or conveys stormwater. Incidental infiltration from conveyances such as swales or ditches, including those with erosion prevention devices such as vegetation, silt fence, or fiber bails, is not an infiltration device. However, swales, ditches, or similar devices constructed with stop logs, ditch excavation for storage or other retention devices, which are for the purpose of increased infiltration, are infiltration devices. Wetlands (including types 1 through 8) and other natural surface water bodies are not infiltration devices or parts of infiltration device systems, and cannot be used as infiltration devices, unless mitigated in accordance with applicable state rules. [State Definitions]
2.1.235	"Karst topography" means an area underlain by fractured carbonate bedrock in which erosion has produced geological characteristics such as: sinkholes; springs, subsurface drainage; caves; sinking streams; dissolutionally enlarged joints (grikes) or bedding planes, and bedrock surface channels (karren). Counties known for karst features include parts of Dakota, Rice, Dodge, and Mower, and most of Goodhue, Olmsted, Winona, Wabasha, Houston and Fillmore. [State Definitions]
2.1.236	"Mine Pit Dewatering" means any water that is impounded or that collects in the mine and is pumped from the mine through the efforts of the mine operator. Uncontaminated groundwater and stormwater collecting in a low area in which there is a stormwater outlet for stormwater/seepage/drainage by gravity overflow shall not be considered mine pit dewatering. However, if a mine is also used for treatment of process generated wastewater, discharges of commingled water from the facilities shall be deemed discharge of process generated wastewater and is not authorized under this permit. [State Definitions]
2.1.237	"Non-Stormwater Discharge" means any discharge not comprised entirely of stormwater. [State Definitions]
2.1.238	"Operator" is the person responsible for the overall operation of an industrial facility under Minn. R. pt. 7090.3000. [Minn. R. 7090.3000, State Definitions]
2.1.239	"Owner" is the person who owns an industrial facility or part of an industrial facility under Minn. R. pt. 7090.3000. [Minn. R. 7090.3000, State Definitions]
2.1.240	"Person" means any human being, any municipality or other governmental or political subdivision or public MPCA, any public or private corporation, any partnership, firm, association, or other organization, any receiver, trustee, assignee, agent, or other legal representative of any of the foregoing, or any other legal entity, but does not include the MPCA. [State Definitions]

2.1.241	"Pipes" mean hollow cylinders or tubes constructed of non-earthen materials. [State Definitions]
2.1.242	"Pollution Prevention Plan" (Plan) means a plan for stormwater and non-stormwater discharges that include facility-specific activities and actions to, first, identify sources of pollution or contamination at the facility, and second, select and implement BMPs to eliminate or reduce contact of stormwater with significant materials and non-stormwater discharges that may result in polluted runoff from the facility. [State Definitions]
2.1.243	"Primary Standard Industrial Classification (SIC) Code" for the purposes of this permit, is the SIC code associated with the industrial activity that generates the greatest revenue. If revenue data is not available, the owner/operator shall base the determination on the number of employees engaged in the industrial activity. If it is not possible to determine the primary SIC code using either of these two methods, the owner/operator shall base the determination on the SIC code with the greatest production. The industrial activity that generates the greatest revenue, employs the most personnel, or has the greatest production, is the industrial activity assigned the primary SIC code. [State Definitions]
2.1.244	"Reclamation" means activities undertaken in compliance with applicable mined land reclamation requirements following the cessation of activities associated with extraction, removal and recovery of nonmetallic minerals, intended to return the land to an appropriate post-mining land use. [State Definitions]
2.1.245	"Seasonal High Water Table" means the highest level the water table reaches during a given year. Methods of determining the seasonal high water table are given in part 7041.3400, subpart 3. [Minn. R. 7041.0100, Subp. 48]
2.1.246	"Sediment Control" means methods employed to prevent sediment from leaving the site. Sediment control practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins. [Minn. R. 7041.0100, Subp. 48, Minn. R. 7041.3400, Subp. 3, State Definitions]
2.1.247	"Significant Materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges. When determining whether a material is significant, the physical and chemical characteristics of the material should be considered (e.g. the material's solubility, transportability, and toxicity characteristics) to determine the material's pollution potential. [40 CFR pt. 122, 26(b)(12)]
2.1.248	"Small Construction Activity" means small construction activity as defined in 40 CFR part 122.26(b)(15). Small construction activities include clearing, grading and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. [State Definitions]
2.1.249	"Stormwater Pond" for purposes of this permit means constructed detention or retention facilities for the treatment of stormwater runoff under the requirements of this permit. This includes permanent ponds, dry ponds, flow equalization ponds (followed by other BMPs), and constructed wetlands. However, natural wetlands (including types 1-8) and other natural surface water bodies are not industrial stormwater ponds, parts of ponds or pond systems, and cannot be used as BMPs for stormwater treatment unless mitigated in accordance with applicable state rules. [State Definitions]
2.1.250	"Structural BMPs" refers to the installation of devices that will reduce or eliminate pollutants to stormwater through installation of permanent structural devices to treat or control runoff. Examples of structural BMPs include but are not limited to installation of stormwater diversion berms or channels; sedimentation basins (retention or detention basins); oil/water separators; grit chambers; roofs, awnings, or buildings to cover significant material. [State Definitions]
2.1.251	"Tanks" means a container, vessel, or enclosure designed to contain substances and is constructed of materials such as concrete, steel, plastic, or fiberglass reinforced plastic, and provides structural support. [State Definitions]

2.1.252	"Temporarily Inactive Facility" means a site or portion of a site where nonmetallic mineral mining and/or milling, asphalt production and ready-mix concrete production occurred in the past but currently are not being actively undertaken and permit coverage is being maintained for the possibility of mining and/or associated activities in the foreseeable future. [State Definitions]
2.1.253	"Treatment Works" means any plant, disposal field, lagoon, dam, pumping station, constructed drainage ditch or surface water intercepting ditch, or other works not specifically mentioned herein, installed for the purpose of treating, stabilizing or disposing of sewage, industrial waste, or other wastes. For the purposes of this permit, this includes stormwater ponds, sedimentation basins and/or infiltration devices for stormwater management. [Minn. Stat. ch. 115.01, Subpt. 21, State Definitions]
2.1.254	"Water Quality Standards" means those provisions contained in Minn. R Chapters 7050 and 7052. [Minn. R. 7050, Minn. R. 7052, State Definitions]
2.1.255	"Wetlands" means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes: A. a predominance of hydric soils; B. inundated or saturated by surface water or groundwater at a frequency and duration to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and C. under normal circumstances support a prevalence of such vegetation. [Minn. R. 7050.0186, Subpt. 1(a)B, State Definitions]

Permit issued: July 1, 2022
Permit expires: May 31, 2027

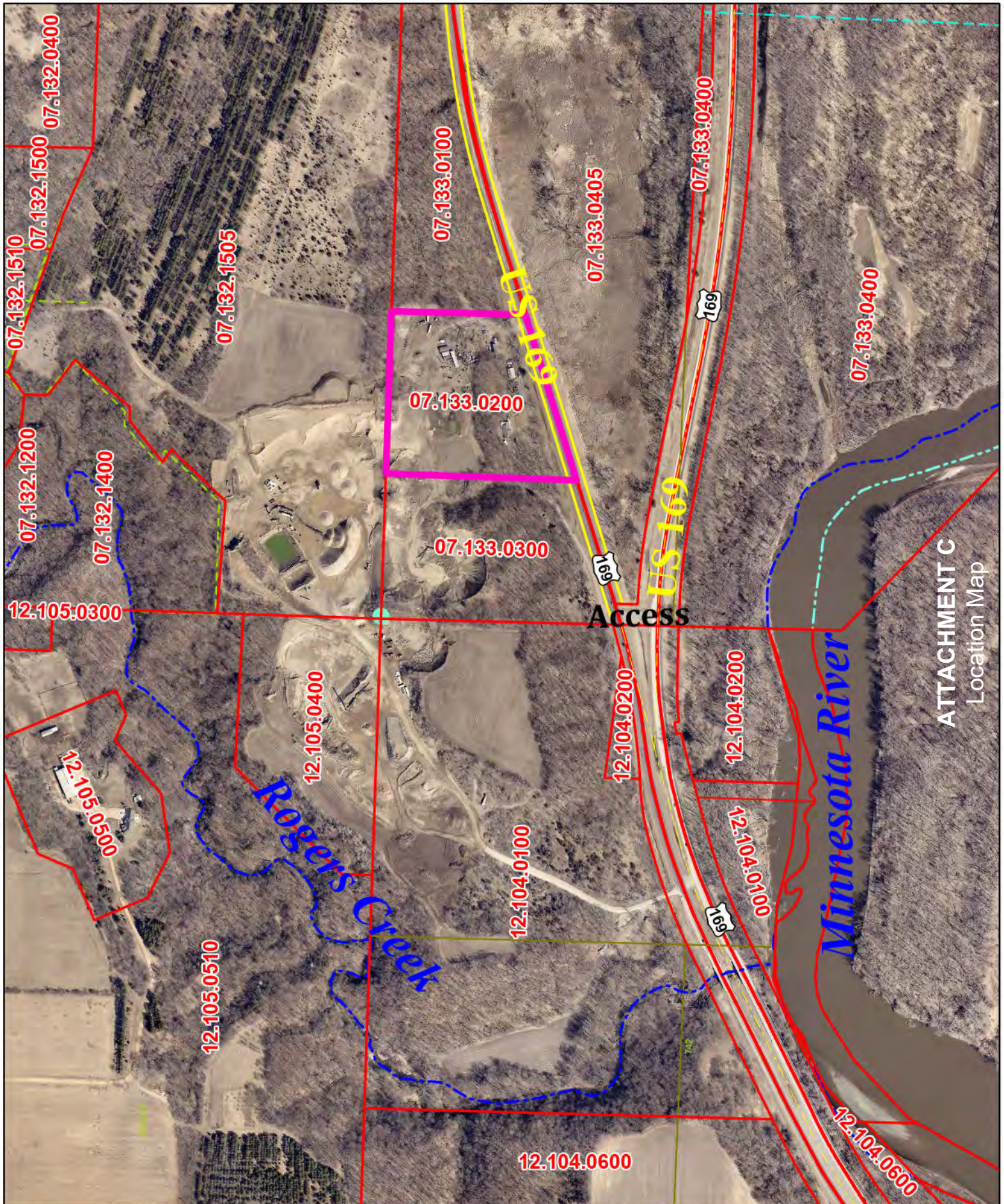
MNG490184
Page 31 of 32

3. Submittal action summary

MNG490184	WW Blacktopping Inc	
		Non-Metallic Mining and Associated Activities General Permit Requirements
	3.1.1	Permit Reissuance. If the Permittee desires to continue permit coverage beyond the date of permit expiration, the Permittee shall submit an application for permit reissuance : Due by 180 days prior to permit expiration. [Minn. R. 7001.0040]

4. Limits and monitoring

[illegible]



ATTACHMENT C
Location Map



ATTACHMENT D
Aerial Map



ATTACHMENT E
Site Photographs

DISPLAYNAME	MAILINGADDR	MAILINGCITYSTATEZIP
AMBROSE & SCHELLI MCCABE	40497 County Road 20	Saint Peter, Mn 56082
JACEK & MALGORZATA SOROKA	39877 County Road 20	Saint Peter, Mn 56082
MARK & SUSAN KENDALL	39956 Us Highway 169	Saint Peter, Mn 56082
LYLE & CAROLINE JASTER	38949 County Road 20	Saint Peter, Mn 56082
HARVEY & DIANN KENDALL	108 Hillcrest Rd	Monticello, Mn 55362
JAMES & ANNE DAVIS	39835 County Road 20	Saint Peter, Mn 56082
GELDNER BROTHERS SAND & GRAVEL LLC	28808 W Lake Dr	Madison Lake, Mn 56063
A & S MCCABE REVOCABLE TRUST	40497 County Road 20	Saint Peter, Mn 56082
DAVID WOELPERN	40196 Us Hwy 169	Saint Peter, Mn 56082-4392
GP-75 LLC	Po Box 30	Saint Peter, Mn 56082
MNR 130 LLC	130 Delaware St Se	Lonsdale, Mn 55046
GREEN LAWN (TRAVERSE) CEMETERY	123 Unknown	Unknown Mn 00000
CHARLOTTE KAMPS REVOCABLE TRUST	137 S Morningside Dr	Le Sueur, Mn 56058
THE STATE OF MINNESOTA	500 Lafayette Rd	Saint Paul, Mn 55155-4030
JUSTIN PETERSON & MADELEINE WALTER	39757 County Road 20	Saint Peter, Mn 56082
HIGH POINT FARMS LLC	2216 Shalom Ave	Mankato, Mn 56001
JEREMY & LISA WALTER	39761 County Road 20	Saint Peter, Mn 56082
RON REGENSCHEID	35724 375th Ave	St Peter, MN 56082



PLANNING & ZONING ADVISORY COMMISSION CRITERIA FOR GRANTING A CONDITIONAL USE PERMIT

Name of Applicant W W Blacktopping, Inc.

Hearing February 27, 2023

Property Owner Mark & Susan Kendall

Continuation N/A

File PLN23-03

Commission Member Name

Use Request Three year review of their Mineral Extraction Conditional Use Permit to mine, crush, and stockpile gravel along with operating a hot mix plant

FINDINGS OF FACT

Authority for issuance of conditional use permits is derived from Minnesota State Statute §394.301 and Nicollet County Zoning Ordinance, Section 505. The conditional use must maintain the health, safety, morals, and general welfare of the community.

1. Given the nature of the land, the requested use is compatible with the general welfare, public health and safety.

YES ☐ NO ☐ REASON: _____

2. The requested use will not create an unreasonably excessive burden on the existing roads or utilities.

YES ☐ NO ☐ REASON: _____

3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.

YES ☐ NO ☐ REASON: _____

4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.

YES ☐ NO ☐ REASON: _____

ATTACHMENT G
Criteria for Conditional Use Permit

5. The requested use is consistent with the Nicollet County Land Use Ordinances.

YES ☐ NO ☐ REASON: _____

6. The requested use is not in conflict with the Nicollet County Comprehensive Plan.

YES ☐ NO ☐ REASON: _____

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

YES ☐ NO ☐ REASON: _____

8. The requested use is reasonably related to the existing land use and environment.

YES ☐ NO ☐ REASON: _____

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

YES ☐ NO ☐ REASON: _____

10. The requested use ____ have an adverse effect upon public health, safety and welfare due to the following other factors:

WILL ☐ WILL NOT ☐ REASON: _____

THE NICOLLET COUNTY PLANNING & ZONING ADVISORY COMMISSION

☐ RECOMMENDS APPROVAL OF THE REQUESTED USE ☐ RECOMMENDS DENIAL OF THE REQUESTED USE

THIS DECISION WAS BASED UPON

- | | |
|---|---------------------------------------|
| ☐ Application | ☐ Site visit |
| ☐ Information received at public hearing | ☐ Staff Report |
| ☐ Pictures | |

Date: _____ Commission Member: _____



CONDITIONAL USE PERMIT

FEEDLOT

Annexstad Dairy Farms

PLN23-04

NICOLLET COUNTY PLANNING & ZONING ADVISORY COMMISSION

SUBJECT:	Conditional Use Permit PLN23-04
APPLICANT:	Mike Annexstad, Annexstad Dairy Farms Inc.
LANDOWNER:	Annexstad Dairy Farms Inc.
LOCATION:	Northeast ¼ of the Northeast ¼, Section 28-111-27 in Lake Prairie Township
PARCEL NO:	07.028.0415
EXISTING ZONING:	Agricultural Preservation
HEARING DATE:	February 27 th , 2023
COUNTY BOARD DATE:	March 14 th , 2023
60 DAYS FROM REQUEST:	April 4 th , 2023

REQUEST & PROJECT DESCRIPTION

Annexstad Dairy Farms is requesting conditional use approval to construct the following at their existing feedlot:

Proposed Structure	Square Footage
Free stall Barn Addition	27,625 (expansion area only)
Liquid Manure Storage Area (LMSA)	74,974
Feed Bunker Addition	16,000

The proposal would increase the number of cows and animal units per the tables below:

Animal Type	Existing Head Count	Purposed Head Count
Mature Cow	183	300
Heifer	51	95
Calf	30	50
Total	264	445

Animal Type	Existing Animal Units	Purposed Animal Units
Mature Cow	256.2	420
Heifer	35.7	66.5
Calf	6	10
Total	297.9	496.5

Feedlots in the Agricultural Preservation Zoning District over 300 animal units require a Conditional Use Permit per Nicollet County Zoning Ordinance 602.3.

The applicant intends to modernize the feedlot operation with their proposal. The barn addition would include a robotic milking system and additional free stalls, including a calving area and bedded pack for heifers and dry cows. The south side of the barn addition would also contain an office, employee break room, milk room, and electrical equipment room.

The applicant will continue to use sand bedding within the barn for cow comfort. Due to economic and agronomic concerns when spreading manure, the applicant is proposing the installation of a capturing system to sequester the sand. Manure and process water mixed with sand would flow from the barn to the LMSA through a sand lane, which is anticipated to capture 80% of the sand for reuse.

The proposed LMSA would have a concrete lined bottom and access ramp sitting on top of a continuous clay liner. The access ramp would allow for the removal of sludge and built up sand using on site equipment. The LMSA would have a storage capacity of 4,780,000 gallons, which is equivalent to an estimated 13 months of manure generation.

ACCESS

Access to the site via 403rd Avenue and Minnesota State Highway 22 is not changing. The applicant is proposing to grade the existing access leading to State Highway 22 and install a new culvert within the right of way. Two to three milk trucks will use the upgraded access weekly, along with occasional manure haulers. The applicant is working with the Minnesota Department of Transportation to obtain a permit for the proposal within the right of way.

COUNTY STANDARDS

E.G. Rud & Sons has created a survey for the applicant to rearrange the property lines in a manner that all setbacks can be maintained. Staff is recommending as a condition that the applicant record a deed to correct the property lines before the zoning permit is issued. There are no disqualifying structures, such as dwellings unrelated to the feedlot, within the 93% OFFSET setback buffer. There are no municipalities within the 99% OFFSET setback buffer.

MINNESOTA POLLUTION CONTROL AGENCY STANDARDS

The applicant has submitted a Construction Short Form Application from the Minnesota Pollution Control Agency (MPCA) to operate a feedlot for the proposed design and capacity. The permit will be issued by Nicollet County on behalf of the MPCA if the Conditional Use is approved. A Manure Management Plan compliant with Minnesota Administrative Rules Section 7020.2225 was submitted with the application. The request appears to meet all state standards.

SURROUNDING LAND USE

The surrounding land use is predominantly agricultural. There are two dwellings within close proximity of the feedlot to the north and the southwest, but they are owned by individuals associated with the operation.

NEIGHBOR NOTIFICATION

Property owners were notified of the proposal per the standards of Minnesota State Statute 394.26.

STAFF RECOMMENDATIONS

1. The applicant undertakes the project according to the plans and specifications submitted to the County with the application.
2. The Conditional Use Permit will be periodically reviewed by the County to assure compliance with the permit and permit conditions.
3. The County may enter onto the premises at reasonable times and in a reasonable manner to ensure the permit holder is in compliance with the conditions and all other applicable statutes, rules, and ordinances.
4. The applicant must provide, maintain, and follow an approved Manure Management Plan under the guidelines set forth in MPCA Rules, Chapter 7020.2225.
5. Manure that is in liquid or slurry form that has been injected or spread must be incorporated within 24 hours.
6. Manure when transported by truck/spreader to fields off site must be covered or in a leak proof tank to avoid any potential manure spills on public roads.
7. If required, the applicant must obtain a Department of Natural Resources Division of Waters' Water Appropriations Permit.
8. Dead animals must be disposed of in accordance with the Board of Animal Health regulations.
9. The applicant must notify Property Services at least three days prior to start of construction, including any related earth work.
10. If required, a Construction Stormwater Permit must be obtained from the Minnesota Pollution Control Agency (MPCA) prior to start of construction.
11. The feedlot must continually meet the 93% OFFSET Annoyance-Free Odor Rating for the duration of the operation.
12. The applicant must record a deed that reconfigures the property lines in a manner that all Nicollet County Zoning Ordinance requirements are met before the Zoning Permit is issued.
13. The applicant must obtain all required permits from the Minnesota Department of Transportation before the Zoning Permit is issued.

Applicant: Mike Annexstad, Annexstad Dairy Farms
Landowner: Annexstad Dairy Farms

PLN23-04

ATTACHMENT A	Application
ATTACHMENT B	Documents Submitted by Applicant
ATTACHMENT C	OFFSET Map
ATTACHMENT D	Site Photographs
ATTACHMENT E	Neighbor Notification List
ATTACHMENT F	Criteria for Conditional Use Permit



PROPERTY SERVICES DIVISION
501 SOUTH MINNESOTA AVENUE, SAINT PETER MN 56082
507-934-7070

PLANNING & ZONING ADVISORY COMMISSION
APPLICATION

Total Fees: \$496.00

Map#: 0728200012
Parcel#: 070280415
Permit#: PLN23-04
Date: February 03, 2023

Applicant: Mike Annexstad, Annexstad Dairy Farms Inc, 38171 403rd Ave, Saint Peter MN 56082

Phone: 507-995-0675

Owner: ANNEXSTAD DAIRY FARMS INC, 38171 403RD AVE, SAINT PETER MN 56082

Property Address: 0,

Abbreviated Legal Description: SP; W 25 AC OF NE1/4 NE1/4 "EX 2.75 AC" & "EX N 190' OF E 200'" & "EX 3.12 (OF 3.36) AC" & "EX .71 AC (OF 3.64) AC FOR R/W" = 17.55 AC

Township: Lake Prairie Township

Record Type: Conditional Use

Category: Feedlot

Project Description: Conditional Use Permit request to construct a free stall barn addition, liquid manure storage area, and feed bunkers. Animal units are increasing from 297.9 to 496.5.

Planning Commission Hearing Date: 02/27/2023

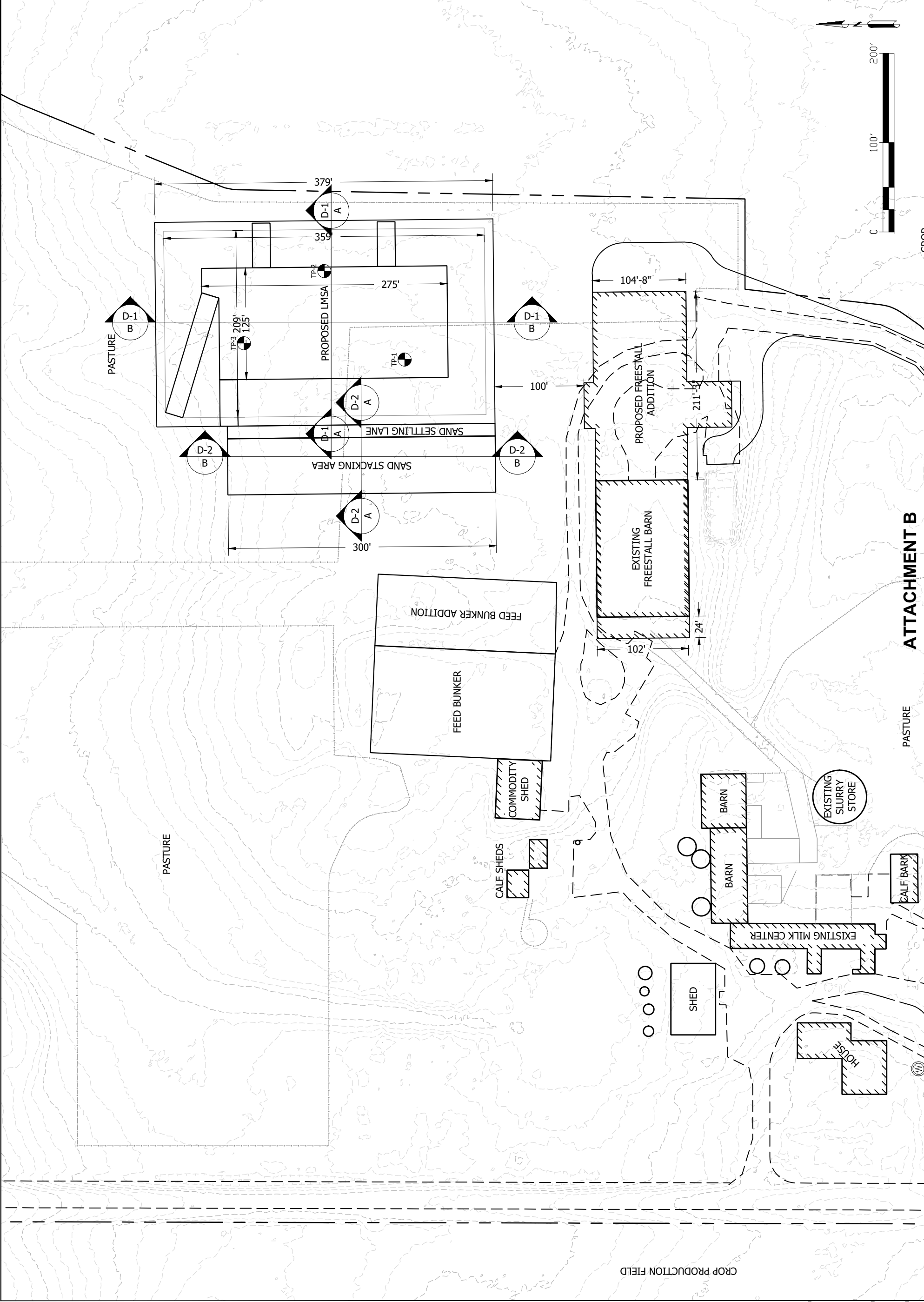
Board of Commissioners Date: 03/14/2023

Annexstad Dairy Farms Inc.
by Michel Anttal

APPLICANT SIGNATURE

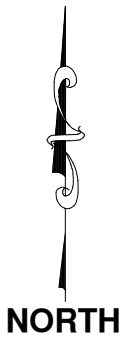
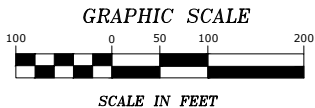
2-3-23
DATE

ATTACHMENT A
Application



BOUNDARY SKETCH & DESCRIPTION

~for~ MICHAEL ANNEXSTAD
~Part of~ The E 1/2 - NE 1/4 SEC. 28, T. 111, R. 27, LAKE PRAIRIE
TWP., NICOLLET COUNTY, MINNESOTA.

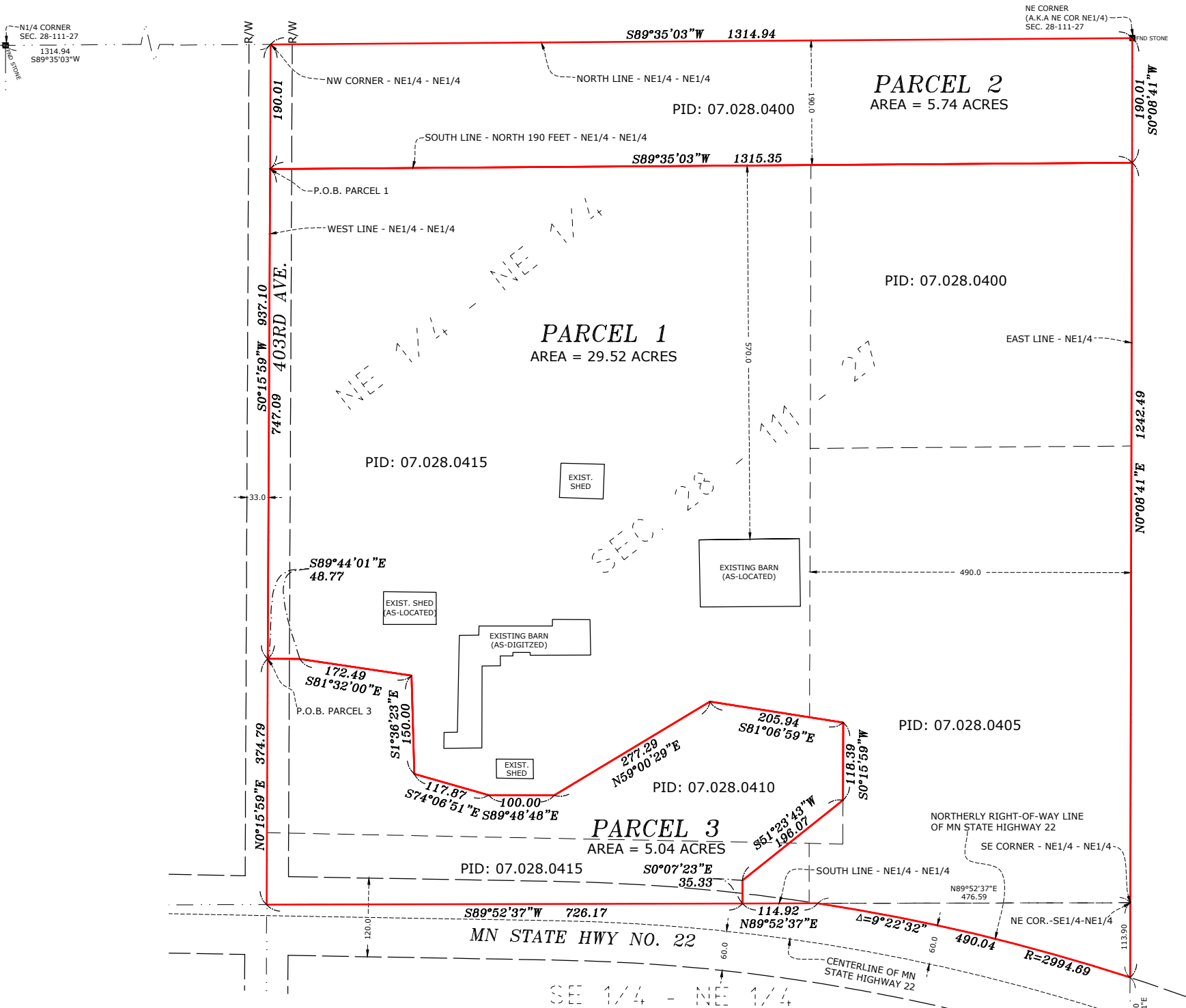


LEGEND

- DENOTES FOUND STONE MONUMENT
(D) DENOTES DEEDED BEARING & DISTANCE
M. DENOTES MEASURED BEARING & DISTANCE

NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 01/17/23.
- Bearings shown are on the Nicollet County Coordinate system NAD83 (2011 Adjustment).
- Parcel ID Number: 07.028.0415, 07.028.0410, 07.028.0405, & 07.028.0400.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- Due to field work being completed during the winter season there may be improvements in addition to those shown that were not visible due to snow and ice conditions characteristic of Minnesota winters.



LEGAL DESCRIPTION OF RECORD

North 622 feet of the East 490 feet of the Northeast Quarter of the Northeast Quarter of Section 28, Township 111 North, Range 27, Nicollet County, Minnesota.
AND
West 25 acres of the Northeast Quarter of the Northeast Quarter of Section 28, Township 111 North, Range 27, Nicollet County, Minnesota, EXCEPTING THEREFROM: The North 190.00 feet (as measured parallel to the West line of the Northeast Quarter of the Northeast Quarter) of the West 630.00 feet (as measured parallel to the North line of the Northeast Quarter of the Northeast Quarter) of the Northeast quarter of the Northeast Quarter of Section 28, Township 111 North, Range 27, Nicollet County, Minnesota. Said parcel contains 2.75 acres of land, more or less, and is subject to and together with any and all easements of record.
ALSO EXCEPTING All that part of the northeast Quarter of the Northeast Quarter of Section 28, Township 111 North, Range 27, Nicollet County, Minnesota, described as: Commencing at the Northeast corner of the Northeast quarter; thence South 89 degrees 36 minutes 39 seconds West (assumed bearing) on the North line of the Northeast Quarter, 1314.94 feet to the Northwest corner of the Northeast Quarter of the Northeast Quarter; thence South 00 degrees 11 minutes 17 seconds West on said West line, 265.21 feet; thence South 88 degrees 57 minutes 10 seconds East, 878.67 feet; thence North 00 degrees 11 minutes 17 seconds East, 185.29 feet; thence North 81 degrees 11 minutes 41 seconds West, 205.94 feet; thence South 58 degrees 55 minutes 47 seconds West, 277.29 feet; thence North 89 degrees 53 minutes 30 seconds West, 100.00 feet; thence North 74 degrees 11 minutes 33 seconds West, 117.87 feet; thence North 01 degrees 41 minutes 05 seconds West, 150.00 feet to a set iron pipe monument, thence North 81 degrees 36 minutes 42 seconds West, 172.49 feet to a set iron pipe monument; thence North 81 degrees 48 minutes 43 seconds West, 48.76 feet to the point of beginning. Said parcel contains 3.36 acres of land, more or less, and is subject to and together with any and all easements of record.
AND
North 190 feet of the East 200 of the West 25 acres of the Northeast Quarter of the Northeast Quarter of Section 28, Township 111 North, Range 27, Nicollet County, Minnesota.

PARCEL 1, PROPOSED DESCRIPTION

Part of the Northeast Quarter of the Northeast Quarter and part of the Southeast Quarter of the Northeast Quarter of Section 28, Township 111, Range 27, Nicollet County, Minnesota, described as follows:
Commencing at the northeast corner of the Northeast Quarter;
thence on an assumed bearing of South 89 degrees 35 minutes 03 seconds West along the north line of the Northeast Quarter, 1314.94 feet to the northwest corner of said Northeast Quarter of the Northeast Quarter;
thence South 00 degrees 15 minutes 59 seconds West along the west line of said Northeast Quarter of the Northeast Quarter 937.10 feet to the south line of the North 190.00 feet of said Northeast Quarter of the Northeast Quarter and the point of beginning of the tract to be described;
thence continuing South 00 degrees 15 minutes 59 seconds West along said west line 747.09 feet;
thence South 89 degrees 44 minutes 01 seconds East 48.77 feet;
thence South 81 degrees 32 minutes 00 seconds East 172.49 feet;
thence South 01 degrees 36 minutes 23 seconds East 150.00 feet;
thence South 74 degrees 06 minutes 51 seconds East 117.87 feet;
thence South 89 degrees 48 minutes 48 seconds East 100.00 feet;
thence North 59 degrees 00 minutes 29 seconds East 277.29 feet;
thence South 81 degrees 06 minutes 59 seconds East 205.94 feet;
thence South 00 degrees 15 minutes 59 seconds West 118.39 feet;
thence South 51 degrees 23 minutes 43 seconds West 196.07 feet;
thence South 00 degrees 07 minutes 23 seconds East 35.33 feet to the south line of said Northeast Quarter of the Northeast Quarter;
thence North 89 degrees 52 minutes 37 seconds East along the last described south line 114.92 feet to the intersection with the northerly right-of-way line of Minnesota State Highway No. 22;
thence southeasterly 490.04 feet along said northerly right-of-way line to a point on the East line of said Northeast Quarter distant 113.90 feet southerly of the northeast corner of said Southeast Quarter of the Northeast Quarter;
thence North 00 degrees 08 minutes 41 seconds East along the east line of said Northeast Quarter 1242.49 feet to said south line of the North 190.00 feet of said Northeast Quarter of the Northeast Quarter;
thence South 89 degrees 35 minutes 03 seconds West, along the last described south line 1315.35 feet to the point of beginning.

This parcel contains 29.52 acres, more or less, and is subject to with any and all easements of record.

PARCEL 2, PROPOSED DESCRIPTION

The North 190 feet (as measured perpendicular to and parallel with the north line) of the Northeast Quarter of the Northeast Quarter of Section 28, Township 111, Range 27, Nicollet County, Minnesota.
This parcel contains 5.74 acres, more or less, and is subject to with any and all easements of record.

PARCEL 3, PROPOSED DESCRIPTION

Part of the Northeast Quarter of the Northeast Quarter Section 28, Township 111, Range 27, Nicollet County, Minnesota, described as follows:
Commencing at the northeast corner of the Northeast Quarter;
thence on an assumed bearing of South 89 degrees 35 minutes 03 seconds West along the north line of the Northeast Quarter 1314.94 feet to the northwest corner of said Northeast Quarter of the Northeast Quarter;
thence South 00 degrees 15 minutes 59 seconds West along the west line of said Northeast Quarter of the Northeast Quarter, 937.10 feet to the point of beginning of the tract to be described;
thence South 89 degrees 44 minutes 01 seconds East 48.77 feet;
thence South 81 degrees 32 minutes 00 seconds East 172.49 feet;
thence South 01 degrees 36 minutes 23 seconds East 150.00 feet;
thence South 74 degrees 06 minutes 51 seconds East 117.87 feet;
thence South 89 degrees 48 minutes 48 seconds East 100.00 feet;
thence North 59 degrees 00 minutes 29 seconds East 277.29 feet;
thence South 81 degrees 06 minutes 59 seconds East 205.94 feet;
thence South 00 degrees 15 minutes 59 seconds West 118.39 feet;
thence South 51 degrees 23 minutes 43 seconds West 196.07 feet;
thence South 00 degrees 07 minutes 23 seconds East 35.33 feet to the south line of said Northeast Quarter of the Northeast Quarter;
thence North 89 degrees 52 minutes 37 seconds West along said south line 726.17 feet to the west line of said Northeast Quarter of the Northeast Quarter;
thence North 00 degrees 15 minutes 59 seconds East along the west line of said Northeast Quarter of the Northeast Quarter 374.79 feet to the point of beginning.

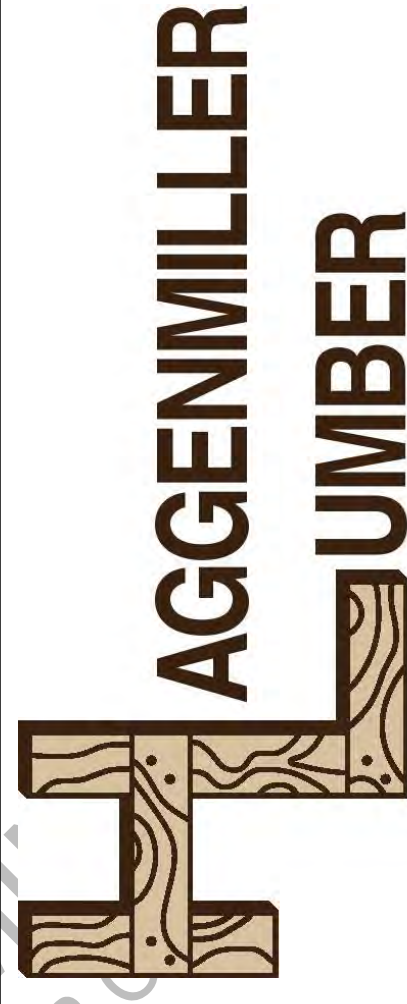
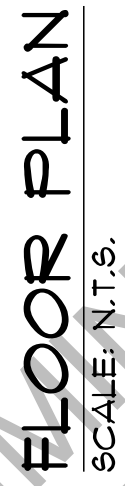
Said parcel contains 5.04 acres, more or less, and is subject to with any and all easements of record.

E. G. RUD & SONS, INC.
Professional Land Surveyors
990 5th Ave SE, Suite 2
Hutchinson, MN 55350
Tel. (320) 587-2025
www.egrud.com

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

KURT D. NELSON
Date: 02/02/23 License No. 45356

DRAWN BY:	CBS	JOB NO:	22.1310BS	DATE:	01/24/23
CHECK BY:	KDN	FIELD CREW:	BCK&JWM		
1	2FEB23	REVISED PARCELS PER COUNTY	CBS		
2					
3					
NO.	DATE	DESCRIPTION	BY		

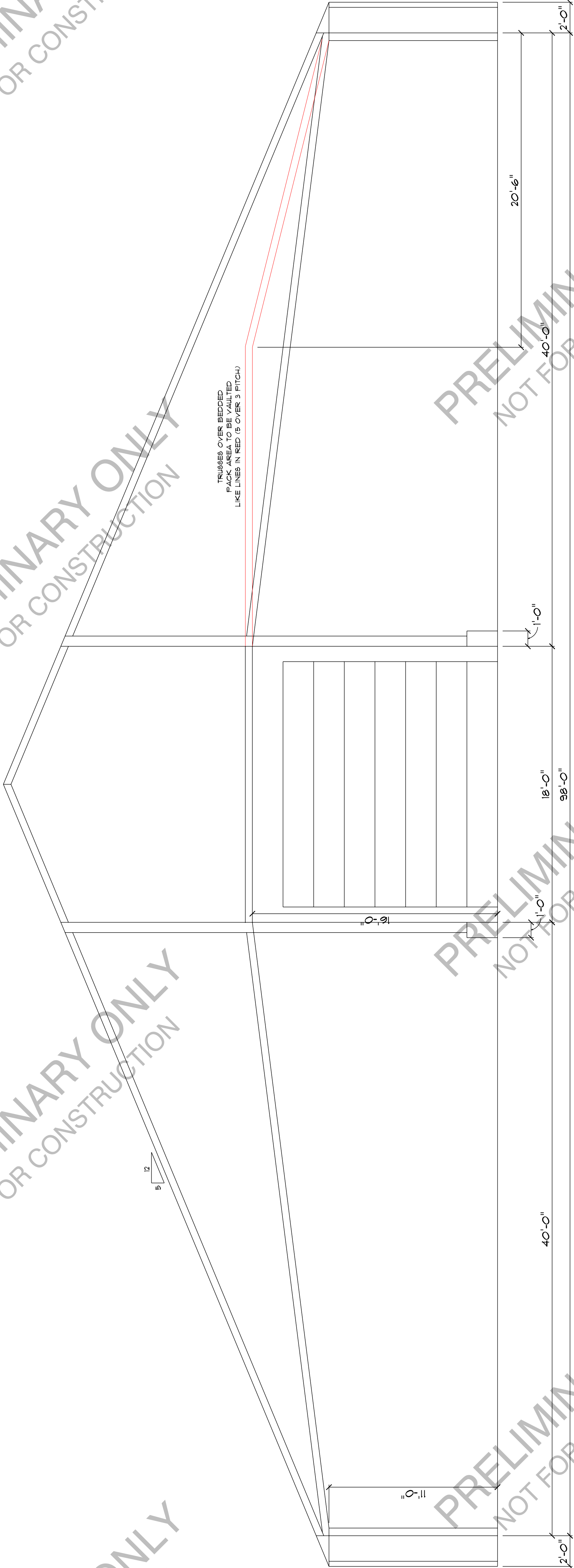


Property of Haggemiller Lumber Inc.
For Estimation And Quotation Only

Disclaimer, this drawing is being provided by Haggemiller Lumber Inc. for its internal use only to estimate or quote the cost of materials for the structure. This drawing is not professionally engineered and Haggemiller Lumber Inc. cannot be held liable for any errors, omissions, or defects in this plan.

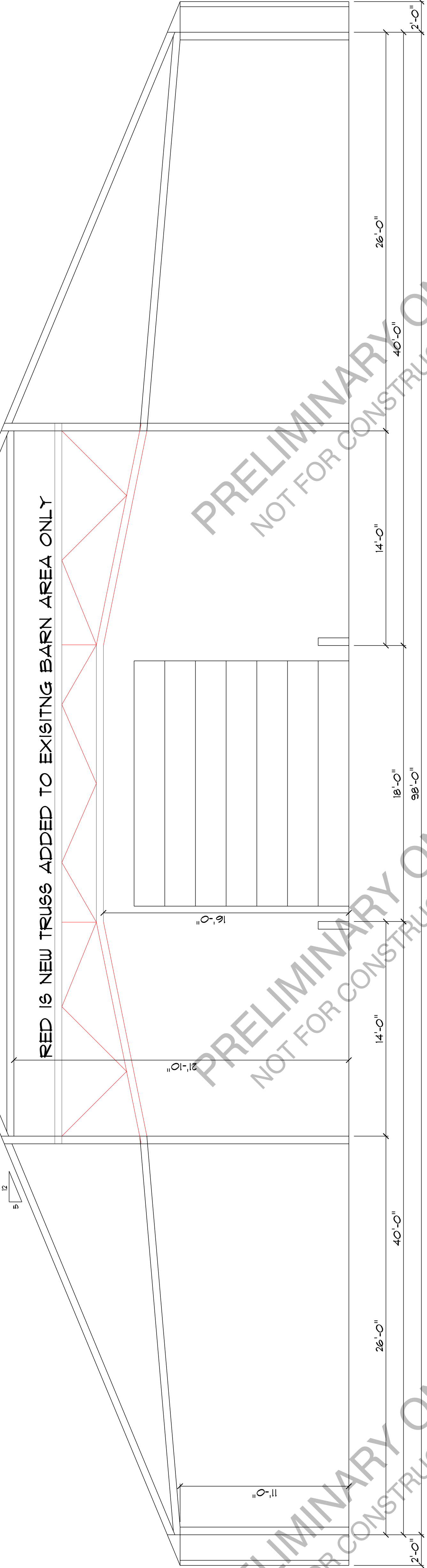
SCALE	1/4" = 1'	APPROVED	DRAWN BY SJJH
DATE			

ANNEXSTAD DAIRY FARM ROBOTIC DAIRY FACILITY ADDITION		23190 401 AV. ARLINGTON MA 01801	PHONE: 507-964-2263 FAX: 507-964-2265	DRAWING NUMBER
--	--	---	--	-----------------------



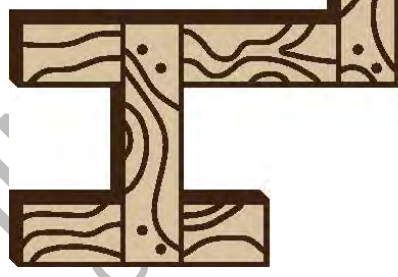
NEW SIDE CROSS SECTION

SCALE: 1/4" = 1'-0"



EXISTING CROSS SECTION

SCALE: 1/4" = 1'-0"



AGGENMILLER
LUMBER

Property of Aggenmiller Lumber Inc.
For Estimation And Quotation Only

DISCLAIMER: This drawing is being provided by Aggenmiller Lumber Inc. for its internal use only. It is not to be used for construction purposes. Aggenmiller Lumber Inc. cannot be held liable for any errors, omissions, or inaccuracies in this plan.

SCALE: 1/4" = 1'
DATE: Tuesday, November 21, 2023

APPROVED:
DRAWN BY: ESH
REVISED:

2380 401 AV.
ACUMSTON TN 38001

PHONE: 901-944-2263
FAX: 901-944-2265

ANNEXSTAD DAIRY FARM
ROBOTIC DAIRY FACILITY ADDITION

DRAWING NUMBER

Name of Applicant: Annexstad Dairy Farms Inc.

Date: 12/19/2022

Please describe the specific details related to your request. If your request is approved, you will be **held** to the plans and specifications submitted to the County with your application.

Annexstad Dairy Farms Inc. is proposing a facility modernization and further facility upgrades. Proposed as part of the plan is a free-stall barn expansion to the existing free-stall barn. Within the expanded footprint a robotic milking center, and additional animal housing will be constructed. These animal housing areas will be additional free-stalls for the expanded milking herd, as well as a dry cow and heifer bedded pack, and calving areas. The current manure handling system is outdated and highly time consuming for day to day management and facility operation. A clay lined liquid manure storage area is proposed adjacent to the free-stall barn. The proposed LMSA will have a total capacity of 4,780,000 gallons, equivalent to 13 months of anticipated manure generation for the animals housed within the expanded free-stall facility.

Annexstad Dairy currently utilizes sand bedding in the freestall barn for cow comfort. Due to economic and agronomic concerns with high sand use in manure application, a sand capturing system is proposed. The proposed sand lane is designed in a way consistent with sand separation from flowing manure. Manure generated within the free-stall barn will be discharged into the sand lane, for sand capture and eventual reuse. The manure and process water will flow into the LMSA directly from the sand lane. Sand capture is anticipated at 80% or more with use of the sand lane. Separated sand will be piled adjacent to the sand lane, to dry prior to reuse in the free-stall barn as bedding. The proposed LMSA will have a concrete lined bottom, atop a continuous clay liner. The proposed concrete bottom will allow for an array of management practices that allows for sludge, or built up sand removal to take place with on-site equipment. The proposed LMSA will have a concreted access ramp, capable of entering the LMSA safely and responsibly to remove and clean the sand that has settled during manure storage. Adjacent to the sand lane is a concrete stacking pad. This pad is intended for solid manure stacking in addition to sand stacking, this concrete will drain directly to the sand lane, which drains into the LMSA. The design is consistent with zero discharge standards for manure storage areas and stacking areas as all runoff will be collected and stored in the proposed LMSA.

Name of Applicant: Annexstad Dairy Farms Inc. Date: 12/19/2022

Request: Annexstad Dairy Farms Inc.

In granting a conditional use permit, the County Board shall consider the advice and recommendation of the Planning Commission and the effect of the proposed use upon the health, safety, morals, and general welfare of the community. Among other things, the County Board shall make the following findings where applicable.

Why do you feel the request meets the following criteria?

1. Given the nature of the land, the requested use is compatible with public health, safety, and general welfare.
The requested use will be consistent with the agricultural make up of the surrounding area.
The requested use will be consistent with the agricultural make up of the surrounding area.

2. The requested use will not create an unreasonably excessive burden on the existing roads or other utilities.
After construction, no significant additional wear and tear of existing roads and utilities is expected. By improving and adding additional manure storage,
the current practice of weekly manure hauling will be greatly reduced and a majority of the manure will be hauled and applied in the Fall.

3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.
Since the proposal is located in a predominantly agricultural area, the expansion will not depreciate nearby properties and
should increase the value of the cropland via improvements to soil fertility and soil health as a result of manure applications.

4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.
The proposed expansion will meet all state and local standards and local setbacks/offsets.
It will also meet all local zoning ordinance standards.

5. The requested use is consistent with the County Zoning Ordinance.
All county zoning ordinances will be followed during and after construction of the dairy expansion.

(Continued onto back)

6. The requested use is not in conflict with the County Comprehensive Plan.

The requested use will conform with the county comprehensive plan by ensuring public safety, health and welfare. The owner will work closely with the county to ensure the county comprehensive plan is followed for the duration on construction and lifespan of the feedlot facility.

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

No additional noise or glare is expected from the site. MPCA approved odor mitigation practices such as the use of pit additives and maintaining natural crusting will be implemented to greatly reduce any odor from the LMSA. The proposed feedlot additions will blend in with the current agricultural surroundings.

8. The requested use is reasonably related to the existing land use and environment.

Since the proposal is taking place on an existing dairy in a predominantly agricultural area, a proposed increase to animal numbers and improved manure handling will fit the current land use of the area.

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

All proposed feedlot components will have an approved engineered design by NRCS and MPCA/Nicollet County to ensure zero run off from the site. All MPCA regulations & local ordinances will be followed for land application of manure.

10. The requested use will/will not have an adverse effect upon public health, safety, and welfare due to the following other factors.

The proposed project will follow federal, state and local best management practices to ensure livestock husbandry and human health and safety is maintained.

***A MAJORITY OF THE CUP CRITERIA MUST BE MET
IN ORDER FOR THE REQUEST TO BE APPROVED.***



File Name:
ANNEXSTAD_P-1

2 of 15

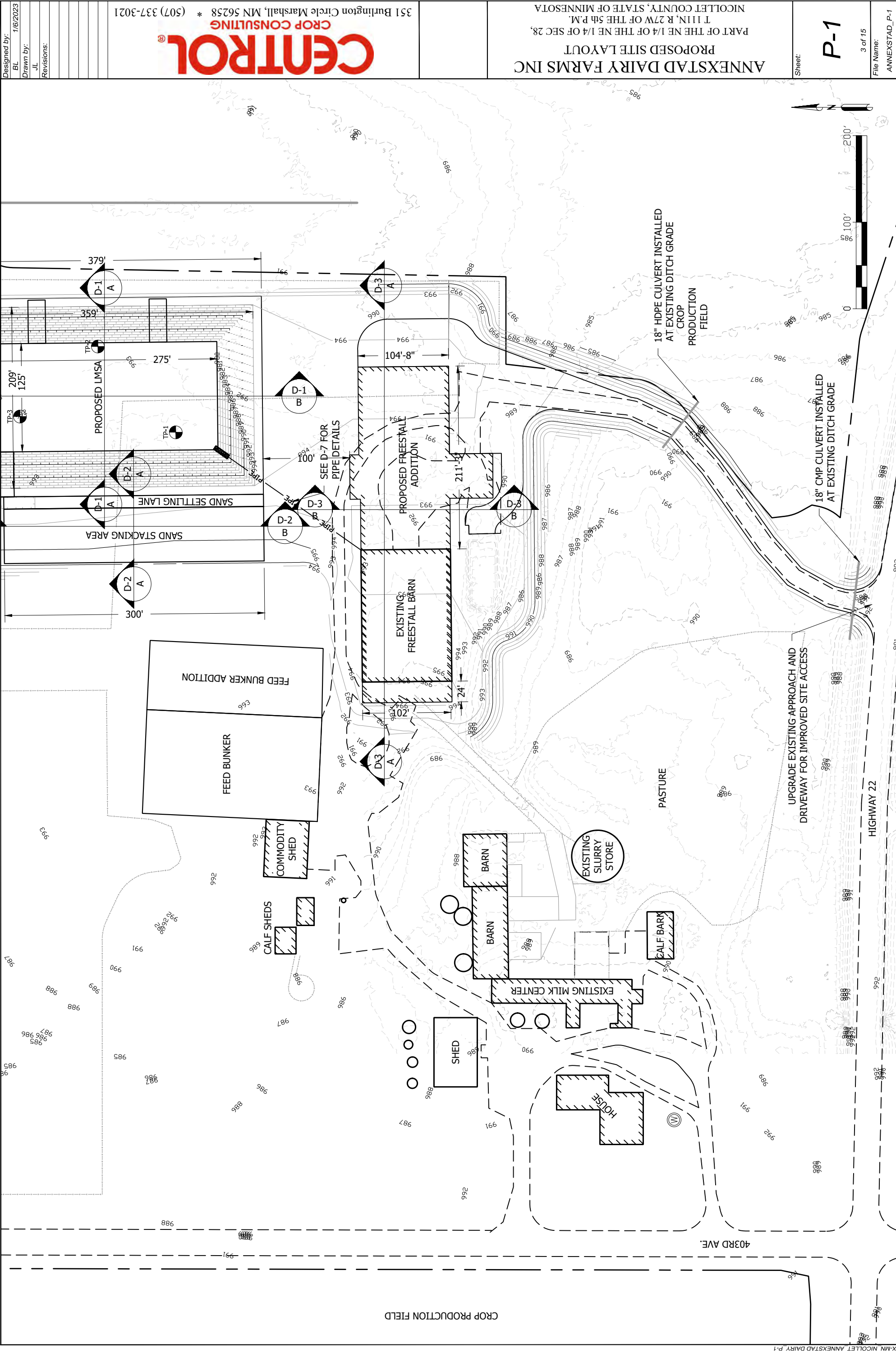
EX-1

Sheet:

ANNEXSTAD DAIRY FARMS INC
EXISTING SITE LAYOUT
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

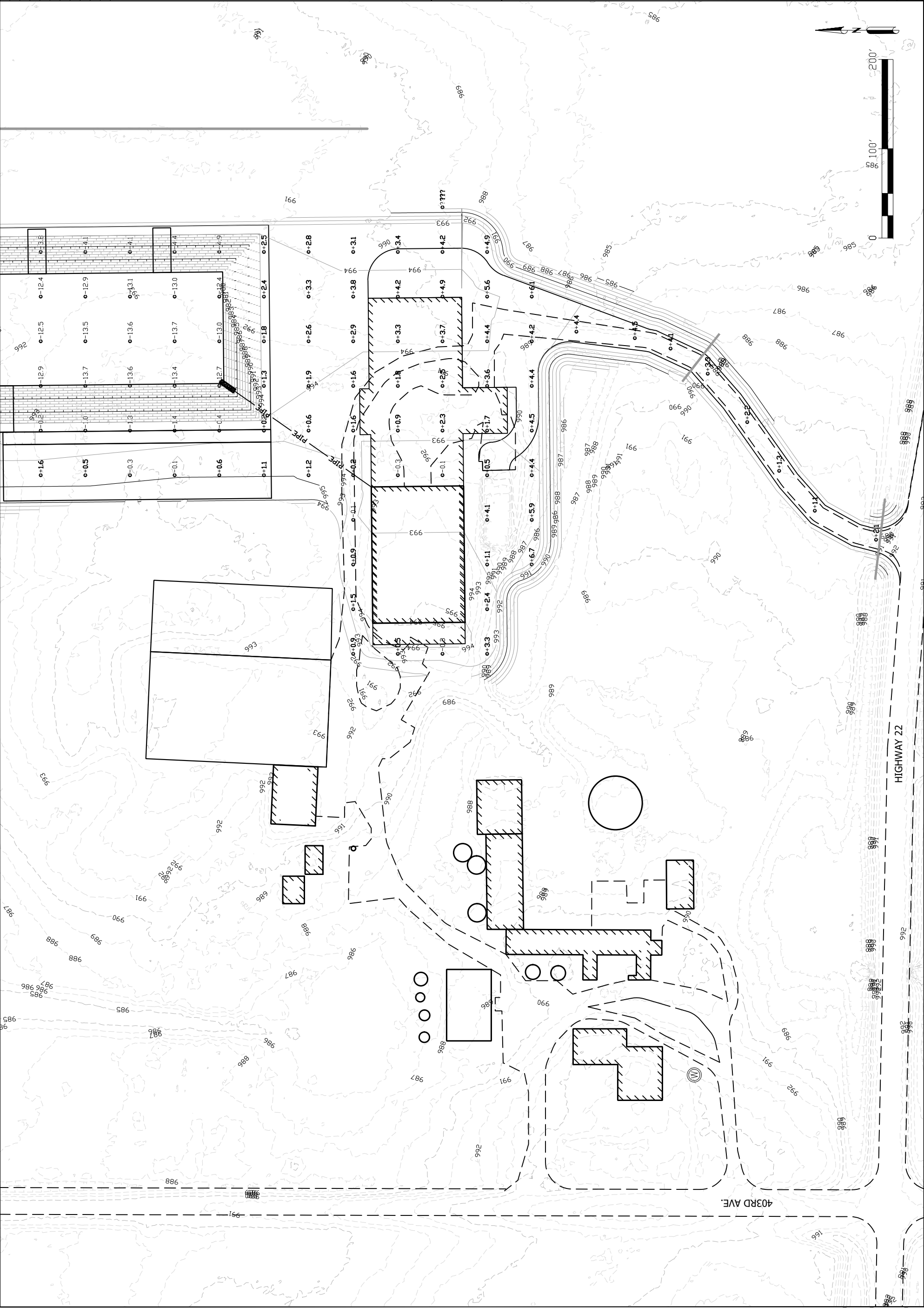
Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		



ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE LAYOUT - CUT/FILL
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

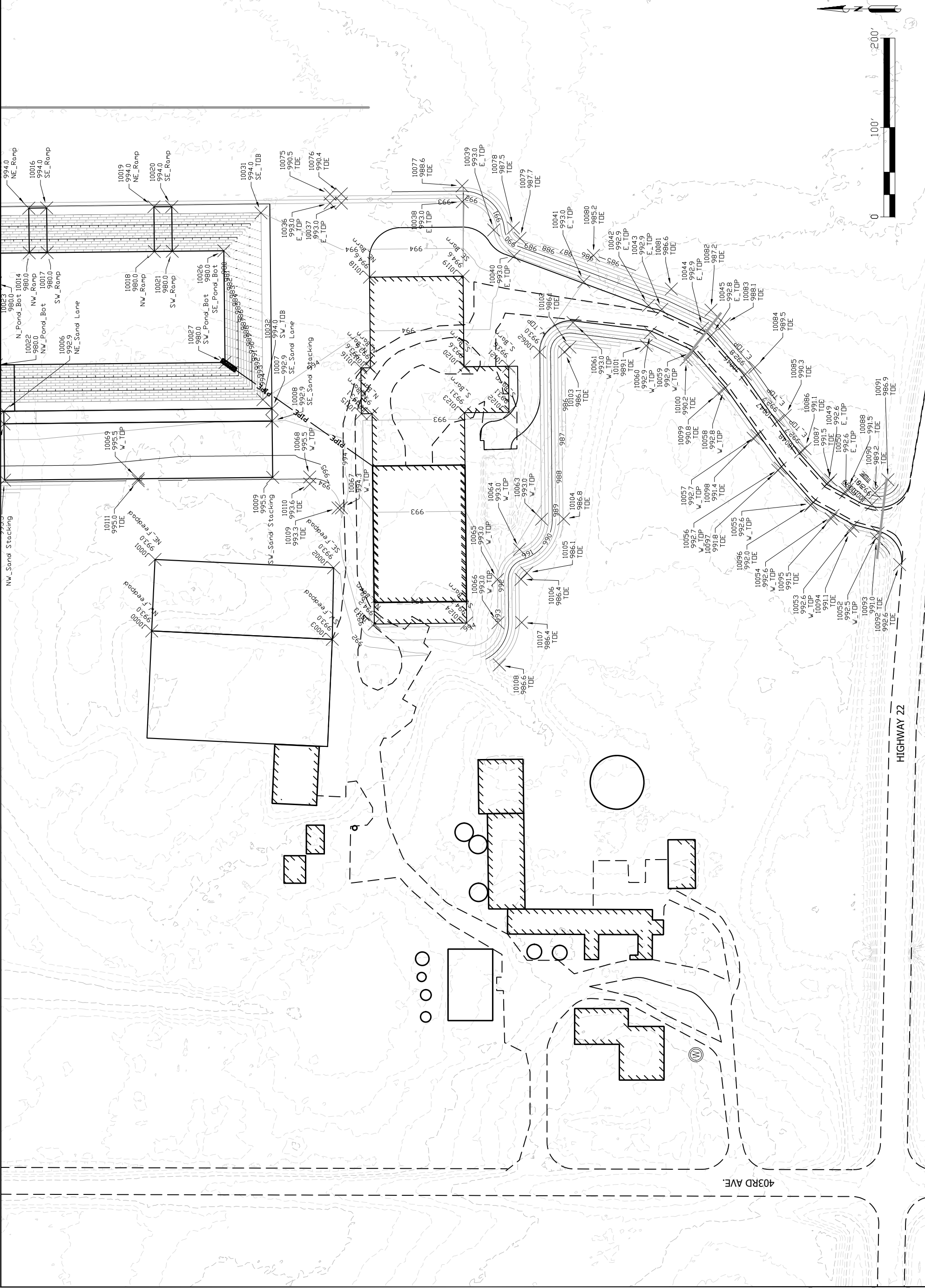
Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		



ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE PLAN - STAKEOUT POINTS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL CROP CONSULTING

Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		

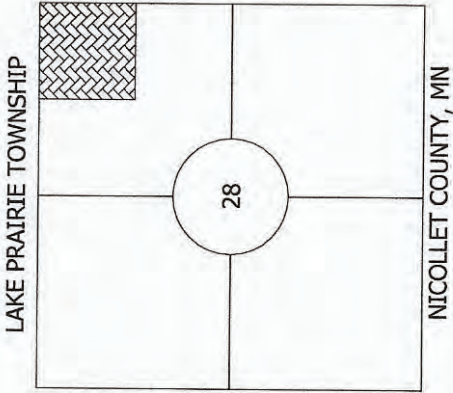


ANNEXSTEAD DAIRY FARMS INC



know what's below.
Call before you dig.

State Law and NRCS policy require that the excavator contact Gopher State One-Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work.



WASTE STORAGE FACILITY (313)
ROOFS AND COVERS (367)
POND SEALING OR LINING, COMPACTED SOIL TREATMENT (520)

AERIAL MAP



DRAWING INDEX

1. C-1 COVER SHEET
2. EX-1 EXISTING SITE LAYOUT
3. P-1 PROPOSED SITE LAYOUT
4. P-2 PROPOSED SITE LAYOUT - CUT/FILL
5. P-3 PROPOSED SITE LAYOUT - STAKEOUT POINTS
6. D-1 BASIN CROSS SECTIONS
7. D-2 SAND LANE CROSS SECTIONS
8. D-3 BARN CROSS SECTIONS
9. D-4 AGITATION RAMP DETAILS
10. D-5 TILE TRENCH DETAILS
11. D-6 SAFETY FENCE DETAILS
12. D-7 THRUST BLOCK DETAILS
13. D-8 CONCRETE DETAILS
14. G-1 GEOTECHNICAL NOTES
15. G-2 GEOTECHNICAL NOTES

***DRAWINGS TO BE USED IN ACCORDANCE
WITH THE ASSOCIATED CONSTRUCTION
SPECIFICATIONS**

PROJECT INFORMATION

PROJECT LOCATION:

FROM NORSELAND MN, EAST ON
HIGHWAY 22 2.5 MILES, NORTH ON 403RD
AVE, SITE ON EAST SIDE OF THE ROAD.

ENGINEER:

CENTROL CROP CONSULTING
ATTN: ELLIOT DE JONGH P.E.
351 BURLINGTON STREET
MARSHALL, MN 56164
970-215-8892



Minnesota NRCS Engineering Job Class: VI

To the best of my professional knowledge, judgement, and belief, the design, construction drawings, and specifications meet applicable NRCS standards and specifications.

ELLIOT DE JONGH

T.S.P. NUMBER: 14-9665

DATE: 1-11-23

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

ELLIOT DE JONGH

DATE: 1-11-23

THIS CERTIFICATION COVERS SHEETS #1-#15

LICENSE NUMBER: 52553
LICENSE RENEWAL DATE IS JUNE 30, 2024

ANNEXSTEAD DAIRY FARMS INC
COVER SHEET
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 11N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Sheet:

C-1

1 of 15

File Name:
ANNEXSTEAD_P-1

CENTROL
CROP CONSULTING
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021

Designed by:
BL 1/6/2023
Drawn by:
JL
Revisions:



File Name:
ANNEXSTAD_P-1

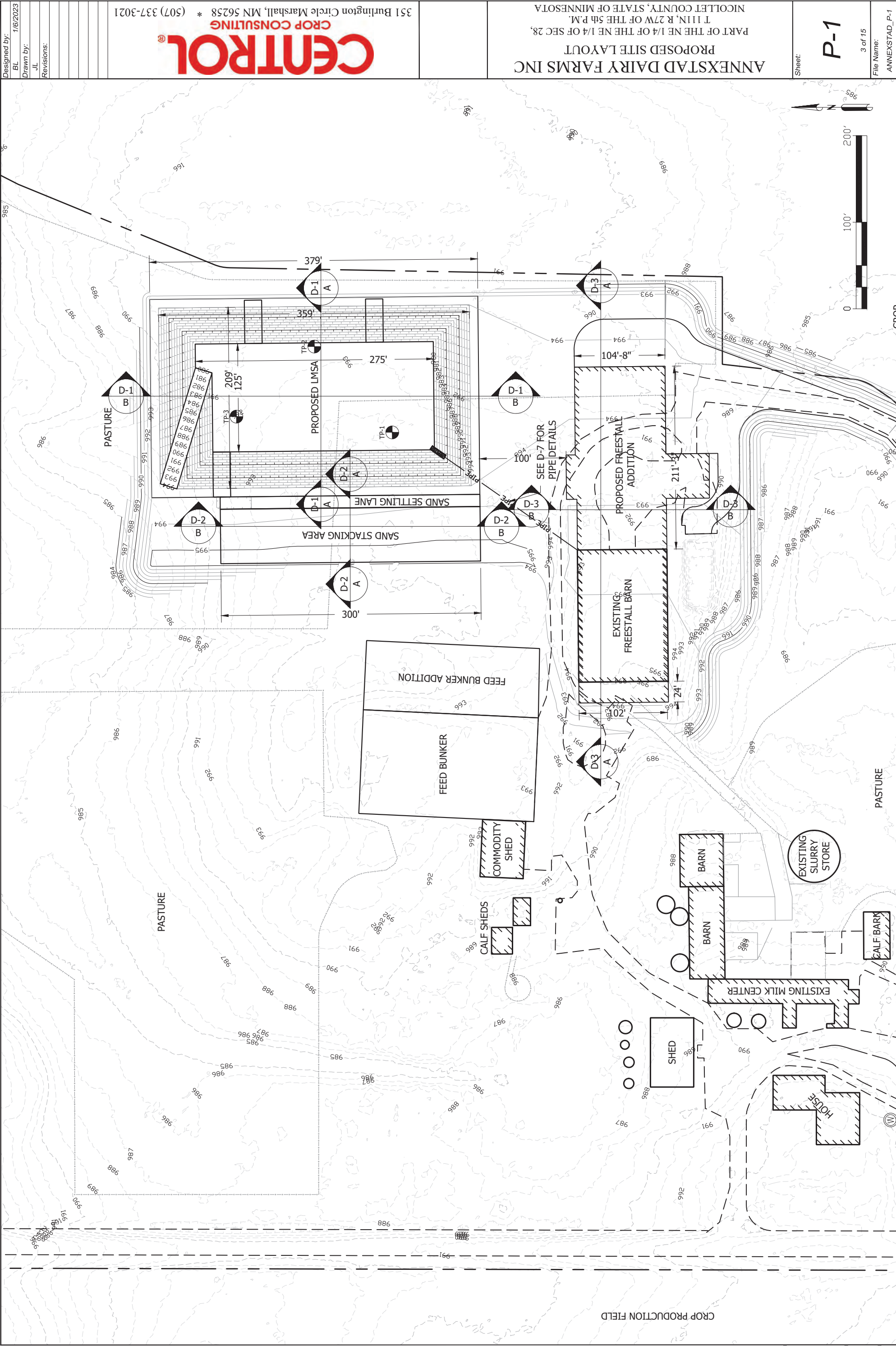
2 of 15

Sheet:
EX-1

ANNEXSTAD DAIRY FARMS INC
EXISTING SITE LAYOUT
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		



ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE LAYOUT
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111 N, R 27 W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

Designed by: BL 1/6/2023
Drawn by: JL
Revisions:

File Name:
ANNEXSTAD_P-1

4 of 15

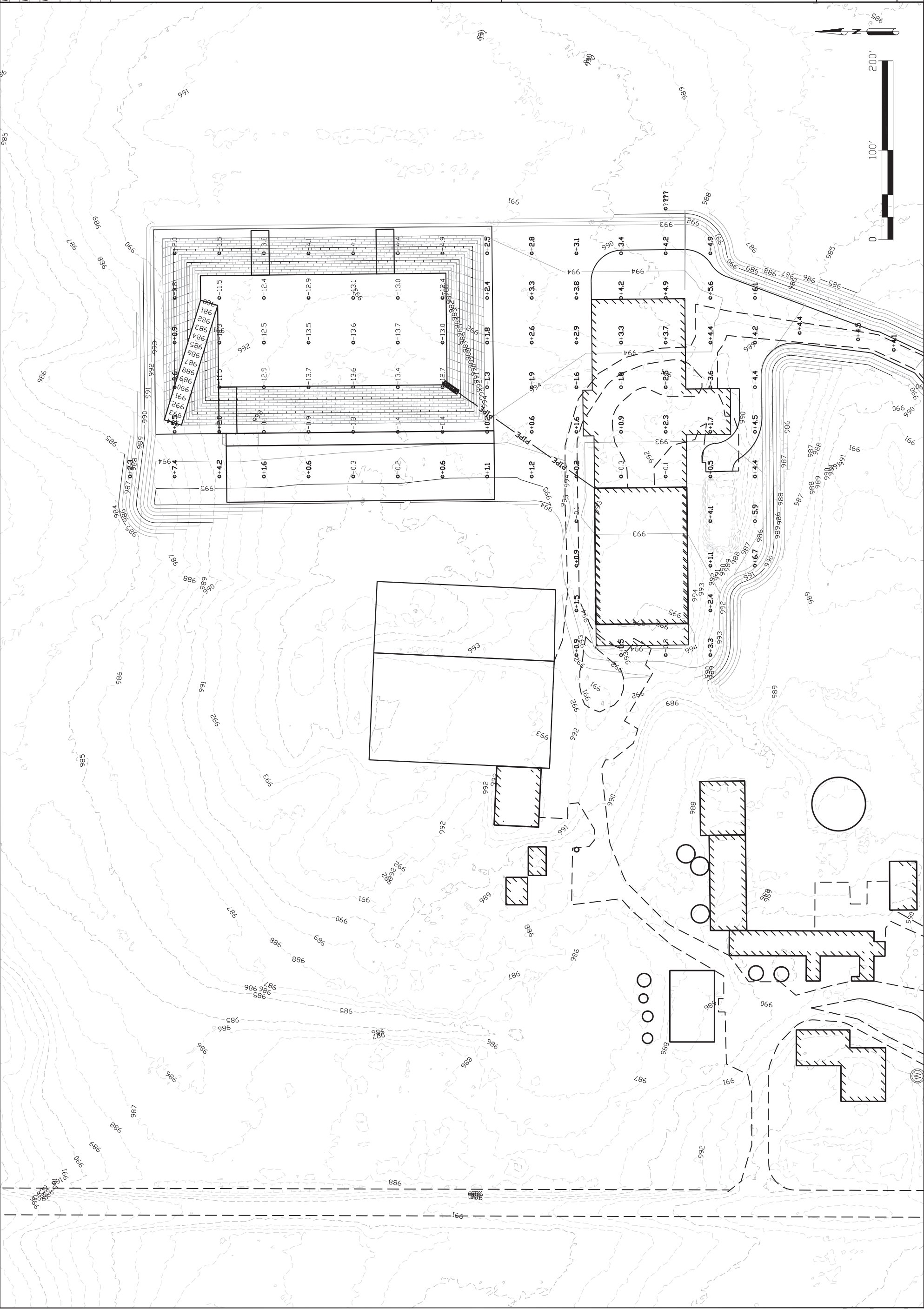
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P-2

ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE LAYOUT - CUT/FILL
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

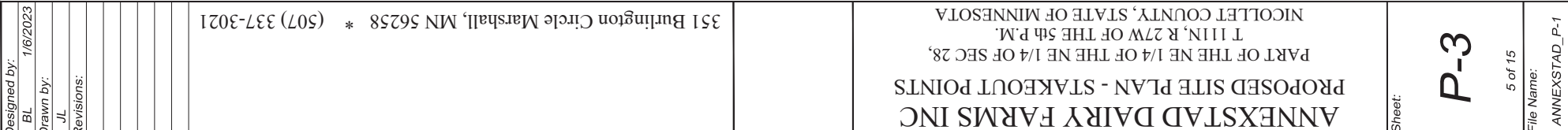
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

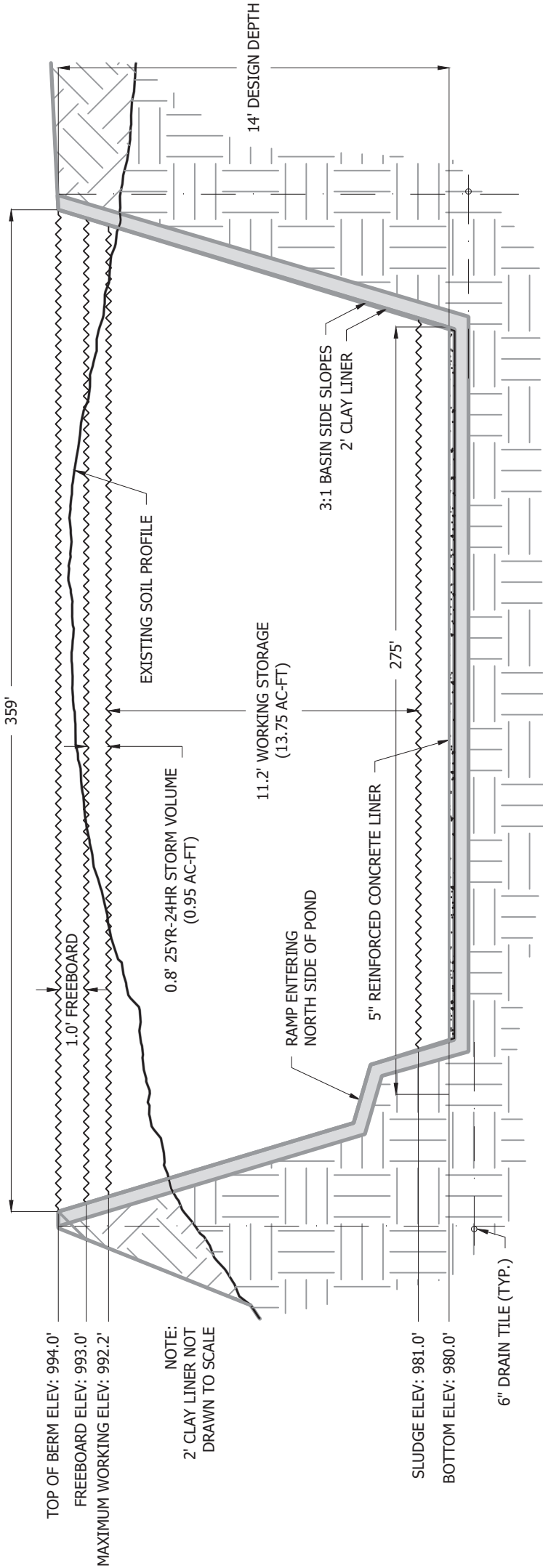
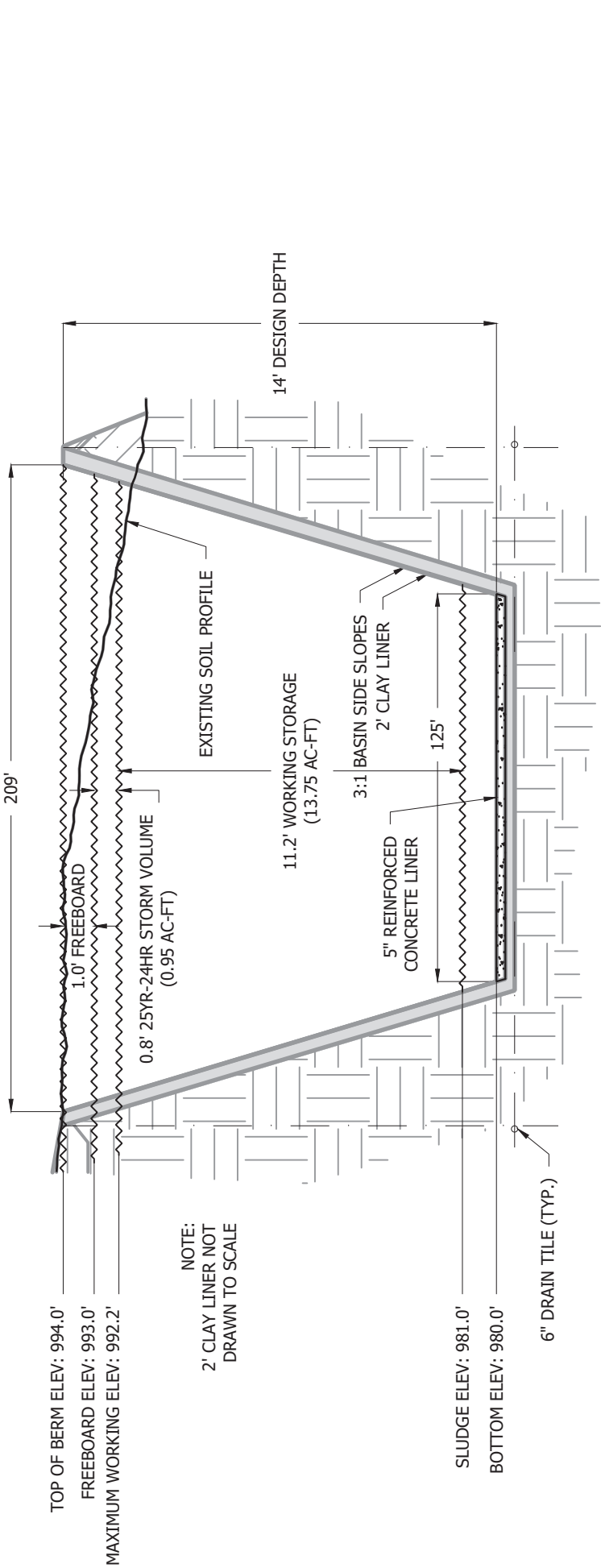
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Drawn by:	JL	
Revisions:		

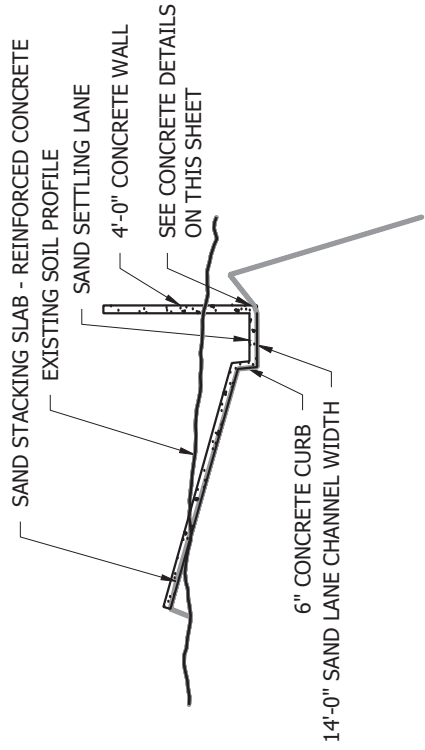


ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE PLAN - STAKEOUT POINTS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021

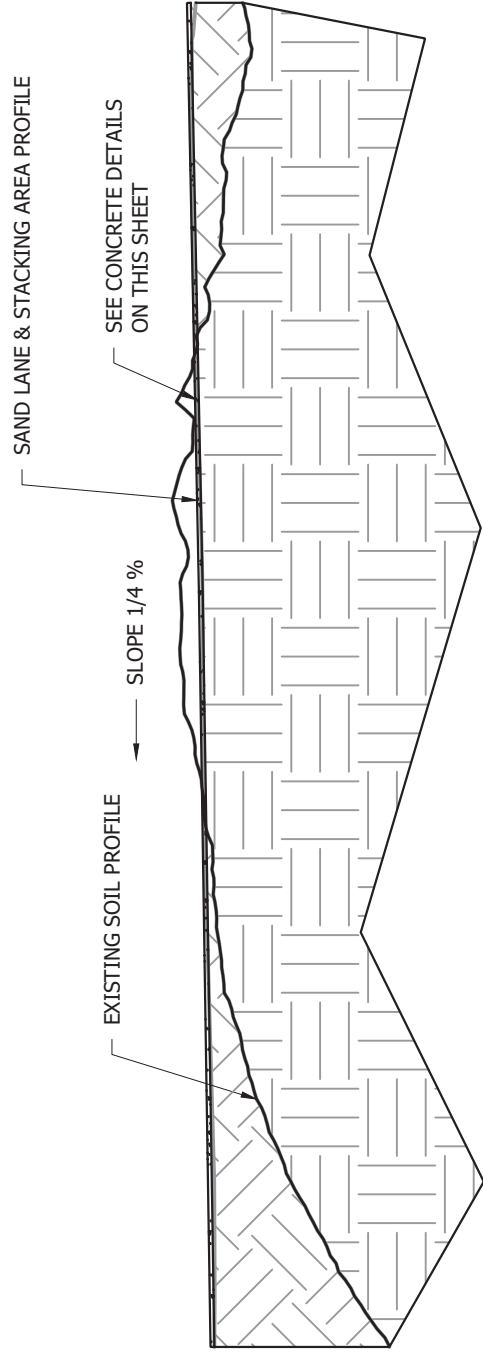






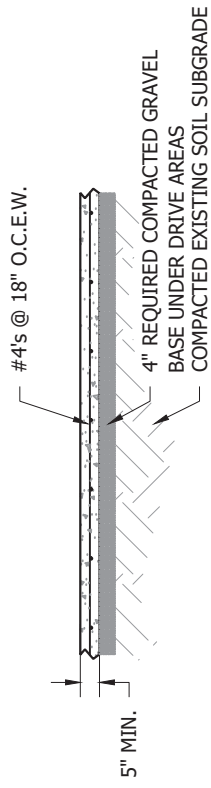
E-W SANDLANE CROSS SECTION

SCALE: 1:50 H, 10:1 V



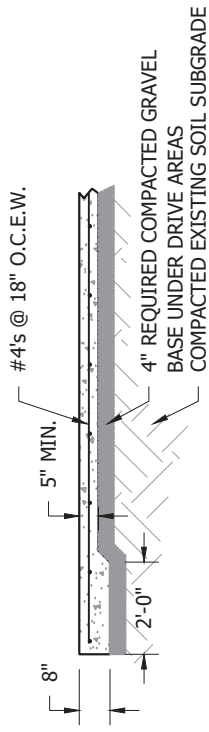
N-S SANDLANE CROSS SECTION

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TYPICAL CONCRETE FLATWORK

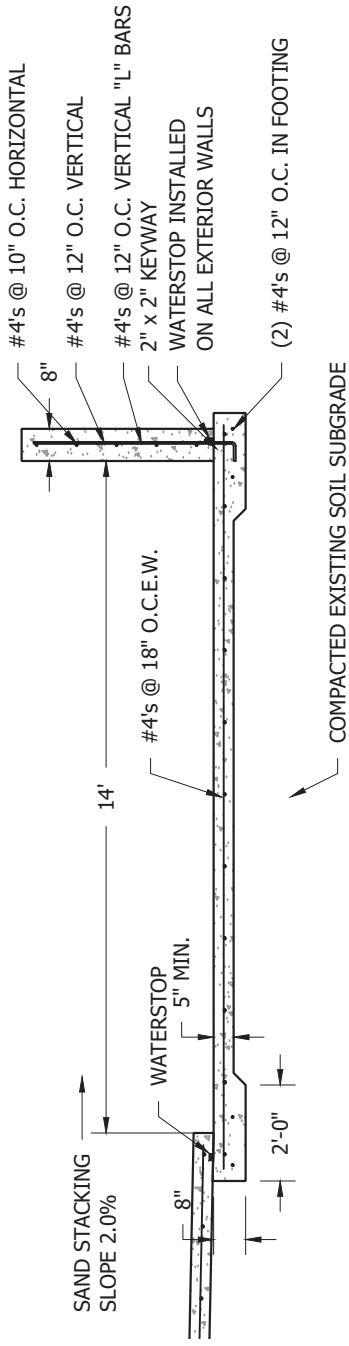
Scale: 1/4" = 1'-0"



THICKENED EDGE CONCRETE FLAT WORK

Scale: 1/4" = 1'-0"

***ALL REBAR GRADE 60**



SAND LANE CONCRETE DETAILS

Scale: $1/4" = 1'-0"$

ANNEXSTAD DAIRY FARMS INC
BASIN CROSS SECTIONS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Sheet:

D-2

7 of 15

File Name:

ANNEXSTAD P-1

Designed by:

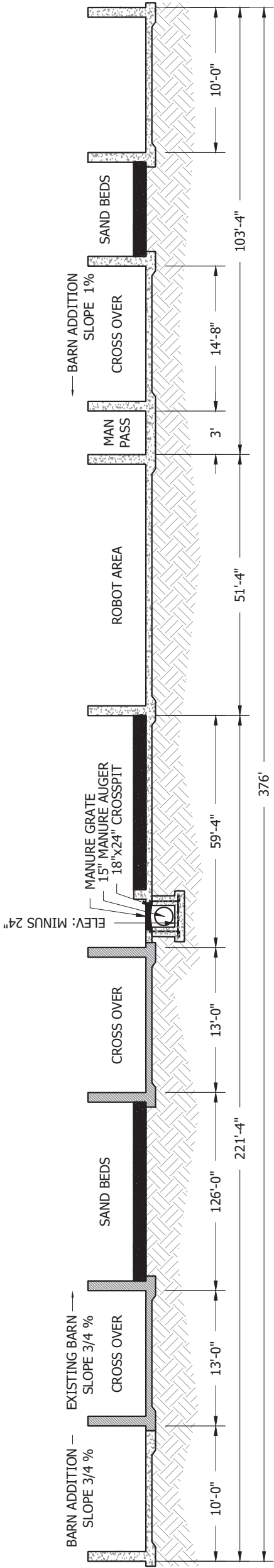
BL	1/6/2023
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Drawn by:

JL

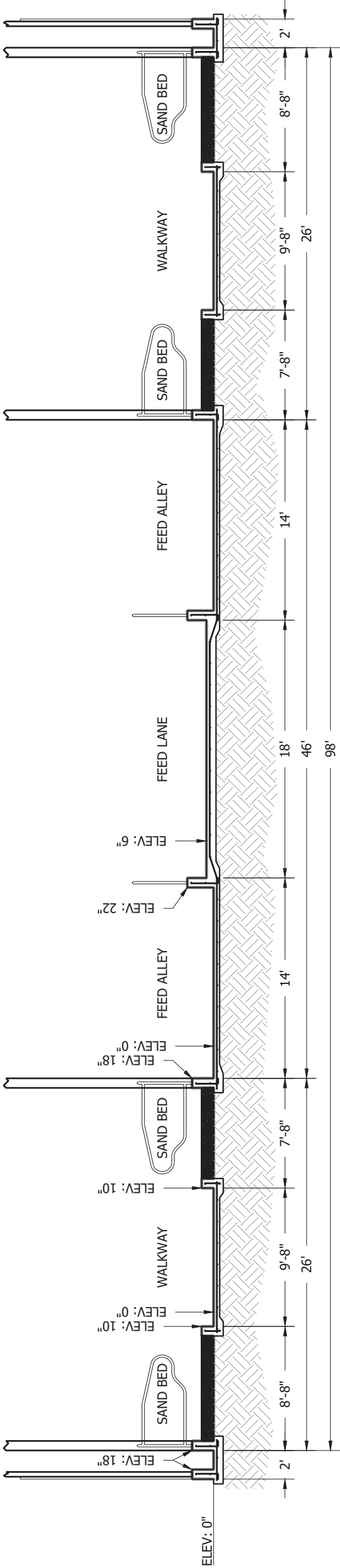
Revisions:

CENTROL[®]
CROP CONSULTING
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021



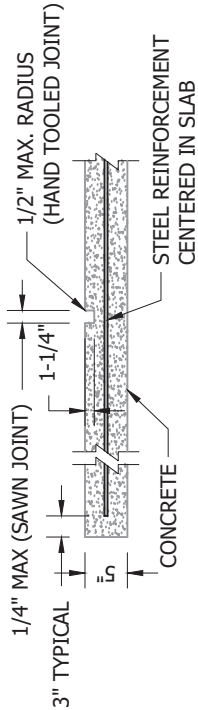
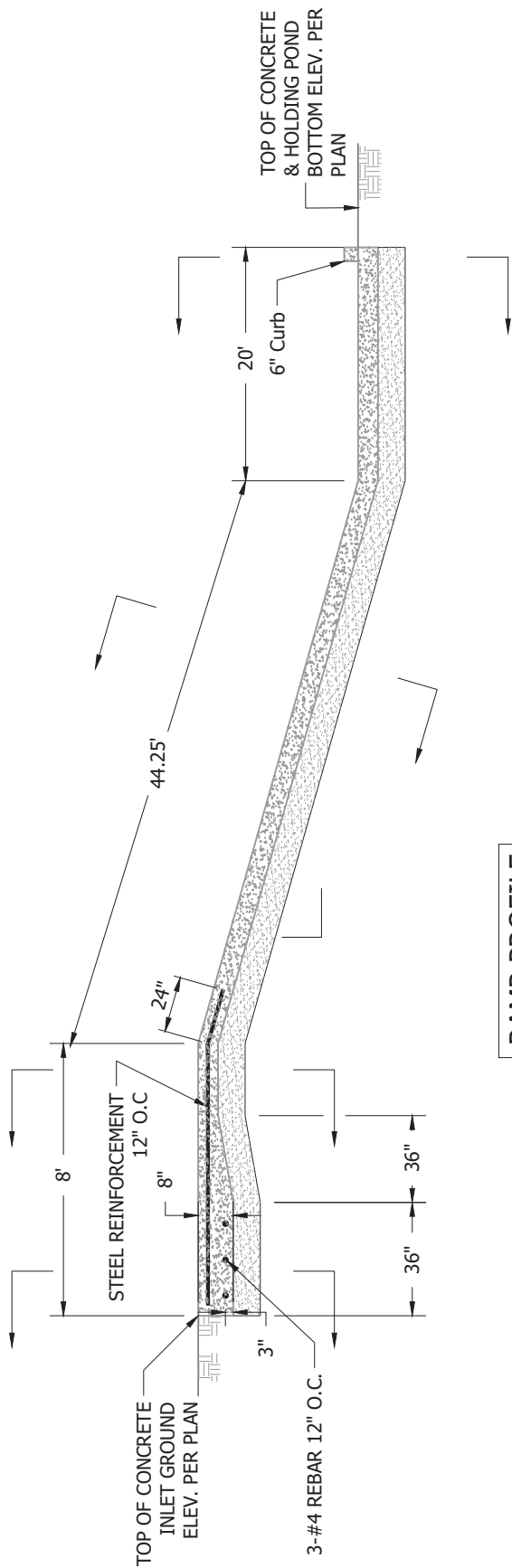
A E-W BARN CROSS SECTION

SCALE: N.T.S.



B N-S BARN CROSS SECTION

SCALE: N.T.S.



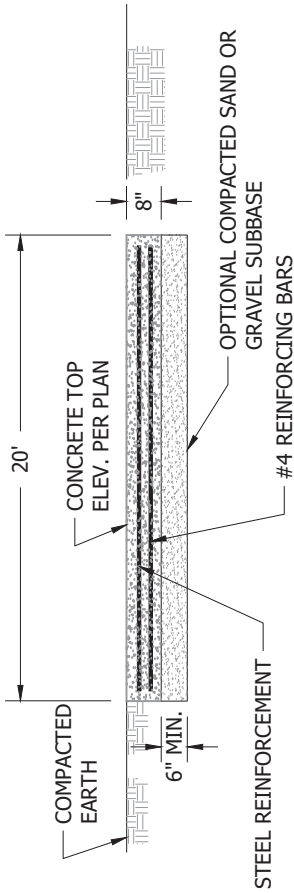
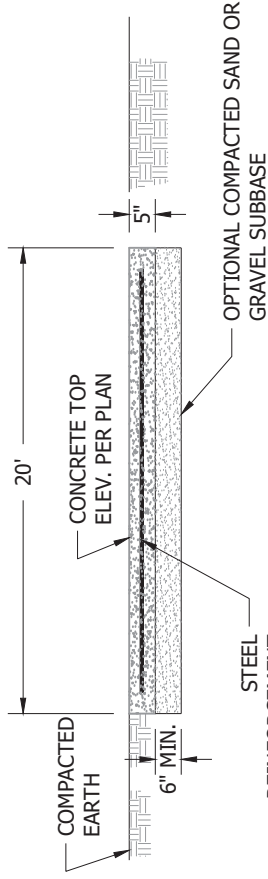
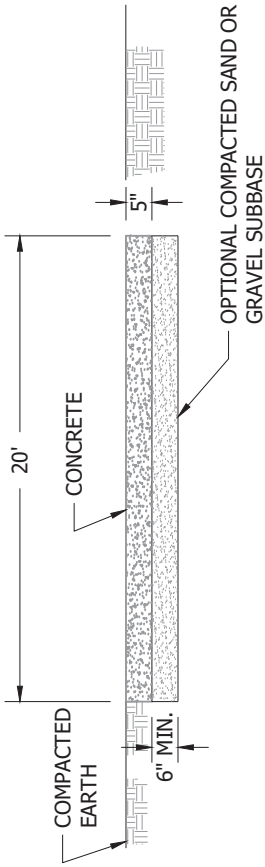
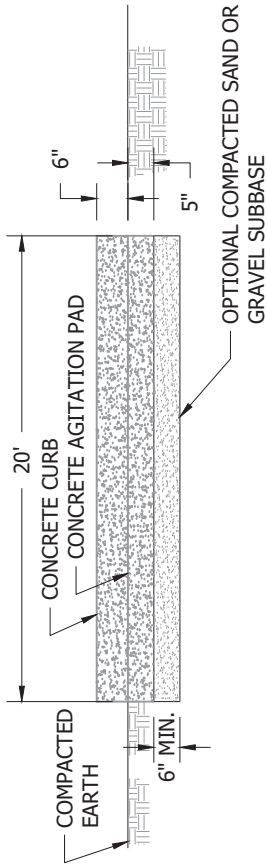
TYPICAL CONTROL JOINT DETAIL AND STEEL REINFORCEMENT DETAILS

MATERIALS NOTES

1. CONCRETE SHALL BE AIR-ENTRAINED.
2. CONCRETE SHALL BE CLASS 4000M (NO LESS THAN 6 BAGS OF CEMENT /CU.YD. AND NO MORE THAN 6 GAL OF WATER /BAG OF CEMENT).
3. THE SAND + GRAVEL SUBBASE MATERIAL SHALL BE CLEAN PIT RUN SAND OR GRAVEL AND WITH LESS THAN 5% BY WEIGHT PASSING THE #200 SIEVE.

CONSTRUCTION NOTES

1. CONTROL JOINTS SHALL DIVIDE THE CHUTE INTO SQUARE OR RECTANGULAR SECTIONS (HORIZONTAL PROJECTION) WITH THE LONGER SIDE BEING NO MORE THAN ONE-AND-A-HALF TIMES THE LENGTH OF THE SHORTER SIDE. THE MAXIMUM SPACING IN THE UNREINFORCED SHALL BE 10 FEET. THE MAXIMUM SPACING IN THE REINFORCED SLAB SHALL BE 50 FEET.
2. ANY FORMS USED IN CONSTRUCTION SHALL BE REMOVED.



RAMP QUANTITIES PER RAMP @ 44.25' (3)		
QUANTITY	UNIT	ITEM
49.9	Cu.Yds.	Excavation
26.8	Cu.Yds.	Sand or Gravel Subbase
23.3	Cu.Yds.	Concrete Class 4000M
200	Sq.Ft.	WWF 6" x 6" W2.9 x W2.9
60	Ln.Ft.	Reinforcing Bars

AGITATION RAMP

SCALE: N.T.S.

NOTES

1. QUALITY CONTROL AND TOLERANCES
- a. COLUMN FINISH ELEVATIONS SHALL BE ± 1/4" FROM DESIGN ELEVATION.

b. WALL ALIGNMENT (HORIZONTAL) SHALL DEVIATE NO MORE THAN 1/4" IN 10 FEET AND NOR MORE THAN 3/4" OVER THE FULL LENGTH OF THE WALL.

c. WALL BEARING LEDGE ELEVATIONS SHALL BE ±1/4" FROM DESIGN ELEVATIONS IN 10 FEET AND NO MORE THAN 1/2" OVER THE FULL LENGTH OF WALL.

d. OVERALL FOUNDATION LENGTH AND WIDTH DIMENSIONS AND DIAGONAL DIMENSIONS SHOULD BE WITHIN 1/2" OF PLAN DIMENSIONS.

e. MINOR HONEYCOMBING SHALL BE REPAIRED ON THE SAME DAY THAT THE FORMS ARE REMOVED. MAJOR HONEYCOMBING (GREATER THAN 1-1/2" DEEP) SHALL BE INSPECTED BY THE ENGINEER AND REPAIRED OR REMOVED AT THEIR DIRECTION.

f. TEST CYLINDERS: TO BE TAKEN WHENEVER A NEW MIX OR CONCRETE SUPPLIER IS USED AND AT A MINIMUM OF EVERY 150 CUBIC YARDS FOR STRENGTH.

g. SEE CONSTRUCTION SPECIFICATIONS FOR ALL DETAILS AND REQUIREMENTS IN SECTION 03 00 00.
2. INFORMATION
- a. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STRUCTURAL NOTES.

b. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY CHANGES.

c. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.

d. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:

i. AMERICAN CONCRETE INSTITUTE (ACI)

ii. CONCRETE REINFORCING STEEL INSTITUTES (CRSI) MANUAL OF STANDARD PRACTICE

e. PUMPOUT PIT LOCATIONS ARE SUBJECT TO OWNER APPROVAL

f. ANY CHANGES TO THE APPROVED SET OF PLANS WITHOUT NOTIFYING THE ENGINEER PRIOR TO SUCH CHANGES ABSOLVES SAID ENGINEER FROM ANY AND ALL RESPONSIBILITY WITH RESPECT TO THE LIABILITY, DAMAGE, OR EXTRA WORK RESULTING FROM SAID CHANGES.
3. WATERSTOP
- a. WATERSTOP CAN BE BENTONITE/BUTYL RUBBER, EQUAL TO WATERSTOP - RX, EXPAND-TITE EXP 200 OR PROVEN EQUAL YET SUITABLE FOR USE WITH LIQUID MANURE WASTES. WATERSTOP SHALL BE PLACED IN ALL CONSTRUCTION JOINTS ON THE FLOOR AND IN THE PERIMETER WALLS. LOCATION AND NUMBER OF CONSTRUCTION JOINTS ARE TO BE DETERMINED BY THE CONTRACTOR.

b. IF REQUIRED, WATERSTOP SPLICES TO BE MADE USING A SPLICING IRON.

c. ALL SLABS ON GRADE THAT HAVE A VERTICAL WALL ON TOP SHALL HAVE A KEYWAY AND WATERSTOP AT THE SLAB/WALL INTERFACE.
4. COLD WEATHER CONCRETING
- a. WHEN FOR MORE THAN 3 SUCCESSIVE DAYS, THE MEAN DAILY TEMPERATURE DROPS BELOW 40 DEG F, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH ACI 306.

b. HOT WEATHER CONCRETING

a. WHEN IT IS LIKELY THAT TEMPERATURES BETWEEN 75 DEG F AND 100 DEG F WILL BE APPROACHED OR EXCEEDED; THAT LOW RELATIVE HUMIDITY IS PRESENT; OR WIND VELOCITY WILL EXCEED 10 MPH, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH CHAPTERS 4 & 5 OF ACI 305.
6. ELECTRICAL
- a. INSTALL REINFORCING BARS AS PER ELECTRICAL CODE AND GROUND AT A MINIMUM NUMBER OF LOCATIONS AS PER ELECTRIC CODE. NOTIFY THE ELECTRICAL INSPECTOR FOR INSPECTION PRIOR TO PLACING CONCRETE.
7. TEMPORARY BRACING AND BACKFILL
- a. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL THE PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.

b. BACKFILL ONLY AFTER THE FLOOR SLATS OR SOLID FLOOR HAS BEEN INSTALLED AND ALL ITEMS THOROUGHLY GROUTED AND CURED.
8. SUBGRADE
- a. EXISTING DISTURBED SUBGRADE SHALL BE RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY

b. ALL FILL UNDER FOOTINGS AND SLAB SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF MAXIMUM DRY DENSITY.

c. SAND FILL AS REQUIRED FOR LEVELING SUBGRADES SHALL BE PROVIDED AT ALL SLAB ON GRADE AREAS.
9. FOOTINGS AND FOUNDATIONS
- a. SOIL BEARING DESIGN VALUE: 2,000 PSF (ASSUMED) ON VIRGIN SOIL OR COMPACTED FILL FOR FOOTINGS.

b. PROTECT FOUNDATION EXCAVATIONS FROM FROST AND DO NOT PLACE CONCRETE ON FROZEN GROUND.

c. FOUNDATION EXCAVATION SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER.

d. FOOTINGS AND FLOOR SHALL BE ON NATIVE CLAY SOIL, OVER EXCAVATION AND PLACEMENT MAY BE NECESSARY ALONG BARN.
10. PERIMETER DRAINAGE
- a. INSTALL THE DRAINAGE TILE AT A MINIMUM DEPTH OF THE BOTTOM OF WALL FOOTER.

b. THE DRAIN TILE SHALL BE HEAVY DUTY PERFORATED POLYETHYLENE TUBING 4" DIAMETER AS A MINIMUM.

c. CONNECT THE DRAIN TILE TO A SUMP FOR INSPECTION AND POTENTIAL DEWATERING INTO PIT ONLY. MONITOR WATER DEPTH PRIOR TO PUMPING PITS.
11. REINFORCED CONCRETE
- a. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F'c = 4,000 PSI

b. WATER CEMENT RATIO SHALL BE 0.45 MAXIMUM.

c. CEMENT SHALL CONFORM TO ASTM C150, TYPE 1.

d. COARSE AGGREGATE SHALL BE 3/4" MAX.

e. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.

f. SLUMP SHALL BE MAXIMUM OF 5"

g. AIR CONTENT SHALL BE 5% TO 7%.

h. ALL EXPOSED CONCRETE SHALL HAVE ENTRAINED AIR ADMIXTURE

i. CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF ACI 301

j. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER FOR THE PURPOSED OF INCREASING THE WORKABILITY BUT NOT TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. CALCIUM CHLORIDE SHALL NOT BE USED.

k. CONCRETE SHALL BE CURED WITH CURING COMPOUND OR OTHER ACCEPTABLE METHODS

l. CONCRETE IN ALL WALLS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 14 DAYS BEFORE BACKFILL IS PLACED AGAINST WALLS. EXERCISE CAUTION WHEN BACKFILLING TO BRING UP THE LEVEL UNIFORMLY ON ALL SIDES OF TANKS AND PITS.

m. NO CONSTRUCTION JOINTS SHALL BE LOCATED IN THE END WALLS. IF REQUIRED, CONSTRUCTION JOINTS IN WALLS SHALL NOT BE LOCATED WITHIN 3 FEET OF PUMPOUT PITS.

12. REINFORCING STEEL

- a. BAR REINFORCEMENT SHALL BE ASTM A615, Fy = GRADE 60 (60,000 PSI) DEFORMED STEEL
- b. MINIMUM LAP SPLICE OF REINFORCING BAR, BASED ON ACI 318, CLASS B, SHALL BE AS FOLLOWED, UNLESS NOTED OTHERWISE:

#3 BARS = 15"

#4 BARS = 20"

#5 BARS = 24"

#6 BARS = 30"

#7 BARS = 36"

#8 BARS = 42"
- c. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER UNLESS NOTED OTHERWISE:

i. CONCRETE PLACED AGAINST EARTH = 3"

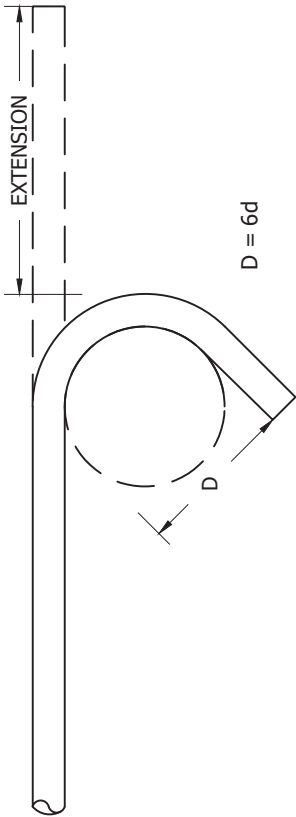
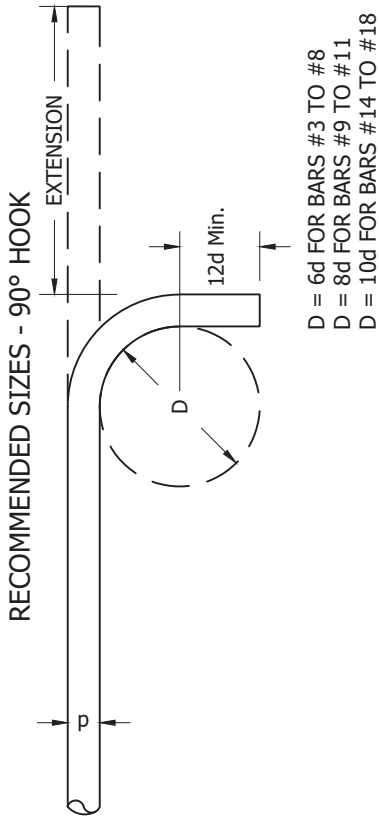
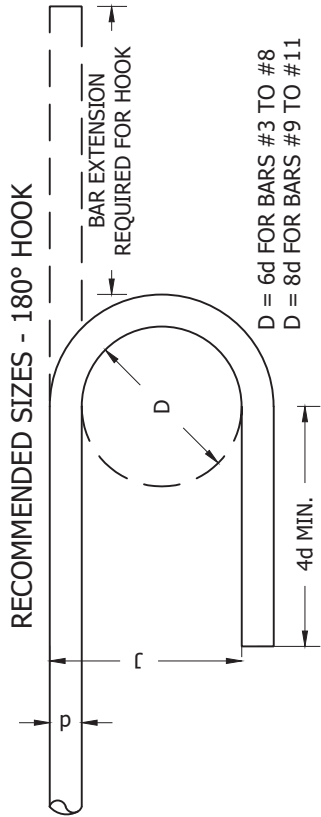
ii. FORMED CONCRETE EXPOSED TO WEATHER OR EARTH:

1. #6 THROUGH #8 BARS = 2"

2. #5 BARS AND SMALLER = 1 1/2"

3. STIRRUPS AND TIES = 1 1/2"
- d. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE.
- e. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE SIZE AND SPACING AS VERTICAL WALL REINFORCEMENT.
- f. ALL LAP SPLICES SHALL BE TIED AT 3 LOCATIONS.

ALSO SEE ASSOCIATED CONSTRUCTION SPECIFICATIONS INCLUDED WITH PROJECT DOCUMENTS



NOTE: STIRRUP HOOKS MAY BE BENT TO THE DIAMETER OF THE SUPPORTING BARS

1 STANDARD HOOK DETAILS

Designed by:
BL 1/6/2023
Drawn by:
JL
Revisions:

CENTROL CROP CONSULTING * (507) 337-3021

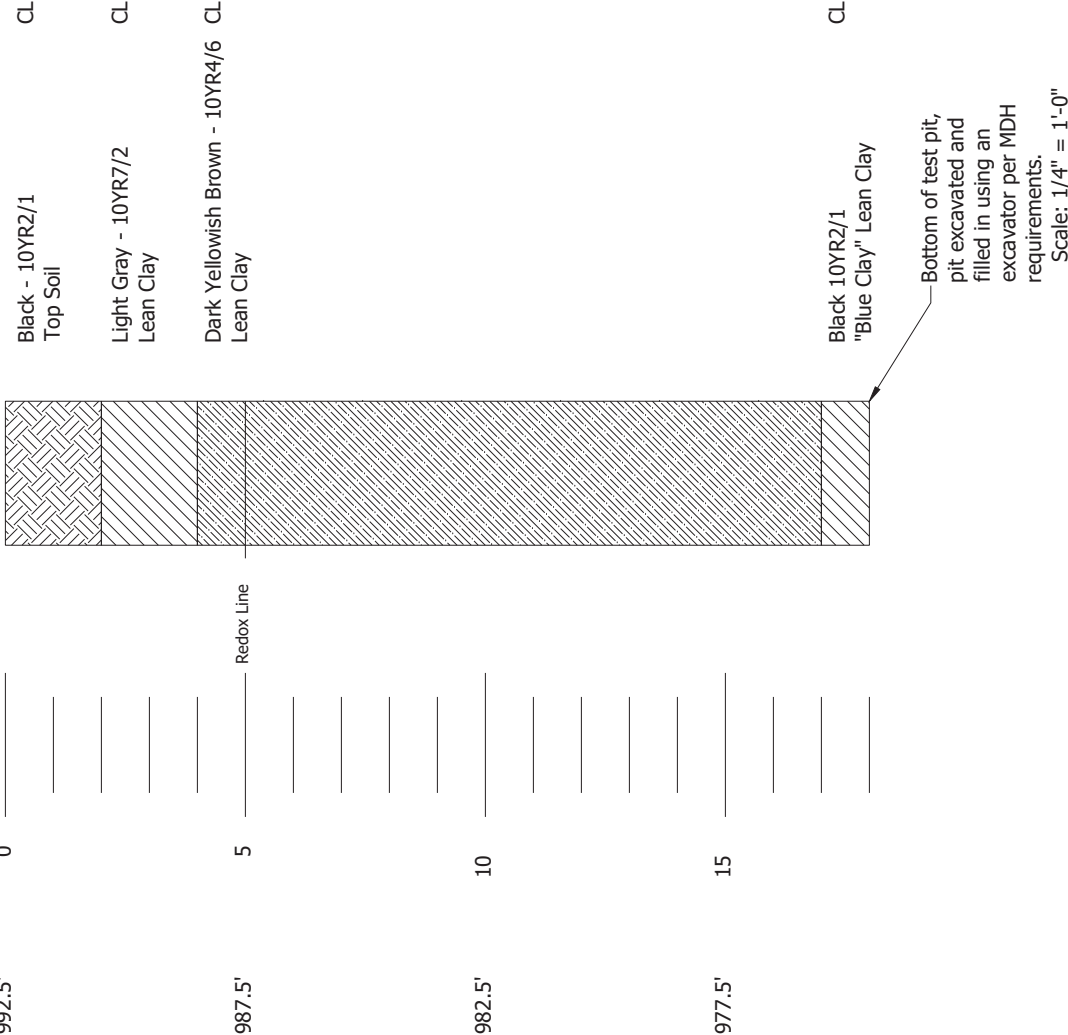
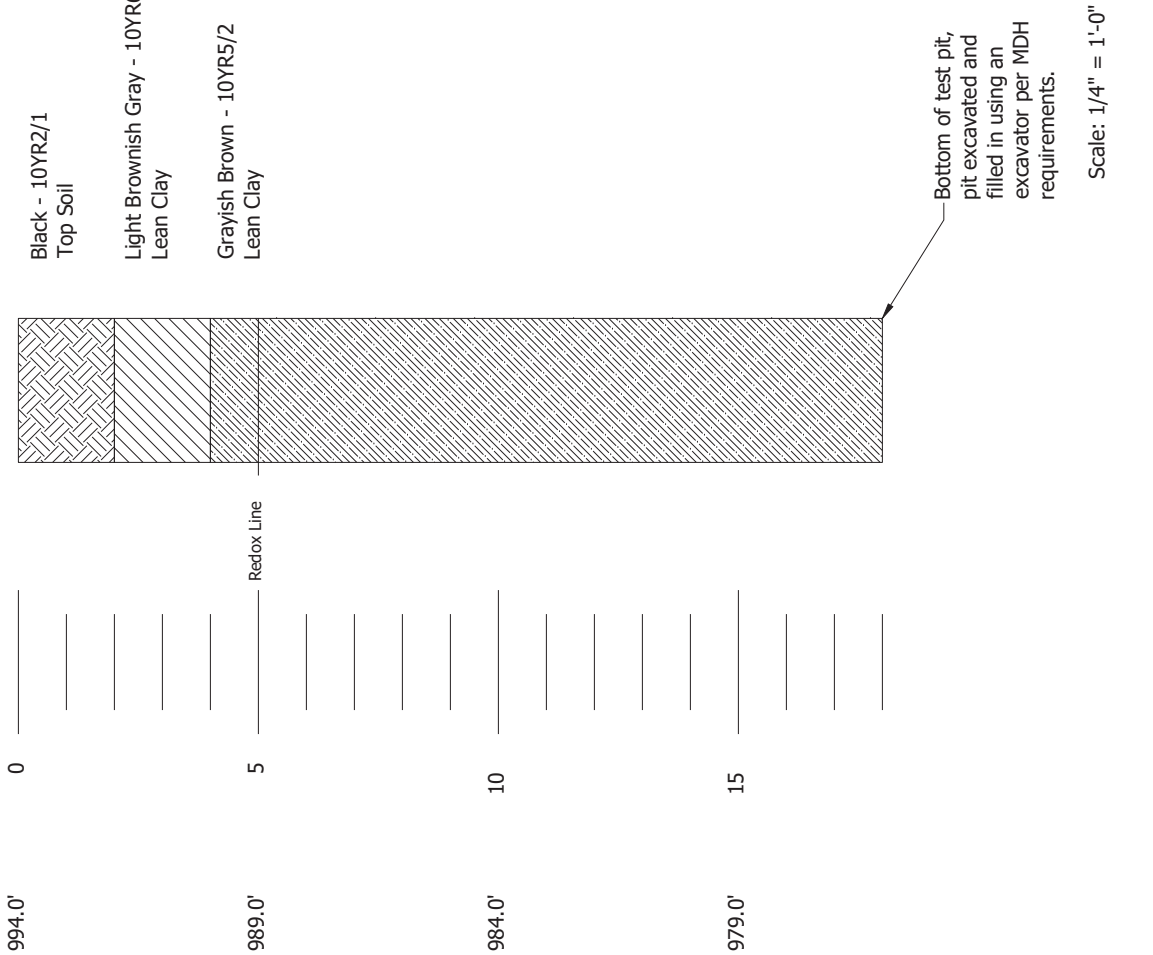
351 Burlington Circle Marshall, MN 56258

ANNEXSTAD DAIRY FARMS INC
CONCRETE DETAILS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

TEST PITS EXCAVATED ON THE PROPOSED SITE
FOR SUBSURFACE GEOTECHNICAL EVALUATION

PROJECT: ANNEXSTEAD DAIRY FARMS INC. - PROPOSED EARTHEN LMSA
DATE: DECEMBER 8, 2022
BY: CENTROL CROP CONSULTING, BL

SITE ELEV.	DEPTH BELOW GRADE (FT)	TEST PIT #1 N44°23'50.41" W94°04'15.47"	DESCRIPTION	USCS SYMBOL	SITE ELEVATION	DEPTH BELOW GRADE (FT)	TEST PIT #2 N44°23'51.29" W94°04'14.10"	DESCRIPTION	USCS SYMBOL
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351 Burlington Circle Marshall, MN 56258

*(507) 337-3021

ANNEXSTAD DAIRY FARMS INC
GEOTECHNICAL NOTES
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111 N, R 27 W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Designed by:
BL 1/6/2023

Drawn by:
JL

Revisions:

TEST PITS EXCAVATED ON THE PROPOSED SITE
FOR SUBSURFACE GEOTECHNICAL EVALUATION

PROJECT: ANNEXSTEAD DAIRY FARMS INC. - PROPOSED EARTHEN LMSA
DATE: DECEMBER 8, 2022
BY: CENTROL CROP CONSULTING, BL

SITE ELEV.	DEPTH BELOW GRADE (FT)	TEST PIT #1 N44°23'52.18" W94°04'15.21"	DESCRIPTION	USCS SYMBOL
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992.0'	0		Black - 10YR2/1 Top Soil	CL
			Light Brownish Gray - 10YR6/2 Brownish Yellow - 10YR6/6 Lean Clay Mixture	CL
987.0'	5		Dark Yellowish Brown - 10YR4/6 Lean Clay	CL

Redox Line



Scale: 1/4" = 1'-0"

ANNEXSTAD DAIRY FARMS INC
GEOTECHNICAL NOTES
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Construction Specifications

Annexstad Dairy Farms Inc

Manure Storage Pit

Prepared by:



351 Burlington Circle

Marshall, MN 56258

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CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.


Elliot De Jongh Lic No: 52553

Date: 1-11-23



SECTION 01 10 00 SUMMARY OF WORK

SCOPE:

The work shall consist of the excavation of soil and the construction of a liquid manure waste storage structure for a Dairy production facility. All work shall be completed according the construction plans associated with the project and in accordance with the current regulations.

SECTION 01 40 00 QUALITY REQUIREMENTS

QUALITY ASSURANCE/QUALITY CONTROL PLAN:

1. Prior to construction the following actions must be completed:
 - a. Obtain any local and state permits for the proposed facility
 - b. Hold a preconstruction meeting with owner, contractors, and the engineer
 - c. Inform both the engineer and local permitting agency three days prior to construction
2. Contractor must complete the following during construction:
 - a. Have the engineer's approval prior to placing concrete and contact the engineer a minimum of six hours prior to concrete placement
 - b. Implement concrete testing at the proposed minimum rate of one sample every 150 cubic yard placed. Test for: slump/strength/air per ASTM standards. Collected samples will be broke in a certified testing facility and reported to the engineer and owner.
 - c. Additional testing will be required if concrete is provided by an alternative supplier or with an alternative mix. The first truck shall be tested according to ASTM standards and any changes must be documented and reported.
3. Pit floor must meet the following prior to concrete placement:
 - a. Electrical inspector shall be notified prior to the placement of concrete in the pit floor.
 - b. Reinforcement steel must be inspected by the engineer or certified individual to ensure size, ties, and chairs are implemented as per the plans.
 - c. Drainage tile must be installed if required on the plans. Installation must be according to the specifications and include pea rock or ¼" to ½" crushed rock as noted on the plans.
4. Pit walls must meet the following prior to concrete placement:
 - a. Contact the engineer and electrical inspector with adequate notice.
 - b. Forms, reinforcing steel, tile, and waterstop inspected by the engineer.
 - c. Perimeter drainage implemented with tile or pumping.
 - d. Obtain approval from the electrical inspector for grounding.
5. Backfilling must not be completed until the following are completed:
 - a. All defects in concrete have been repaired.
 - b. Perimeter drainage system installed including inspection port or pump.
 - c. Exterior of pit is clear of vegetation and organic material.
 - d. Have engineer's approval prior to backfilling.

6. Site finish work shall include:
 - a. Finished grading around building and site for proper drainage and operations as per owner's and engineer's approval.
 - b. Safety signs installed at each pumpout pit.
 - c. Pumpout pit covers in place.
 - d. Signature from concrete contractor on MPCA Construction Inspection Form
7. Final inspections completed by engineer shall include:
 - a. Completed construction report to owner and regulatory agency.

SECTION 01 50 00 TEMPORARY FACILITIES

Utilities:

1. Temporary utilities if needed shall be coordinated with the utility providers and contractor for the following services:
 - a. Electricity
 - b. Water
 - c. Communications
 - d. Gas
 - e. Sanitary services for site personnel

SECTION 02 21 00 SURVEYS

Survey:

Site survey data will be collected using available topographic information. Contractor shall be responsible for staking the project according to relative grades, proposed locations and site features. A control benchmark with an assumed elevation will be placed on site for preliminary design purposes. Do not destroy benchmarks.

SECTION 02 32 00 GEOTECHNICAL INVESTIGATIONS

Test pits:

Subsurface geotechnical investigations will be completed for use in the design of the project. Results from the site investigation will be made available in the design documents for the project, specifically the construction plans. The accuracy or completeness of this information is not guaranteed by the Owner or Engineer and shall not be considered part of the contract plans or specifications.

SECTION 03 00 00 CONCRETE

SCOPE OF WORK

The work shall consist of furnishing, forming, placing, finishing, and curing portland cement concrete as required to build the structures presented in the project drawings, details and construction QA/QC and specifications.

FORMS

1. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces.
2. Form Coatings: Provide commercial formulation form coating compounds that will not bond with, stain, nor adversely affect concrete surfaces.
3. Form Ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units which will leave no metal closer than 1-1/2 inches to surface
4. Placement of concrete on mud, dried earth, uncompacted fill will not be permitted.

REINFORCING MATERIALS

1. Reinforcing Bars: ASTM A-615, Grade 60, deformed.

CONCRETE MATERIALS

1. Portland Cement: ASTM C-150, Type I.
2. Fly Ash: ASTM C-618, Type C or Type F. Limit use of fly ash to not exceed 25 percent of cement content by weight.
3. Normal Weight Aggregates: ASTM C-33. The maximum aggregate size shall be 1 1/2 inches.
4. Water: Drinkable.
5. Air-Entraining Admixture: ASTM C-260, certified by manufacturer to be compatible with other required admixtures.
6. Water Reducing Admixture: ASTM C-494, Type A, and containing not more than 0.1 percent chloride ions.

RELATED MATERIALS

1. Granular Base: Evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade
2. Non-Shrink Grout: CRD-C 621, factory pre-mixed grout.
3. Liquid Membrane-Forming Curing Compound: Liquid type membrane forming curing compound complying with ASTM C-309, Type I, Class A.
4. Epoxy Adhesive: ASTM C-881, two component material suitable for use on dry or damp surfaces. Epoxy shall be Sikadur Hi-Mod, Sika Chemical Company or equal.
5. Waterstop shall be of one of the following:
 - a. PVC waterstops shall be 3/16" x 4".
 - b. Waterstop Plus TM or equal.
6. Joint sealant shall be one of the following or equal.
 - a. Sikadur CJR.

- b. b) Sikadur 51 NS/SL
 - c. Unitex Pro-Flex Flexible Epoxy Control Joint Sealer
 - d. Sonneborn Epolith-P
 - e. Sonneborn Epolith-G
7. Expansion joints shall be 1/2" inch Sonoflex-F (polyethelene foam expansion joint filler or equal).

DESIGN OF MIXES

1. 4000 psi 28-day compressive strength; W/C ratio as below, air content as below:
 - a. Adjustment to Concrete Mixes: Mix design adjustments may be requested by contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by architect/engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by architect/engineer before using in work.
2. Admixtures: Use water-reducing admixture or high range water reducing admixture (super plasticizer) in concrete as required for placement and workability. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 5% - 7%.
3. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
 - a. Subjected to watertight; W/C 0.45 maximum.
4. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - a. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
 - b. Other Concrete: Not less than 1 inch nor more than 5 inches.

CONCRETE MIXING

1. Ready-Mix Concrete: Comply with requirements of ASTM C-94, and as herein specified.
2. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

FORMS

1. Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure.
2. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
3. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retightening forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

PLACING REINFORCEMENT AND JOINTS

1. Comply with Concrete Reinforcing Steel Institutes recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
 - a. Avoiding cutting or puncturing vapor retarder
 - b. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

- c. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
 - d. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations.
2. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to architect/engineer. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise indicated.
3. Isolation Joints in Slab-On Ground: Construct isolation joints in slab-on-ground at points of contact between slabs-on-ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.
 - a. Joint filler and sealant materials shall be used according to manufacturer's instructions.
4. Contraction (Control) Joints in Slabs-On-Ground: Construct contraction joints in slabs-on-ground to form panels of patterns as shown. Use saw cuts 1/8" x 1/4 slab depth or inserts 1/4" wide x 1/4 of slab depth, unless otherwise indicated. Form contraction joints by inserting premolded plastic, hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate. If joint pattern not shown, provide joints not exceeding 20 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third-bays).

PREPARATION OF FORM SURFACES

1. Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.
2. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.
3. Thin form-coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
4. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

CONCRETE PLACEMENT

1. Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
2. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

3. **Placing Concrete in Forms:** Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Consolidate placed concrete by mechanical vibrating equipment supplemented by handspading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
4. **Placing Concrete Slabs:** Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations. Maintain reinforcing in proper position during concrete placement operations.
5. **Hot Weather Placing:** When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
 - a. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is contractor's option.
 - b. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 - c. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.
6. **Cold Weather Placing:** When cold weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 306 and as herein specified:
 - a. Warm water or aggregate before mixing to maintain concrete temperature at time of placement above 40 degrees F. The temperature of the water shall be below 165 degrees F.
 - b. Before placing concrete at low temperatures, all subgrade, forms, or reinforcement surfaces with which the concrete may come in contact, should be heated to remove any ice or snow and to prevent freezing of the concrete.
 - c. The concrete shall be kept above 32 degrees F for a minimum of 24 hours. Corners and edges are very critical.

CONCRETE CURING AND PROTECTION

1. **General:** Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than seven (7) days. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period. **B. Curing Methods:** Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified. Provide curing and sealing compound to exposed interior slabs and to exterior slabs, walks, and curbs, as follows:
2. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours) in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

REMOVAL OF FORMS

Formwork not supporting weight of concrete, such as sides of walls, walks and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg. F (10 deg. C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

CONCRETE SURFACE REPAIRS

1. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to architect/engineer. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
2. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of architect/engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
3. Repair of Unformed Surfaces: Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01 inches wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions. Repair defective areas, except random cracks and single holes not exceeding one (1) inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4- inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete. Repair isolated random cracks and single holes not over 1- inch in diameter by drypack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of 1-part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

FREEZE THAW PROTECTION

A minimum of 2' of water/manure should be in the pit prior to freezing conditions. This is particularly important if there are no animals in the facility. After the pit is constructed and prior to use or during use, the concrete floor and subgrade must be protected from freezing.

SECTION 03 40 00 PRECAST CONCRETE

A cut sheet regarding the details of the design and strengths of the slats and beams shall be provided by the manufacturer. Design specifications shall meet the recommendations of the MWPS-36, Rectangular Concrete Manure Storage Handbook.

SECTION 10 14 00 SIGNAGE

SCOPE:

1. Warning signs must be placed at each potential access point to the manure pit where a confined space could have manure gases. The signs must read:
DANGER, POISONOUS GAS IN PIT, KEEP OUT!

SECTION 31 01 00 EARTHWORK/GRADING

SCOPE:

1. The work consists of the construction of and renovation of all earth embankments, earthfill areas, and earth backfills required by the drawings and specifications.
2. Earthfill is composed of natural earth materials that can be placed and compacted by construction equipment operated in a conventional manner.
3. Earth backfill is composed of natural earth material placed and compacted in confined spaces or adjacent to structures (including pipes) by hand tamping, manually directed power tampers, or vibrating plates, or their equivalent.
4. All areas not classified as structural fill or grading for pavement area shall be compacted to class C specifications.

WORK NOT INCLUDED:

Subsurface geotechnical investigation excavations to be completed by the owner.

DEFINITIONS:

1. Grading: Earthmoving operations performed to bring subgrade and/or final grade to proper contours, compaction, and other requirements of this section.
 - A. Rough Grading: Generally refers to operations involving bulk moving of soils.
 - B. For the purposes of this section, grading refers to both rough grading and fine grading required to provide the specified product.
2. Finished/Fine Grading: refers to operations to achieve the final finished smooth surface.
 - A. Grade: The elevation at the top of a soil stratum.
 - B. Final Grade or Finished Grade: The elevation of the top surface of soil, pavement, or other soil covering of the completed work.
 - C. Subgrade:
 - a. The elevation of the interface between native or imported soil and topsoil, pond liner, other soil covering, or the lowest stratum of pavement.

- b. The elevation of the interface between native undisturbed soil and bulk fill placements.
- D. Subgrade Soil: The soil (undisturbed or placed as fill) below the subgrade elevation.

REFERENCES:

ASTM D-698, Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12 inch Drop. In this section, maximum density determined by ASTM D 698 is referred to as Standard Density.

SURVEY

Finish grades of the site will be in reference to the structure and owners site grading preferences. No final survey will be completed however site grading must be implemented to ensure proper site drainage and adequate room for equipment operations, specifically commodity and animal delivery and shipping. Final grades to be approved by the owner at time of completion.

STOCKPILE AREAS:

Any excess material shall be disposed of on-site at the locations specified by the landowner. Excess material will be graded away from the building while allowing positive drainage away from the structure.

OFF-SITE DISPOSAL:

No material shall be taken off-site unless approved by the owner.

IMPORTED FILL:

No imported fill shall be needed. If it is determined and agreed upon by the landowner that additional fill material must be imported, this will be a separate contract item and price determined at that time.

SOIL REPORTS

Soil reports will be made available at the time of construction. The reports show subsurface conditions at discrete locations. Continuity of subsurface conditions between test locations cannot be assured. The owner nor its representatives can neither make nor confirm interpretations from these reports.

MATERIALS

FILL SOIL:

1. All fill material shall be obtained from required excavations and designated borrow areas. The selection, blending, routing, and disposition of material in the various fills shall be subject to approval by the engineer.
2. Fill materials shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

3. The types of material used in the various fills shall be as listed and described in the specifications and drawings.

REJECTED FILL SOIL:

Excavated material which in the opinion of a qualified engineer, are unsuitable for use as subgrade soil shall be used in less critical area as defined by the engineer.

TOPSOIL:

Reuse on-site topsoil: Place topsoil free of subsoil, roots, and rocks larger than 1 1/2 inch.

IMPORTED SOIL:

Only if needed will off-site soil be certified by a Geotechnical Engineer.

ROCK EXCAVATION:

Material that cannot be dislodged with heavy duty excavator shall be classified as rock excavation. Typical materials classified as rock excavation are boulders larger than ½ cy, bedrock strata, rock ledges.

WATER:

Contractor will supply water used for construction. It will also be the contractor's responsibility to provide means of handling water.

EXECUTION

UTILITIES:

1. Locate known below-grade utilities. Request locates from utility companies, including but not limited to: water, sewer, storm sewer, telephone, electrical power, natural gas, and cable television.
2. Flag and protect those utilities to remain.
3. No representation is made by the landowner or Centrol Crop Consulting to the existence or non-existence of underground utilities. It is the contractor's responsibility to request a locate prior to construction.

GRADING - GENERAL:

1. Foundation preparation:
Foundations for earthfill shall be stripped to remove vegetation and other unsuitable material or shall be excavated as specified.

Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earthfill, and the surface material of the foundation shall

be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at a moisture content that the earthfill can be compacted against them to produce a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earthfill shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond between the foundation and the fill.

Foundation and abutment surfaces shall be no steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earthfill to be placed upon the foundation.

2. Placement

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the engineer. Earthfill shall not be placed upon a frozen surface nor shall snow, ice, or frozen material be incorporated in the earthfill matrix.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed a maximum thickness of 10" for class C compaction and 8" for class A compaction. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

Hand compacted earth backfill shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of earth backfill compacted by manually directed power tampers. Earth backfill shall be placed in a manner that prevents damage to the structures and allows the structures to assume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.

3. Control of moisture content

During placement and compaction of earthfill and earth backfill, the moisture content of the material being placed shall be maintained within the specified range.

The application of water to the earthfill material shall be accomplished at the borrow areas in so far as practicable. Water may be applied by sprinkling the material after placement on the earthfill if necessary. Uniform moisture distribution shall be obtained by disking.

Material that is too wet when deposited on the earthfill shall either be removed or be dried to the specified moisture content prior to compaction.

If the top surface of the preceding layer of compacted earthfill, a foundation, or abutment surface in the zone of contact with the earthfill becomes too dry to permit suitable bond, it shall either be removed or scarified and moistened by sprinkling to an acceptable moisture content before placement of the next layer of earthfill.

4. Compaction

Earthfill—Earthfill shall be compacted according to the following requirements for the class of compaction specified:

a. Class A Compaction

- i. Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in soil report or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size used in the compaction test method specified.

b. Class B compaction

- i. Each layer of earthfill shall be compacted to a mass density not less than the minimum density specified.

c. Class C compaction

- i. Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

Earth backfill—Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the surrounding in place earth material or adjacent required earthfill or earth backfill. Compaction shall be accomplished by hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified heavy equipment including backhoe mounted power tampers or vibrating compactors and manually directed vibrating rollers shall not be operated within 2 feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist is not permitted.

The passage of heavy equipment will not be allowed:

- i. Over cast-in-place conduits within 14-days after placement of the concrete
- ii. Over cradled or bedded precast conduits within 7 days after placement of the concrete cradle bedding.
- iii. Over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the

structure or pipe or 2 feet, whichever is greater, except as may be specified otherwise.

When the required strength of the concrete is not specified, compaction of earth backfill adjacent to structures shall not be started until the following time intervals have elapsed after placement of the concrete.

Structure	Time interval (days)
Vertical or near-vertical walls with earth loading on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (inside forms removed)	14
Conduits, pre-cast, cradled	2
Conduits, pre-cast, bedded	1
Cantilever outlet bents (backfilled both sides simultaneously)	3

5. Reworking or removal and replacement of defective earthfill:
Earthfill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable earthfill. The replacement earthfill and the foundation, abutment, and earthfill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.
6. Coordinate work with trenching for underground utilities.
7. Rock excavation is not anticipated. If rock is encountered, notify engineer Do not perform rock excavation until rock surface can be cross-sectioned and classified.
8. Protect newly graded areas from the action of wind and water. Restore grade where settlement or washing occurs.

ALL OTHER EARTHFILL AREAS:

All areas not otherwise specified shall be compacted to meet class C compaction as outlined above

SECTION 31 23 00 - DRAINAGE

SCOPE:

1. A perimeter tile shall be installed to keep the elevation of the water table below the bottom of the storage liner of liquid manure waste.
2. Perimeter tile must be located one foot outside of the footing of the structure and consist of 4 inch heavy duty polyethylene perforated agricultural drainage pipe. An inspection port must be included for use in sampling and inspecting the system for proper operation.
3. The tile must be bedded and covered with pea rock or crushed rock ¼" to ½" in size.

4. Tile may be installed prior to site construction for dewatering purposes as decided by the owner, engineer, and contractor. If so, the tile must be installed a minimum of 4 feet outside the location of the proposed footer and at least 2 feet below the floor of the pit. Installation must be with a backhoe or trencher and not with a tile plow. Gradient of the tile shall be 0.2 feet per 100 feet of length to the sump.
5. Prior to backfilling the trench, all construction debris and organic material must be removed.

O&M: PLAN FOR OPERATIONS, MAINTENANCE, AND INSPECTIONS

OVERVIEW

Waste storage pits provide temporary storage of manure or other process waters until the waste is managed as a soil nutrient resource. The manager of this facility must carry out periodic operation and maintenance activities to assure the components perform to their intended function. The following checklist is provided as an aid for developing a good operation and maintenance plan.

OPERATION CHECKLIST

- ☐ Routine inspections of perimeter of structure for evidence of structural fatigue or cracking.
- ☐ Inspect perimeter tile regularly and at least 2 weeks prior to emptying the pit to ensure no ground water is present. If water levels are present, fix the system so that it can operate correctly and thus relieve the hydrostatic pressure prior to emptying the pit.
- ☐ Inspect tile water quality for changes in odor or color. If detected notify the engineer or MPCA immediately and stop the flow of the tile line.
- ☐ Inspect and properly maintain all pump pit covers and tile inspection ports.
- ☐ Inspect posted signs at each pump pit which must state:

"DANGER – POISONOUS GAS PIT- KEEP OUT!"
- ☐ Monitor liquid levels in the pit on a quarterly basis using a measuring stick. Note any changes in potential increase in water production which may increase the need for storage. Washing activities and water line breaks must be considered.
- ☐ Keep a record of inspections in a dedicated file for future reference.

Construction Short Form

Animal feedlot or manure
storage area permit application

CSF and Interim Permit Program

Doc Type: Permit Application

Applicability: Use this form to obtain, modify, or extend the term of a construction short form (CSF) or interim permit when a feedlot meets both of the following:

- The feedlot is located in a delegated county.
 - o Map of delegated counties: <https://www.pca.state.mn.us/sites/default/files/wq-f1-12.pdf>
- The feedlot does not meet or exceed a federal large Concentrated Animal Feeding Operation (CAFO) threshold.
 - o Table of large CAFO thresholds: https://www3.epa.gov/npdes/pubs/sector_table.pdf

All other feedlots must use the MPCA online permit application service available at: <https://webapp.pca.state.mn.us/services/login/>. After completing and signing this form, submit it and any required enclosures to the County Feedlot Officer (CFO).

Keep a copy of this application form and all submittals for your records.

I. Permit type and reason for applicationFeedlot Registration Number: 103-97816

Please indicate which type of feedlot permit you are applying for
(choose only one):

☒ Construction Short Form ☐ Interim (correcting a pollution hazard)

Please indicate the reason for the permit application (choose only one):

☒ New Permit
(No existing CSF or interim permit)

☐ Permit Modification
(Changes to sites with an existing CSF or interim permit)

☐ Permit Extension - Current CSF or Interim Permit number: _____
(Work not completed prior to permit expiration)

For extension requests only - Indicate below the reason(s) the work may not be completed prior to permit expiration

Estimated amount of time required to complete the work: _____ ☐ days ☐ months

Note: The length of the extension is limited to 24 months for CSF permits and 90 days for interim permits

Note: When the notice to neighbors and property owners is required the content of the notice must include the date the original permit was issued and the new proposed completion date as well as the normally required information.

II. Owner's name(s) and address(es) - (All partners of a Limited Liability Partnership (LLP) must be listed.)

Primary owner – Will be used as the mailing address

Name: Rolf AnnexstadAddress: 38171 403rd Ave.City: St. Peter State: MNPhone: 507-995-4940 Zip: 56082Email: rolfannex@gmail.com

Additional owner – attach additional sheets as necessary

Name: Michael AnnexstadAddress: 38005 403rd Ave.City: St. Peter State: MNPhone: 507-995-0675 Zip: 56082Email: mikecannex@gmail.com

Note: The term owner includes all persons having possession, control, or title to an animal feedlot or manure storage area (including lessees or renters). All owners must be listed. Attach to this application the names, addresses, and phone numbers of all additional owners.

III. Facility name and site addressSite Name: Annexstad Dairy Farms Inc.☐ Facility is a MN Ag Water Quality Certified Farm (MAWQCP)

Complete if facility address is different than the primary owner address:

Street: 38171 403rd Ave.City: St. Peter State: MNPhone: 507-995-4940 Zip: 56082**Contact person for day-to-day activities**Name: Rolf AnnexstadStreet: 38171 403rd Ave.City: St. Peter State: MNPhone: _____ Zip: 56082Cell phone: 507-995-4940Email: rolfannex@gmail.com

(General letters/notices may be sent by email where one is indicated.)

ADDITIONAL OWNERS:

Jean Annexstad

38171 403rd Ave.

St. Peter MN 56082

507-479-0433

jeanannexstad@gmail.com

IV. Facility location

County: Nicollet

Township name: Lake Prairie

Township (26 – 71 or 101 – 168)	Range (1 – 51)	Section (1 – 36)	¼ Section (160 acre) (NW, NE, SW, SE)	¼ of ¼ Section (40 acre) (NW, NE, SW, SE)
T 111 N	R 27 W	28	NE	NE

V. Sensitive features

1. Is any part of the facility within 1,000 feet of any type of surface waters or tile intake? ☒ Yes ☐ No

If Yes, select all types below

☐ Lake ☐ River ☒ Stream (Perennial or Intermittent) ☒ Tile Intake
☐ Pond ☐ Creek ☒ Ditch ☐ Wetland ☐ Calcareous Fen ☐ Unknown

2. Is any part of the facility located within 300 feet of a river/stream? ☐ Yes ☒ No

3. Is any part of the facility located within a delineated flood plain (100 year flood)? ☐ Yes ☒ No

4. Is any part of the facility located within designated shoreland? ☐ Yes ☒ No

5. Is any part of the facility located within 1,000 feet of a karst feature?
(sinkholes, caves, disappearing springs, resurgent springs, karst windows, dry valleys, or blind valleys) ☐ Yes ☒ No

If Yes, complete a. and b. below:

- a. Are there 4 or more sinkholes within 1,000 feet? ☐ Yes ☐ No

- b. Is any part of the facility within 300 feet of a known sinkhole? ☐ Yes ☐ No

6. Is any part of the facility located within 1,000 feet of a well: ☒ Yes ☐ No

If Yes, complete a. and b. below:

- a. What is the shortest distance from a well to any animal holding area? 135 ft.

What is the shortest distance from a well to any manure storage area? 135 ft.

- b. Indicate if the well is any of the following types:

☐ a community water supply well
☐ a well serving a public school as defined under Minn. Stat. § 120A.05
☐ a well serving a private school excluding home school sites
☐ a well serving a licensed child care center where the well is vulnerable (Minn. R. 4720.5550, subp. 2)

VI. Environmental Review (complete when construction or expansion is proposed)

Mandatory environmental review is required for the addition of 1,000 or more animal units (AU) at any facility. This threshold is reduced to 500 AU in "sensitive areas". The facility is within a sensitive area when any of the following apply.

- Any part of the facility is within a delineated floodplain (yes to question 3 above)
- Any part of the facility is within designated shoreland (yes to question 4 above)
- Any part of the facility is within 1,000 feet of a karst feature (yes to question 5 above)
- Any part of the facility is within a vulnerable drinking water supply management area
- Any part of the facility is within a federal, state, or local wild and scenic river district
- Any part of the facility is located within the Minnesota River Project Riverbend area or the Mississippi headwaters area

Additionally mandatory environmental review is required for "Phased actions". Phased actions are two or more projects located in the same geographic area and constructed within three years of each other by the same proposer. When this is the case, the animal units from all projects are combined to determine if environmental review is required.

Do you have ownership interest in another livestock operation that was constructed/expanded within the past three years or are you substantially certain you will be constructing/expanding another livestock operation within the next three years?

☐ Yes ☒ No

If Yes, how far away (straight-line distance) is it located from the project proposed in this application? _____ miles

There are also rule provisions to require completion of the environmental review process in the event of a citizen petition or upon the discretion of the MPCA. Please see the MPCA fact sheet entitled "[When is Environmental Review Required for Feedlots](https://www.pca.state.mn.us/quick-links/environmental-review)" (available on the MPCA website at <https://www.pca.state.mn.us/quick-links/environmental-review> and/or Minn. R. 4410 for further details.

VII. Animal numbers and animal unit (AU) calculation

Complete the table below to identify the **maximum** number of animals housed at that facility. All animal numbers and animal sizes used to complete this table should reflect the animal holding **capacity** of the facility even if the facility does not currently house or propose to house that number of animals. At no time is the number of animals at the facility allowed to exceed the capacity provided below without first obtaining a permit or permit modification.

Current Capacity - List the current head count **capacity** for each animal type in column 3 below. For sites with a permit, this should match the currently permitted number of animals. Next, multiply the AU Factor in column 2 by the number of animals listed in column 3 to get the **Current AU Capacity** for each animal type (column 4). Finally, add together all AU's in column 4 to get a total at the bottom of the chart. *If this application is for a brand-new feedlot site leave columns 3 and 4 blank. (i.e., bare piece of ground)*

Final Capacity - List the final head count **capacity** for each animal type in column 5 below. This number should include current animals plus or minus any expansion or reduction in each animal type. This should reflect the maximum AU capacity requested with this permit application. Next, multiply the AU Factor in column 2 by the number of animals listed in column 5 to get the **Final AU Capacity** for each animal type (column 6). Finally, add together all AU's in column 6 to get a total at the bottom of the chart.

1. Animal type	2. Animal unit factor	Current facility capacity		Final facility capacity (Current +/- Changes)	
		3. Head count	4. Animal units = column 2 x column 3	5. Head count	6. Animal units = column 2 x column 5
A. Dairy cattle					
Mature cow (milked or dry) over 1,000 lbs.	1.4	183	256.2	300	420
Mature cow (milked or dry) under 1,000 lbs.	1.0				
Heifer	0.7	51	35.7	95	66.5
Calf	0.2	30	6	50	10
B. Veal					
Veal	0.2				
C. Beef cattle					
Slaughter steer/heifer, stock cow, or bull	1.0				
Feeder cattle (stocker or backgrounding), heifer	0.7				
Cow and calf pair	1.2				
Calf (weaned)	0.2				
D. Swine					
Over 300 lbs.	0.4				
Between 55 and 300 lbs.	0.3				
Under 55 lbs.	0.05				
E. Horses					
Horse	1.0				
F. Sheep					
Sheep or Lamb	0.1				
G. Chickens with a <i>liquid</i> manure system					
Layer Hens or Broilers	0.033				
H. Chickens with a <i>dry</i> manure system					
Broilers over 5 lbs.	0.005				
Broilers under 5 lbs.	0.003				
Layer Hens over 5 lbs.	0.005				
Layer Hens under 5 lbs.	0.003				
I. Turkeys					
Over 5 lbs.	0.018				
Under 5 lbs.	0.005				
J. Ducks					
Duck (with a liquid manure handling system)	0.01				
Duck (with a dry manure handling system)	0.01				
K. Animals not listed in A to J (AU factor in column 2 = average weight of the animal type divided by 1,000 lbs.)					
Animal type:					
Total animal unit capacity			Current AU capacity		Final AU capacity
Add all numbers in column 4 for Current AU total			297.9		496.5
Add all numbers in column 6 for Final AU total					

VIII. Animal holding areas

Do any animals at the facility have access to pasture? ☒ Yes ☐ No

Complete the table below for the following animal holding areas. If needed, continue your list on an additional copy of this page.

- Total confinement barn with underfloor pit** - A barn where animals cannot access an outdoor area and liquid manure enters storage directly beneath the floor. This includes "shallow pits" or "pull plugs".
- Total confinement barn** - A barn where animals cannot access an outdoor area.
- Partial confinement barn** - A barn where animals can directly access an outdoor area (i.e., associated open lot).
- Open lot** - An uncovered area where animals are housed outdoors.
- Individual animal housing area** - A structure that houses only one animal at a time (i.e., calf huts/hutches).
- Working-Sorting-Hospital area** - A structure or area, covered or uncovered, where animals temporarily enter during load-out or load-in events or when additional care is needed to address medical issues with the animal.
- Milk parlor-Holding area** - A structure or area where animals temporarily enter prior to or during milking.

List each animal holding area in a separate column

Animal holding area ID	Use the far right column for non-rectangular holding areas					Non-Rectangular
Facility Site Sketch ID (i.e., #1, A, Barn 1)	1- Freestall	2- Parlor	3- Holding Area	4- Calf Barn	5- Freestall	6-Heifer Barns
Status: (check one box only)	☐ Proposed	☐ Proposed	☐ Proposed	☐ Proposed	☒ Proposed	☐ Proposed
<i>Proposed</i> - not permitted previously or permitted but not yet operational	☒ Existing	☒ Existing	☒ Existing	☒ Existing	☐ Existing	☒ Existing
<i>Existing</i> - current operational component	☐ Eliminating	☐ Eliminating	☐ Eliminating	☐ Eliminating	☐ Eliminating	☐ Eliminating

List approximate holding area dimensions in feet

(If non-rectangular, use the far right column and list surface area)

Type of animal holding areas	Length X Width	Length X Width	Length X Width	Length X Width	Length X Width	Non-Rectangular (Surface Area)
Total confinement barn with underfloor pit	X	X	X	X	X	sq. ft
Underfloor pit maximum depth (ft)	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:
Underfloor pit volume (gal)	gal	gal	gal	gal	gal	gal
Total confinement barn	102' X 153'	X	X	32' X 54'	104' X 211'	sq. ft
Partial confinement barn	X	X	X	X	X	9,120 sq. ft
Associated open lot dimensions (list area for non-rectangular lots)	X	X	X	X	X	X
	sq. ft	sq. ft	sq. ft	sq. ft	sq. ft	6,410 sq. ft
Open lot	X	X	X	X	X	sq. ft
Individual animal housing area (i.e., calf huts/hutches that house one animal)	X	X	X	X	X	sq. ft
	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:
Working-Sorting-Hospital area	X	X	X	X	X	sq. ft
Milk parlor-Holding area	X	40' X 60'	38' X 102'	X	X	sq. ft
Other buildings for animal husbandry	X	X	X	X	X	sq. ft

Indicate the maximum capacity (number of animals) of each animal holding area

The total number of all animals listed should match the final animal numbers listed on page 3.

Animal numbers						
Mature dairy cows (over 1,000 lbs.)	154				146	
Mature dairy cows (under 1,000 lbs.)						
Dairy heifers					10	85
Dairy calves		20	20	10		
Veal						
Slaughter steer/heifer, stock cow or bull						
Feeder cattle-stocker/background/heifer						
Cow and calf pair						
Beef calves (weaned)						
Swine over 300 lbs.						
Swine between 55 and 300 lbs.						
Swine under 55 lbs.						
Horses						
Sheep or lamb						
All chickens with liquid manure system						
Broiler chickens over 5 lbs. - dry system						
Broiler chickens under 5 lbs. - dry system						
Laying hens over 5 lbs. - dry system						
Laying hens under 5 lbs. - dry system						
Turkeys - over 5 lbs.						
Turkeys - under 5 lbs.						
Other:						

VIII. Animal holding areas

Do any animals at the facility have access to pasture? ☒ Yes ☐ No

Complete the table below for the following animal holding areas. If needed, continue your list on an additional copy of this page.

- Total confinement barn with underfloor pit** - A barn where animals cannot access an outdoor area and liquid manure enters storage directly beneath the floor. This includes "shallow pits" or "pull plugs".
- Total confinement barn** - A barn where animals cannot access an outdoor area.
- Partial confinement barn** - A barn where animals can directly access an outdoor area (i.e., associated open lot).
- Open lot** - An uncovered area where animals are housed outdoors.
- Individual animal housing area** - A structure that houses only one animal at a time (i.e., calf huts/hutches).
- Working-Sorting-Hospital area** - A structure or area, covered or uncovered, where animals temporarily enter during load-out or load-in events or when additional care is needed to address medical issues with the animal.
- Milk parlor-Holding area** - A structure or area where animals temporarily enter prior to or during milking.

List each animal holding area in a separate column

Animal holding area ID						Non-Rectangular
Facility Site Sketch ID (i.e., #1, A, Barn 1)						7- Calf Sheds
Status: (check one box only) <i>Proposed</i> - not permitted previously or permitted but not yet operational <i>Existing</i> - current operational component	☐ Proposed	☐ Proposed	☐ Proposed	☐ Proposed	☐ Proposed	☐ Proposed
	☐ Existing	☐ Existing	☐ Existing	☐ Existing	☐ Existing	☐ Existing
	☐ Eliminating	☐ Eliminating	☐ Eliminating	☐ Eliminating	☐ Eliminating	☒ Eliminating

List approximate holding area dimensions in feet

(If non-rectangular, use the far right column and list surface area)

Type of animal holding areas	Length X Width	Length X Width	Length X Width	Length X Width	Length X Width	Non-Rectangular (Surface Area)
Total confinement barn with underfloor pit	X	X	X	X	X	sq. ft
Underfloor pit maximum depth (ft)	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:	Pit Depth:
Underfloor pit volume (gal)	gal	gal	gal	gal	gal	gal
Total confinement barn	X	X	X	X	X	sq. ft
Partial confinement barn	X	X	X	X	X	1,420 sq. ft
Associated open lot dimensions (list area for non-rectangular lots)	X sq. ft	X sq. ft	X sq. ft	X sq. ft	X sq. ft	X 3,540 sq. ft
Open lot	X	X	X	X	X	sq. ft
Individual animal housing area (i.e., calf huts/hutches that house one animal)	X	X	X	X	X	sq. ft
Working-Sorting-Hospital area	X	X	X	X	X	sq. ft
Milk parlor-Holding area	X	X	X	X	X	sq. ft
Other buildings for animal husbandry	X	X	X	X	X	sq. ft

Indicate the maximum capacity (number of animals) of each animal holding area

The total number of all animals listed should match the final animal numbers listed on page 3.

Animal numbers						
Mature dairy cows (over 1,000 lbs.)						
Mature dairy cows (under 1,000 lbs.)						
Dairy heifers						
Dairy calves						
Veal						
Slaughter steer/heifer, stock cow or bull						
Feeder cattle-stocker/background/heifer						
Cow and calf pair						
Beef calves (weaned)						
Swine over 300 lbs.						
Swine between 55 and 300 lbs.						
Swine under 55 lbs.						
Horses						
Sheep or lamb						
All chickens with liquid manure system						
Broiler chickens over 5 lbs. - dry system						
Broiler chickens under 5 lbs. - dry system						
Laying hens over 5 lbs. - dry system						
Laying hens under 5 lbs. - dry system						
Turkeys - over 5 lbs.						
Turkeys - under 5 lbs.						
Other:						

IX. Liquid Manure Storage Areas (LMSA)

Complete the table below for all your LMSAs based upon liner type. If needed, continue your list on an additional copy of this page.

Additional Instructions:

- Do not list below barn LMSAs in this table** – This information has been captured in the animal holding areas table.
- LMSAs with more than one liner type - List this LMSA in the category that represents the sidewall primary liner type.
For example: a LMSA with a concrete floor and earthen sidewalls should be listed in the LMSA - Earthen category.
- LMSAs with dual liners, which is a primary liner underlain by a secondary liner (typically only in karst susceptible areas) - List the LMSA in the category that represents the primary liner; which is, the liner in direct contact with the manure.
For example: a HDPE plastic lined LMSA underlain by a compacted clay liner should be listed in the LMSA - Synthetic category.
- Use the two right columns for circular and other non-rectangular shapes.

LMSA ID	List each LMSA in a separate column					Circular	Non-Rectangular
Facility Site Sketch ID	9- Lagoon	10- Sand Lane	12- Free Stall Pit			8-Slurry Store	
Status: (check only one) <i>See animal holding area table for definitions</i>	☒ Proposed ☐ Existing ☐ Eliminating	☒ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☒ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☒ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating

List approximate LMSA dimensions in feet							
Type of LMSA Liner	(If non-rectangular, use the appropriate column and list diameter or surface area)						Non-Rectangular (Surface Area)
<i>Do not list below barn LMSAs</i>	Length X Width	Length X Width	Length X Width	Length X Width	Length X Width	Circular	
LMSA - Earthen	209' X 359'	14' X 300'	X	X	X	Diameter:	sq. ft
Maximum depth (ft)	Depth: 14'	Depth: 0.5'	Depth:	Depth:	Depth:	Depth:	Depth:
LMSA - Concrete	X	X	34' X 84'	X	X	Diameter:	sq. ft
Maximum depth (ft)	Depth:	Depth:	Depth: 7'	Depth:	Depth:	Depth:	Depth:
LMSA – Synthetic ^a	X	X	X	X	X	Diameter:	sq. ft
Maximum depth (ft)	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
LMSA – GCL ^b	X	X	X	X	X	Diameter:	sq. ft
Maximum depth (ft)	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
LMSA – Steel tank ^c	X	X	X	X	X	Diameter: 60'	sq. ft
Maximum depth (ft)	Depth:	Depth:	Depth:	Depth:	Depth:	Depth: 20'	Depth:
LMSA – Other	X	X	X	X	X	Diameter:	sq. ft
Maximum depth (ft)	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:

List the LMSA volume in gallons							
Volume of LMSA (gal)	4,791,221	15,000	143,616			380,685	

a. Synthetic liners include all plastic or rubber liners (HDPE, EPDM, LDPE, LLDPE, PVC, etc.).

b. GCL refers to all types of geosynthetic clay liners where bentonite clay is confined between two synthetic membranes (i.e., bentomat®).

c. Steel tank refers to above ground steel tanks including those with concrete floors (i.e., slurystore®).

X. Other Facility Components

Complete the table below for the following facility components. If needed, continue your list on an additional copy of this page.

- Permanent Stockpile** - An area where solid manure is stored or processed. Do not list temporary stockpiles
- Feed Storage Area** - Areas where any type of feed is stored in outdoor piles/bunkers, including those covered with plastic.
DO NOT list vertical silos, grain bins, commodity sheds, or other totally enclosed structures.
- Mortality Compost Area** - **ONLY** list mortality management areas that compost dead animals with litter or manure.
- Vegetated Infiltration Area (VTA)** - A vegetated area with berms on all sides so that liquid can only leave via infiltration into the soil.
- Filter-Buffer Strip** - A vegetated area where liquid flows over a grassed area and is allowed to leave the area via surface flow.

Component ID	List each component in a separate column					Non-Rectangular	Non-Rectangular
	Use the two far right columns for non-rectangular shapes						
Facility Site Sketch ID	11- Sand Stack	13- Feed Bunker	14- Feed Bunker				
Status: (check only one) <i>See animal holding area table for definitions</i>	☒ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☒ Existing ☐ Eliminating	☒ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating	☐ Proposed ☐ Existing ☐ Eliminating

List approximate component dimensions in feet							
Type of Component	(If non-rectangular, use one of the two far right columns and list surface area)						
	Length X Width	Length X Width	Length X Width	Length X Width	Length X Width	Non-Rectangular	Non-Rectangular
Permanent Stockpile	60' X 300'	X	X	X	X	sq. ft	sq. ft
Feed Storage Area	X	120' X 200'	80' X 200'	X	X	sq. ft	sq. ft
Mortality Compost Area	X	X	X	X	X	sq. ft	sq. ft
Infiltration Area (VTA)	X	X	X	X	X	sq. ft	sq. ft
Filter-Buffer Strip	X	X	X	X	X	sq. ft	sq. ft

XI. Construction stormwater (CSW) requirements (complete only if construction is proposed)

When construction activities are proposed, indicate the expected acreage of soil disturbance: 7.0 acres

Construction at the facility disturbs one acre or more but less than 5 acres must comply with the requirements of the CSW NPDES general permit, unless a separate application is made for a CSW permit.

Prior to construction at the facility that disturbs 5 or more acres an application for a CSW permit is required.

XII. Notifications and public meetings

The notifications and public meetings below are required to be done **before** permit issuance.

A. Notification to local zoning officials

When required. This notification is required in *either* of the following situations:

- **Construction of a new** feedlot, or manure storage area (i.e. new site) of any AU capacity.
- **Expansion of an existing** feedlot, or manure storage area of any AU capacity.

Notification methods. The applicant must provide notification of the construction or expansion to all local zoning authorities, including county, town, and city zoning authorities, at least 30 days prior to commencement of the construction or expansion. This notification *must* include, at a minimum, the information provided in Minn. R. 7020.2000, subp.4.,A (1) (a) (i to v).

An example notification can be found in the factsheet [Public Notification Requirements – Feedlots](https://www.pca.state.mn.us/feedlots) available on the MPCA website at <https://www.pca.state.mn.us/feedlots>.

B. Notice to residents and property owners within 5,000 feet of a proposed project

When required. This notice is required in *either* of the following situations:

- **Construction of a new** feedlot, or manure storage area, which will have a capacity of 500 AU or more (i.e. new site).
- **Expansion of an existing** feedlot, or manure storage area, which currently has, or will have upon completion of the expansion, a capacity of 500 AU or more.

Notice methods. The owner shall not less than 20 business days before the anticipated issuance date of the permit, provide notice to each resident and each owner of real property within 5,000 feet of the perimeter of the proposed facility. This notice *must* include, at a minimum, the information provided in Minn. R. 7020.2000, subp.4.

An example notice can be found in the factsheet [Public Notification Requirements – Feedlots](https://www.pca.state.mn.us/feedlots) available on the MPCA website at <https://www.pca.state.mn.us/feedlots>.

Verification of notice.

The CFO must verify that this notice has been completed prior to permit issuance.

Please include with this permit application one of the following options that provides verification that the required notice has been completed:

- An affidavit of publication from a newspaper of general circulation used to provide this notification.
- A list of all parties, with their location, that were notified by certified mail and copies of all signed mail return receipts.
- A list of all parties, with their location, that were personally visited with a date and signature from each party and certification signed by a notary public indicating in detail what was discussed.

XIII. Certifications and signature

Notification to local officials

The Applicant certifies that, if the application includes construction of a new facility or expansion of an existing facility, all local zoning authorities have been notified in accordance with Minn. R. 7020.2000 subp. 5.

Construction Stormwater (CSW) Requirements

The Applicant certifies that, if construction will disturb 5 or more acres, they have made a separate application for a CSW permit. For construction activities that disturb at least 1 acre but less than 5 acres, the Applicant certifies to comply with the requirements of the current CSW NPDES general permit (Minn. R. 7090.2020 provides permit coverage without the need for an application).

Application processing by the MPCA

If the MPCA or CFO determines that the CFO is unable to issue the CSF or interim permit as specified by Minn. R. 7020.1600 subp. 4a, the Applicant agrees to submit a new application using the MPCA online feedlot permit application service.

Applicant Signature

I hereby certify that the design, construction, and operation of the facility will be in accordance with this application and plans, specifications, reports, and related communications approved by the CFO, and in accordance with applicable permit conditions or regulations/standards of the MPCA. I also certify under penalty of law that this document and all attachments were prepared under my direction or supervision and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The person that signs this application must be one of the following:

- A. For a corporation, a principal executive officer of at least the level of vice president
- B. For a partnership, a general partner
- C. For a sole proprietorship, the proprietor

By typing/signing my name below, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing this form.

Signature: Annexstad Dairy Farms, Inc Title: Sec -
(This document has been electronically signed.) Date (mm/dd/yyyy): 12/20/2022
Office phone: _____ Cell phone: 507-995-4940

To sign up for electronic communications including the MPCA feedlot newsletters, please go to the MPCA website at <https://public.govdelivery.com/accounts/MNP/CA/subscriber/new>.

Required enclosures

Permit applications submitted without all required enclosures are incomplete.

All forms are available on the [CSF & Interim permits](https://www.pca.state.mn.us/feedlots) page of the MPCA feedlot program website at: <https://www.pca.state.mn.us/feedlots>

- ☒ A. A site sketch/aerial photograph indicating the location of the existing and proposed facility components.
- ☒ B. A Manure/Nutrient Management Plan (MMP) – The following are optional forms to assist with MMP development:

When **all** manure is transferred to another entity for utilization, complete a MMP using the form:

[MMP requirements when ownership of manure is transferred](#).

When **all** manure is applied to land owned, rented, or leased by the applicant(s), or applied to other land where nutrient application decisions are made by the applicant(s), complete a MMP using the spreadsheet form:

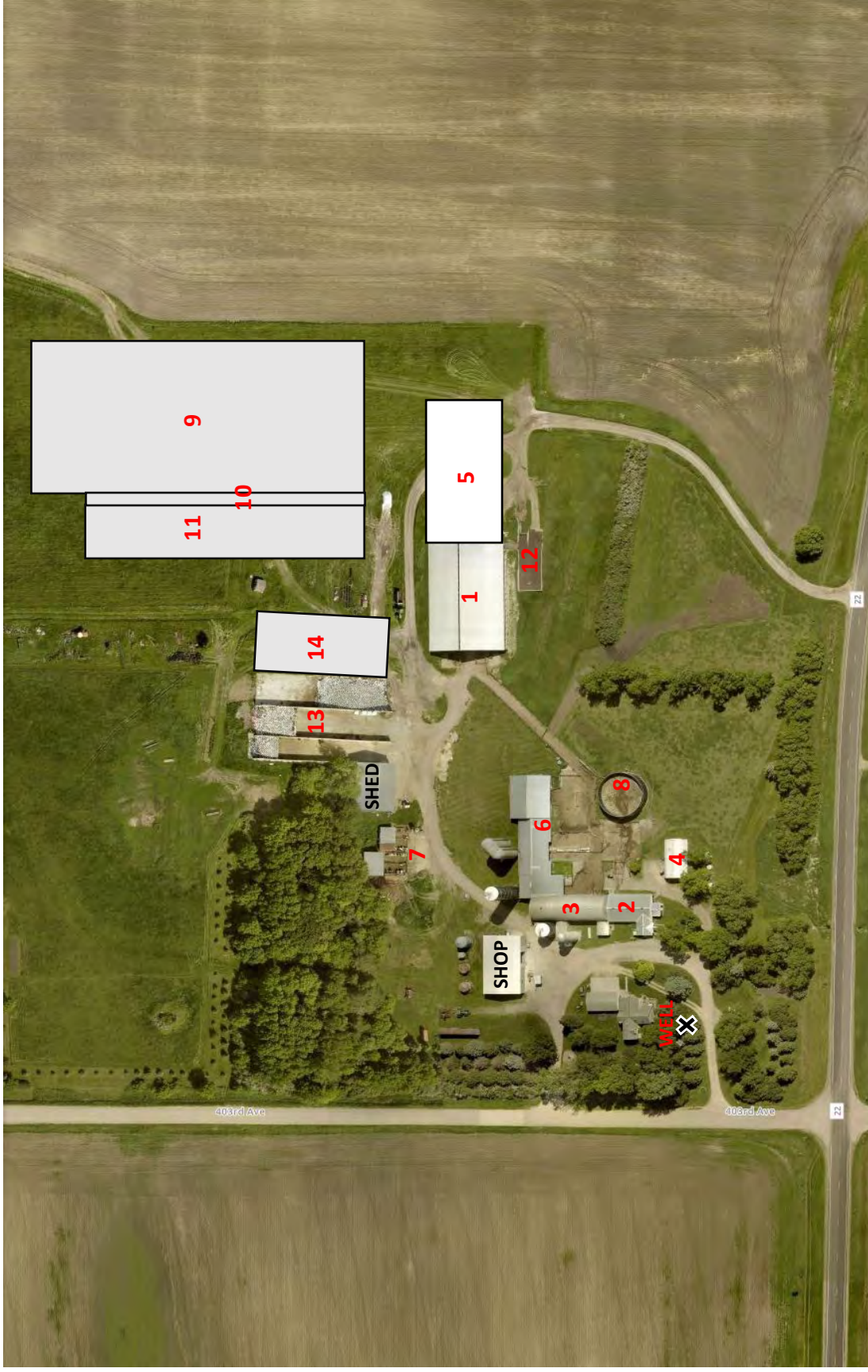
[MPCA Manure Management Planner](#).

When **some** (not all) manure is transferred to another entity for utilization, complete a MMP using both forms:

[MMP requirements when ownership of manure is transferred](#) and
[MPCA Manure Management Planner](#).

- ☒ C. Plans and Specifications for construction, modification, or expansion of any of the following:
 - Liquid manure storage area
 - Vegetative infiltration area (VTA or VIB)
 - Permanent manure stockpile
 - Filter-Buffer strip
- ☒ D. Verification of the notifications required in part XII of this application.

Site Map



**Crop Year 2023 Manure Management
Plan (Proposed)**

Manure Storage, Handling, and Testing Information



Facility Name: Annexstad Dairy Farms Inc.

NPDES or SDS Permit? NoPermit Number: n/a

Owner/Operator Name: Rolf, Jean and Mike AnnexstadDate Last Revised: 12/21/2022Registration Number: 103-97816

Version 9.01 Last Updated: 1/13/22

wq-f6-12

Manure Sources		Manure Source #1	Manure Source #2	Manure Source #3	Manure Source #4
Description of Manure Source		Proposed Lagoon	Proposed Run-off Slurry Store	Proposed Manure Pack (1)	Proposed Manure Pack (2)
Livestock Information					
Predominate Animal Type (Contributing to Manure Source)		Dairy Milk Cow	Dairy Dry Cow	Dairy Dry Cow	Dairy Calf
Average Animal Weight		1,400 lbs	1,400 lbs	1,400 lbs	300 lbs
Animal Number		260	40	40	50
Length of Time Livestock Spend In Facility		365 days/yr	365 days/yr	365 days/yr	365 days/yr
Additional Animal Type (Contributing to Manure Source)			Dairy Heifer	Dairy Heifer	
Average Animal Weight		lbs	700 lbs	700 lbs	lbs
Animal Number		days/yr	95	95	days/yr
Length of Time Livestock Spend In Facility			365 days/yr	365 days/yr	
Storage Information					
Storage Type		Lagoon	Outdoor Concrete Pit/Tank	Manure Pack	Manure Pack
Capacity		4,791,221 gals	380,685 gals	tons	tons
Storage Length		14 months	185 days	12 months	12 months
Application Methods					
Commercial Applicator (Yes/No or Name)		Jeff Davis	Jeff Davis	No	No
Spreader Type		Liquid Tanker	Liquid Tanker	Solids Spreader	Solids Spreader
How Volume/Tonnage Determined per Load		Commercial Applicator	Commercial Applicator	Spreader Volume	Spreader Volume
How Application Rate is Calibrated		Commercial Applicator	Commercial Applicator	Loads Applied per Field	Loads Applied per Field
Manure Analysis - Existing facilities should use actual manure test results					
Sampling Frequency		Every Year	Every Year	Every Year	Every Year
Sampling Methods		Estimate (New Structure)	Estimate (New Structure)	Stockpile Composite	Stockpile Composite
Date Last Analyzed		10/13/21	08/15/22	12/14/22	12/14/22
Basis for N,P, & K Values Below		Estimate	Estimate	This Year's Sample	This Year's Sample
Total N - (do not enter lab estimated availability)		20 lbs/1000 gal	1 lbs/1000 gal	14 lbs/ton	14 lbs/ton
Total P ₂ O ₅ - (do not enter lab estimated availability)		7 lbs/1000 gal	4 lbs/1000 gal	6 lbs/ton	6 lbs/ton
Total K ₂ O - (do not enter lab estimated availability)		20 lbs/1000 gal	7 lbs/1000 gal	21 lbs/ton	21 lbs/ton
Annual Generation - Existing facilities should use actual production values					
Total Manure Produced per Year (Estimated)		1,774,820 gals	294,222 gals	568 tons	83 tons
Total Manure Produced per Year (Actual)		gals	748,858 gals	tons	tons
Annual N Produced		35,496 lbs	749 lbs	7,952 lbs	1,168 lbs
Annual P ₂ O ₅ Produced		12,424 lbs	2,995 lbs	3,408 lbs	501 lbs
Annual K ₂ O Produced		35,496 lbs	5,242 lbs	11,929 lbs	1,753 lbs

Average Book Values		Average Book Values		Average Book Values	
N	31	N	32	N	10
P ₂ O ₅	15	P ₂ O ₅	14	P ₂ O ₅	3
K ₂ O	19	K ₂ O	24	K ₂ O	5

Average Book Values		Average Book Values	
N	10	N	10
P ₂ O ₅	3	P ₂ O ₅	3
K ₂ O	6	K ₂ O	6

Average Book Values		Average Book Values	
N	10	N	10
P ₂ O ₅	3	P ₂ O ₅	3
K ₂ O	5	K ₂ O	5

 MINNESOTA POLLUTION
CONTROL AGENCY**Total Acres (Fields 1 - 35) 617**

Sensitive Features Management Worksheet

This worksheet identifies all allowable techniques that can be used to provide protection to sensitive features **as required** in Minnesota Rules and/or permit conditions. One of the following measures must be employed for the applicable sensitive feature. Any of the identified practices are acceptable.

<u>Tile Intakes</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - Inject or incorporate within 24 hours and prior to rainfall within 300 ft.
Option C - 35 ft grassed buffer
Option D - 100 ft setback with at least 16.5 ft as grassed buffer
<u>Drainage Ditches</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
Option D - Protective Berm (prohibits runoff from entering the ditch)
<u>Lakes, Rivers, and Streams</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 100 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
<u>Intermittent Streams and/or Public Waters Wetlands (over 10 acres)</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
<u>Wells, Mines, or Quarry</u>
Option A - 50 ft setback - minimum (100 ft if NPDES permitted)
<u>Sinkholes</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall upslope and within 300 ft and observe a 50 ft non-manured setback (100 ft non-manured setback for NPDES)
Option B - Berm that prevents runoff from entering the sinkhole
<u>Application of Manure During the Summer Months (June, July, and August)</u> - This also includes September for NPDES permitted sites
Option A - A cover crop will be planted on all fields that receive manure applications during June, July, and August
<u>Other Conduits to Water</u>
Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
Option D - Protective Berm (prohibits runoff from entering the waters)
<u>Early Fall Land Application</u> - Unless otherwise required, this only applies to early fall manure application at NPDES or SDS permitted facilities
Option A - Fall Application onto fields that are dominated by coarse-textured soils shall be delayed until soil temperatures in the upper six (6) inches, are less than 50 degrees Fahrenheit, unless otherwise first approved by the MPCA.

High Soil Test Phosphorus Management

This worksheet identifies all allowable techniques that will be used to manage soil phosphorus levels as required in Minnesota Rules. Based upon the soil test results for the field(s), one of the following measures will be employed to manage soil phosphorus levels on land where manure will be applied. Any of the identified practices are acceptable.

Soil Phosphorus: 22-75 ppm Bray or 17-60 ppm Olsen

Option A - Manure will **NOT** be applied within 300 ft of open tile intakes (NPDES Permits only), lakes, streams, intermittent streams, public waters wetlands, or drainage ditches without protective berms (indicate setbacks on aerial photos)

Option B - I will maintain or reduce soil P levels in this field over a six year period. (Example calculations are provided below)

Step 1 - Multiply expected crop yields by the P removal of the crop (Table C of this planner) and determine the average crop P removal over 6 years

Ex. 170 bu Corn [170 * 0.34] = 58 lbs P removed/year & 45 bu Soybeans [45 * 0.82] = 37 lbs P removed/year (Average of 48 lbs P removed/yr)

Step 2 - Determine the amount of P that is typically applied in manure applications

Ex. 4000 gals/ac * 35 lbs P/1000 gals * 0.8 = 112 lbs P applied

Step 3 - Divide step 2 by the average in step 1. (112 lbs P applied/48 lbs P removed = 2.3) Then take 6 years divided by this result and round down.

Ex. 112 lbs P applied/48 lbs P removed = 2.3 THEN 6 years/2.3 = 2.6 (round down to 2 out of 6 years manure can be applied)

Soil Phosphorus: 76-150 ppm Bray or 61-120 ppm Olsen

Option A - Manure will **NOT** be applied within 300 ft of open tile intakes, lakes, streams, intermittent streams, public waters wetlands, or drainage ditches without protective berms (indicate setbacks on aerial photos)

Option B - Use the University of MN soil P index and apply to fields with a low or very low rating and maintain or reduce soil P over six years

The Minnesota Soil Phosphorus Index can be found at : <https://www.swac.umn.edu/extension-outreach/phosphorusloss>

Option C - I will follow all NRCS 590 standards in accordance with the table below and maintain or reduce soil P over six years

Field within 300 feet of waters	Effective 100ft Grassed Buffer	Sheet and Rill Erosion (ton/acre-year)	Manure Application Allowed
No	Yes or No	Any Rate	Yes
Yes	Yes or No	More than 6	No
Yes	No	Less than 4	P removal basis
Yes	No	4 to 6	No
Yes	Yes	Less than 6	P removal basis

Soil Phosphorus: Over 150 ppm Bray or Over 120 ppm Olsen

Option A - Use the University of MN soil P index and apply to fields with a low or very low rating and maintain or reduce soil P over six years

The Minnesota Soil Phosphorus Index can be found at : <https://www.swac.umn.edu/extension-outreach/phosphorusloss>

Option B - I will follow all NRCS 590 standards in accordance with the table below and maintain or reduce soil P over six years

Field within 300 feet of waters	Effective 100ft Grassed Buffer	Sheet and Rill Erosion (ton/acre-year)	Manure Application Allowed
Yes	Yes or No	More than 6	No
Yes	No	Any Rate	No
Yes	Yes or No	2 or less	P removal basis
Yes	Yes or No	More than 2	No
No	No	Less than 4	P removal basis
No	No	More than 4	No
No	Yes	Less than 4	Yes
No	Yes	4 to 6	P removal basis
No	Yes or No	More than 6	No

6 Year Soil Phosphorus Management Plan

When soil phosphorus levels are required to be maintained (or reduced) over a 6 year period, one of the following crop rotation scenarios will be employed for the applicable field or area near sensitive features. You must complete at least one rotation below or indicate that manure will not be applied within 300 feet of sensitive features (this option will only be visible when all soil test results are below 150 Bray or 120 Olsen).

☐ Manure will not be applied within 300 ft of open tile intakes, lakes, streams, intermittent streams, public water wetlands, or drainage ditches without protective berms.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Crop (Year 1)	Corn Silage	Corn	Corn Silage					
Yield	25 ton	220 bu	25 ton					
Manure Application Source (1-12) & Rate	1 13000 gals	1 13000 gals	1 15000 gals					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					
Crop (Year 2)	Corn Silage	Corn Silage	Corn Silage					
Yield	25 ton	25 ton	25 ton					
Manure Application Source (1-12) & Rate	1 13000 gals	1 13000 gals	3 20 tons					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					
Crop (Year 3)	Corn Silage	Peas	Corn Silage					
Yield	25 ton	4000 lb	25 ton					
Manure Application Source (1-12) & Rate	1 13000 gals		1 12500 gals					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					
Crop (Year 4)	Alfalfa	Corn	Corn Silage					
Yield	7 ton	220 bu	25 ton					
Manure Application Source (1-12) & Rate	1 18000 gals	3 15 tons	3 24 tons					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					
Crop (Year 5)	Alfalfa	Soybeans	Corn Silage					
Yield	7 ton	60 bu	25 ton					
Manure Application Source (1-12) & Rate	3 15 tons		1 11000 gals					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					
Crop (Year 6)	Alfalfa	Corn Silage	Corn Silage					
Yield	7 ton	25 ton	25 ton					
Manure Application Source (1-12) & Rate	3 15 tons	1 13000 gals	3 25 tons					
2 nd Manure Application								
Fertilizer P (total)	lbs	lbs	lbs					

Results

P Applied over 6 Yrs	464 lbs	291 lbs	547 lbs	lbs	lbs	lbs	lbs	lbs
P Removed over 6 Yrs	511.8 lbs	428.8 lbs	570 lbs	lbs	lbs	lbs	lbs	lbs
Will Rotation Build Soil Phosphorus Levels?	No	No	No					

Crop and Nutrient Planning Worksheet (Fields 1-35)

[illegible]

MINNESOTA POLLUTION
CONTROL AGENCY

☒ I will transfer ownership of some of the manure



Simply start typing in any of the cells **below**, the cell will auto adjust to accommodate the length of the text entered.

Estimated # of run-off gallons to be accumulated per year in the slurry store = 748,858 (engineered design estimate)

Proposed LMSA sized for >14 months of storage to ensure capacity for potential future growth to the farm and increased rainfall events

Manure Management Plan (MMP) requirements when ownership of manure is transferred

Feedlot program

Doc Type: Permit Information Form

Are you transferring ownership of manure?

MMP and record-keeping requirements for feedlot owners are different when manure ownership is transferred to a third party for land application. The following questions will help you determine if you transfer ownership of manure:

- ☐ Yes ☒ No Will manure be applied to land that is owned, leased, or rented by the feedlot owner/operator or a member/partner of the feedlot ownership entity (Inc., LLP, LLLP, et. al.)?
- ☐ Yes ☒ No Does the feedlot owner/operator, feedlot ownership member/partner, or employee under the direction of the feedlot ownership entity control the crop and nutrient planning decisions of the manure application sites, including planning for manure application rates, timing, and methods?

If you answered "No" to both questions, then you are transferring ownership of your manure and the feedlot operator may use these guidelines to complete a MMP.

If you answered "Yes" to either question, you are retaining ownership of manure and must complete a more comprehensive MMP. More information on the requirements when manure ownership is retained and resources to develop a retained ownership MMP can be found on the Minnesota Pollution Control Agency's (MPCA) website at <https://www.pca.state.mn.us/water/feedlots>.

If only a portion of your manure is considered to have transferred ownership, then use this form to develop a MMP for the manure which has transferred ownership, and develop the more comprehensive MMP for the manure which is not transferred.

MMP development

Name of feedlot facility: Annexstad Dairy Farms Inc.

Registration number: 103-97816

Manure generation, storage, and testing

Manure storage areas (check all that apply):

- ☐ Earthen Basin ☐ Underfloor Concrete Pit ☒ Outdoor Concrete Pit/Tank ☐ Slurry Store ☒ Lagoon
- ☐ Stockpile ☐ Underfloor Dry Storage ☒ Manure Pack ☐ Litter ☐ Other

Yearly manure generation:

Liquid: 2,523,678 gallons
Solid: 651 tons

Storage capacity:

Liquid: 12 months
Solid: 12 months

Anticipated amount to be transferred (approximate):

Liquid: ☐ 100% ☐ 50% ☒ Other: 25 %
Solid: ☐ 100% ☐ 50% ☒ Other: 25 %

Anticipated nutrient content*:

Source 1: N 20 P 7 K 20
Source 2: N 1 P 4 K 7
Source 3: N 14 P 6 K 21
Source 4: N 14 P 6 K 21

Manure type:

☒ Liquid ☐ Solid
☒ Liquid ☐ Solid
☐ Liquid ☒ Solid
☐ Liquid ☒ Solid

Testing frequency:

☒ Yearly ☐ Once every ___ years
☒ Yearly ☐ Once every ___ years
☒ Yearly ☐ Once every ___ years
☒ Yearly ☐ Once every ___ years

* List the total lbs of N, P, and K. Do not list estimated first year availability if provided by the lab.

Minimum requirements:

- Yearly sampling for the first three (3) years and then once every four (4) years - NPDES permits require yearly sampling.
- Samples must also occur when changes to nutrient content are expected (unusual weather, change of animal types, etc.)
- Samples must be representative of manure source and follow University of Minnesota Extension Service recommendations.
- Nutrient analysis must occur at a Minnesota Department of Agriculture certified lab or pre-approved alternative.

Land application

Anticipated land application methods (check all that apply):

☒ Broadcast with incorporation ☒ Broadcast without incorporation ☒ Injection ☐ Unknown

Anticipated land application timing (check all that apply):

☒ Fall ☒ Spring ☐ Winter* ☒ Summer (cover crop required) ☐ Unknown

*For NPDES permitted sites only, transfer of manure is prohibited when...

- a) liquid manure will be surface applied to frozen or snow covered soils after November 30, or
- b) solid manure will be surface applied to frozen or snow covered soils during the month of March.

How will you ensure that there is enough land available for spreading manure in accordance with allowable rates; and that land owners are willing to accept/purchase the manure?

☐ Land application agreements Approximate acreage under agreements _____

☒ Other (describe below) Approximate acreage available via other methods _____

Dairy manure is a highly valuable fertilizer source in the area. There are an abundance of producers in the area that would purchase manure as a fertilizer source for row crops in close proximity to the site.

Minimum requirements:

- Attachment A - *Minimum state requirements for applying manure* must be provided to manure recipient.
 - o The nutrient content of the transferred manure must be indicated on Attachment A.
- Records of manure transfer activities will be kept utilizing [Records when manure ownership is transferred 300 or more animal units \(wq-f6-43\)](#), which is available on the MPCA website: www.pca.state.mn.us/feedlots.

Animal mortality management (NPDES and SDS permitted sites only)

The following best management practices (BMP)s should be employed to assist in compliance with BAH and MPCA requirements.

Rendering - Carcass pick-up point BMPs

- Kept in an animal-proof, enclosed area.
- At least 200 yards from a neighbor's buildings.
- Picked up within 72 hours (seven [7] days if refrigerated to less than 45 degrees).

Composting - Composting area BMPs

- Built on an impervious, weight-bearing pad that is large enough to allow equipment to maneuver.
Note: Class V gravel material is not considered to be impervious.
- Covered with a roof to prevent excessive moisture on the composting material and eliminate runoff concerns.
- Built of rot-resistant material that is strong enough to withstand the force exerted by equipment.
- Large enough to handle each day's normal mortality through the endpoint of the composting which consists of a minimum of two (2) heat cycles.

Burial – Burial site BMPs

- Stay five (5 feet above seasonal high water table.
- Stay 1000 feet away from lakes and 300 feet away from rivers, streams, ditches, etc.
- Be covered immediately with enough soil to keep scavengers out (three feet is sufficient).
- Not be placed in sandy or gravelly soil types.
- Maintain at least 10 feet vertical separation between dead animals and bedrock.

Incineration – Incineration BMPs

- Capable of producing emissions not to exceed 20 percent opacity.
- Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.
- Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

Other Method (describe below)

Attachment A – Minimum state requirements for applying manure

Provide this information to the manure recipient

Manure analysis

I. Nitrogen rate limits

N _____ P _____ K _____

Limit rates so that estimated plant-available N from all manure and fertilizer sources combined does not exceed the nitrogen recommendations of the University of Minnesota. For corn crops, rates should be consistent with the MRTN.

- 195 lbs/N for corn following corn (as of 2020)
- 150 lbs/N for corn following soybeans (as of 2020)

Calculating N available this year from manure applied to the previous crop

All sources of nitrogen must be considered when calculating nitrogen application rates. This includes residual nitrogen from alfalfa grown two years ago, commercial fertilizer (starter or supplemental), nitrates in groundwater, and manure applied last year.

$$\frac{\text{Application rate last year (tons or gal/acre)}}{\text{Liquid only}} \div 1000 \times \frac{\text{Availability factor (0.15 for swine, 0.25 for all others)}}{\text{N Test last year}} = \text{N available this year (lbs/acre)}$$

Crop-available manure N applied to legumes cannot exceed legume nitrogen removal rates; 3.5 lbs N per bushel of soybeans, 50 lbs N per ton of alfalfa, 27 lbs N per ton grass hay.

Calculating a manure application rate for the upcoming crop

$$\frac{\text{Desired amount of N from manure}}{\text{Availability factor (\# from table 1/100)}} \div \frac{\text{Manure N Test}}{\text{Liquid only}} \times 1000 = \text{Application Rate (tons or gal/acre)}$$

Summer applications – Plant a cover crop where manure is applied in June, July, or August to harvested fields that would otherwise remain without crop cover for the rest of the growing season.

Calculating N available from manure applied for the upcoming crop

$$\frac{\text{Application rate (tons or gal/acre)}}{\text{Liquid only}} \div 1000 \times \frac{\text{Availability factor (\# from table 1/100)}}{\text{N Test this year}} = \text{N available this year (lbs/acre)}$$

II. Manure application setbacks

Manure application must comply with the following setbacks. County setbacks may be more restrictive.

Feature	Surface application	Incorporation within 24 hrs
Lakes, streams	300**	25'
Wetlands (10+ ac)	300**	25'
Drainage ditches w/o berms	300**	25'
Open Tile Intakes	300'	0'
Sinkholes w/o berms		
Downslope	50'	50'
Upslope	300'	50'
Wells and quarries	50'	50'

* 100' vegetated buffer can be used instead of 300' setback for non-winter applications (50' buffer for wetlands/ditches)

Table 1. Percent of total manure nitrogen available the first year

Animal Type	Broadcast			Injection	
	Incorporation after 4 days	Incorporation 12 - 96 hrs	Incorporation within 12 hrs	Knife	Sweep
Beef	25	45	60	50	60
Dairy	20	40	55	50	55
Swine	35	55	75	70	80
Poultry	45	55	70	70	70

If you have a manure spill contact the state duty officer at 1-800-422-0798

III. Soil phosphorus (P) management

Soil P testing – Test soils for P at least once every four years.

Avoid P build-up within 300 feet of waters* – Where soils test P levels exceed 21 Bray P-1 or 16 Olsen, the rate and frequency of manure applications must not allow soil phosphorus build-up over a six year period, unless a 50-100' vegetative buffer is established along the waters. Single year applications can be based on nitrogen if the remaining phosphorus is removed by subsequent crops.

Avoid extremely high P soils – Avoid manure application onto fields where soils exceed:

- 150 ppm Bray P-1 or 120 ppm Olsen
- 75 ppm Bray P-1 or 60 ppm Olsen within 300 feet of water or tile intakes.

* "waters" refers to lakes, streams, intermittent streams, wetlands over 10 acres, and drainage ditches without protective berms.

IV. Manure recipient record keeping requirements

The cropland manager must keep records of the following for at least three years (six years if applying near waters):

- Manure test dates and results
- Field ID and acreage
- Soil P test dates and results
- Crop grown and yield goal
- Previous crop grown
- N recommendation for the crop grown
- N from irrigation water
- Carry-over N from previous manure applications
- Date and rate of manure application
- Method of application and incorporation timing
- Manure N and P₂O₅ available
- Fertilizer N and P₂O₅ applied
- Total lbs N available/acre (all sources)
- Total lbs P₂O₅ available/acre (all sources)

V. Short-term stockpiling practices

Follow all stockpiling setbacks for waters and conduits to waters (ranging from 50 to 300 feet); avoid sandy soils and high water table soils (<2'); avoid slopes over 6%; use diversions if slopes exceed 2%; and keep records as required in Minn. R. 7020.2125. The stockpile size must not exceed the amount of manure needed to supply nutrient needs to the tract of land where applied.

More information: For more information, contact the MPCA or visit the website at <https://www.pca.state.mn.us/water/feedlots>.

Field Maps, Soils Maps, Setback Maps

Aerial Map



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Map Center: 44° 26' 58.26, -94° 5' 59.83

0ft 819ft 1638ft

5-111N-27W
Nicollet County
Minnesota



11/29/2022

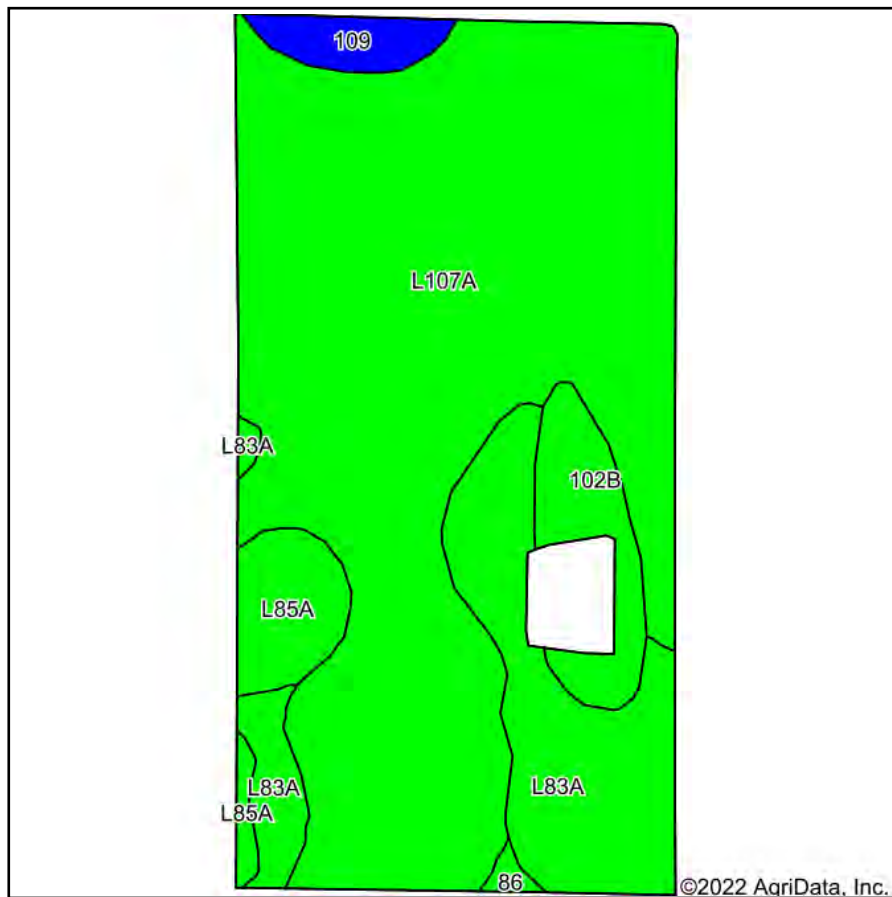
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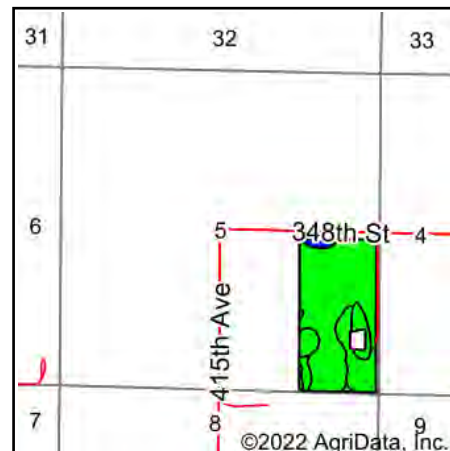
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Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
 County: **Nicollet**
 Location: **5-111N-27W**
 Township: **Lake Prairie**
 Acres: **71.01**
 Date: **11/29/2022**

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Maps Provided By:



Area Symbol: MN103, Soil Area Version: 18

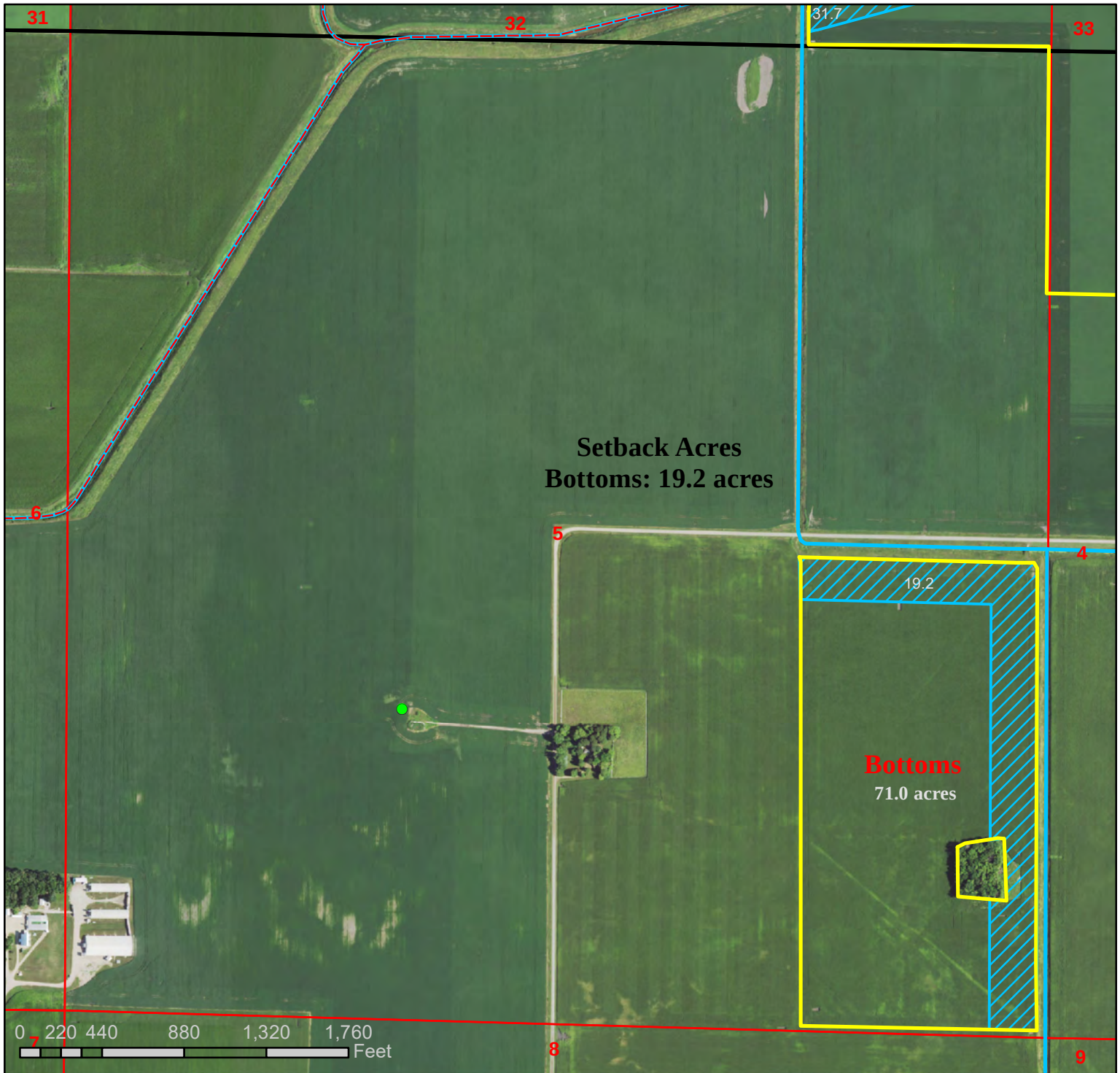
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L107A	Canisteo-Glencoe complex, 0 to 2 percent slopes	50.07	70.5%		IIw	91	81	72	56	81
L83A	Webster clay loam, 0 to 2 percent slopes	11.90	16.8%		IIw	93	82	78	60	82
102B	Clarion loam, 2 to 6 percent slopes	3.62	5.1%		Ile	95	83	78	62	83
L85A	Nicollet clay loam, 1 to 3 percent slopes	3.43	4.8%		Iw	99	81	81	64	81
109	Cordova clay loam, 0 to 2 percent slopes	1.70	2.4%		IIw	87	85	85	65	82
86	Canisteo clay loam, 0 to 2 percent slopes	0.29	0.4%		IIw	93	81	71	56	81
Weighted Average					1.95	91.8	*n 81.4	*n 74.1	*n 57.6	*n 81.3

*n: The aggregation method is "Weighted Average using all components"

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

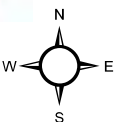
Sensitive Features Map



Legend

- | | |
|------------------|--------------|
| Intakes | Townships |
| Impaired Streams | Sections |
| PWI Streams | PWI Wetlands |
| MN Well Index | SWAA |
| AnnexBounds | DWMSA |
| Setback | |

Annexstad Dairy Farms Inc.
Lake Prairie 5
Nicollet County, MN



Aerial Map



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Map Center: 44° 27' 22.74, -94° 5' 24.4

0ft 817ft 1634ft

5-111N-27W
Nicollet County
Minnesota



11/29/2022

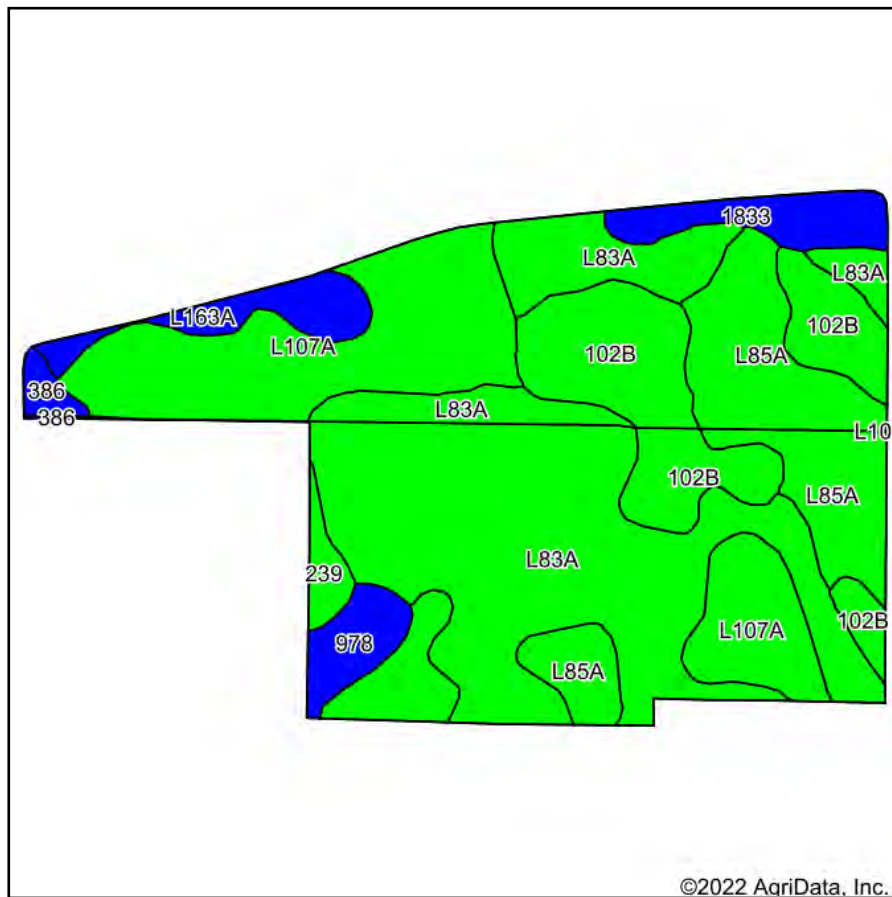
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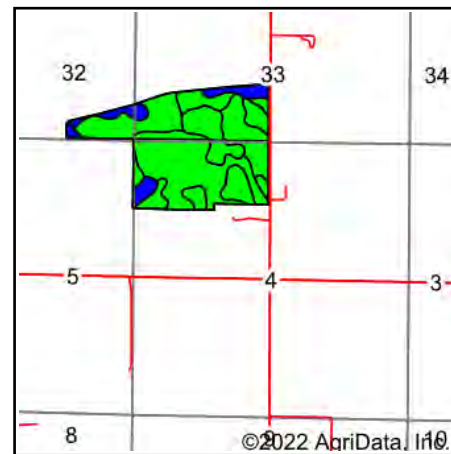
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Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
 County: **Nicollet**
 Location: **5-111N-27W**
 Township: **Lake Prairie**
 Acres: **147.64**
 Date: **11/29/2022**

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Maps Provided By:



Area Symbol: MN103, Soil Area Version: 18
 Area Symbol: MN143, Soil Area Version: 19

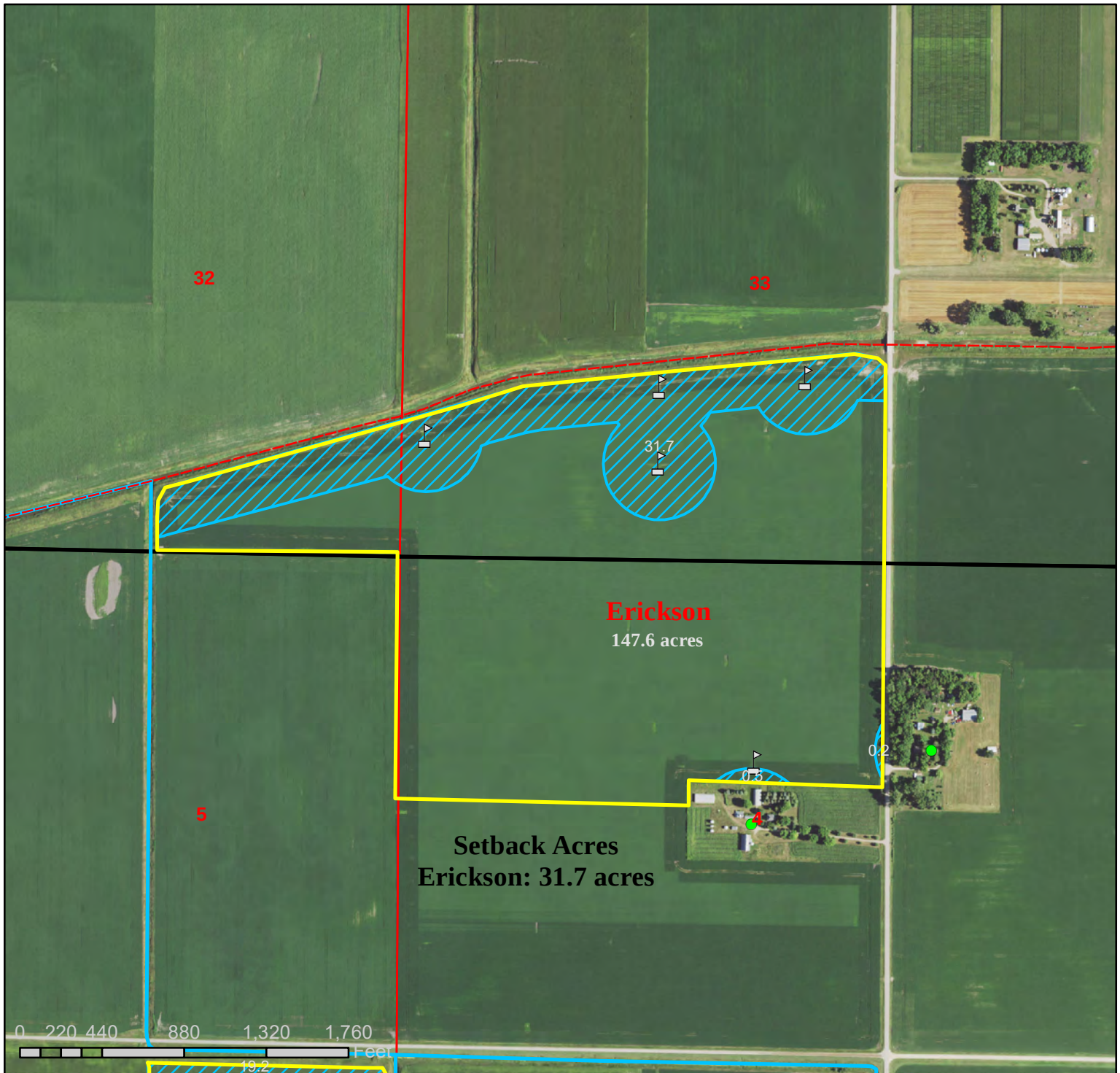
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L83A	Webster clay loam, 0 to 2 percent slopes	43.48	29.5%		IIw	93	82	78	60	82
L107A	Canisteo-Glencoe complex, 0 to 2 percent slopes	22.00	14.9%		IIw	91	81	72	56	81
102B	Clarion loam, 2 to 6 percent slopes	14.20	9.6%		Ile	95	83	78	62	83
L83A	Webster clay loam, 0 to 2 percent slopes	12.69	8.6%		IIw	93	82	78	60	82
L107A	Canisteo-Glencoe complex, 0 to 2 percent slopes	11.45	7.8%		IIw	91	81	72	56	81
L85A	Nicollet clay loam, 1 to 3 percent slopes	10.39	7.0%		Iw	99	81	81	64	81
L85A	Nicollet clay loam, 1 to 3 percent slopes	10.30	7.0%		Iw	99	81	81	64	81
102B	Clarion loam, 2 to 6 percent slopes	6.62	4.5%		Ile	95	83	78	62	83
1833	Coland clay loam, 0 to 2 percent slopes, occasionally flooded	5.21	3.5%		IIw	83	83	70	41	83
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	4.55	3.1%		IIIw	86	76	74	64	74
978	Cordova-Rolfe complex, 0 to 2 percent slopes	3.67	2.5%		IIw	86	84	84	65	77
239	Le Sueur loam, 1 to 3 percent slopes	1.80	1.2%		Iw	97	90	90	70	84
386	Okoboji mucky silty clay loam	1.19	0.8%		IIIw	86	76	52	22	76
386	Okoboji mucky silty clay loam	0.09	0.1%		IIIw	86	76	58	20	76
Weighted Average					1.89	92.9	*n 81.7	*n 76.7	*n 59.3	*n 81.4

*n: The aggregation method is "Weighted Average using all components"

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Sensitive Features Map

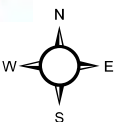


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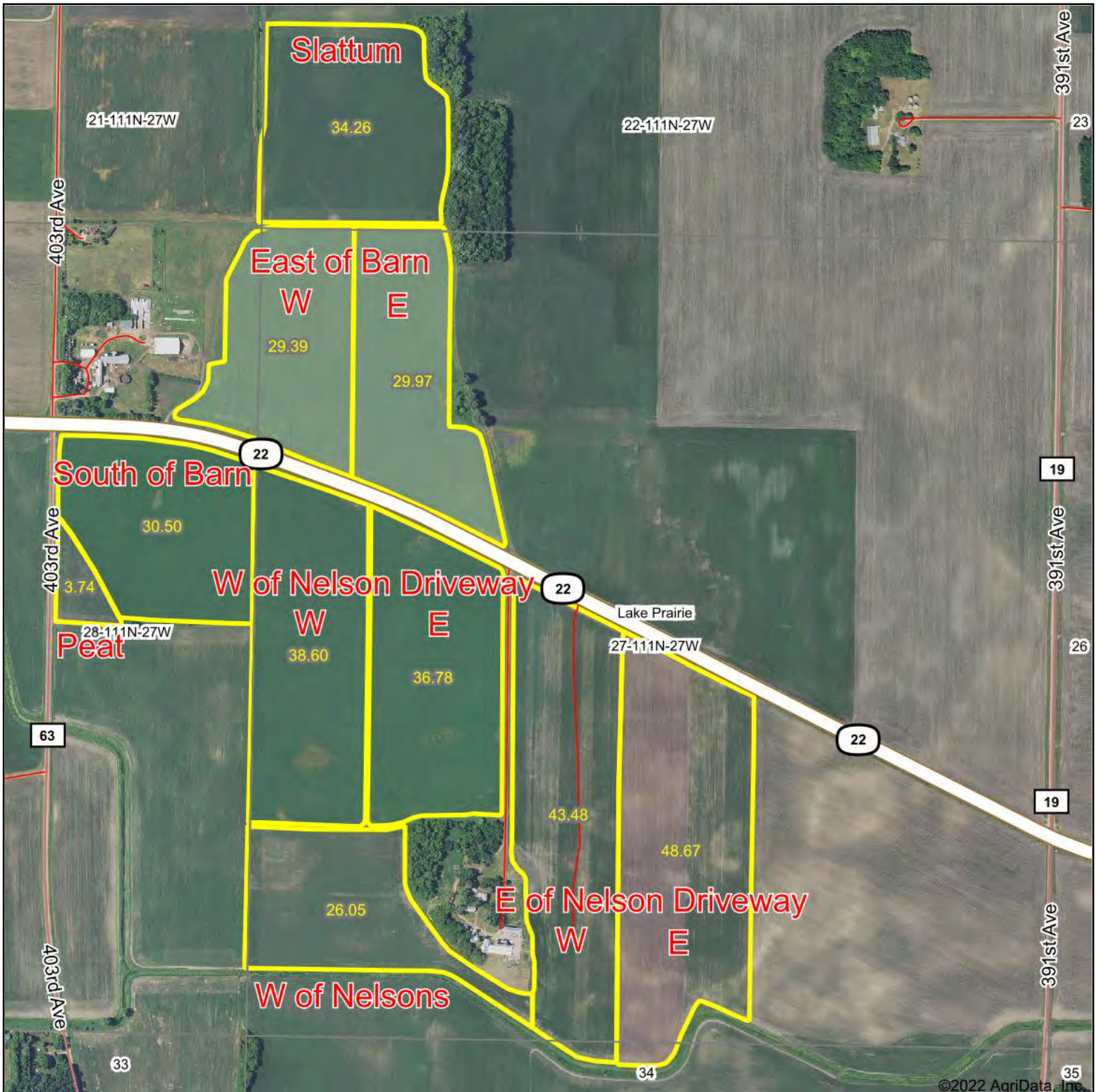
- | | |
|------------------|--------------|
| Intakes | Townships |
| Impaired Streams | Sections |
| PWI Streams | PWI Wetlands |
| MN Well Index | SWAA |
| AnnexBounds | DWMSA |
| Setback | |

Annexstad Dairy Farms Inc.
Lake Prairie 4 & 5
Nicollet County, MN

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Aerial Map



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Map Center: 44° 23' 35, -94° 3' 43.76

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27-111N-27W
Nicollet County
Minnesota



12/21/2022

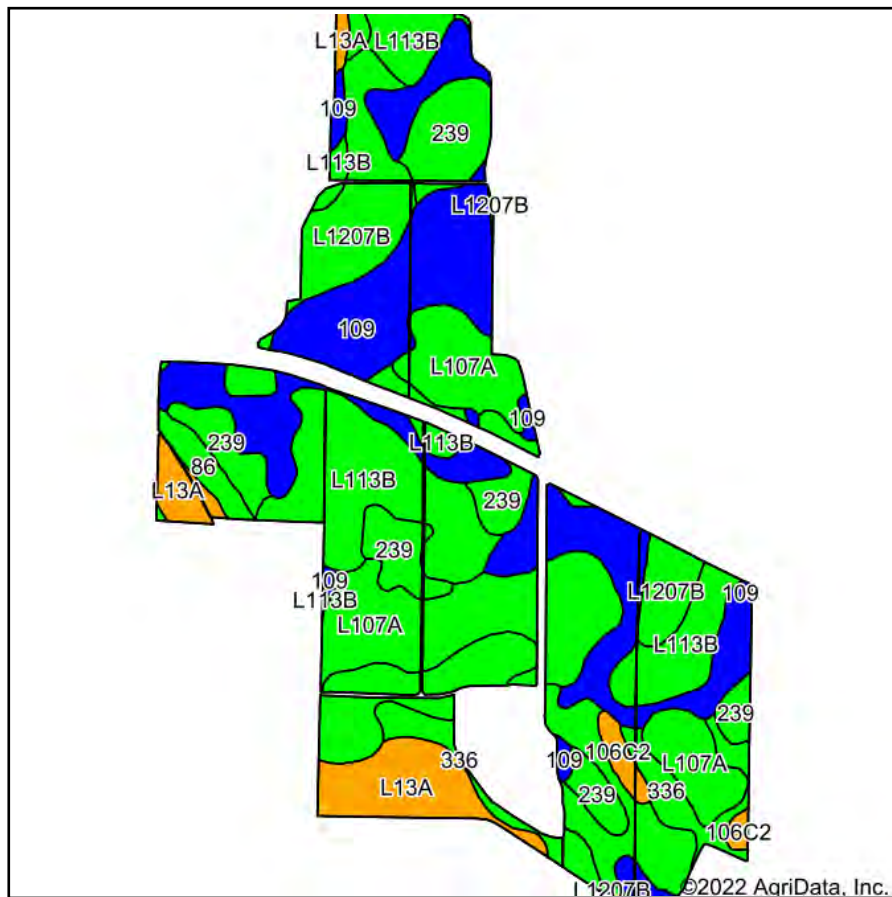
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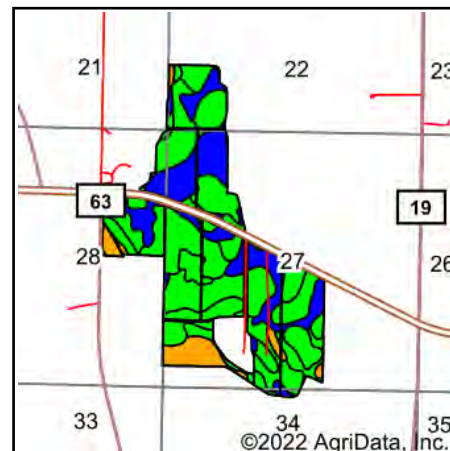
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Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
 County: **Nicollet**
 Location: **27-111N-27W**
 Township: **Lake Prairie**
 Acres: **321.44**
 Date: **12/21/2022**

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Maps Provided By:

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Area Symbol: MN103, Soil Area Version: 18

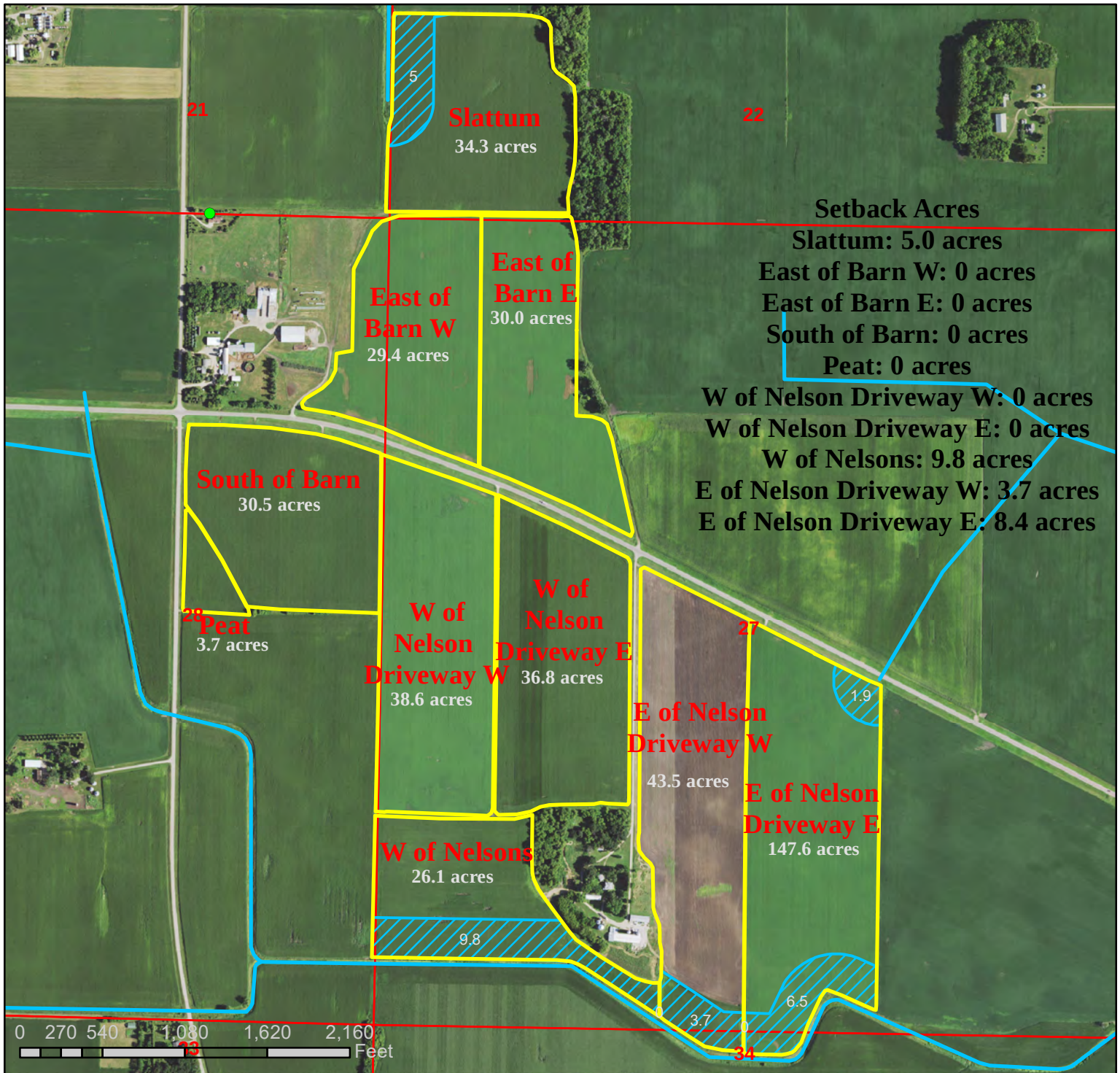
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109	Cordova clay loam, 0 to 2 percent slopes	80.98	25.2%		Ilw	87	85	85	65	82
L113B	Reedslake-Le Sueur complex, 1 to 6 percent slopes	80.75	25.1%		Ile	98	81	77	62	80
L107A	Canisteo-Glencoe complex, 0 to 2 percent slopes	55.71	17.3%		Ilw	91	81	72	56	81
239	Le Sueur loam, 1 to 3 percent slopes	33.65	10.5%		Iw	97	90	90	70	84
L1207B	Le Sueur-Reedslake-Cordova complex, 0 to 5 percent slopes	28.22	8.8%		Ile	95	81	79	62	80
L13A	Klossner muck, 0 to 1 percent slopes	20.21	6.3%		Illw	77	84	78	68	84
336	Delft clay loam, 0 to 2 percent slopes	13.83	4.3%		Ilw	94	79	77	59	79
86	Canisteo clay loam, 0 to 2 percent slopes	4.36	1.4%		Ilw	93	81	71	56	81
106C2	Lester loam, 6 to 10 percent slopes, moderately eroded	3.73	1.2%		IIle	76	77	77	56	69
Weighted Average					1.97	91.8	*n 83	*n 79.7	*n 62.7	*n 81.2

*n: The aggregation method is "Weighted Average using all components"

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Sensitive Features Map

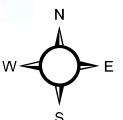


Legend

- | | |
|------------------|--------------|
| Intakes | Townships |
| Impaired Streams | Sections |
| PWI Streams | PWI Wetlands |
| MN Well Index | SWAA |
| AnnexBounds | DWMSA |
| Setback | |

Annexstad Dairy Farms Inc.
 Lake Prairie 21, 22, 27, & 28
 Nicollet County, MN

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Map Center: 44° 25' 13.49, -94° 3' 34.39

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15-111N-27W
Nicollet County
Minnesota



11/29/2022

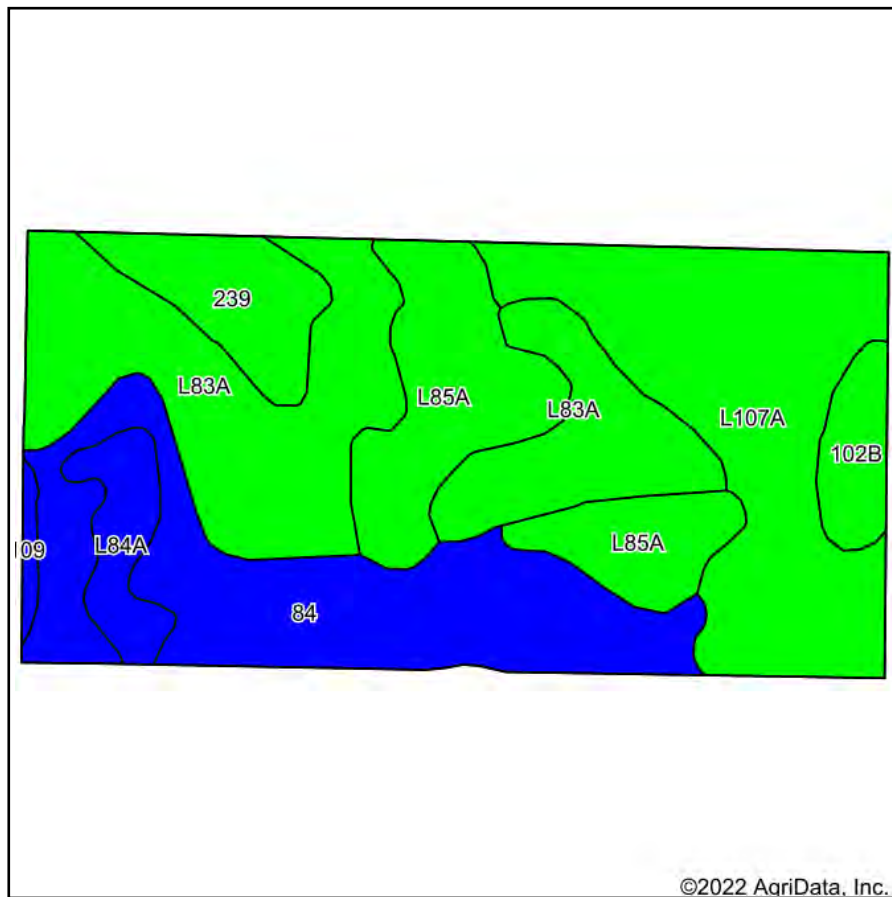
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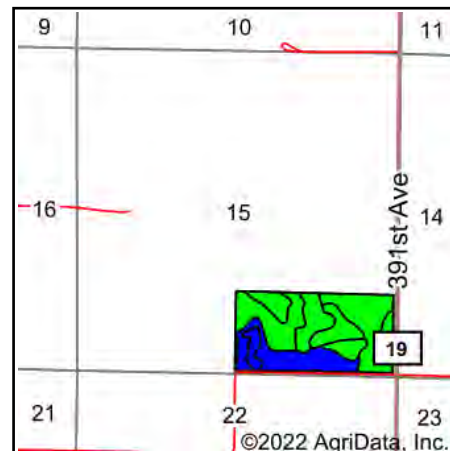
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Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
 County: **Nicollet**
 Location: **15-111N-27W**
 Township: **Lake Prairie**
 Acres: **75.28**
 Date: **11/29/2022**

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Area Symbol: MN103, Soil Area Version: 18

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index	*n NCCPI Overall	*n NCCPI Corn	*n NCCPI Small Grains	*n NCCPI Soybeans
L83A	Webster clay loam, 0 to 2 percent slopes	20.08	26.7%		IIw	93	82	78	60	82
L107A	Canisteo-Glencoe complex, 0 to 2 percent slopes	17.61	23.4%		IIw	91	81	72	56	81
84	Brownton silty clay loam, 0 to 2 percent slopes	16.15	21.5%		IIw	81	65	64	44	64
L85A	Nicollet clay loam, 1 to 3 percent slopes	11.23	14.9%		Iw	99	81	81	64	81
239	Le Sueur loam, 1 to 3 percent slopes	4.42	5.9%		Iw	97	90	90	70	84
L84A	Glencoe clay loam, 0 to 1 percent slopes	2.88	3.8%		IIIw	86	77	76	60	76
102B	Clarion loam, 2 to 6 percent slopes	2.41	3.2%		Ile	95	83	78	62	83
109	Cordova clay loam, 0 to 2 percent slopes	0.50	0.7%		IIw	87	85	85	65	82
Weighted Average					1.83	90.8	*n 78.3	*n 74.7	*n 56.9	*n 77.7

*n: The aggregation method is "Weighted Average using all components"

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Sensitive Features Map

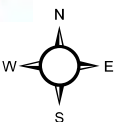


Legend

- | | |
|------------------|--------------|
| Intakes | Townships |
| Impaired Streams | Sections |
| PWI Streams | PWI Wetlands |
| MN Well Index | SWAA |
| AnnexBounds | DWMSA |
| Setback | |

Annexstad Dairy Farms Inc.
Lake Prairie 15
Nicollet County, MN

CENTROL
ENVIRONMENTAL & ENGINEERING



Manure Analysis Results



Stearns DHIA Laboratories

MN Lab ID# 027-145-378

825 12th St. So., P O Box 227,
Sauk Centre, MN 56378-0227
320.352.2028 Phone
800.369.2697 Toll Free
320.352.6163 Fax
Email:
stearnsdhalab@stearnsdhalab.com

Name: CENTROL CROP CONSULTING
PO BOX 236
351 BURLINGTON CIRCLE
MARSHALL, MN 56258

Sample ID/Invoice#: 507219
Account #: 002376
Internal ID#: 158141
Species: Dairy
Sample Type: Manure
Receipt Date: 12/14/2022 10:03 AM
Report Date: 12/15/2022 12:26:40 PM
Site: CENTROBT
Client Sample ID: ANNEXSTAD DAIRY FARM BED PACK

Manure Nutrients	Units	As Received	lbs/1000 gal	lbs/Ton
Moisture, %	%	56.66		
Dry Matter	%	43.34		
Nitrogen (TKN)	%	0.72	59.94	14.38
%P205	%	0.31	25.86	6.20
%K20	%	1.03	85.74	20.57

Estimated 1st Year Available Nutrients

Injected or Incorporated

Surface Applied

as Liquid
(lbs/1000 gal)

as Solid
(lbs/ton)

as Liquid
(lbs/1000 gal)

as Solid
(lbs/ton)

Nitrogen (TKN)	33	8	12	3
%P205	21	5	21	5
%K20	77	19	77	19

Estimated \$ Value of Equivalent Commercial Fertilizer

Prices as of 08/22/2022

Nitrogen	\$0.94
P205	\$0.90
K20	\$0.62

Injected or Incorporated

Surface Applied

As Liquid
(per 1000 gal)

As Solid
(per ton)

As Liquid
(per 1000 gal)

As Solid
(per ton)

Nitrogen (TKN)	\$30.99	\$7.44	\$11.27	\$2.70
%P205	\$18.62	\$4.47	\$18.62	\$4.47
%K20	\$47.85	\$11.48	\$47.85	\$11.48

Total \$ Value	\$97.46	\$23.39	\$77.74	\$18.65
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This analysis is based solely on the sample provided.
Improper sampling techniques will result in misrepresentation of values.



Stearns DHIA Laboratories

MN Lab ID# 027-145-378

825 12th St. So., P O Box 227,
Sauk Centre, MN 56378-0227
320.352.2028 Phone
800.369.2697 Toll Free
320.352.6163 Fax
Email:
stearnsdhialab@stearnsdhialab.com

Name: CENTROL CROP CONSULTING
PO BOX 236
351 BURLINGTON CIRCLE
MARSHALL, MN 56258

Sample ID/Invoice#: 496388
Account #: 002376
Internal ID#: 152513
Species: Beef
Sample Type: Manure
Receipt Date: 8/15/2022 12:15 AM
Report Date: 8/16/2022 2:10:42 PM
Site: CENTRJMU
Client Sample ID: BLAC-X LOT BASIN

Like-In-Kind
representative
manure analysis of
the proposed run-
off basin

Manure Nutrients	Units	As Received	lbs/1000 gal	lbs/Ton
Moisture, %	%	99.65		
Dry Matter	%	0.35		
Nitrogen (TKN)	%	0.02	1.41	0.34
%P205	%	0.05	4.30	1.03
%K20	%	0.08	6.99	1.68

Estimated 1st Year Available Nutrients

Injected or Incorporated

Surface Applied

as Liquid
(lbs/1000 gal)

as Solid
(lbs/ton)

as Liquid
(lbs/1000 gal)

as Solid
(lbs/ton)

Nitrogen (TKN)	1	0	0	0
%P205	3	1	3	1
%K20	6	2	6	2

Estimated \$ Value of Equivalent Commercial Fertilizer

Prices as of 04/01/2022

Nitrogen	\$1.13
P205	\$0.95
K20	\$0.70

Injected or Incorporated

Surface Applied

As Liquid
(per 1000 gal)

As Solid
(per ton)

As Liquid
(per 1000 gal)

As Solid
(per ton)

Nitrogen (TKN)	\$0.96	\$0.23	\$0.40	\$0.10
%P205	\$3.27	\$0.78	\$3.27	\$0.78
%K20	\$4.41	\$1.06	\$4.41	\$1.06

Total \$ Value	\$8.64	\$2.07	\$8.08	\$1.94
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This analysis is based solely on the sample provided.
Improper sampling techniques will result in misrepresentation of values.



Stearns DHIA Laboratories

MN Lab ID# 027-145-378

825 12th St. So., P O Box 227,
Sauk Centre, MN 56378-0227
320.352.2028 Phone
800.369.2697 Toll Free
320.352.6163 Fax
Email:
steamsdhialab@steamsdhialab.com

Name: D AND D PUMPING
47679 365TH ST
SAUK CENTRE, MN 56378

Sample ID/Invoice#: 474233
Account #: 002604
Internal ID#: 145094
Species: Dairy
Sample Type: Manure
Receipt Date: 10/13/2021 11:53 AM
Report Date: 10/14/2021 3:59:57 PM
Sample Cost: \$28.00
Client Sample ID: JOHNSON DAIRY INC

Like-In-Kind
representative
manure analysis of
the proposed lagoon/
earthen basin

Manure Nutrients	Units	As Received	lbs/1000 gal	lbs/Ton
Moisture, %	%	96.53		
Dry Matter	%	3.47		
Nitrogen (TKN)	%	0.24	20.14	4.83
%P205	%	0.09	7.26	1.74
%K20	%	0.24	20.27	4.86

Estimated 1st Year Available Nutrients

	Injected or Incorporated		Surface Applied	
	as Liquid (lbs/1000 gal)	as Solid (lbs/ton)	as Liquid (lbs/1000 gal)	as Solid (lbs/ton)
Nitrogen (TKN)	11	3	4	1
%P205	6	1	6	1
%K20	18	4	18	4

Estimated \$ Value of Equivalent Commercial Fertilizer

Prices as of 09/02/2021

Nitrogen	\$0.61
P205	\$0.75
K20	\$0.54

	Injected or Incorporated		Surface Applied	
	As Liquid (per 1000 gal)	As Solid (per ton)	As Liquid (per 1000 gal)	As Solid (per ton)
Nitrogen (TKN)	\$6.76	\$1.62	\$2.46	\$0.59
%P205	\$4.36	\$1.05	\$4.36	\$1.05
%K20	\$9.85	\$2.36	\$9.85	\$2.36
Total \$ Value	\$20.97	\$5.03	\$16.67	\$4.00

This analysis is based solely on the sample provided.
Improper sampling techniques will result in misrepresentation of values.

Soil Test Results

BOB WOLF

AGROTECH CONSULTING LLC

320 MAPLE RIDGE DRIVE

HENDERSON MN 56044

Date Received: Jun 11 2020

Report Date:

work Order No: 202011-01176

Lab Num	Sample ID	Soil pH	Buff pH	OM %	B-I ppm	P ppm	Olsen P ppm	MehP ppm	Salts EC	K ppm	Zn ppm	Cu ppm	B ppm	S ppm	NO3 lbs	N-NH4 lbs	C1 lbs	BrayII ppm	CCE %
20-A73716	1	7.4	7.3	6.1	39	22				307									
20-A73717	2	7.7	7.4	5.5	2	26				278									
20-A73718	3	7.0	7.2	6.1	73	40				401									
20-A73719	4	7.0	7.1	4.5	126	74				424									
20-A73720	5	7.3	7.3	4.7	58	45				357									
20-A73721	6	7.2	7.2	6.9	40	24				332									
20-A73722	7	7.2	7.2	6.2	28	18				276									
20-A73723	8	7.6	7.4	6.6	13	29				273									
20-A73724	9	7.2	7.2	4.5	172	98				606									
20-A73725	10	6.6	7.0	6.1	99	53				321									
20-A73726	11	6.7	7.0	7.8	75	47				292									
20-A73727	12	6.8	7.0	5.5	62	40				210									
20-A73728	13	7.0	7.1	4.7	122	73				436									
20-A73729	14	7.4	7.3	4.0	59	33				299									
20-A73730	15	7.1	7.2	6.6	58	32				329									
20-A73731	16	7.5	7.3	6.5	26	14				197									
20-A73732	17	7.3	7.2	6.1	15	10				126									
20-A73733	18	7.0	7.1	4.8	89	47				167									
20-A73734	19	7.0	7.0	5.1	33	21				137									
20-A73735	20	7.0	7.1	7.2	83	45				420									
20-A73736	21	6.7	6.9	8.2	68	37				147									
20-A73737	22	6.8	7.0	4.4	59	33				165									
20-A73738	23	7.1	7.2	4.7	67	37				151									
20-A73739	24	7.0	7.1	4.6	51	29				111									
20-A73740	25	7.6	7.3	4.3	22	12				147									
20-A73741	26	7.1	7.1	8.2	30	15				153									
20-A73742	27	7.2	7.2	7.8	30	18				188									
20-A73743	28	7.2	7.2	4.3	53	30				135									
20-A73744	29	7.1	7.2	5.4	53	34				215									
20-A73745	30	7.2	7.2	4.8	20	16				128									
20-A73746	31	6.9	7.1	5.0	19	13				147									
20-A73747	32	6.6	6.9	5.7	49	28				162									
20-A73748	33	6.4	6.8	11.5	75	49				385									
20-A73749	34	7.3	7.3	4.0	51	29				184									
20-A73750	35	7.1	7.2	4.8	51	31				244									

Page:2														
Lab Num	Sample ID	Soil pH	Buff pH	OM %	B-I ppm	P ppm	MehP ppm	Salts EC	K ppm	Zn ppm	Cu ppm	B ppm	S ppm	NO3 lbs
												N-NH4 lbs	Cl lbs	BrayII CCE ppm %
20-A73751	36	6.9	7.1	6.9	41	25			227					
20-A73752	37	7.4	7.2	6.1	20	12			261					
20-A73753	38	6.9	7.1	9.2	210	89			786					
20-A73754	39	7.4	7.4	3.0	129	49			418					
20-A73755	40	7.0	7.2	9.7	38	25			405					
20-A73756	41	7.3	7.3	5.5	55	27			414					
20-A73757	42	7.1	7.2	5.2	147	87			754					
20-A73758	43	7.1	7.2	5.4	118	68			757					
20-A73759	44	7.3	7.3	8.3	82	51			408					
20-A73760	45	6.3	6.7	12.4	39	25			338					
20-A73761	46	6.4	6.8	9.9	62	29			357					
20-A73762	47	7.3	7.3	4.7	95	55			444					
20-A73763	48	7.5	7.4	3.4	80	54			572					
20-A73764	49	7.6	7.3	6.5	21	12			170					
20-A73765	50	7.1	7.1	5.0	40	25			140					
20-A73766	51	7.2	7.1	4.6	38	23			107					
20-A73767	52	7.2	7.2	4.7	58	37			193					
20-A73768	53	7.2	7.2	4.5	41	26			143					
20-A73769	54	7.0	7.1	4.6	47	28			148					
20-A73770	55	7.2	7.1	6.2	67	39			171					
20-A73771	56	7.2	7.2	5.3	34	22			170					
20-A73772	57	7.0	7.1	5.5	44	26			129					
20-A73773	58	7.0	7.2	4.1	53	28			126					
20-A73774	59	7.5	7.3	5.0	4	11			126					
20-A73775	60	7.4	7.3	6.8	33	19			156					
20-A73776	61	7.2	7.1	5.6	49	30			136					
20-A73777	62	7.1	7.1	5.3	58	36			139					
20-A73778	63	7.0	7.0	3.9	24	17			112					
20-A73779	64	7.2	7.2	5.0	35	23			132					

	#	OM	pH	P Olsen	K
W of Nelsons	38	9.2	6.9	89	786
	39	3	7.4	49	418
	40	9.7	7	25	405
	41	5.5	7.3	27	414
	42	5.2	7.1	87	754
	43	5.4	7.1	68	757
	44	8.3	7.3	51	408
	45	12.4	6.3	25	338
	46	9.9	6.4	29	357
	47	4.7	7.3	55	444
	48	3.4	7.5	54	572
Total		7.0	7.1	50.8	513.9
West of Nelsons Driveway W	52	4.7	7.2	37	193
	51	4.6	7.2	23	107
	64	5	7.2	23	132
	53	4.5	7.2	26	143
	63	3.9	7	17	112
	54	4.6	7	28	148
	50	5	7.1	25	140
	62	5.3	7.1	36	139
	55	6.2	7.2	39	171
	61	5.6	7.2	30	136
	60	6.8	7.4	19	156
	56	5.3	7.2	22	170
	49	6.5	7.6	12	170
	59	5	7.5	11	126
	57	5.5	7	26	129
	58	4.1	7	28	126
Total		5.2	7.2	25.1	143.6
E of Nelsons Driveway W	1	6.1	7.4	22	307
	7	6.2	7.2	18	276
	16	6.5	7.5	14	197
	6	6.9	7.2	24	332
	15	6.6	7.1	32	329
	2	5.5	7.7	26	278
	8	6.6	7.6	29	273
	18	4.8	7	47	167
	5	4.7	7.3	45	357
	14	4	7.4	33	299
	3	6.1	7	40	401
	9	4.5	7.2	98	606
	20	7.2	7	45	420
	4	4.5	7	74	424
	13	4.7	7	73	436
	10	6.1	6.6	53	321

	22	4.4	6.8	33	165
	11	7.8	6.7	47	292
	12	5.5	6.8	40	210
Total		5.7	7.1	41.7	320.5
E of Nelsons Driveway E	30	4.8	7.2	16	128
	31	5	6.9	13	147
	17	6.1	7.3	10	126
	29	5.4	7.1	34	215
	37	6.1	7.4	12	261
	28	4.3	7.2	30	135
	32	5.7	6.6	28	162
	19	5.1	7	21	137
	27	7.8	7.2	18	188
	36	6.9	6.9	25	227
	26	8.2	7.1	15	153
	33	11.5	6.4	49	385
	35	4.8	7.1	31	244
	21	8.2	6.7	37	147
	25	4.3	7.6	12	147
	34	4	7.3	29	184
	24	4.6	7	29	111
	23	4.7	7.1	37	151
Total		6.0	7.1	24.8	180.4
W of Nelsons Driveway E	59	7.4	7.1	18	183
	65	5.3	7.6	17	131
	54	6.5	7.2	24	170
	60	5.7	7.1	22	128
	66	5.9	7.3	15	147
	58	5.1	7.3	20	173
	64	5.6	7.7	24	141
	55	4.5	7.2	15	152
	61	6.1	7.4	13	119
	67	6.8	8	7	99
	57	10	7.6	22	197
	63	6.5	7.7	9	168
	56	5.3	7.3	12	114
	62	5.6	7	10	121
	68	4.3	7.6	12	201
Total		6.0	7.4	16.0	149.6
Peat & South of Barn	52	7.8	7.9	22	97
	50	6.8	7.9	12	137
	49	9.2	7.7	8	134
	51	6.5	7.3	28	233
	48	5.3	7	34	158
	46	6.9	6.8	14	135
	45	5.6	7.2	16	172
	47	5	7.2	10	138

	44	6.7	7.3	5	136
	42	5.9	7.2	33	171
	41	5.2	7.1	29	145
	43	4.9	7.3	28	239
	40	6.1	7.2	58	224
Total		6.3	7.3	22.8	163.0
E of Barn E	17	6.8	7.5	34	191
	18	7.4	7.6	24	228
	19	7.1	7.9	39	338
	20	7.2	8.1	12	106
	21	4.7	7.6	31	214
	8	6.3	7.7	9	137
	7	6.8	7.6	21	179
	6	6.8	7.9	19	204
	5	5.8	7.7	10	167
	4	7	7.6	14	152
	1	6.3	7.2	20	129
	3	6.9	7.6	22	217
	2	4.8	7.3	28	347
Total		6.5	7.6	21.8	200.7
E of Barn W	39	8.6	6.8	38	158
	34	4.7	7.2	37	127
	35	5.3	6.8	35	203
	36	5	7.2	33	186
	37	5.5	7.5	26	160
	38	5.9	7.9	24	212
	26	6.1	7.2	44	191
	25	7.4	6.9	32	254
	24	7.7	7.4	17	148
	23	5.6	7.9	20	140
	22	5.8	7.6	21	138
Total		6.1	7.3	29.7	174.3
Slattum	30	6.3	7.3	82	525
	31	5.5	7.3	81	506
	32	4.8	7.4	105	738
	33	6	7.4	129	999
	13	5.1	7.4	87	769
	29	4.1	7.4	42	316
	28	5.3	7.3	46	363
	27	5.9	7.3	71	485
	12	7.1	7.3	34	344
	14	5.9	7.2	32	233
	15	6.8	7.2	33	341
	16	5.3	7.2	42	305
	11	5.3	7.3	30	184
	10	5.5	7.3	47	230
	9	6.1	7.2	40	294

Total	5.7	7.3	60.1	442.1
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Soil Test Overview Map

Annexstad Dairy

Area: 70.85

Farm: Annexstad Dairy

Field: Bottoms lp5t



Location:

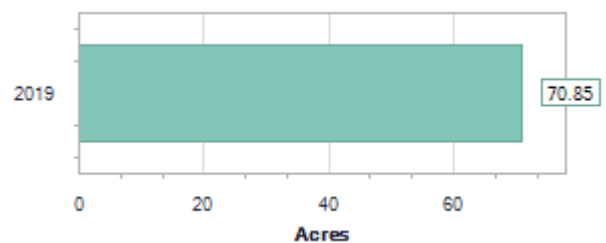
County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S5

Directions:

Acres sampled by year



Soil Test Sampling Map

Annexstad Dairy

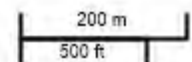
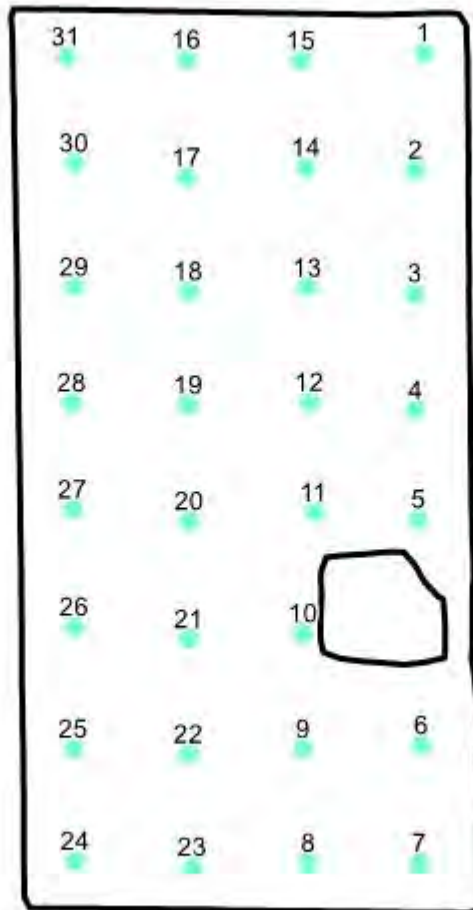
Farm: Annexstad Dairy

Field: Bottoms lp5t

Area: 70.85

Sample Date: Apr 24, 2019

Lab Name:



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S5

Summary Statistics

Layer Name: Soil Test 2019

Sample Count: 31

LayerID: 264004H9e9f

Notes:

Soil Test Map Report - OM

Annexstad Dairy

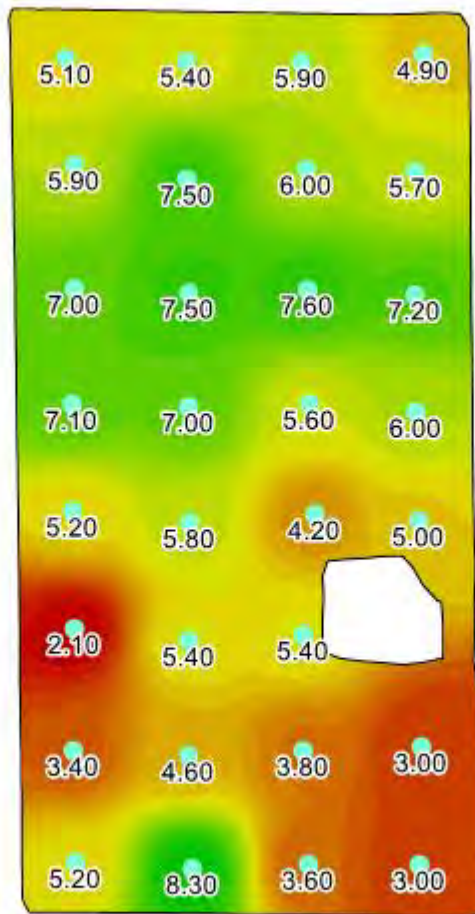
Farm: Annexstad Dairy

Field Bottoms 1p5t

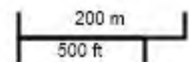
Area: 70.85

Sample Date Apr 24, 2019

Lab Name



-94.092481, 44.445782 Lake Prairie, Nicollet, Minnesota 111N 27W 5



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S5

Summary Statistics

Layer Name Soil Test 2019

Sample Count 31

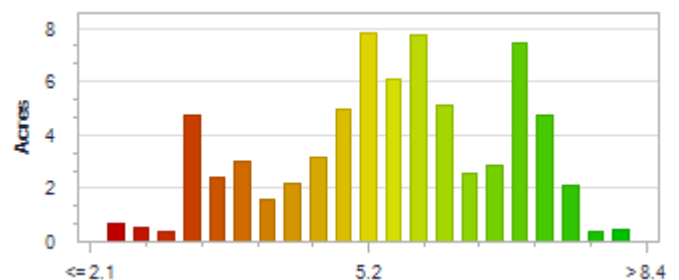
Minimum 2.1

Maximum 8.3

Average Rate 5.45

Weighted Average: 5.46

OM percent



Soil Test Map Report - P_Olsen

Annexstad Dairy

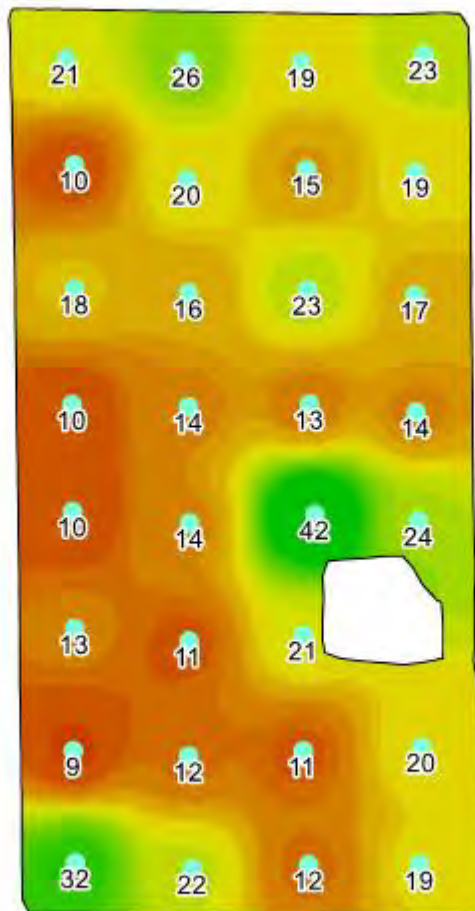
Farm: Annexstad Dairy

Field Bottoms lp5t

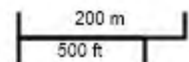
Area: 70.85

Sample Date Apr 24, 2019

Lab Name



-94.092481, 44.445782 Lake Prairie, Nicollet, Minnesota 111N 27W 5



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S5

Summary Statistics

Layer Name Soil Test 2019

Sample Count 31

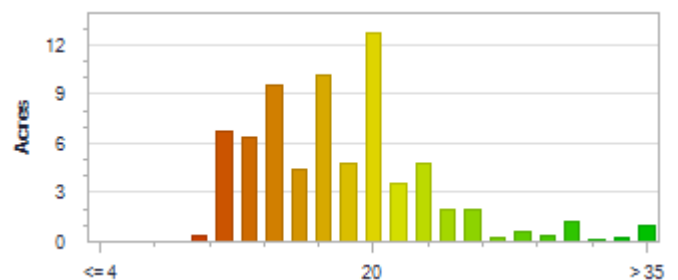
Minimum 9

Maximum 42

Average Rate 17.58

Weighted Average: 17.56

P_Olsen ppm





Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Bottoms lp5t

Area: 70.85

Sample Date: Apr 24, 2019

Lab Name:

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K
none	none	none	percent	ppm	ppm	ppm
1	7.4	7.3	4.90	23	50	309
2	7.5	7.4	5.70	19	6	231
3	7.4	7.3	7.20	17	33	257
4	7.5	7.3	6.00	14	30	273
5	7.3	7.3	5.00	24	46	541
6	5.7	6.7	3.00	20	36	168
7	7.0	7.2	3.00	19	32	135
8	7.8	7.4	3.60	12	28	161
9	7.8	7.4	3.80	11	4	225
10	7.1	7.2	5.40	21	33	232
11	7.0	7.1	4.20	42	66	225
12	7.2	7.2	5.60	13	20	173
13	7.0	7.1	7.60	23	34	263
14	7.6	7.3	6.00	15	29	230
15	7.6	7.3	5.90	19	42	279
16	7.6	7.3	5.40	26	53	306
17	7.1	7.1	7.50	20	31	274
18	7.5	7.3	7.50	16	34	268
19	7.7	7.4	7.00	14	3	263
20	7.5	7.3	5.80	14	27	194
21	7.7	7.4	5.40	11	24	182
22	7.8	7.4	4.60	12	7	164
23	7.6	7.3	8.30	22	42	302
24	7.2	7.2	5.20	32	45	215
25	7.9	7.4	3.40	9	16	160
26	6.5	7.1	2.10	13	21	130
27	7.4	7.3	5.20	10	21	198
28	7.6	7.3	7.10	10	4	185
29	7.6	7.3	7.00	18	14	242
30	7.6	7.3	5.90	10	22	177
31	7.5	7.3	5.10	21	38	195
Average:	7.4	7.3	5.46	18	29	231

Soil Test Overview Map

Annexstad Dairy

Area: 147.76

Farm: Annexstad Dairy

Field: Erickson Ip4x



Location:

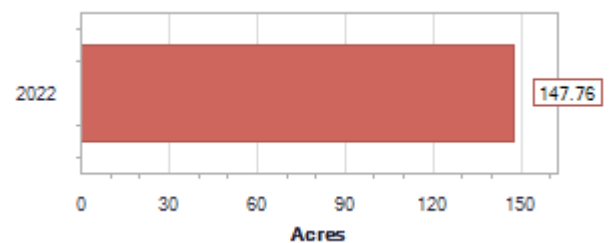
County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S4

Directions:

Acres sampled by year



Soil Test Sampling Map

Annexstad Dairy

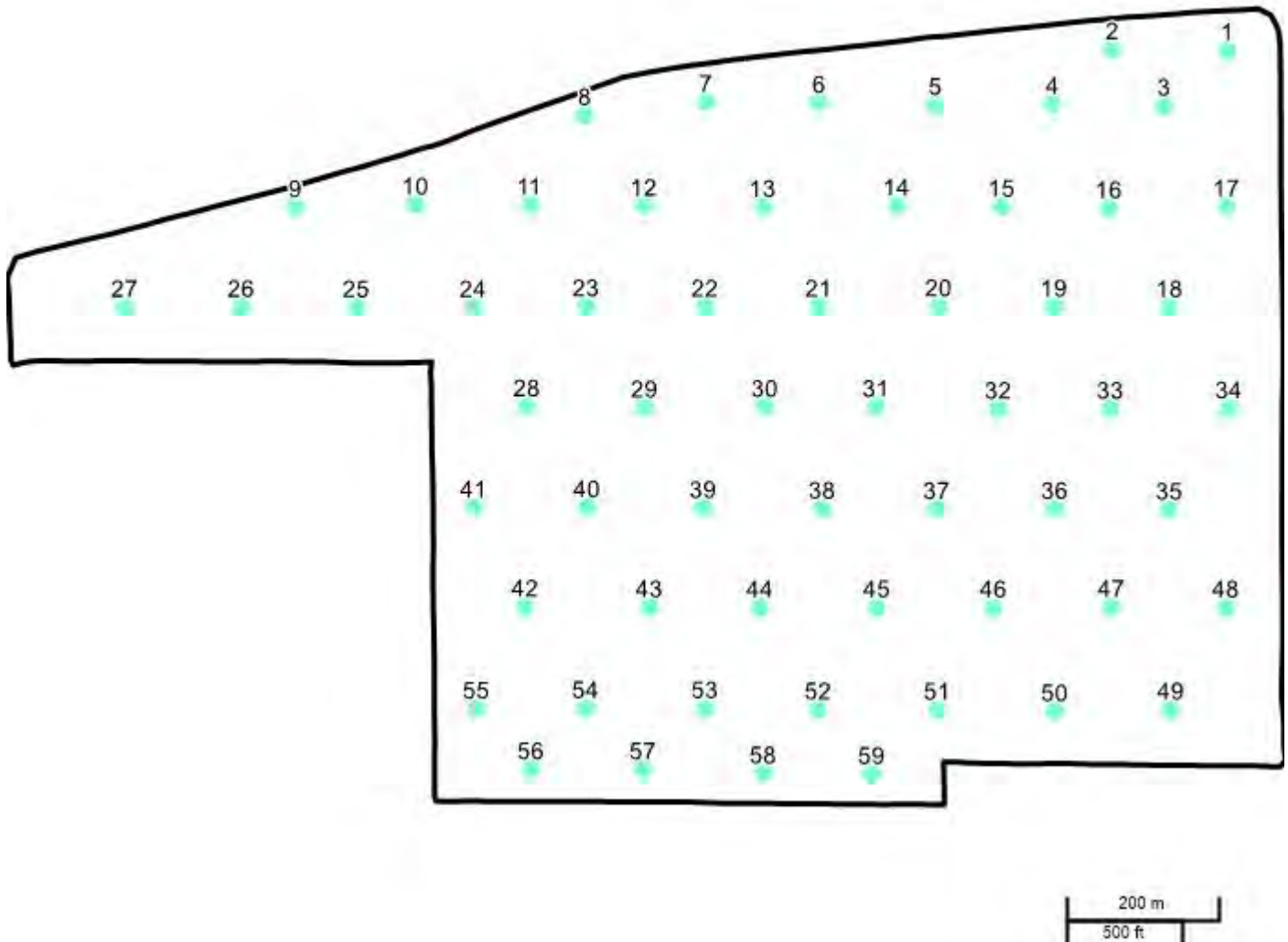
Farm: Annexstad Dairy

Field: Erickson Ip4x

Area: 147.76

Sample Date: Mar 29, 2022

Lab Name: MVTL



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S4

Summary Statistics

Layer Name: Ip4xS22

Sample Count: 59

LayerID: 333130Hf975

Notes:

Soil Test Map Report - OM

Annexstad Dairy

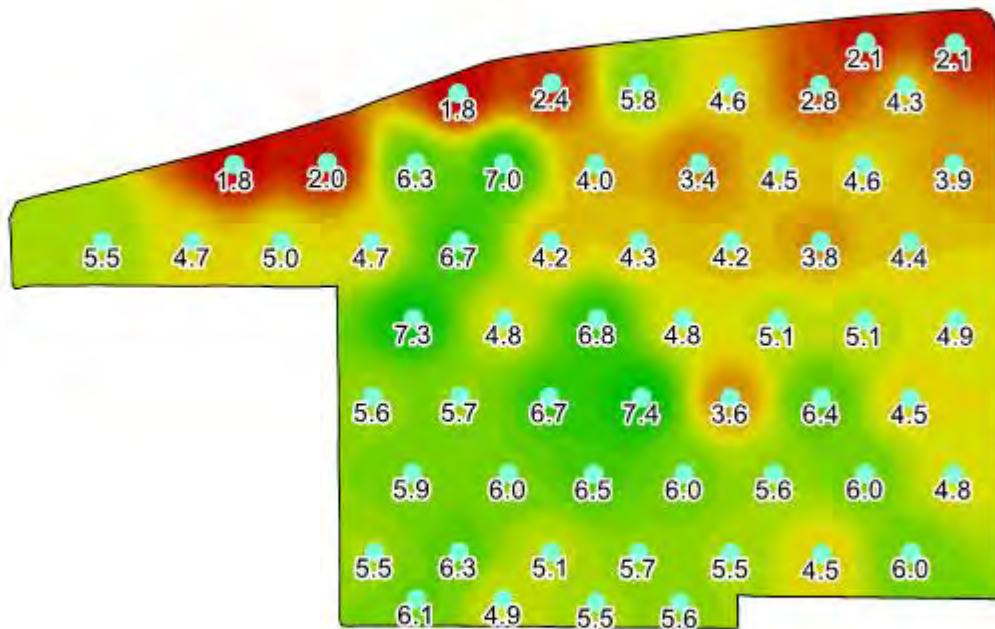
Farm: Annexstad Dairy

Field Erickson Ip4x

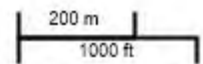
Area: 147.76

Sample Date Mar 29, 2022

Lab Name MVTL



-94.087522, 44.456434 Lake Prairie, Nicollet, Minnesota 111N 27W 4



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S4

Summary Statistics

Layer Name Ip4xS22

Sample Count 59

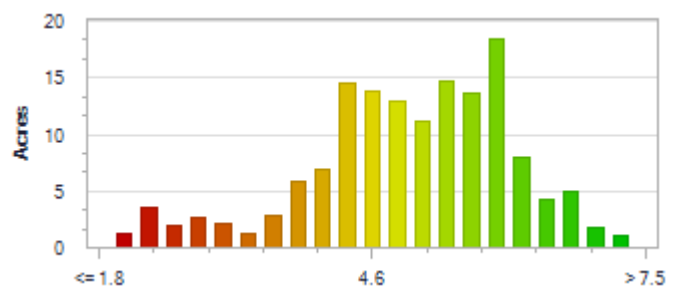
Minimum 1.8

Maximum 7.4

Average Rate 4.97

Weighted Average: 4.97

OM percent





Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Erickson lp4x

Area: 147.76

Sample Date: Mar 29, 2022

Lab Name: MVTL

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K	Zn
none	none	none	percent	ppm	ppm	ppm	ppm
1	7.9	7.6	2.1	18	64	165	2.90
2	8.0	7.6	2.1	21	43	198	3.00
3	6.8	7.1	4.3	47	84	152	3.00
4	7.7	7.5	2.8	55	115	165	2.60
5	7.1	7.3	4.6	31	70	146	2.50
6	7.3	7.3	5.8	27	60	163	2.70
7	7.6	7.5	2.4	26	43	179	3.40
8	8.0	7.6	1.8	12	8	200	2.90
9	7.8	7.6	1.8	10	3	189	3.10
10	7.8	7.6	2.0	22	6	204	3.30
11	7.4	7.3	6.3	20	44	172	3.20
12	7.6	7.4	7.0	14	36	136	2.20
13	6.4	6.9	4.0	37	59	127	2.20
14	7.4	7.4	3.4	40	87	166	2.50
15	5.9	6.6	4.5	41	68	126	2.40
16	6.3	6.8	4.6	41	80	148	2.60
17	6.2	6.9	3.9	34	60	136	2.10
18	6.7	7.0	4.4	56	84	140	2.50
19	6.6	7.0	3.8	34	58	105	1.80
20	6.8	7.0	4.2	43	72	118	1.70
21	6.1	6.7	4.3	48	72	108	1.60
22	6.5	7.0	4.2	51	83	159	2.40
23	7.4	7.4	6.7	22	72	155	2.20
24	7.7	7.5	4.7	7	6	110	1.20
25	7.6	7.4	5.0	13	36	135	1.60
26	7.7	7.5	4.7	10	17	98	1.60
27	7.6	7.4	5.5	12	2	114	2.20
28	7.6	7.4	7.3	14	39	149	2.00
29	6.8	7.2	4.8	13	20	140	2.00
30	6.8	7.1	6.8	44	58	197	3.10
31	6.1	6.8	4.8	46	68	169	2.90
32	5.9	6.6	5.1	45	71	142	2.50
33	6.0	6.7	5.1	55	92	215	3.30
34	7.2	7.2	4.9	70	102	211	3.30
35	6.6	7.0	4.5	50	90	218	3.30
36	7.6	7.4	6.4	19	51	149	2.70
37	6.5	7.0	3.6	23	29	127	1.90
38	7.3	7.3	7.4	22	47	213	2.80
39	6.9	7.1	6.7	15	27	164	2.40
40	7.7	7.4	5.7	8	21	141	1.80
41	6.4	6.9	5.6	28	40	141	2.10
42	7.0	7.2	5.9	29	48	232	2.60
43	6.8	7.1	6.0	32	61	351	3.10



Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Erickson lp4x

Area: 147.76

Sample Date: Mar 29, 2022

Lab Name: MVTL

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K	Zn
none	none	none	percent	ppm	ppm	ppm	ppm
44	6.7	7.0	6.5	28	49	228	2.80
45	6.6	7.0	6.0	34	50	217	3.00
46	7.3	7.3	5.6	23	51	182	3.20
47	7.6	7.5	6.0	15	35	253	2.10
48	6.4	6.8	4.8	43	60	218	2.60
49	7.7	7.4	6.0	29	45	225	2.40
50	7.7	7.5	4.5	22	51	343	2.60
51	6.9	7.1	5.5	34	61	339	2.20
52	6.4	6.7	5.7	33	41	196	2.30
53	6.2	6.8	5.1	37	55	190	2.40
54	7.7	7.5	6.3	18	38	265	1.90
55	6.7	7.1	5.5	55	89	242	3.40
56	7.7	7.4	6.1	12	24	231	2.10
57	6.3	6.8	4.9	34	50	223	2.00
58	6.3	6.7	5.5	25	41	191	2.30
59	6.1	6.6	5.6	43	57	201	2.50
Average:	7.0	7.2	4.9	30	52	182	2.49

Soil Test Overview Map

Annexstad Dairy

Area: 325.36

Farm: Annexstad Dairy

Field: Home Nelson lp27a



Location:

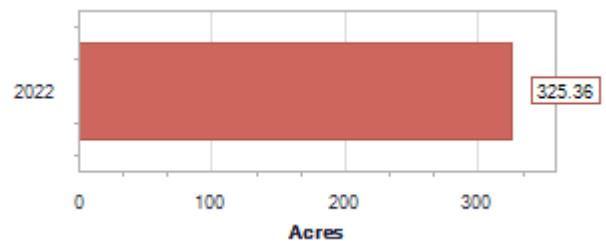
County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S27

Directions:

Acres sampled by year



Soil Test Sampling Map

Annexstad Dairy

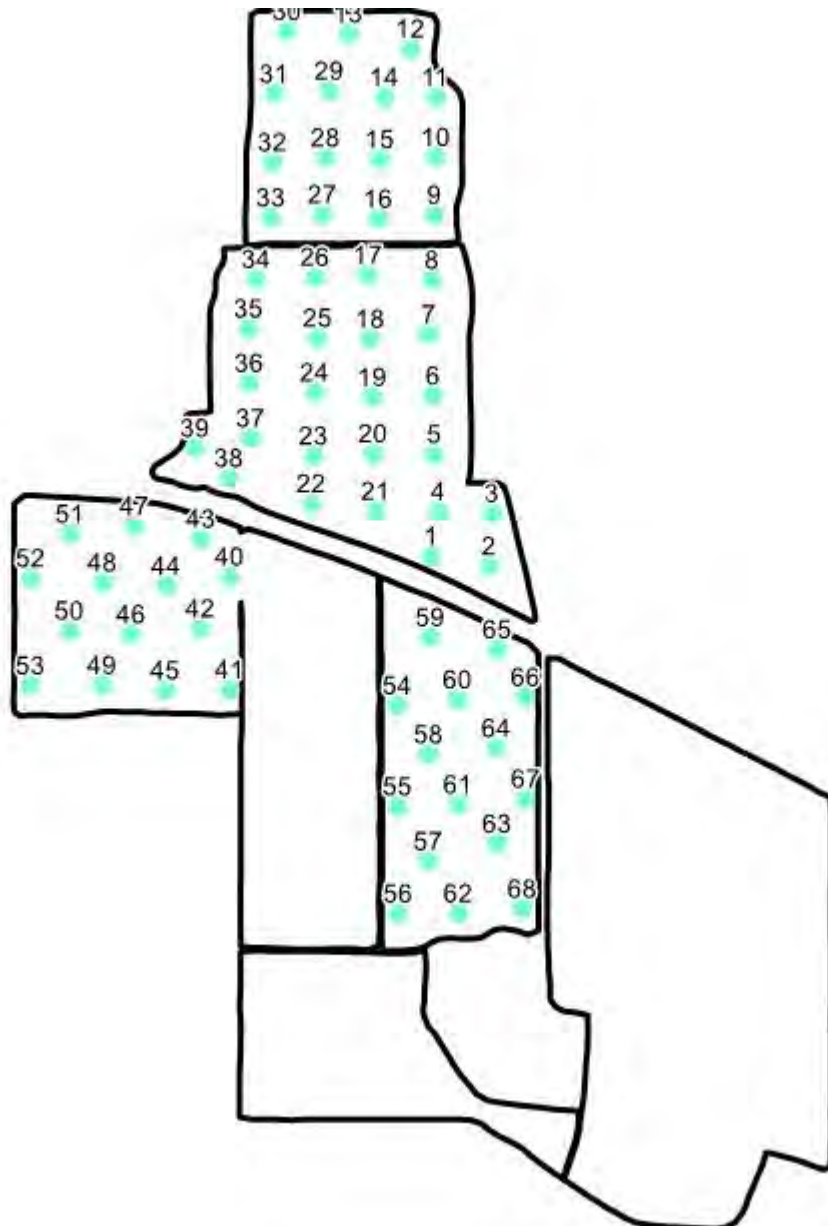
Farm: Annexstad Dairy

Field: Home Nelson lp27a

Area: 325.36

Sample Date: Feb 18, 2022

Lab Name: MVTL



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S27

Summary Statistics

Layer Name: lp27aS22

Sample Count: 68

LayerID: 327340H1f75

Notes:

Soil Test Map Report - OM

Annexstad Dairy

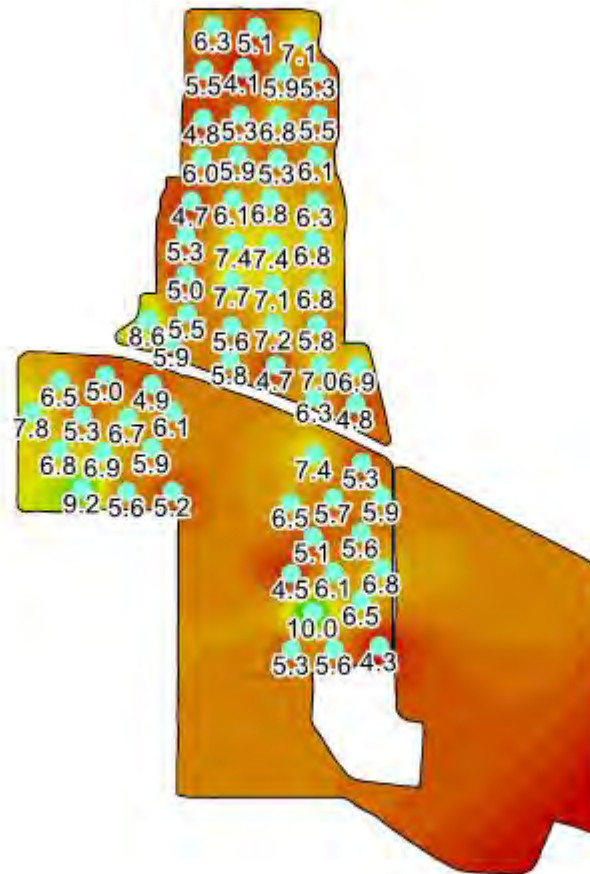
Farm: Annexstad Dairy

Field Home Nelson lp27a

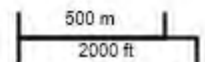
Area: 325.36

Sample Date Feb 18, 2022

Lab Name MVTL



-94.065705, 44.393098 Lake Prairie, Nicollet, Minnesota 111N 27W 27



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S27

Summary Statistics

Layer Name lp27aS22

Sample Count 68

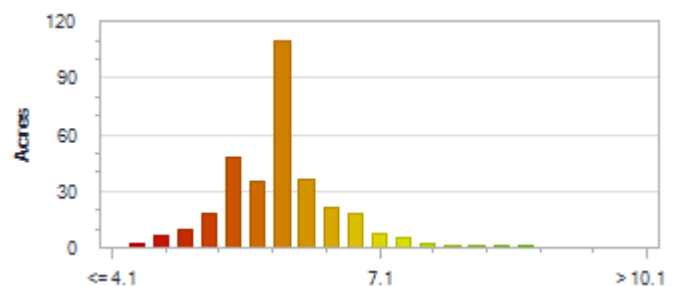
Minimum 4.1

Maximum 10

Average Rate 5.91

Weighted Average: 5.91

OM percent



Soil Test Map Report - P_Olsen

Annexstad Dairy

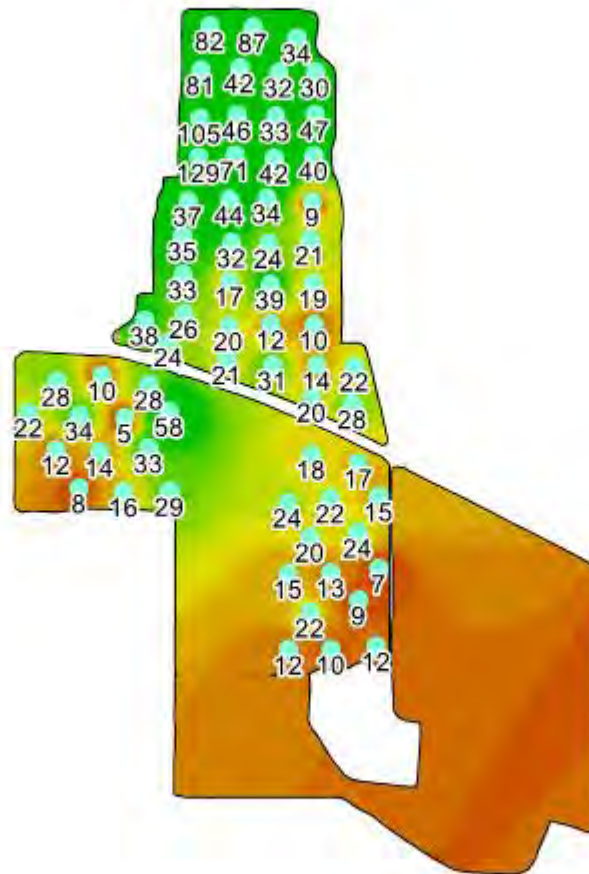
Farm: Annexstad Dairy

Field Home Nelson lp27a

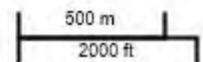
Area: 325.36

Sample Date Feb 18, 2022

Lab Name MVTL



-94.065705, 44.393098 Lake Prairie, Nicollet, Minnesota 111N 27W 27



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S27

Summary Statistics

Layer Name lp27aS22

Sample Count 68

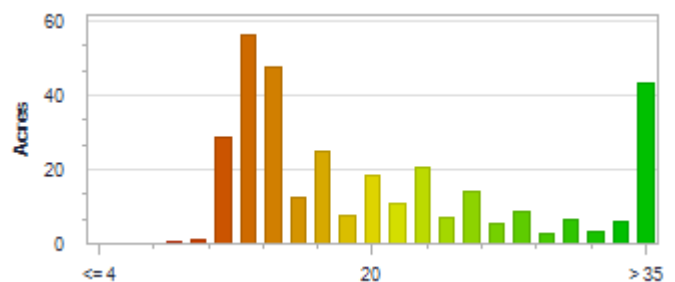
Minimum 5

Maximum 129

Average Rate 22.49

Weighted Average: 22.47

P_Olsen ppm





Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Home Nelson Ip27a

Area: 325.36

Sample Date: Feb 18, 2022

Lab Name: MVTL

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K	Zn
none	none	none	percent	ppm	ppm	ppm	ppm
1	7.2	7.2	6.3	20	33	129	2.80
2	7.3	7.4	4.8	28	50	347	3.70
3	7.6	7.4	6.9	22	34	217	3.40
4	7.6	7.4	7.0	14	21	152	3.10
5	7.7	7.6	5.8	10	3	167	2.20
6	7.9	7.6	6.8	19	2	204	2.20
7	7.6	7.4	6.8	21	30	179	2.80
8	7.7	7.5	6.3	9	22	137	3.30
9	7.2	7.4	6.1	40	64	294	4.20
10	7.3	7.3	5.5	47	76	230	4.30
11	7.3	7.3	5.3	30	53	184	3.60
12	7.3	7.4	7.1	34	58	344	4.20
13	7.4	7.4	5.1	87	146	769	5.10
14	7.2	7.3	5.9	32	45	233	3.20
15	7.2	7.4	6.8	33	60	341	3.90
16	7.2	7.4	5.3	42	68	305	4.10
17	7.5	7.4	6.8	34	49	191	3.70
18	7.6	7.4	7.4	24	48	228	2.50
19	7.9	7.5	7.1	39	13	338	3.00
20	8.1	7.5	7.2	12	2	106	1.70
21	7.6	7.4	4.7	31	40	214	2.60
22	7.6	7.4	5.8	21	33	138	2.20
23	7.9	7.4	5.6	20	30	140	2.00
24	7.4	7.4	7.7	17	32	148	2.70
25	6.9	7.2	7.4	32	57	254	3.70
26	7.2	7.3	6.1	44	75	191	4.20
27	7.3	7.4	5.9	71	118	485	5.80
28	7.3	7.3	5.3	46	79	363	4.40
29	7.4	7.4	4.1	42	63	316	3.60
30	7.3	7.3	6.3	82	134	525	5.80
31	7.3	7.3	5.5	81	131	506	5.70
32	7.4	7.5	4.8	105	161	738	6.00
33	7.4	7.4	6.0	129	216	999	8.50
34	7.2	7.3	4.7	37	60	127	3.90
35	6.8	7.1	5.3	35	64	203	3.40
36	7.2	7.3	5.0	33	57	186	3.00
37	7.5	7.4	5.5	26	40	160	2.70
38	7.9	7.5	5.9	24	9	212	2.00
39	6.8	7.1	8.6	38	62	158	4.70
40	7.2	7.3	6.1	58	94	224	6.00
41	7.1	7.2	5.2	29	48	145	3.60
42	7.2	7.2	5.9	33	53	171	4.10
43	7.3	7.4	4.9	28	48	239	4.10



Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Home Nelson Ip27a

Area: 325.36

Sample Date: Feb 18, 2022

Lab Name: MVTL

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K	Zn
none	none	none	percent	ppm	ppm	ppm	ppm
44	7.3	7.3	6.7	5	14	136	3.00
45	7.2	7.3	5.6	16	22	172	3.40
46	6.8	7.0	6.9	14	24	135	3.40
47	7.2	7.2	5.0	10	17	138	2.90
48	7.0	7.2	5.3	34	57	158	4.30
49	7.7	7.5	9.2	8	12	134	3.30
50	7.9	7.6	6.8	12	2	137	2.80
51	7.3	7.3	6.5	28	50	233	4.70
52	7.9	7.6	7.8	22	2	97	4.00
53							
54	7.2	7.3	6.5	24	34	170	4.00
55	7.2	7.3	4.5	15	22	152	2.30
56	7.3	7.3	5.3	12	17	114	2.70
57	7.6	7.4	10.0	22	39	197	3.90
58	7.3	7.3	5.1	20	26	173	2.80
59	7.1	7.2	7.4	18	24	183	3.70
60	7.1	7.1	5.7	22	35	128	2.70
61	7.4	7.4	6.1	13	15	119	2.40
62	7.0	7.1	5.6	10	14	121	2.20
63	7.7	7.5	6.5	9	6	168	2.60
64	7.7	7.4	5.6	24	38	141	3.00
65	7.6	7.4	5.3	17	29	131	2.80
66	7.3	7.3	5.9	15	21	147	3.20
67	8.0	7.5	6.8	7	2	99	2.60
68	7.6	7.5	4.3	12	17	201	2.30
Average:	7.4	7.4	6.1	31	47	232	3.53

Soil Test Overview Map

Annexstad Dairy

Area: 75.72

Farm: Annexstad Dairy

Field: Prairie lp15t



Location:

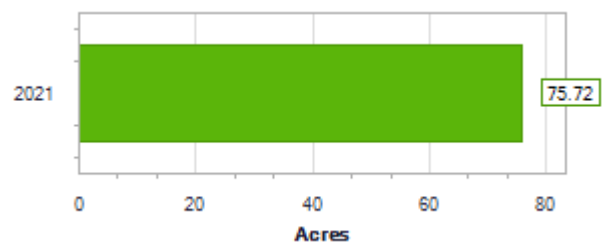
County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S15

Directions:

Acres sampled by year





Soil Test Sampling Map

Annexstad Dairy

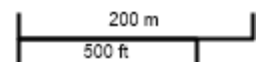
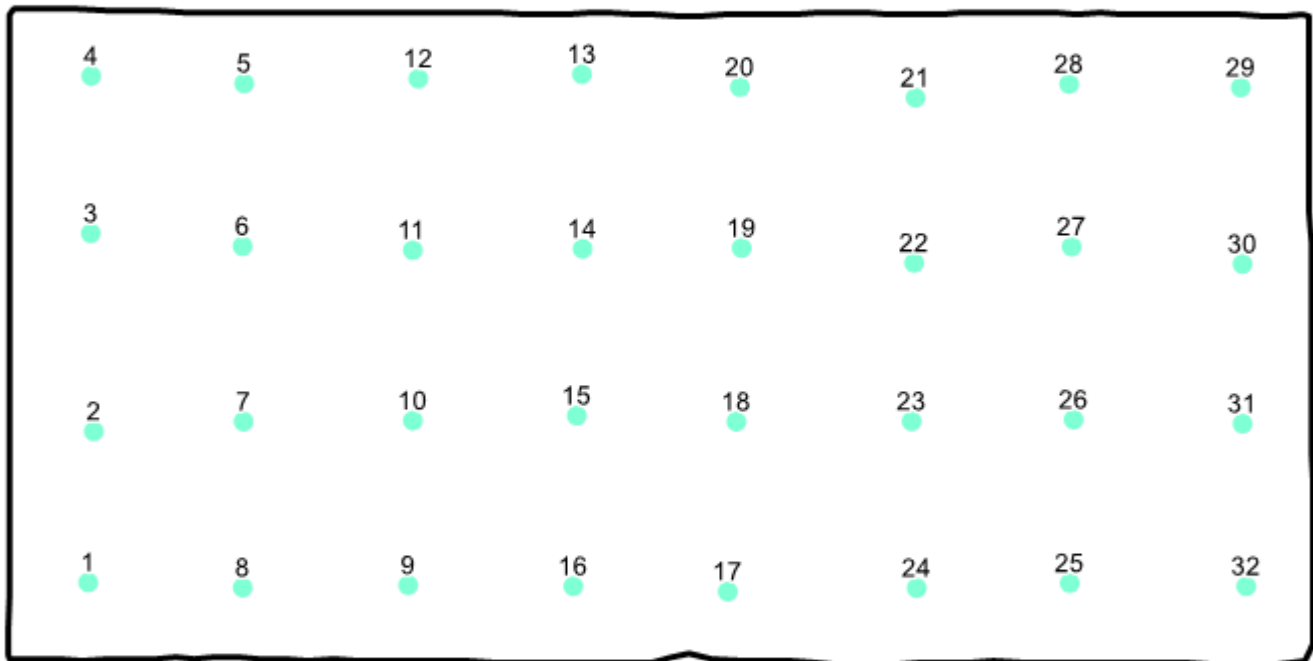
Farm: Annexstad Dairy

Field: Prairie lp15t

Area: 75.72

Sample Date: Mar 29, 2021

Lab Name: MVTL



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S15

Summary Statistics

Layer Name: lp15tS21

Sample Count: 32

LayerID: 272926H894a

Notes:

Soil Test Map Report - OM

Annexstad Dairy

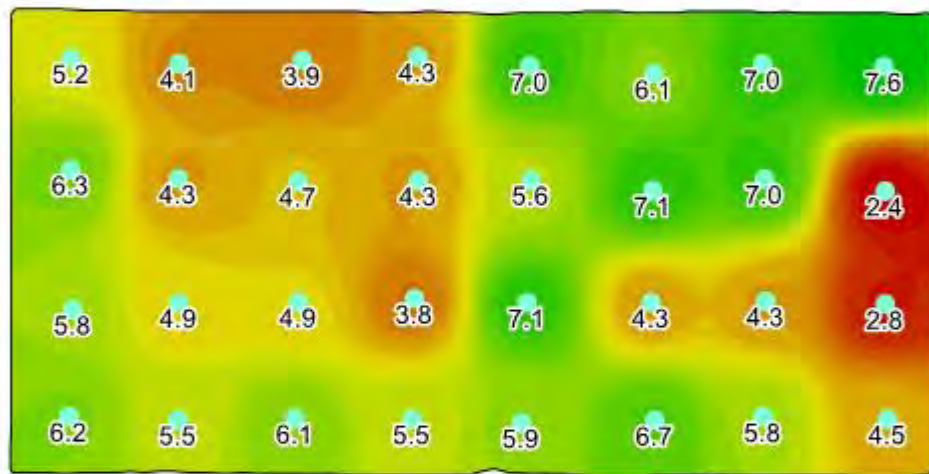
Farm: Annexstad Dairy

Field Prairie lp15t

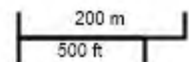
Area: 75.72

Sample Date Mar 29, 2021

Lab Name MVTL



-94.054655, 44.415135 Lake Prairie, Nicollet, Minnesota 111N 27W 15



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S15

Summary Statistics

Layer Name lp15tS21

Sample Count 32

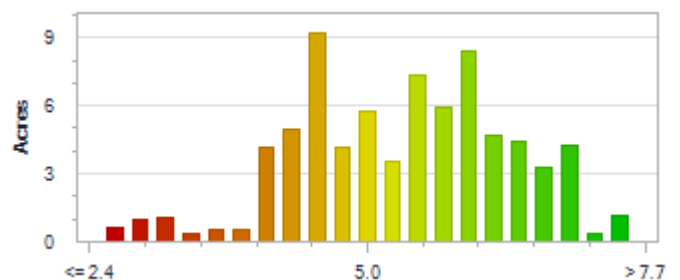
Minimum 2.4

Maximum 7.6

Average Rate 5.35

Weighted Average: 5.35

OM percent



Soil Test Map Report - P_Olsen

Annexstad Dairy

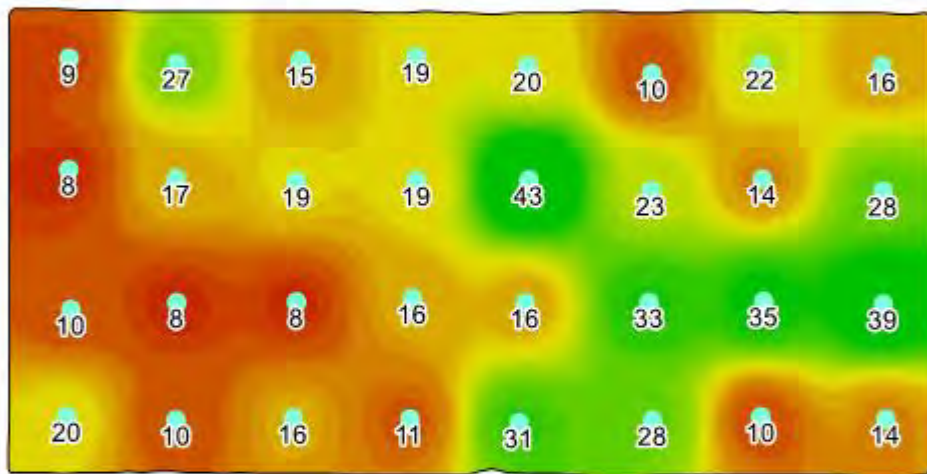
Farm: Annexstad Dairy

Field Prairie lp15t

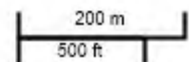
Area: 75.72

Sample Date Mar 29, 2021

Lab Name MVTL



-94.054655, 44.415135 Lake Prairie, Nicollet, Minnesota 111N 27W 15



Location:

County:

Township: Lake Prairie

Twp Rng Sec: T111N R27W S15

Summary Statistics

Layer Name lp15tS21

Sample Count 32

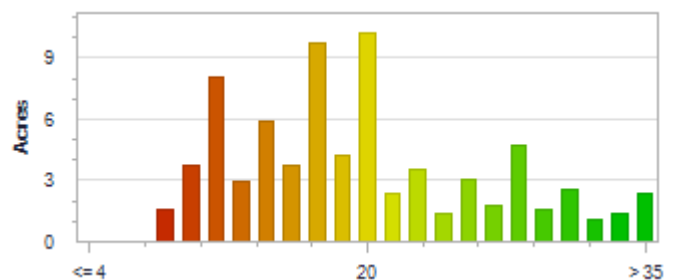
Minimum 8

Maximum 43

Average Rate 19.19

Weighted Average: 19.21

P_Olsen ppm





Soil Test Summary

Annexstad Dairy

Farm: Annexstad Dairy

Field: Prairie lp15t

Area: 75.72

Sample Date: Mar 29, 2021

Lab Name: MVTL

SampleID	pH	BpH	OM	P_Olsen	P_Bray	K
none	none	none	percent	ppm	ppm	ppm
1	7.6	7.3	6.2	20	12	397
2	7.5	7.4	5.8	10	5	315
3	7.5	7.3	6.3	8	15	263
4	7.5	7.3	5.2	9	16	299
5	7.3	7.2	4.1	27	41	288
6	7.5	7.3	4.3	17	23	232
7	7.7	7.4	4.9	8	14	308
8	7.8	7.5	5.5	10	2	286
9	7.3	7.3	6.1	16	22	218
10	7.6	7.3	4.9	8	8	218
11	7.3	7.2	4.7	19	28	248
12	7.3	7.3	3.9	15	21	202
13	7.6	7.3	4.3	19	24	283
14	7.3	7.3	4.3	19	25	209
15	7.4	7.2	3.8	16	21	192
16	7.5	7.3	5.5	11	13	209
17	7.3	7.2	5.9	31	44	290
18	7.6	7.4	7.1	16	30	278
19	7.2	7.2	5.6	43	68	382
20	7.6	7.4	7.0	20	38	362
21	7.7	7.4	6.1	10	11	362
22	7.4	7.3	7.1	23	38	400
23	7.3	7.2	4.3	33	50	358
24	7.5	7.3	6.7	28	42	413
25	7.8	7.4	5.8	10	16	314
26	7.2	7.2	4.3	35	49	368
27	7.7	7.4	7.0	14	14	360
28	7.5	7.3	7.0	22	31	374
29	7.7	7.4	7.6	16	7	382
30	7.5	7.4	2.4	28	49	350
31	7.4	7.3	2.8	39	62	437
32	7.7	7.4	4.5	14	32	341
Average:	7.5	7.3	5.3	19	27	311

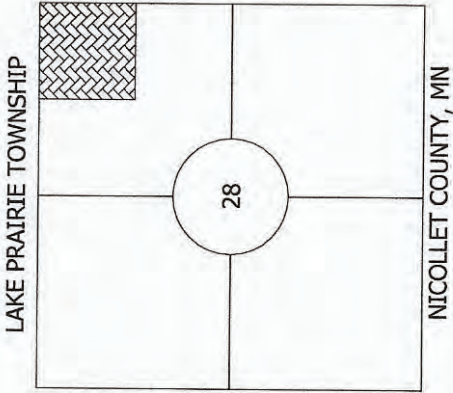
**Plans and Specs for Construction,
Modification or Expansion**

ANNEXSTEAD DAIRY FARMS INC



know what's below.
Call before you dig.

State Law and NRCS policy require that the excavator contact Gopher State One-Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work.



WASTE STORAGE FACILITY (313)
ROOFS AND COVERS (367)
POND SEALING OR LINING, COMPACTED SOIL TREATMENT (520)

AERIAL MAP



DRAWING INDEX

1. C-1 COVER SHEET
2. EX-1 EXISTING SITE LAYOUT
3. P-1 PROPOSED SITE LAYOUT
4. P-2 PROPOSED SITE LAYOUT - CUT/FILL
5. P-3 PROPOSED SITE LAYOUT - STAKEOUT POINTS
6. D-1 BASIN CROSS SECTIONS
7. D-2 SAND LANE CROSS SECTIONS
8. D-3 BARN CROSS SECTIONS
9. D-4 AGITATION RAMP DETAILS
10. D-5 TILE TRENCH DETAILS
11. D-6 SAFETY FENCE DETAILS
12. D-7 THRUST BLOCK DETAILS
13. D-8 CONCRETE DETAILS
14. G-1 GEOTECHNICAL NOTES
15. G-2 GEOTECHNICAL NOTES

***DRAWINGS TO BE USED IN ACCORDANCE
WITH THE ASSOCIATED CONSTRUCTION
SPECIFICATIONS**

PROJECT INFORMATION

PROJECT LOCATION:

FROM NORSELAND MN, EAST ON
HIGHWAY 22 2.5 MILES, NORTH ON 403RD
AVE, SITE ON EAST SIDE OF THE ROAD.

ENGINEER:

CENTROL CROP CONSULTING
ATTN: ELLIOT DE JONGH P.E.
351 BURLINGTON STREET
MARSHALL, MN 56164
970-215-8892



Minnesota NRCS Engineering Job Class: VI

To the best of my professional knowledge, judgement, and belief, the design, construction drawings, and specifications meet applicable NRCS standards and specifications.

ELLIOT DE JONGH

T.S.P. NUMBER: 14-9665

DATE: 1-11-23

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

ELLIOT DE JONGH

DATE: 1-11-23

THIS CERTIFICATION COVERS SHEETS #1-#15

LICENSE NUMBER: 52553
LICENSE RENEWAL DATE IS JUNE 30, 2024

ANNEXSTEAD DAIRY FARMS INC
COVER SHEET
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 11N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Sheet:

C-1

1 of 15

File Name:
ANNEXSTEAD_P-1

CENTROL
CROP CONSULTING
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021

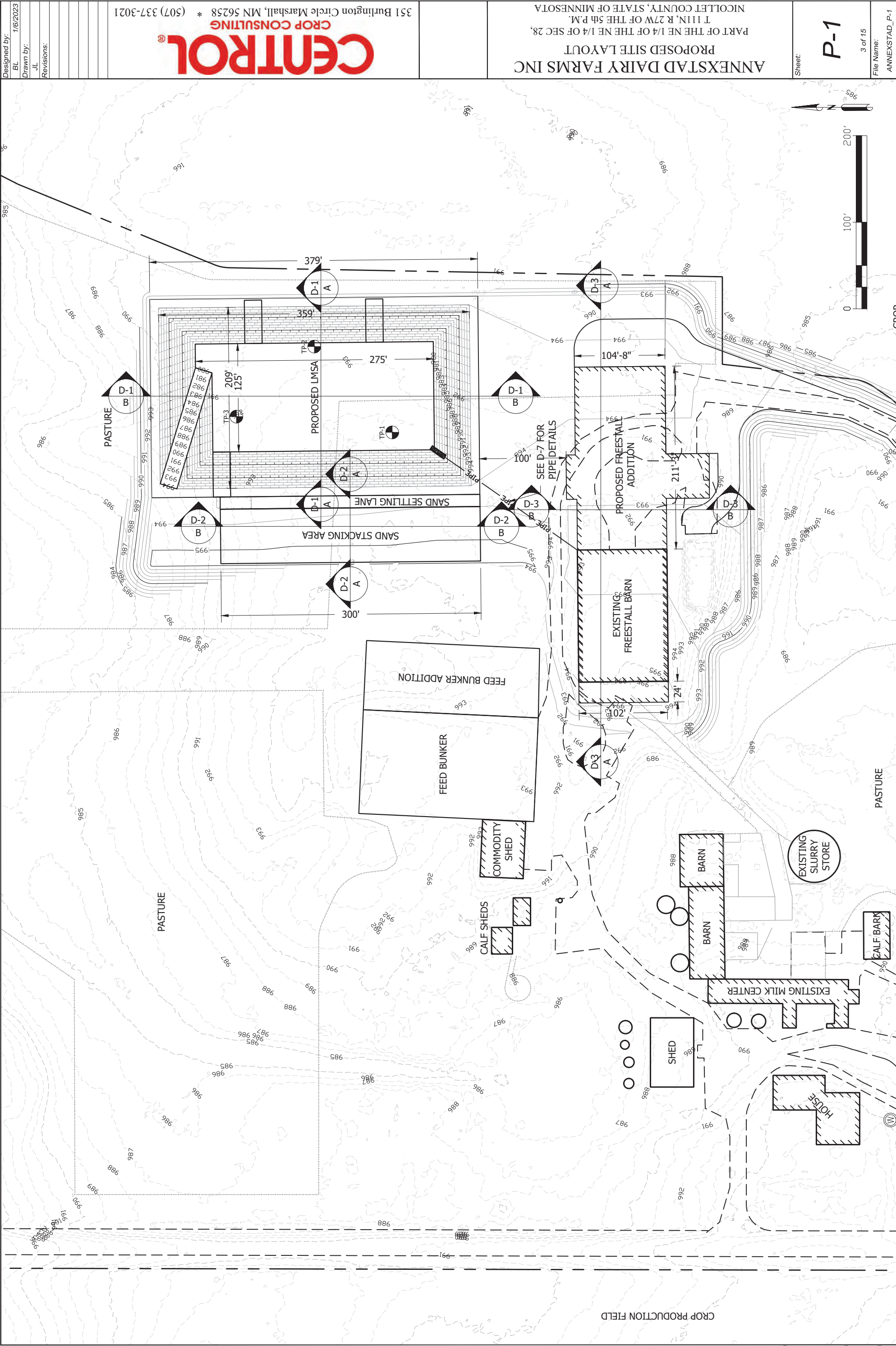
Designed by:
BL 1/6/2023
Drawn by:
JL
Revisions:



ANNEXSTAD DAIRY FARMS INC
EXISTING SITE LAYOUT
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		



ANNEXSTAD DAIRY FARMS INC
PROPOSED SITE LAYOUT
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111 N, R 27 W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

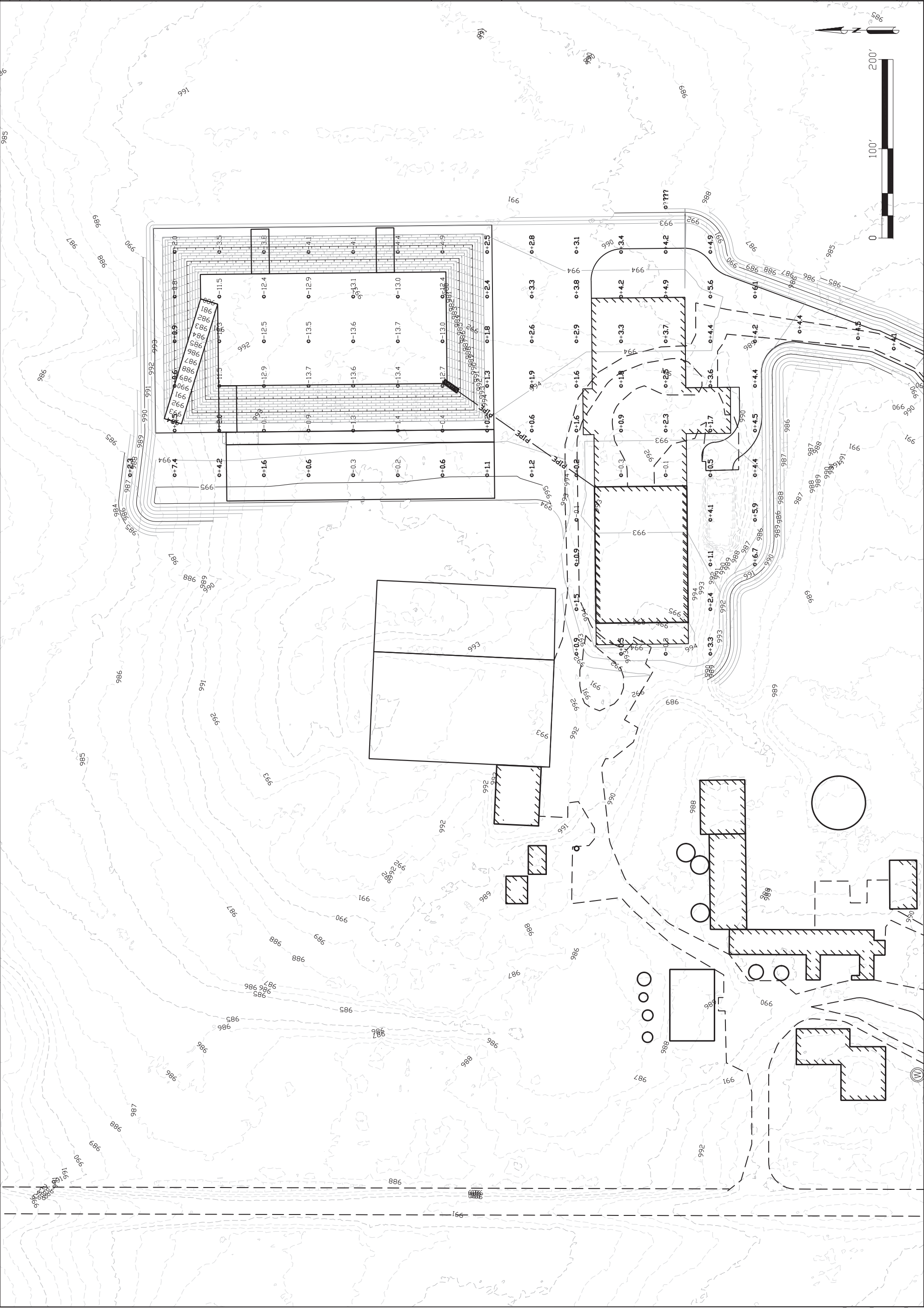
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021
CENTROL
CROP CONSULTING

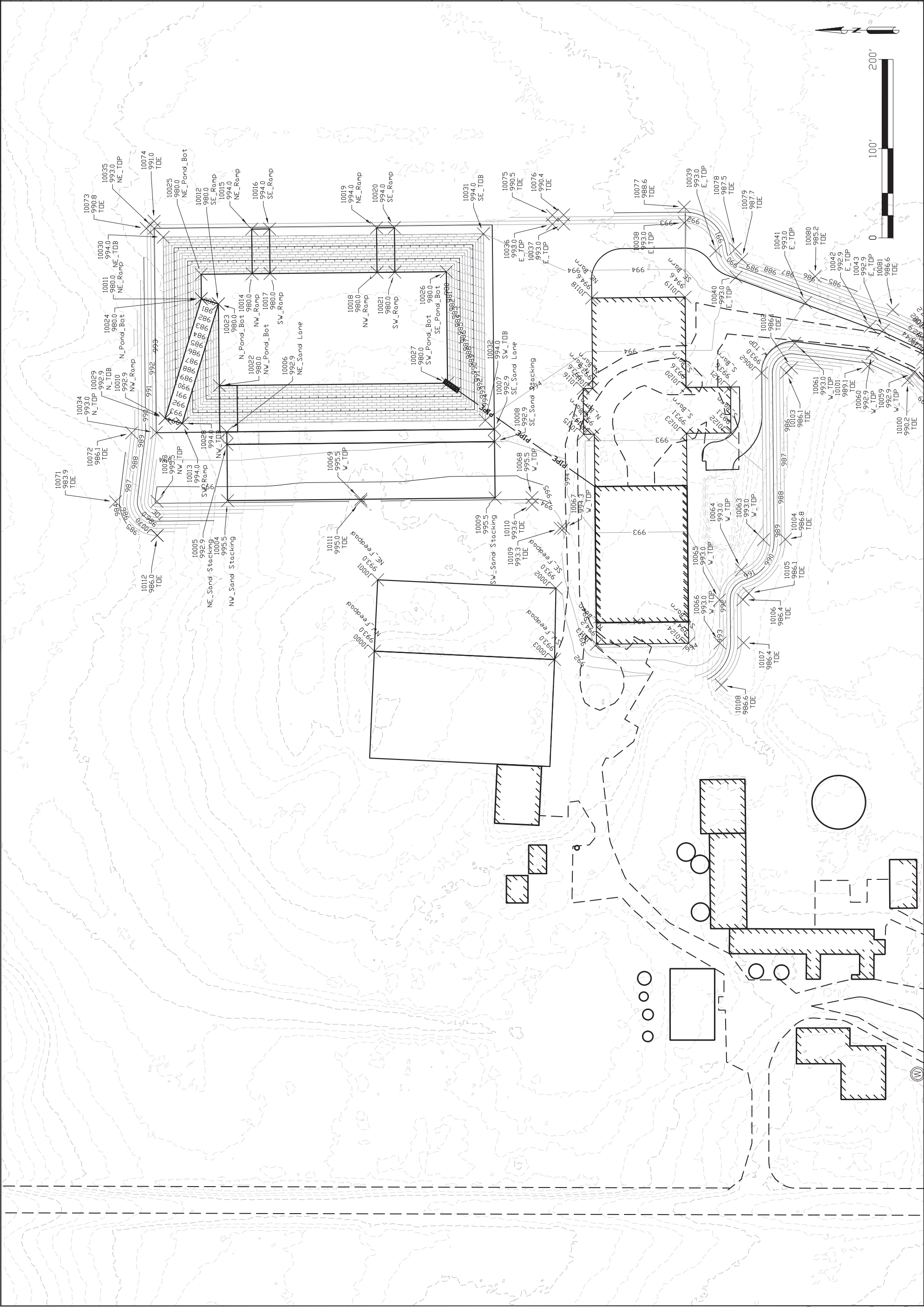
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Drawn by:	JL	
Revisions:		

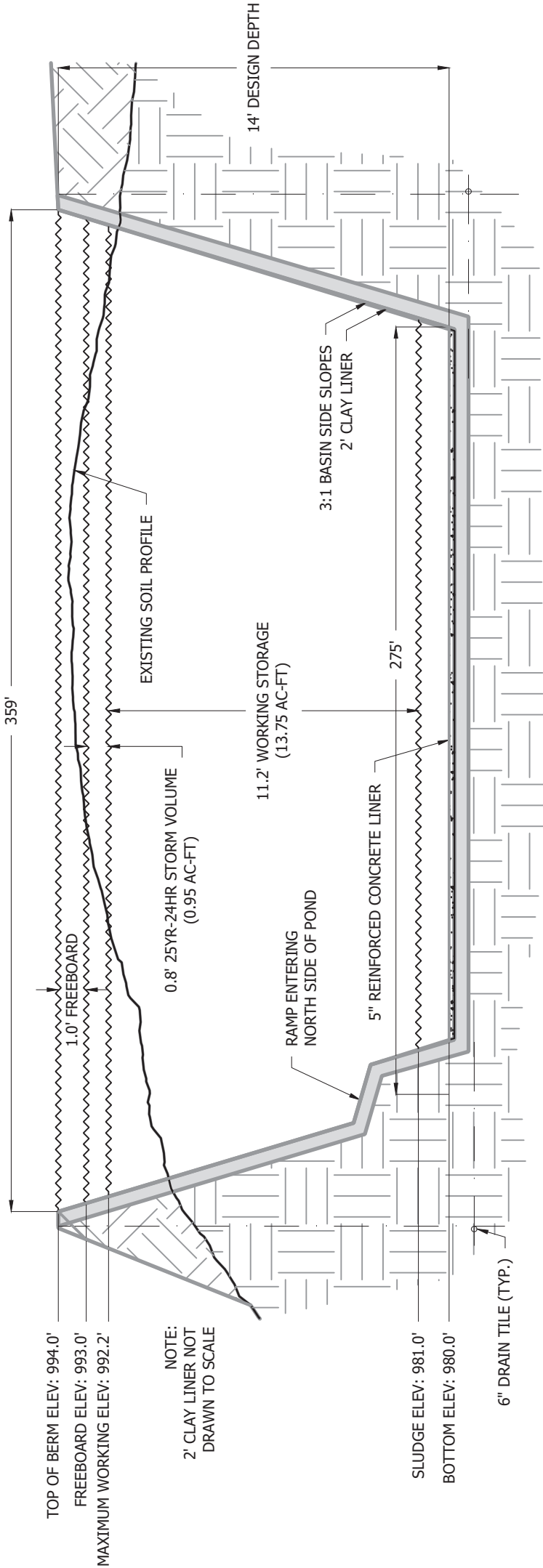
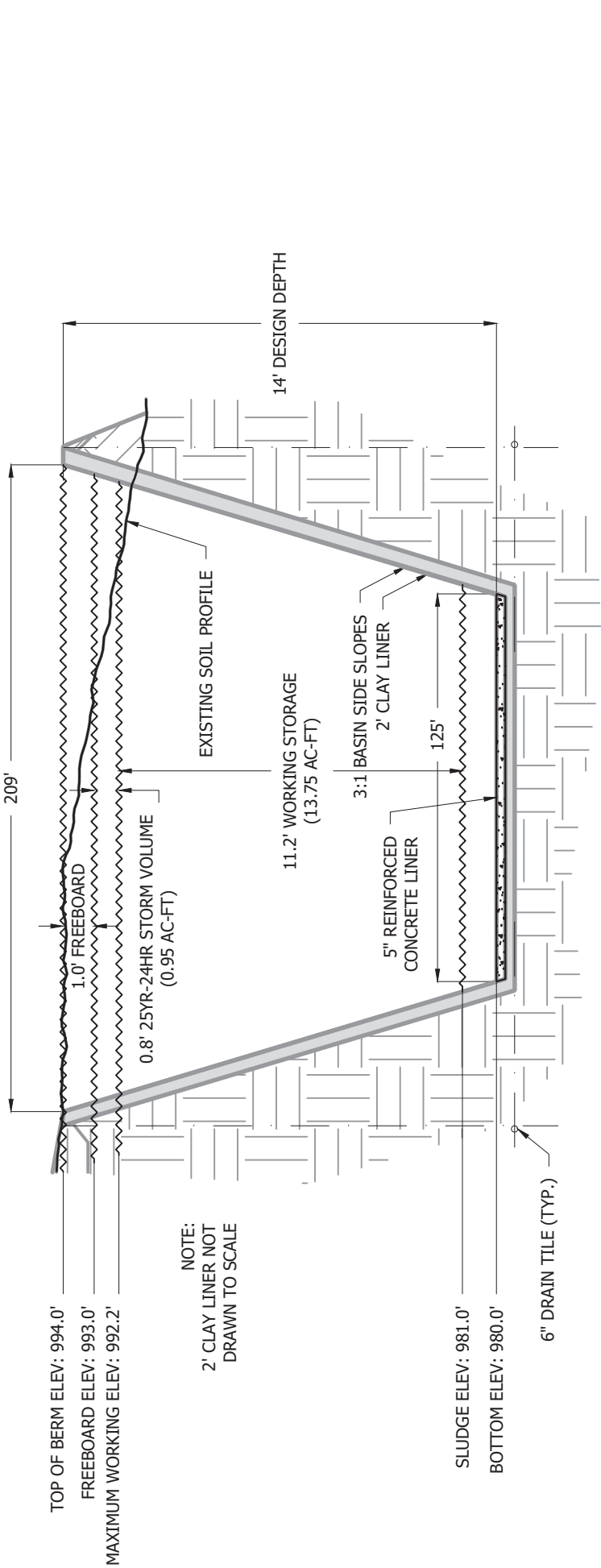
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PROPOSED SITE LAYOUT - CUT/FILL
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

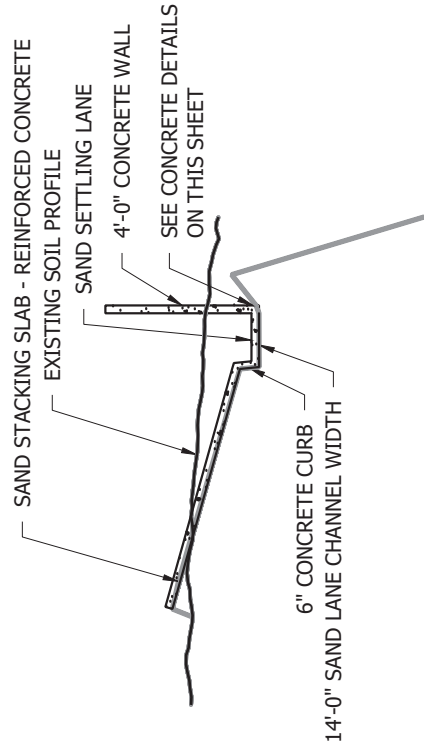
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CROP CONSULTING
351 Burlington Circle Marshall, MN 56258 * (507) 337-3021

Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		



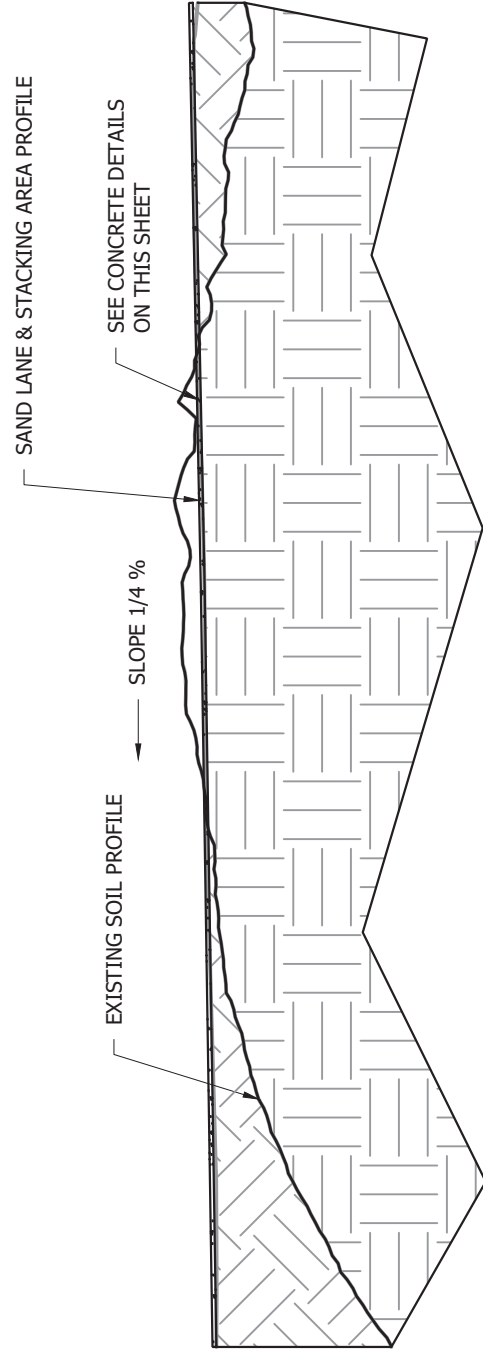






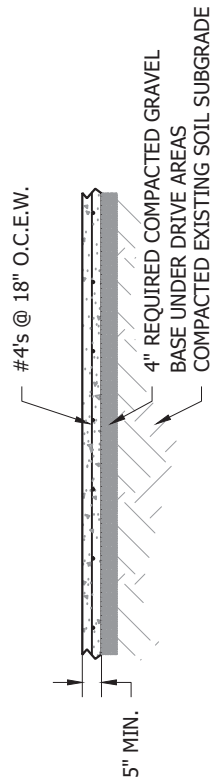
E-W SANDLANE CROSS SECTION

SCALE: 1:50 H, 10:1 V



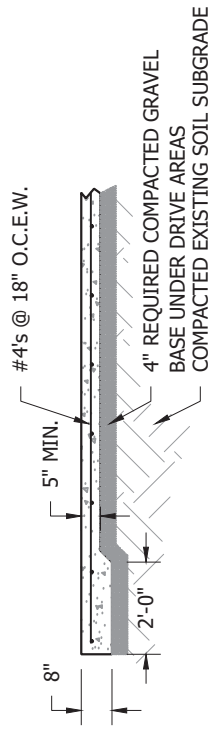
N-S SANDLANE CROSS SECTION

SCALE: 1:50 H, 10:1 V



TYPICAL CONCRETE FLATWORK

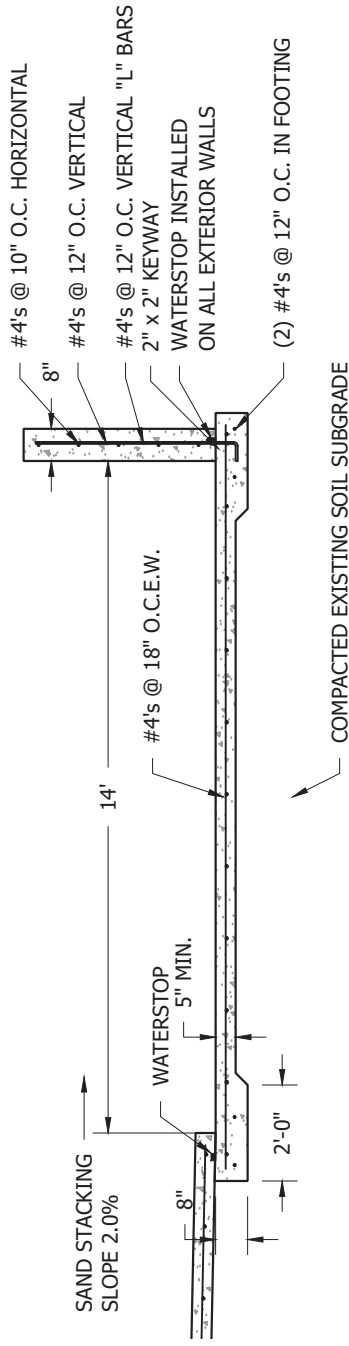
Scale: 1/4" = 1'-0"



THICKENED EDGE CONCRETE FLAT WORK

Scale: 1/4" = 1'-0"

*ALL REBAR GRADE 60



SAND LANE CONCRETE DETAILS

Scale: 1/4" = 1'-0"

ANNEXSTAD DAIRY FARMS INC
BASIN CROSS SECTIONS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Sheet:

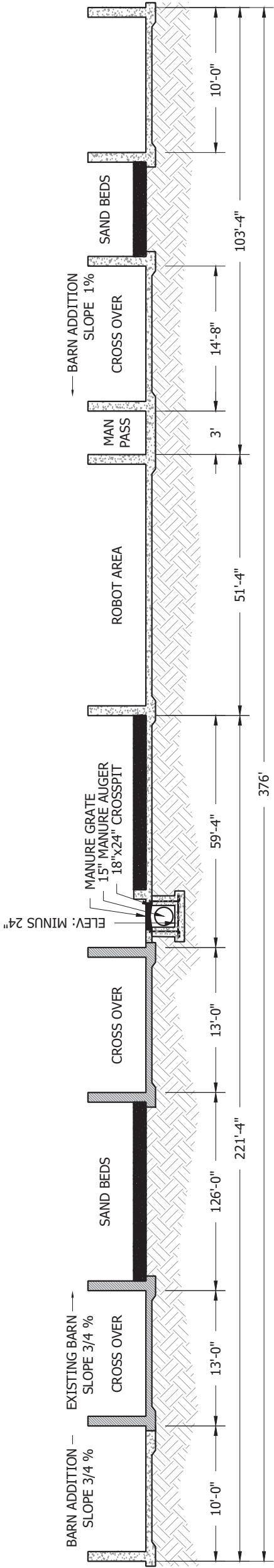
D-2

7 of 15

File Name:

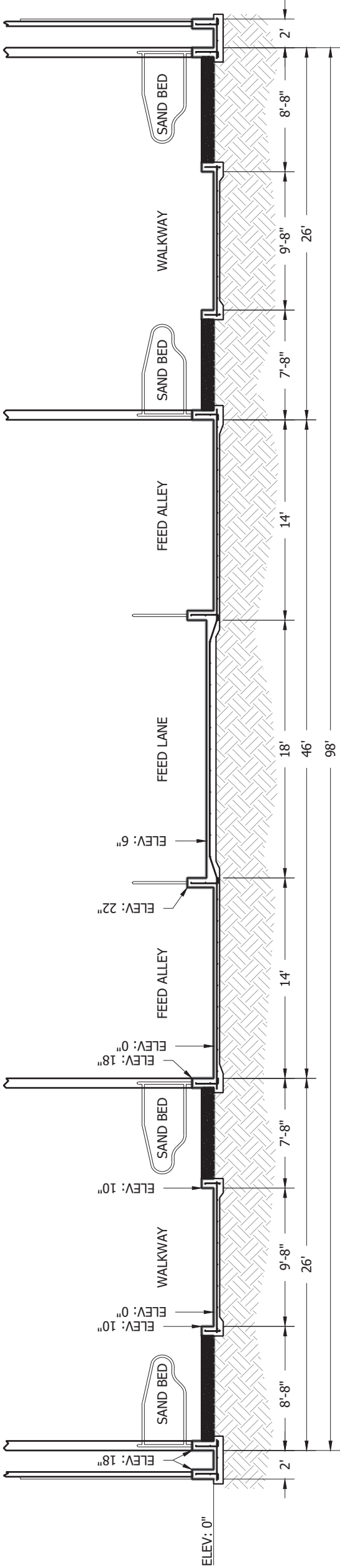
ANNEXSTAD P-1

Designed by: BL 1/6/2023
 Drawn by: JL
 Revisions:



A E-W BARN CROSS SECTION

SCALE: N.T.S.



B N-S BARN CROSS SECTION

SCALE: N.T.S.

1

AGITAION RAMP

SCALE: N.T.S.

RAMP QUANTITIES PER RAMP @ 44.25' (3)		
QUANTITY	UNIT	ITEM
49.9	Cu.Yds.	Excavation
26.8	Cu.Yds.	Sand or Gravel Subbase
23.3	Cu.Yds.	Concrete Class 4000M
200	Sq.Ft.	WWF 6" x 6" W2.9 x W2.9
60	Ln.Ft.	Reinforcing Bars

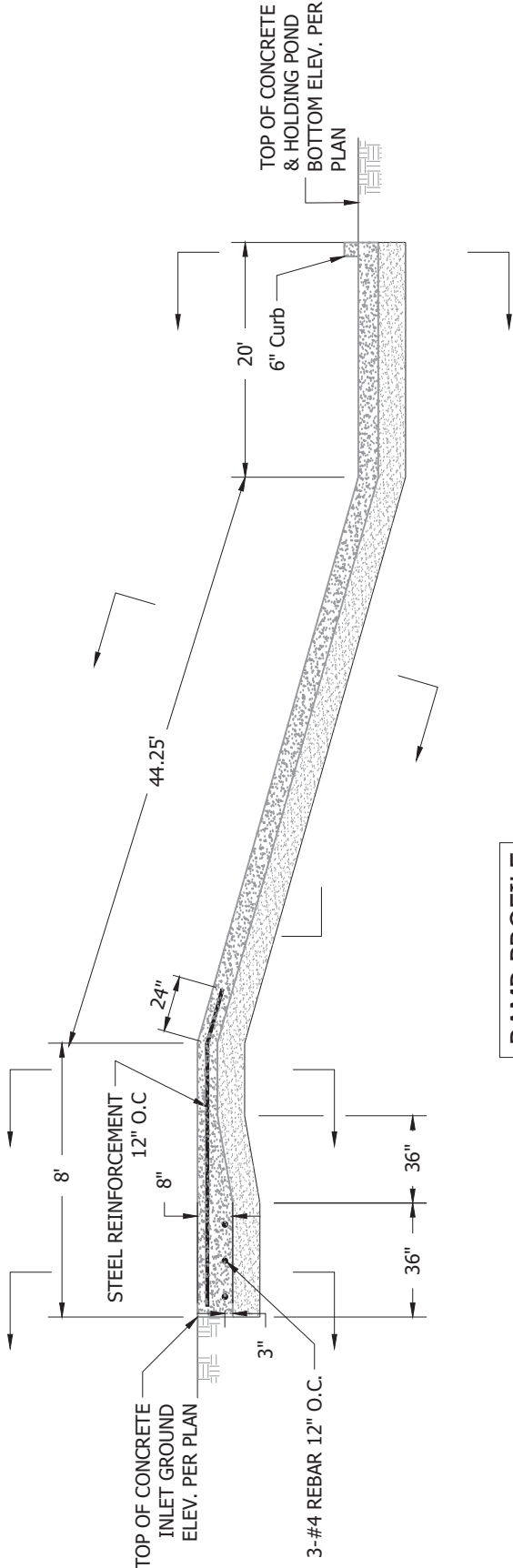
- MATERIALS NOTES
1. CONCRETE SHALL BE AIR-ENTRAINED.

2. CONCRETE SHALL BE CLASS 4000M (NO LESS THAN 6 BAGS OF CEMENT /CU.YD. AND NO MORE THAN 6 GAL OF WATER /BAG OF CEMENT).

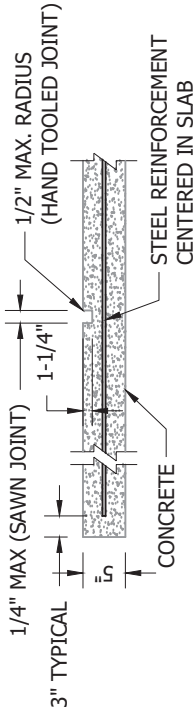
3. THE SAND + GRAVEL SUBBASE MATERIAL SHALL BE CLEAN PIT RUN SAND OR GRAVEL AND WITH LESS THAN 5% BY WEIGHT PASSING THE #200 SIEVE.

- CONSTRUCTION NOTES
1. CONTROL JOINTS SHALL DIVIDE THE CHUTE INTO SQUARE OR RECTANGULAR SECTIONS (HORIZONTAL PROJECTION) WITH THE LONGER SIDE BEING NO MORE THAN ONE-AND-A-HALF TIMES THE LENGTH OF THE SHORTER SIDE. THE MAXIMUM SPACING IN THE UNREINFORCED SHALL BE 10 FEET. THE MAXIMUM SPACING IN THE REINFORCED SLAB SHALL BE 50 FEET.

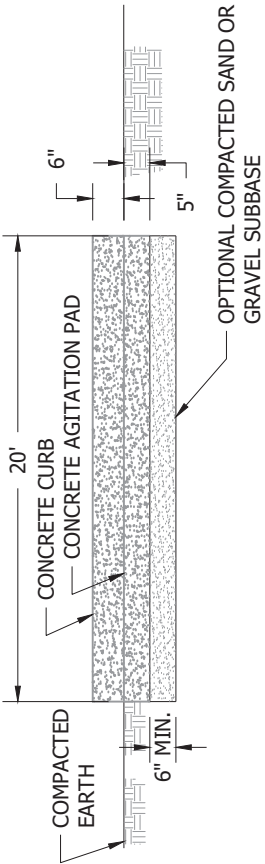
2. ANY FORMS USED IN CONSTRUCTION SHALL BE REMOVED.



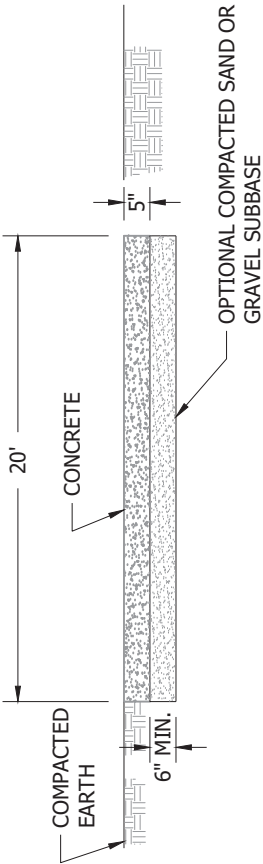
RAMP PROFILE
(NOT TO SCALE)



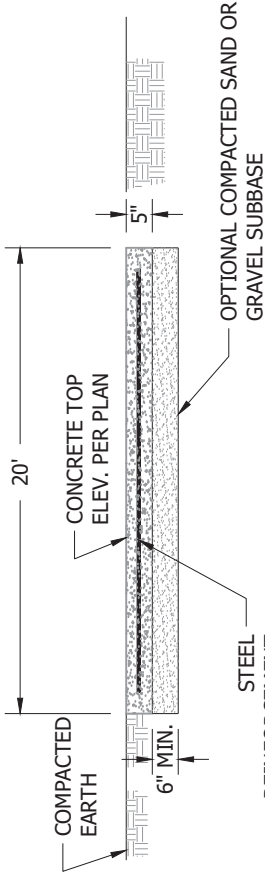
TYPICAL CONTROL JOINT DETAIL AND
STEEL REINFORCEMENT DETAILS



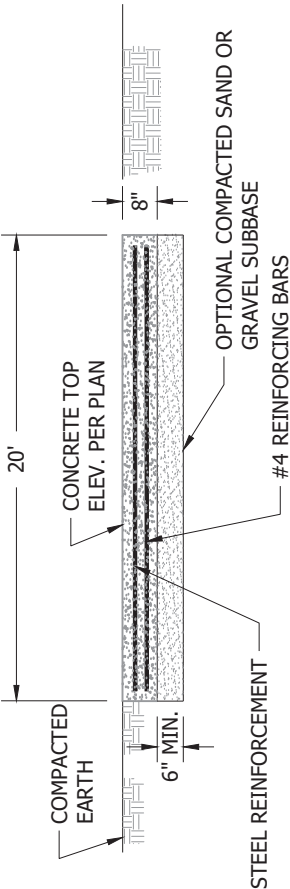
TYPICAL SECTION K-K



TYPICAL SECTION J-J



TYPICAL SECTION I-I



TYPICAL SECTION H-H

NOTES

1. QUALITY CONTROL AND TOLERANCES
- a. COLUMN FINISH ELEVATIONS SHALL BE ± 1/4" FROM DESIGN ELEVATION.

b. WALL ALIGNMENT (HORIZONTAL) SHALL DEVIATE NO MORE THAN 1/4" IN 10 FEET AND NOR MORE THAN 3/4" OVER THE FULL LENGTH OF THE WALL.

c. WALL BEARING LEDGE ELEVATIONS SHALL BE ±1/4" FROM DESIGN ELEVATIONS IN 10 FEET AND NO MORE THAN 1/2" OVER THE FULL LENGTH OF WALL.

d. OVERALL FOUNDATION LENGTH AND WIDTH DIMENSIONS AND DIAGONAL DIMENSIONS SHOULD BE WITHIN 1/2" OF PLAN DIMENSIONS.

e. MINOR HONEYCOMBING SHALL BE REPAIRED ON THE SAME DAY THAT THE FORMS ARE REMOVED. MAJOR HONEYCOMBING (GREATER THAN 1-1/2" DEEP) SHALL BE INSPECTED BY THE ENGINEER AND REPAIRED OR REMOVED AT THEIR DIRECTION.

f. TEST CYLINDERS: TO BE TAKEN WHENEVER A NEW MIX OR CONCRETE SUPPLIER IS USED AND AT A MINIMUM OF EVERY 150 CUBIC YARDS FOR STRENGTH.

g. SEE CONSTRUCTION SPECIFICATIONS FOR ALL DETAILS AND REQUIREMENTS IN SECTION 03 00 00.
2. INFORMATION
- a. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STRUCTURAL NOTES.

b. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY CHANGES.

c. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.

d. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:

i. AMERICAN CONCRETE INSTITUTE (ACI)

ii. CONCRETE REINFORCING STEEL INSTITUTES (CRSI) MANUAL OF STANDARD PRACTICE

e. PUMPOUT PIT LOCATIONS ARE SUBJECT TO OWNER APPROVAL

f. ANY CHANGES TO THE APPROVED SET OF PLANS WITHOUT NOTIFYING THE ENGINEER PRIOR TO SUCH CHANGES ABSOLVES SAID ENGINEER FROM ANY AND ALL RESPONSIBILITY WITH RESPECT TO THE LIABILITY, DAMAGE, OR EXTRA WORK RESULTING FROM SAID CHANGES.
3. WATERSTOP
- a. WATERSTOP CAN BE BENTONITE/BUTYL RUBBER, EQUAL TO WATERSTOP - RX, EXPAND-TITE EXP 200 OR PROVEN EQUAL YET SUITABLE FOR USE WITH LIQUID MANURE WASTES. WATERSTOP SHALL BE PLACED IN ALL CONSTRUCTION JOINTS ON THE FLOOR AND IN THE PERIMETER WALLS. LOCATION AND NUMBER OF CONSTRUCTION JOINTS ARE TO BE DETERMINED BY THE CONTRACTOR.

b. IF REQUIRED, WATERSTOP SPLICES TO BE MADE USING A SPLICING IRON.

c. ALL SLABS ON GRADE THAT HAVE A VERTICAL WALL ON TOP SHALL HAVE A KEYWAY AND WATERSTOP AT THE SLAB/WALL INTERFACE.
4. COLD WEATHER CONCRETING
- a. WHEN FOR MORE THAN 3 SUCCESSIVE DAYS, THE MEAN DAILY TEMPERATURE DROPS BELOW 40 DEG F, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH ACI 306.

b. HOT WEATHER CONCRETING

a. WHEN IT IS LIKELY THAT TEMPERATURES BETWEEN 75 DEG F AND 100 DEG F WILL BE APPROACHED OR EXCEEDED; THAT LOW RELATIVE HUMIDITY IS PRESENT; OR WIND VELOCITY WILL EXCEED 10 MPH, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH CHAPTERS 4 & 5 OF ACI 305.
5. ELECTRICAL
- a. INSTALL REINFORCING BARS AS PER ELECTRICAL CODE AND GROUND AT A MINIMUM NUMBER OF LOCATIONS AS PER ELECTRIC CODE. NOTIFY THE ELECTRICAL INSPECTOR FOR INSPECTION PRIOR TO PLACING CONCRETE.
6. TEMPORARY BRACING AND BACKFILL
- a. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL THE PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.

b. BACKFILL ONLY AFTER THE FLOOR SLATS OR SOLID FLOOR HAS BEEN INSTALLED AND ALL ITEMS THOROUGHLY GROUTED AND CURED.
7. SUBGRADE
- a. EXISTING DISTURBED SUBGRADE SHALL BE RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY

b. ALL FILL UNDER FOOTINGS AND SLAB SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF MAXIMUM DRY DENSITY.

c. SAND FILL AS REQUIRED FOR LEVELING SUBGRADES SHALL BE PROVIDED AT ALL SLAB ON GRADE AREAS.
8. FOOTINGS AND FOUNDATIONS
- a. SOIL BEARING DESIGN VALUE: 2,000 PSF (ASSUMED) ON VIRGIN SOIL OR COMPACTED FILL FOR FOOTINGS.

b. PROTECT FOUNDATION EXCAVATIONS FROM FROST AND DO NOT PLACE CONCRETE ON FROZEN GROUND.

c. FOUNDATION EXCAVATION SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER.

d. FOOTINGS AND FLOOR SHALL BE ON NATIVE CLAY SOIL, OVER EXCAVATION AND PLACEMENT MAY BE NECESSARY ALONG BARN.
9. PERIMETER DRAINAGE
- a. INSTALL THE DRAINAGE TILE AT A MINIMUM DEPTH OF THE BOTTOM OF WALL FOOTER.

b. THE DRAIN TILE SHALL BE HEAVY DUTY PERFORATED POLYETHYLENE TUBING 4" DIAMETER AS A MINIMUM.

c. CONNECT THE DRAIN TILE TO A SUMP FOR INSPECTION AND POTENTIAL DEWATERING INTO PIT ONLY. MONITOR WATER DEPTH PRIOR TO PUMPING PITS.
10. REINFORCED CONCRETE
- a. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F'c = 4,000 PSI

b. WATER CEMENT RATIO SHALL BE 0.45 MAXIMUM.

c. CEMENT SHALL CONFORM TO ASTM C150, TYPE 1.

d. COARSE AGGREGATE SHALL BE 3/4" MAX.

e. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.

f. SLUMP SHALL BE MAXIMUM OF 5"

g. AIR CONTENT SHALL BE 5% TO 7%.

h. ALL EXPOSED CONCRETE SHALL HAVE ENTRAINED AIR ADMIXTURE

i. CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF ACI 301

j. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER FOR THE PURPOSED OF INCREASING THE WORKABILITY BUT NOT TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. CALCIUM CHLORIDE SHALL NOT BE USED.

k. CONCRETE SHALL BE CURED WITH CURING COMPOUND OR OTHER ACCEPTABLE METHODS

l. CONCRETE IN ALL WALLS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 14 DAYS BEFORE BACKFILL IS PLACED AGAINST WALLS. EXERCISE CAUTION WHEN BACKFILLING TO BRING UP THE LEVEL UNIFORMLY ON ALL SIDES OF TANKS AND PITS.

m. NO CONSTRUCTION JOINTS SHALL BE LOCATED IN THE END WALLS. IF REQUIRED, CONSTRUCTION JOINTS IN WALLS SHALL NOT BE LOCATED WITH IN 3 FEET OF PUMPOUT PITS.

12. REINFORCING STEEL

- a. BAR REINFORCEMENT SHALL BE ASTM A615, Fy = GRADE 60 (60,000 PSI) DEFORMED STEEL
- b. MINIMUM LAP SPLICE OF REINFORCING BAR, BASED ON ACI 318, CLASS B, SHALL BE AS FOLLOWED, UNLESS NOTED OTHERWISE:

#3 BARS = 15"

#4 BARS = 20"

#5 BARS = 24"

#6 BARS = 30"

#7 BARS = 36"

#8 BARS = 42"
- c. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER UNLESS NOTED OTHERWISE:

i. CONCRETE PLACED AGAINST EARTH = 3"

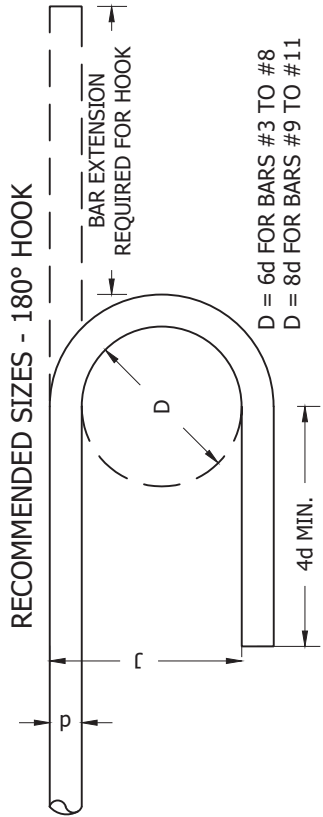
ii. FORMED CONCRETE EXPOSED TO WEATHER OR EARTH:

1. #6 THROUGH #8 BARS = 2"

2. #5 BARS AND SMALLER = 1 1/2"

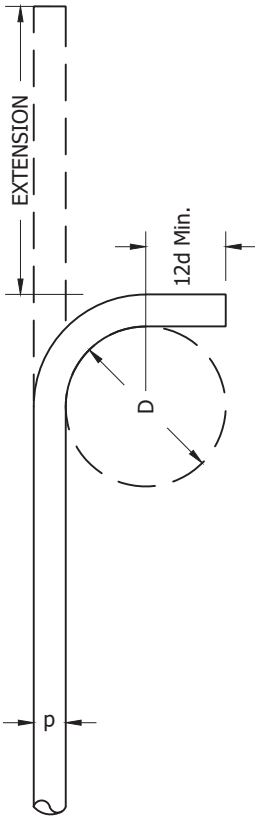
3. STIRRUPS AND TIES = 1 1/2"
- d. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE.
- e. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE SIZE AND SPACING AS VERTICAL WALL REINFORCEMENT.
- f. ALL LAP SPLICES SHALL BE TIED AT 3 LOCATIONS.

ALSO SEE ASSOCIATED CONSTRUCTION SPECIFICATIONS INCLUDED WITH PROJECT DOCUMENTS



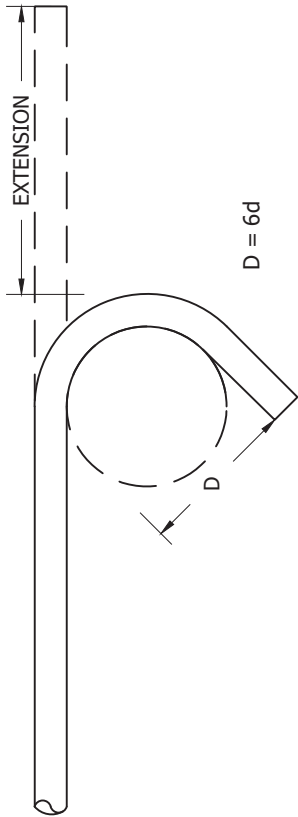
BAR SIZE (d) (inches)	BAR EXTENSION (inches)	J (inches)
#2	1/4"	4"
#3	3/8"	5"
#4	1/2"	6"
#5	5/8"	7"
#6	3/4"	8"
#7	7/8"	10"
#8	1"	11"
#9	1-1/8"	1'-3"
#10	1-1/4"	1'-5"
#11	1-3/8"	1'-7"

RECOMMENDED SIZES - 90° HOOK



D = 6d FOR BARS #3 TO #8
D = 8d FOR BARS #9 TO #11
D = 10d FOR BARS #14 TO #18

RECOMMENDED SIZES - 135° HOOK



D = 6d

NOTE: STIRRUP HOOKS MAY BE BENT TO THE DIAMETER OF THE SUPPORTING BARS

Designed by:	BL	1/6/2023
Drawn by:	JL	
Revisions:		

CENTROL

CROP CONSULTING

351 Burlington Circle Marshall, MN 56258

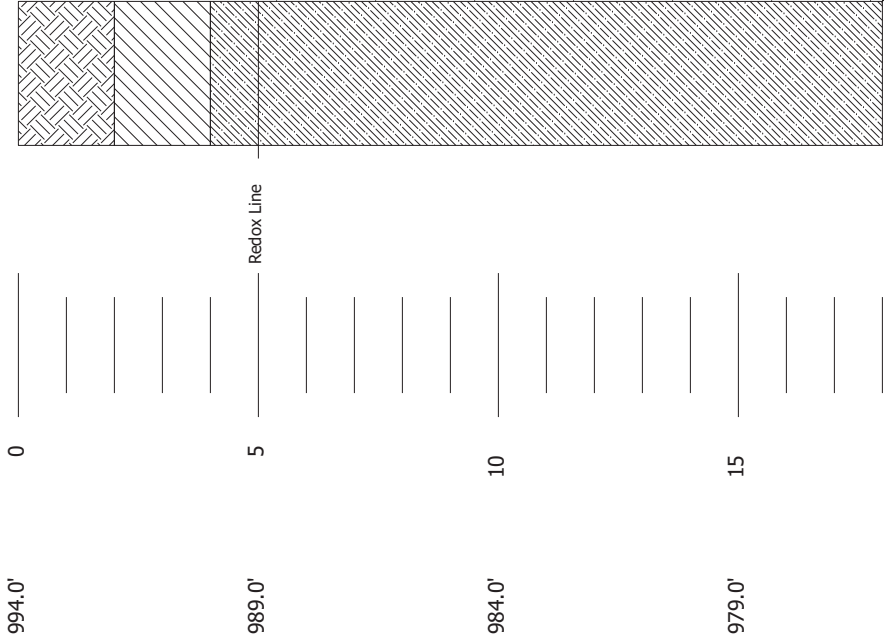
(507) 337-3021

ANNEXSTAD DAIRY FARMS INC
CONCRETE DETAILS
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111N, R 27W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

TEST PITS EXCAVATED ON THE PROPOSED SITE
FOR SUBSURFACE GEOTECHNICAL EVALUATION

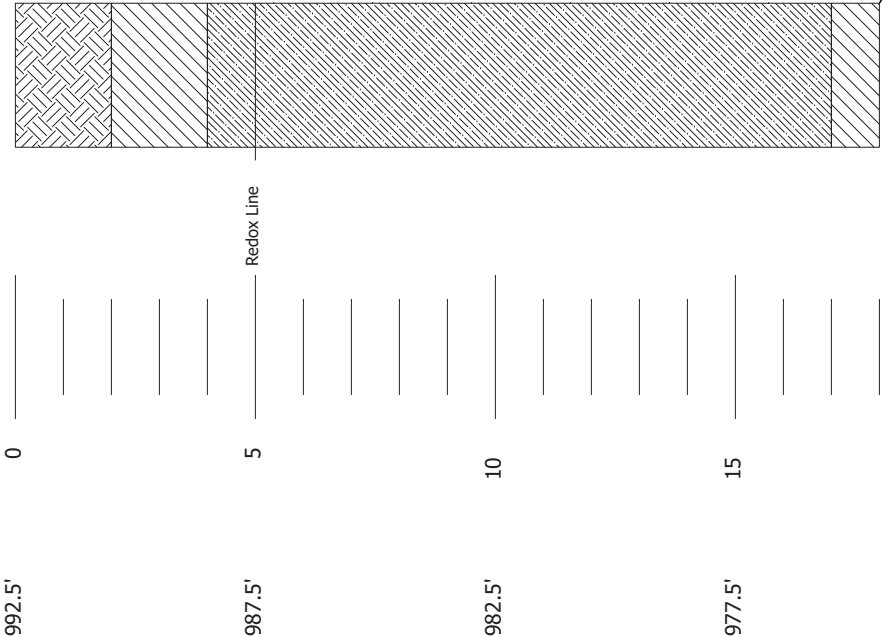
PROJECT: ANNEXSTEAD DAIRY FARMS INC. - PROPOSED EARTHEN LMSA
DATE: DECEMBER 8, 2022
BY: CENTROL CROP CONSULTING, BL

SITE ELEV.	DEPTH BELOW GRADE (FT)	TEST PIT #1 N44°23'50.41" W94°04'15.47"	DESCRIPTION	USCS SYMBOL	SITE ELEVATION	DEPTH BELOW GRADE (FT)	TEST PIT #2 N44°23'51.29" W94°04'14.10"	DESCRIPTION	USCS SYMBOL
------------	------------------------	---	-------------	-------------	----------------	------------------------	---	-------------	-------------



Bottom of test pit,
pit excavated and
filled in using an
excavator per MDH
requirements.

Scale: 1/4" = 1'-0"



Black 10YR2/1
"Blue Clay" Lean Clay

Bottom of test pit,
pit excavated and
filled in using an
excavator per MDH
requirements.
Scale: 1/4" = 1'-0"



351 Burlington Circle Marshall, MN 56258 * (507) 337-3021

ANNEXSTAD DAIRY FARMS INC
GEOTECHNICAL NOTES
PART OF THE NE 1/4 OF THE NE 1/4 OF SEC 28,
T 111 N, R 27 W OF THE 5th P.M.
NICOLLET COUNTY, STATE OF MINNESOTA

Designed by:
BL 1/6/2023

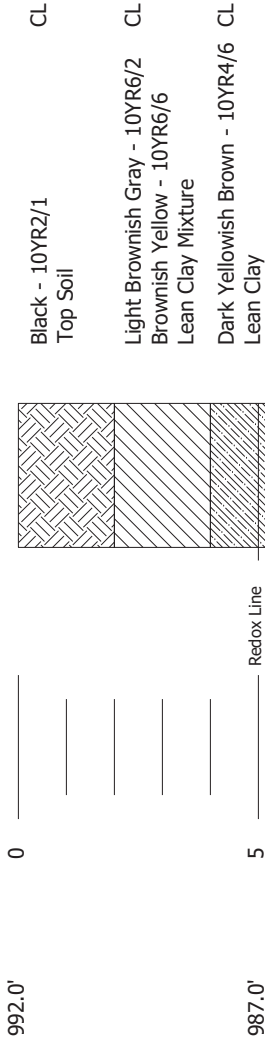
Drawn by:
JL

Revisions:

TEST PITS EXCAVATED ON THE PROPOSED SITE
FOR SUBSURFACE GEOTECHNICAL EVALUATION

PROJECT: ANNEXSTEAD DAIRY FARMS INC. - PROPOSED EARTHEN LMSA
DATE: DECEMBER 8, 2022
BY: CENTROL CROP CONSULTING, BL

SITE ELEV.	DEPTH BELOW GRADE (FT)	TEST PIT #1 N44°23'52.18" W94°04'15.21"	DESCRIPTION	USCS SYMBOL
------------	------------------------	---	-------------	-------------



Redox Line

Bottom of test pit,
pit excavated and
filled in using an
excavator per MDH
requirements.

Scale: 1/4" = 1'-0"

Construction Specifications

Annexstad Dairy Farms Inc

Manure Storage Pit

Prepared by:



351 Burlington Circle

Marshall, MN 56258

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SECTION 01 10 00 SUMMARY OF WORK	4
SECTION 01 40 00 QUALITY REQUIREMENTS.....	4
SECTION 01 50 00 TEMPORARY FACILITIES	5
SECTION 02 21 00 SURVEYS	5
SECTION 02 32 00 GEOTECHNICAL INVESTIGATIONS.....	5
SECTION 03 00 00 CONCRETE	6
SECTION 03 40 00 PRECAST CONCRETE.....	11
SECTION 10 14 00 SIGNAGE	11
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MATERIALS.....	12
EXECUTION.....	13
SECTION 31 23 00 - DRAINAGE	16
O&M: PLAN FOR OPERATIONS, MAINTENACE, AND INSPECTIONS.....	18

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.



Elliot De Jongh Lic No: 52553

Date: 1-11-23



SECTION 01 10 00 SUMMARY OF WORK

SCOPE:

The work shall consist of the excavation of soil and the construction of a liquid manure waste storage structure for a Dairy production facility. All work shall be completed according the construction plans associated with the project and in accordance with the current regulations.

SECTION 01 40 00 QUALITY REQUIREMENTS

QUALITY ASSURANCE/QUALITY CONTROL PLAN:

1. Prior to construction the following actions must be completed:
 - a. Obtain any local and state permits for the proposed facility
 - b. Hold a preconstruction meeting with owner, contractors, and the engineer
 - c. Inform both the engineer and local permitting agency three days prior to construction
2. Contractor must complete the following during construction:
 - a. Have the engineer's approval prior to placing concrete and contact the engineer a minimum of six hours prior to concrete placement
 - b. Implement concrete testing at the proposed minimum rate of one sample every 150 cubic yard placed. Test for: slump/strength/air per ASTM standards. Collected samples will be broke in a certified testing facility and reported to the engineer and owner.
 - c. Additional testing will be required if concrete is provided by an alternative supplier or with an alternative mix. The first truck shall be tested according to ASTM standards and any changes must be documented and reported.
3. Pit floor must meet the following prior to concrete placement:
 - a. Electrical inspector shall be notified prior to the placement of concrete in the pit floor.
 - b. Reinforcement steel must be inspected by the engineer or certified individual to ensure size, ties, and chairs are implemented as per the plans.
 - c. Drainage tile must be installed if required on the plans. Installation must be according to the specifications and include pea rock or ¼" to ½" crushed rock as noted on the plans.
4. Pit walls must meet the following prior to concrete placement:
 - a. Contact the engineer and electrical inspector with adequate notice.
 - b. Forms, reinforcing steel, tile, and waterstop inspected by the engineer.
 - c. Perimeter drainage implemented with tile or pumping.
 - d. Obtain approval from the electrical inspector for grounding.
5. Backfilling must not be completed until the following are completed:
 - a. All defects in concrete have been repaired.
 - b. Perimeter drainage system installed including inspection port or pump.
 - c. Exterior of pit is clear of vegetation and organic material.
 - d. Have engineer's approval prior to backfilling.

6. Site finish work shall include:
 - a. Finished grading around building and site for proper drainage and operations as per owner's and engineer's approval.
 - b. Safety signs installed at each pumpout pit.
 - c. Pumpout pit covers in place.
 - d. Signature from concrete contractor on MPCA Construction Inspection Form
7. Final inspections completed by engineer shall include:
 - a. Completed construction report to owner and regulatory agency.

SECTION 01 50 00 TEMPORARY FACILITIES

Utilities:

1. Temporary utilities if needed shall be coordinated with the utility providers and contractor for the following services:
 - a. Electricity
 - b. Water
 - c. Communications
 - d. Gas
 - e. Sanitary services for site personnel

SECTION 02 21 00 SURVEYS

Survey:

Site survey data will be collected using available topographic information. Contractor shall be responsible for staking the project according to relative grades, proposed locations and site features. A control benchmark with an assumed elevation will be placed on site for preliminary design purposes. Do not destroy benchmarks.

SECTION 02 32 00 GEOTECHNICAL INVESTIGATIONS

Test pits:

Subsurface geotechnical investigations will be completed for use in the design of the project. Results from the site investigation will be made available in the design documents for the project, specifically the construction plans. The accuracy or completeness of this information is not guaranteed by the Owner or Engineer and shall not be considered part of the contract plans or specifications.

SECTION 03 00 00 CONCRETE

SCOPE OF WORK

The work shall consist of furnishing, forming, placing, finishing, and curing portland cement concrete as required to build the structures presented in the project drawings, details and construction QA/QC and specifications.

FORMS

1. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces.
2. Form Coatings: Provide commercial formulation form coating compounds that will not bond with, stain, nor adversely affect concrete surfaces.
3. Form Ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units which will leave no metal closer than 1-1/2 inches to surface
4. Placement of concrete on mud, dried earth, uncompacted fill will not be permitted.

REINFORCING MATERIALS

1. Reinforcing Bars: ASTM A-615, Grade 60, deformed.

CONCRETE MATERIALS

1. Portland Cement: ASTM C-150, Type I.
2. Fly Ash: ASTM C-618, Type C or Type F. Limit use of fly ash to not exceed 25 percent of cement content by weight.
3. Normal Weight Aggregates: ASTM C-33. The maximum aggregate size shall be 1 1/2 inches.
4. Water: Drinkable.
5. Air-Entraining Admixture: ASTM C-260, certified by manufacturer to be compatible with other required admixtures.
6. Water Reducing Admixture: ASTM C-494, Type A, and containing not more than 0.1 percent chloride ions.

RELATED MATERIALS

1. Granular Base: Evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade
2. Non-Shrink Grout: CRD-C 621, factory pre-mixed grout.
3. Liquid Membrane-Forming Curing Compound: Liquid type membrane forming curing compound complying with ASTM C-309, Type I, Class A.
4. Epoxy Adhesive: ASTM C-881, two component material suitable for use on dry or damp surfaces. Epoxy shall be Sikadur Hi-Mod, Sika Chemical Company or equal.
5. Waterstop shall be of one of the following:
 - a. PVC waterstops shall be 3/16" x 4".
 - b. Waterstop Plus TM or equal.
6. Joint sealant shall be one of the following or equal.
 - a. Sikadur CJR.

- b. b) Sikadur 51 NS/SL
 - c. Unitex Pro-Flex Flexible Epoxy Control Joint Sealer
 - d. Sonneborn Epolith-P
 - e. Sonneborn Epolith-G
7. Expansion joints shall be 1/2" inch Sonoflex-F (polyethelene foam expansion joint filler or equal).

DESIGN OF MIXES

1. 4000 psi 28-day compressive strength; W/C ratio as below, air content as below:
 - a. Adjustment to Concrete Mixes: Mix design adjustments may be requested by contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by architect/engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by architect/engineer before using in work.
2. Admixtures: Use water-reducing admixture or high range water reducing admixture (super plasticizer) in concrete as required for placement and workability. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 5% - 7%.
3. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
 - a. Subjected to watertight; W/C 0.45 maximum.
4. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - a. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
 - b. Other Concrete: Not less than 1 inch nor more than 5 inches.

CONCRETE MIXING

1. Ready-Mix Concrete: Comply with requirements of ASTM C-94, and as herein specified.
2. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

FORMS

1. Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure.
2. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
3. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retightening forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

PLACING REINFORCEMENT AND JOINTS

1. Comply with Concrete Reinforcing Steel Institutes recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
 - a. Avoiding cutting or puncturing vapor retarder
 - b. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

- c. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
 - d. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations.
2. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to architect/engineer. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise indicated.
3. Isolation Joints in Slab-On Ground: Construct isolation joints in slab-on-ground at points of contact between slabs-on-ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.
 - a. Joint filler and sealant materials shall be used according to manufacturer's instructions.
4. Contraction (Control) Joints in Slabs-On-Ground: Construct contraction joints in slabs-on-ground to form panels of patterns as shown. Use saw cuts 1/8" x 1/4 slab depth or inserts 1/4" wide x 1/4 of slab depth, unless otherwise indicated. Form contraction joints by inserting premolded plastic, hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate. If joint pattern not shown, provide joints not exceeding 20 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third-bays).

PREPARATION OF FORM SURFACES

1. Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.
2. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.
3. Thin form-coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
4. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

CONCRETE PLACEMENT

1. Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
2. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

3. **Placing Concrete in Forms:** Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Consolidate placed concrete by mechanical vibrating equipment supplemented by handspading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
4. **Placing Concrete Slabs:** Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations. Maintain reinforcing in proper position during concrete placement operations.
5. **Hot Weather Placing:** When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
 - a. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is contractor's option.
 - b. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 - c. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.
6. **Cold Weather Placing:** When cold weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 306 and as herein specified:
 - a. Warm water or aggregate before mixing to maintain concrete temperature at time of placement above 40 degrees F. The temperature of the water shall be below 165 degrees F.
 - b. Before placing concrete at low temperatures, all subgrade, forms, or reinforcement surfaces with which the concrete may come in contact, should be heated to remove any ice or snow and to prevent freezing of the concrete.
 - c. The concrete shall be kept above 32 degrees F for a minimum of 24 hours. Corners and edges are very critical.

CONCRETE CURING AND PROTECTION

1. **General:** Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than seven (7) days. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period. **B. Curing Methods:** Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified. Provide curing and sealing compound to exposed interior slabs and to exterior slabs, walks, and curbs, as follows:
2. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours) in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

REMOVAL OF FORMS

Formwork not supporting weight of concrete, such as sides of walls, walks and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg. F (10 deg. C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

CONCRETE SURFACE REPAIRS

1. **Patching Defective Areas:** Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to architect/engineer. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
2. **Repair of Formed Surfaces:** Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of architect/engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
3. **Repair of Unformed Surfaces:** Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01 inches wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions. Repair defective areas, except random cracks and single holes not exceeding one (1) inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4- inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete. Repair isolated random cracks and single holes not over 1- inch in diameter by drypack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of 1-part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

FREEZE THAW PROTECTION

A minimum of 2' of water/manure should be in the pit prior to freezing conditions. This is particularly important if there are no animals in the facility. After the pit is constructed and prior to use or during use, the concrete floor and subgrade must be protected from freezing.

SECTION 03 40 00 PRECAST CONCRETE

A cut sheet regarding the details of the design and strengths of the slats and beams shall be provided by the manufacturer. Design specifications shall meet the recommendations of the MWPS-36, Rectangular Concrete Manure Storage Handbook.

SECTION 10 14 00 SIGNAGE

SCOPE:

1. Warning signs must be placed at each potential access point to the manure pit where a confined space could have manure gases. The signs must read:
DANGER, POISONOUS GAS IN PIT, KEEP OUT!

SECTION 31 01 00 EARTHWORK/GRADING

SCOPE:

1. The work consists of the construction of and renovation of all earth embankments, earthfill areas, and earth backfills required by the drawings and specifications.
2. Earthfill is composed of natural earth materials that can be placed and compacted by construction equipment operated in a conventional manner.
3. Earth backfill is composed of natural earth material placed and compacted in confined spaces or adjacent to structures (including pipes) by hand tamping, manually directed power tampers, or vibrating plates, or their equivalent.
4. All areas not classified as structural fill or grading for pavement area shall be compacted to class C specifications.

WORK NOT INCLUDED:

Subsurface geotechnical investigation excavations to be completed by the owner.

DEFINITIONS:

1. Grading: Earthmoving operations performed to bring subgrade and/or final grade to proper contours, compaction, and other requirements of this section.
 - A. Rough Grading: Generally refers to operations involving bulk moving of soils.
 - B. For the purposes of this section, grading refers to both rough grading and fine grading required to provide the specified product.
2. Finished/Fine Grading: refers to operations to achieve the final finished smooth surface.
 - A. Grade: The elevation at the top of a soil stratum.
 - B. Final Grade or Finished Grade: The elevation of the top surface of soil, pavement, or other soil covering of the completed work.
 - C. Subgrade:
 - a. The elevation of the interface between native or imported soil and topsoil, pond liner, other soil covering, or the lowest stratum of pavement.

- b. The elevation of the interface between native undisturbed soil and bulk fill placements.
- D. Subgrade Soil: The soil (undisturbed or placed as fill) below the subgrade elevation.

REFERENCES:

ASTM D-698, Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12 inch Drop. In this section, maximum density determined by ASTM D 698 is referred to as Standard Density.

SURVEY

Finish grades of the site will be in reference to the structure and owners site grading preferences. No final survey will be completed however site grading must be implemented to ensure proper site drainage and adequate room for equipment operations, specifically commodity and animal delivery and shipping. Final grades to be approved by the owner at time of completion.

STOCKPILE AREAS:

Any excess material shall be disposed of on-site at the locations specified by the landowner. Excess material will be graded away from the building while allowing positive drainage away from the structure.

OFF-SITE DISPOSAL:

No material shall be taken off-site unless approved by the owner.

IMPORTED FILL:

No imported fill shall be needed. If it is determined and agreed upon by the landowner that additional fill material must be imported, this will be a separate contract item and price determined at that time.

SOIL REPORTS

Soil reports will be made available at the time of construction. The reports show subsurface conditions at discrete locations. Continuity of subsurface conditions between test locations cannot be assured. The owner nor its representatives can neither make nor confirm interpretations from these reports.

MATERIALS

FILL SOIL:

1. All fill material shall be obtained from required excavations and designated borrow areas. The selection, blending, routing, and disposition of material in the various fills shall be subject to approval by the engineer.
2. Fill materials shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

3. The types of material used in the various fills shall be as listed and described in the specifications and drawings.

REJECTED FILL SOIL:

Excavated material which in the opinion of a qualified engineer, are unsuitable for use as subgrade soil shall be used in less critical area as defined by the engineer.

TOPSOIL:

Reuse on-site topsoil: Place topsoil free of subsoil, roots, and rocks larger than 1 1/2 inch.

IMPORTED SOIL:

Only if needed will off-site soil be certified by a Geotechnical Engineer.

ROCK EXCAVATION:

Material that cannot be dislodged with heavy duty excavator shall be classified as rock excavation. Typical materials classified as rock excavation are boulders larger than ½ cy, bedrock strata, rock ledges.

WATER:

Contractor will supply water used for construction. It will also be the contractor's responsibility to provide means of handling water.

EXECUTION

UTILITIES:

1. Locate known below-grade utilities. Request locates from utility companies, including but not limited to: water, sewer, storm sewer, telephone, electrical power, natural gas, and cable television.
2. Flag and protect those utilities to remain.
3. No representation is made by the landowner or Centrol Crop Consulting to the existence or non-existence of underground utilities. It is the contractor's responsibility to request a locate prior to construction.

GRADING - GENERAL:

1. Foundation preparation:
Foundations for earthfill shall be stripped to remove vegetation and other unsuitable material or shall be excavated as specified.

Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earthfill, and the surface material of the foundation shall

be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at a moisture content that the earthfill can be compacted against them to produce a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earthfill shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond between the foundation and the fill.

Foundation and abutment surfaces shall be no steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earthfill to be placed upon the foundation.

2. Placement

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the engineer. Earthfill shall not be placed upon a frozen surface nor shall snow, ice, or frozen material be incorporated in the earthfill matrix.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed a maximum thickness of 10" for class C compaction and 8" for class A compaction. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

Hand compacted earth backfill shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of earth backfill compacted by manually directed power tampers. Earth backfill shall be placed in a manner that prevents damage to the structures and allows the structures to assume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.

3. Control of moisture content

During placement and compaction of earthfill and earth backfill, the moisture content of the material being placed shall be maintained within the specified range.

The application of water to the earthfill material shall be accomplished at the borrow areas in so far as practicable. Water may be applied by sprinkling the material after placement on the earthfill if necessary. Uniform moisture distribution shall be obtained by disking.

Material that is too wet when deposited on the earthfill shall either be removed or be dried to the specified moisture content prior to compaction.

If the top surface of the preceding layer of compacted earthfill, a foundation, or abutment surface in the zone of contact with the earthfill becomes too dry to permit suitable bond, it shall either be removed or scarified and moistened by sprinkling to an acceptable moisture content before placement of the next layer of earthfill.

4. Compaction

Earthfill—Earthfill shall be compacted according to the following requirements for the class of compaction specified:

a. Class A Compaction

- i. Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in soil report or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size used in the compaction test method specified.

b. Class B compaction

- i. Each layer of earthfill shall be compacted to a mass density not less than the minimum density specified.

c. Class C compaction

- i. Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

Earth backfill—Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the surrounding in place earth material or adjacent required earthfill or earth backfill. Compaction shall be accomplished by hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified heavy equipment including backhoe mounted power tampers or vibrating compactors and manually directed vibrating rollers shall not be operated within 2 feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist is not permitted.

The passage of heavy equipment will not be allowed:

- i. Over cast-in-place conduits within 14-days after placement of the concrete
- ii. Over cradled or bedded precast conduits within 7 days after placement of the concrete cradle bedding.
- iii. Over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the

structure or pipe or 2 feet, whichever is greater, except as may be specified otherwise.

When the required strength of the concrete is not specified, compaction of earth backfill adjacent to structures shall not be started until the following time intervals have elapsed after placement of the concrete.

Structure	Time interval (days)
Vertical or near-vertical walls with earth loading on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (inside forms removed)	14
Conduits, pre-cast, cradled	2
Conduits, pre-cast, bedded	1
Cantilever outlet bents (backfilled both sides simultaneously)	3

5. Reworking or removal and replacement of defective earthfill:
Earthfill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable earthfill. The replacement earthfill and the foundation, abutment, and earthfill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.
6. Coordinate work with trenching for underground utilities.
7. Rock excavation is not anticipated. If rock is encountered, notify engineer Do not perform rock excavation until rock surface can be cross-sectioned and classified.
8. Protect newly graded areas from the action of wind and water. Restore grade where settlement or washing occurs.

ALL OTHER EARTHFILL AREAS:

All areas not otherwise specified shall be compacted to meet class C compaction as outlined above

SECTION 31 23 00 - DRAINAGE

SCOPE:

1. A perimeter tile shall be installed to keep the elevation of the water table below the bottom of the storage liner of liquid manure waste.
2. Perimeter tile must be located one foot outside of the footing of the structure and consist of 4 inch heavy duty polyethylene perforated agricultural drainage pipe. An inspection port must be included for use in sampling and inspecting the system for proper operation.
3. The tile must be bedded and covered with pea rock or crushed rock ¼" to ½" in size.

4. Tile may be installed prior to site construction for dewatering purposes as decided by the owner, engineer, and contractor. If so, the tile must be installed a minimum of 4 feet outside the location of the proposed footer and at least 2 feet below the floor of the pit. Installation must be with a backhoe or trencher and not with a tile plow. Gradient of the tile shall be 0.2 feet per 100 feet of length to the sump.
5. Prior to backfilling the trench, all construction debris and organic material must be removed.

O&M: PLAN FOR OPERATIONS, MAINTENANCE, AND INSPECTIONS

OVERVIEW

Waste storage pits provide temporary storage of manure or other process waters until the waste is managed as a soil nutrient resource. The manager of this facility must carry out periodic operation and maintenance activities to assure the components perform to their intended function. The following checklist is provided as an aid for developing a good operation and maintenance plan.

OPERATION CHECKLIST

- ☐ Routine inspections of perimeter of structure for evidence of structural fatigue or cracking.
- ☐ Inspect perimeter tile regularly and at least 2 weeks prior to emptying the pit to ensure no ground water is present. If water levels are present, fix the system so that it can operate correctly and thus relieve the hydrostatic pressure prior to emptying the pit.
- ☐ Inspect tile water quality for changes in odor or color. If detected notify the engineer or MPCA immediately and stop the flow of the tile line.
- ☐ Inspect and properly maintain all pump pit covers and tile inspection ports.
- ☐ Inspect posted signs at each pump pit which must state:

"DANGER – POISONOUS GAS PIT- KEEP OUT!"
- ☐ Monitor liquid levels in the pit on a quarterly basis using a measuring stick. Note any changes in potential increase in water production which may increase the need for storage. Washing activities and water line breaks must be considered.
- ☐ Keep a record of inspections in a dedicated file for future reference.

REPORT OF MATERIALS TESTING



PROJECT: ANNEXSTAD DAIRY FARM
ST. PETER, MN

REPORTED
TO:

CENTRAL CROP
CONSULTING
311 BURLINGTON
CIRCLE P.O. BOX 236
MARSHALL, MN 56258
ATTN: BRENT
LOUWAGIE

AET NO: P-0018900

DATE:

Dec 20, 2022

INTRODUCTION

This report concerns the soil testing we performed for the referenced project. The scope of work pertinent to this report was specifically limited to the following:

- Perform laboratory tests on the submitted sample.
- Present the results of our services in a formal report.

Our work on this project was authorized by Mr. Brent Louwagie of Central Crop Consulting.

TEST METHODS AND RESULTS

All tests were performed in general accordance with the applicable ASTM methods which are indicated on the attached test data sheets.

REMARKS

To protect the addressee, the public, and ourselves, this report (and all supporting information) is provided for the addressee's own use. No representations are made to parties other than the addressee. The test samples have been discarded. If you have any questions concerning this report or we can be of further assistance, please contact us.

Report Prepared By:
American Engineering Testing, Inc.



Sam Sveine
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1730 First Avenue | Mankato, MN 56001

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TEST RESULTS
PERMEABILITY TEST DATA (ASTM:D5084)

Sample No.	PR #1
Sample Type:	Remolded
Soil Classification	Sandy lean clay, brown/gray (CL)
Permeability Test	
<u>Height (inches)</u>	4.030
<u>Diameter (inches)</u>	2.904
<u>Dry Density (pcf)</u>	100.8
<u>Water Content (%)</u>	19.43%
<u>Type of Test (Head)</u>	Falling
<u>Pressure Differential (psi)</u>	1.0
<u>Water Temp (°C)</u>	20
<u>K @ 20°C (cm/sec)</u>	2.04×10^{-8}
<u>Specifications K @ 20°C (cm/sec)</u>	6.90×10^{-8}



American Engineering Testing, Inc.
Mankato
1730 1st Avenue
Mankato, MN 56001
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www.teamAET.com

Proctor Report

Report No: PTR:AET-095985-S1

Issue No: 1

Client: Centrol Crop Consulting

CC: Brent Louwagie

Project: Annexstad Dairy Farm

St. Peter MN

Job No: P-0018900

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Date of Issue:

12/20/2022

Reviewed By:

Sam Sveine
Manager

Sample Details

Sample ID: AET-095985-S1

Field ID:

Proctor 1

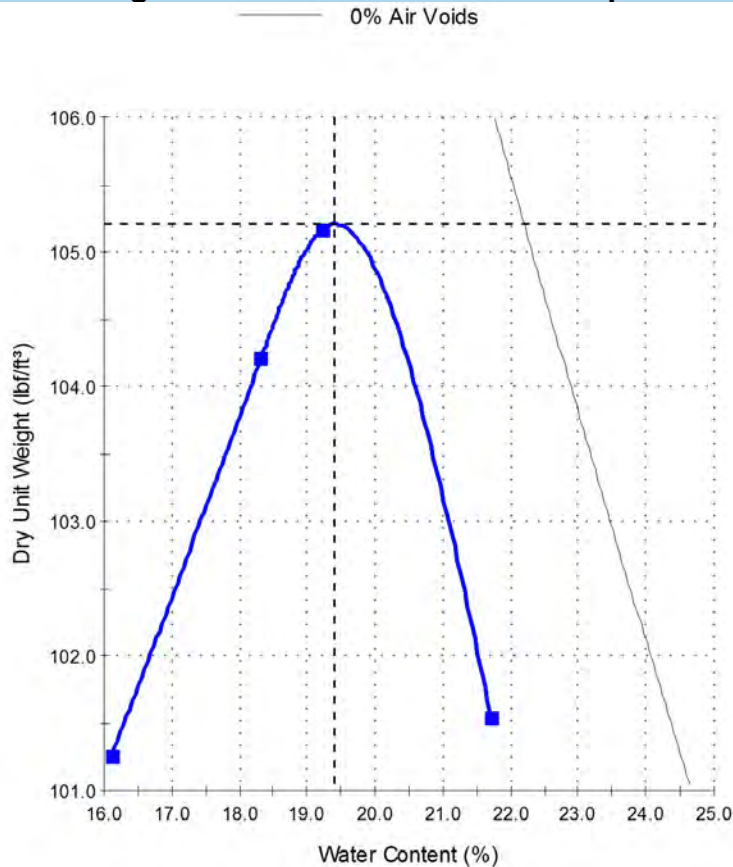
Date Sampled: 12/8/2022

Sampling Method: ASTM D698

Location: On-site Material

Sampled By: Client

Dry Unit Weight - Water Content Relationship



Test Results

ASTM D 698

Maximum Dry Unit Weight (lb/ft³): 105.2

Optimum Water Content (%): 19.4

Method: A

Preparation Method: Moist

Specific Gravity (Fines): 2.70

Tested By: Camden Bode

Date Tested: 12/12/2022

AASHTO T 89/T 90

Liquid Limit (%): 35

Plastic Limit (%): 20

Plasticity Index (%): 15

Tested By: Lori Bode

Date Tested: 12/12/2022

Comments



DISPLAYNAME	MAILINGADDR	MAILINGCITYSTATEZIP
ROBERT & JODEE HANSON	38660 403rd Ave	Saint Peter, MN 56082
GRANT & KAREN ANNEXSTAD REVOCABLE TRUST	38579 413th Ave	Saint Peter, MN 56082
ROLF & JEAN ANNEXSTAD	38171 403rd Ave	Saint Peter, MN 56082
ALLEN & JULIE QUIST	38197 State Highway 22	Saint Peter, MN 56082
MICHAEL ANNEXSTAD	38005 403rd Ave	Saint Peter, MN 56082
NEAL & PETER ANDERSON	37821 County Road 63	Saint Peter, MN 56082
PETER & KARRI ANDERSON	37821 County Road 63	Saint Peter, MN 56082
EUGENE THORSON	523 N 4th St	Saint Peter, MN 56082
TERRY & KELLY PANKRATZ	38349 County Road 15	Saint Peter, MN 56082
NEAL & JONI ANDERSON TRUST	37734 County Road 63	Saint Peter, MN 56082
ANNEXSTAD DAIRY FARMS INC	38171 403rd Ave	Saint Peter, MN 56082
NELSONGARD FARM LLC	42098 380th St	Saint Peter, MN 56082
STEVEN & MARK HERBERG	38836 State Highway 22	Saint Peter, MN 56082
NEAL & JONI ANDERSON REVOCABLE TRUST	37734 County Road 63	Saint Peter, MN 56082
PETER ANDERSON	37821 County Road 63	Saint Peter MN 56082
MELVIN & BEULAH SULLIVAN	45113 350th St	Gaylord, MN 55334
ROLF & JEAN ANNEXSTAD	38171 403rd Ave	Saint Peter, MN 56082
MICHAEL ANNEXSTAD	38005 403rd Ave	Saint Peter, MN 56082
RON REGENSCHEID	35724 375th Ave	Saint Peter, MN 56082



PLANNING & ZONING ADVISORY COMMISSION CRITERIA FOR GRANTING A CONDITIONAL USE PERMIT

Name of Applicant Annexstad Dairy Farms Inc.

PC Hearing February 27, 2023

Property Owner Mike Annexstad

BOC Hearing March 14, 2023

File PLN23-04

Commission Member Name

Use Request Feedlot Expansion Over 300 Animal Units

FINDINGS OF FACT

Authority for issuance of conditional use permits is derived from Minnesota State Statute §394.301 and Nicollet County Zoning Ordinance, Section 505. The conditional use must maintain the health, safety, morals, and general welfare of the community.

1. Given the nature of the land, the requested use is compatible with the general welfare, public health and safety.

YES ☐ NO ☐ REASON: _____

2. The requested use will not create an unreasonably excessive burden on the existing roads or utilities.

YES ☐ NO ☐ REASON: _____

3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.

YES ☐ NO ☐ REASON: _____

4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.

YES ☐ NO ☐ REASON: _____

ATTACHMENT F
Criteria for Conditional Use Permit

5. The requested use is consistent with the Nicollet County Land Use Ordinances.

YES ☐ NO ☐ REASON: _____

6. The requested use is not in conflict with the Nicollet County Comprehensive Plan.

YES ☐ NO ☐ REASON: _____

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

YES ☐ NO ☐ REASON: _____

8. The requested use is reasonably related to the existing land use and environment.

YES ☐ NO ☐ REASON: _____

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

YES ☐ NO ☐ REASON: _____

10. The requested use _____ have an adverse effect upon public health, safety and welfare due to the following other factors:

WILL ☐ WILL NOT ☐ REASON: _____

THE NICOLLET COUNTY PLANNING & ZONING ADVISORY COMMISSION

☐ RECOMMENDS APPROVAL OF THE REQUESTED USE ☐ RECOMMENDS DENIAL OF THE REQUESTED USE

THIS DECISION WAS BASED UPON

- | | |
|---|---------------------------------------|
| ☐ Application | ☐ Site visit |
| ☐ Information received at public hearing | ☐ Staff Report |
| ☐ Pictures | |

Date: _____ Commission Member: _____



01/01/2023 - 01/31/2023 Permit Report

RECORD ID	RECORD TYPE	DESCRIPTION	ADDRESS	OWNER NAME
BLD23-00001	Structure Permit	New 42' x 40' 3 stall cement floor garage.	38002 481ST AVE NICOLLET, MN 56074	LANGHORST VERONE M LE
BLD23-00002	Structure Permit	12' x 28' home addition.	34456 405TH AVE LE SUEUR, MN 56058	GRUBER DANIEL C
BLD23-00003	Structure Permit	New 30' grain bin.	35389 575TH LN LAFAYETTE, MN 56054	PLATZ BRUCE R
BLD23-00004	SSTS Compliance Inspection		34456 405TH AVE LE SUEUR, MN 56058	GRUBER DANIEL C
BLD23-00005	SSTS Compliance Inspection		50803 421ST AVE N MANKATO, MN 56003	GOODBURN JERRY D & NORA R GOODBURN
BLD23-00006	SSTS Compliance Inspection		50803 421ST AVE N MANKATO, MN 56003	GOODBURN JERRY D & NORA R GOODBURN
BLD23-00007	SSTS Compliance Inspection		41168 COUNTY ROAD 15 ST PETER, MN 56082	Carissa Murth