Redwood County Environmental Office -- PO Box 130, Redwood Falls, MN 56283 Phone: (507) 637-4023

Redwood County
www.co.redwood.mn.us

Animal Confinement Feedlot Conditional Use Permit Application

Permit #: 3-18 Date: 4-23-18

Proposed Location of Feedlot Operation:

Address: 23630 Hunter Ave. (House # / Street Name) City: Wabasso State: MN Zip: 56293

Parcel #: 71-028-1060 Township: Vail Section: 28 Twp #: 111 N Range: 37W

Information about the Operation:

General description of feedlot operation (including type and number of animal units, barns, and manure storage plan):

The existing facility consists of (3) total confinement buildings with manure pack storage capable of holding 820 feeder cattle (820au). The proposed facility consists of (1) additional total confinement building capable of holding 600 head of feeder cattle with a deep pitted manure storage area.

Legal Description of Proposed Feedlot Location:

NE 1/4 28-111N-37W Redwood County, MN

Site / Plan Information:

Zoning District: n/a

Soil Type 1: L163A Okoboji silty clay loam

Soil Type 2: 86 Canisteo clay loam

Water source for the site: Private well

Drainage System: Perimeter drain tile

Estimated water use:

Animal 1

Animal Type: Finishing cattle

10.0 gallons/day/animal x 1,420.0 number of animals on site x 365.0 number of days present

= 5,183,000.0

Animal 2

Animal Type:

0 gallons/day/animal x 0 number of animals on site x 0 number of days present

= 0 gallons/yr/site

Animal 3

Animal Type:

gallons/day/animal x number of animals on site x number of days present

= 0 gallons/yr/site

Total Gallons: 5,183,000.0

Proposed Building(s) Information: (Please enter dimensions in feet)

Building 1: Width: 65 Length: 242

Building 2: Width: Length:

Building 3: Width: Length:

Building 4: Width: Length:

Setback from road right-of-way: 2,165.0 feet

Setback from center line of road: 2,198.0 feet

Estimated date for beginning construction: _____ Estimated completion date: _____

General Contractor:

Name: STEVE HEILING City: REDWOOD FALLS State: MN

Applicant Information:

Note: If the applicant is not one natural person, requested information and signature(s) must be provided for each partner/associate/co-applicant and must include documentation of each co-applicant's legal identity and the legal relationship between them. Each partner/associate/co-applicant must sign or affirm the application before it will be accepted for consideration.

First Name: Todd Last Name: Altermatt

Business Name: _____

Address: 23630 Hunter Ave. City: Wabasso State: MN Zip: 56293

Home Phone: _____ Cell Phone: _____ Email: altermatt.farms@hotmai

List any additional applicants: Terry Altermatt, Cole Altermatt

Land Owner: Complete only if different from Applicant

First Name: _____ Last Name: _____

Business Name: _____

Address: _____ City: _____ State: MN Zip: _____

Home Phone: _____ Cell Phone: _____ Email: _____

If the applicant is not the owner of the land, please specify the type of agreement the applicant has with the owner of the land at the proposed site: _____

Feedlot Operator: Complete only if different from Applicant

If the operator is not a natural person(s), you must also provide documentation of the operator's legal identity.

First Name: _____ Last Name: _____

Business Name: _____

Address: _____ City: _____ State: MN Zip: _____

Home Phone: _____ Cell Phone: _____ Email _____

I affirm that the forgoing information is true and accurate. I understand that if any portion of this information is false or materially misleading, any conditional use permit issued in reliance upon this information is voidable at the election of Redwood County.

Applicant(s) Signature(s): _____ Date: 4/23/18

Landowner Signature _____ Date: 4/23/18

List of Required Documentation: (Application not complete until received)

- MPCA Application
- Manure Spreading Agreements
- Pit Design
- Manure Management Plan

Office Use Only * The section below is to be filled out by the Environmental Office Staff

Permit fee: $700 Receipt #: 486933

Application Received: 4-23-18

Commission Action:

Approved: _____ Date: _____

Disapproved: _____ Date: _____

County Board Action:

Approved: _____ Date: _____

Disapproved: _____ Date: _____

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Animal feedlot or manure storage area permit application

NPDES and SDS Permit Program

Doc Type: Permit Application

Applicability: You must submit this form to the Minnesota Pollution Control Agency (MPCA) for issuance, reissuance, and major modification of National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) feedlot permit coverage. A separate application form exists for minor modification requests. *The Feedlot permit modifications fact sheet that explains major and minor permit modifications is available on the MPCA website* at https://www.pca.state.mn.us/feedlots ***Keep a copy of this application form and all submittals for your records.***

Submit this form and any required enclosures to the MPCA as follows:

- After signing this form, scan and email it along with any required enclosures to FeedlotSubmittal.pca@state.mn.us.
  - To submit the application fee – mail the check with a copy of the first page of this form to the address listed below.
- If submission via email is not possible, you can mail this form, the required enclosures, and check for the application fee to:

  Attn: Feedlot Master File Staff
  Minnesota Pollution Control Agency
  18 Wood Lake Drive SE
  Rochester, MN 55904

I. Permit type and reason for application

Feedlot Registration number: 127-50027

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

☒ NPDES (Federal Permit) with State requirements included ☐ SDS (State Permit)

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

☒ General permit coverage issuance
(No existing general permit coverage or coverage under a new general permit due to pending expiration of current coverage)

☐ General permit coverage major modification
(Changes to sites with existing general permit coverage, including construction or expansion)

☐ Individual permit issuance
(No existing individual permit)

☐ Individual permit reissuance
(Existing Individual permit due to expire and no desire to make any changes)

☐ Individual permit major modification
(Changes to a site with an existing Individual permit, including construction or expansion)

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: Todd Altermatt
Address: 23630 Hunter Ave.
City: Wabasso State: MN
Phone: 507-828-8227 Zip: 56293
Email: altermatt.farms@hotmail.com

Additional owner – attach additional sheets as necessary

Name: Terry Altermatt
Address: 1255 Oak St.
City: Wabasso State: MN
Phone: 507-828-8235 Zip: 56293
Email: altermatt.farms@hotmail.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 address

Site Name: Todd, Terry & Cole Altermatt Farm

☐ Facility is a MN Ag Water Quality Certified Farm (MAWQCP)

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

Street: 23630 Hunter Ave.
City: Wabasso State: MN
Phone: 507-828-8227 Zip: 56293

Contact person for day-to-day activities

Name: Cole Altermatt
Street: 689 Maple St.
City: Wabasso State: MN
Phone: Zip: 56293
Cell phone: 507-829-3141
Email: altermatt.farms@hotmail.com

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

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Animal feedlot or manure storage area permit application

NPDES and SDS Permit Program

Doc Type: Permit Application

Applicability: You must submit this form to the Minnesota Pollution Control Agency (MPCA) for issuance, reissuance, and major modification of National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) feedlot permit coverage. A separate application form exists for minor modification requests. *The Feedlot permit modifications fact sheet that explains major and minor permit modifications is available on the MPCA website* at https://www.pca.state.mn.us/feedlots ***Keep a copy of this application form and all submittals for your records.***

Submit this form and any required enclosures to the MPCA as follows:

- After signing this form, scan and email it along with any required enclosures to FeedlotSubmittal.pca@state.mn.us.
  - To submit the application fee – mail the check with a copy of the first page of this form to the address listed below.
- If submission via email is not possible, you can mail this form, the required enclosures, and check for the application fee to:

  Attn: Feedlot Master File Staff
  Minnesota Pollution Control Agency
  18 Wood Lake Drive SE
  Rochester, MN 55904

I. Permit type and reason for application

Feedlot Registration number: _____

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

☐ NPDES (Federal Permit) with State requirements included ☐ SDS (State Permit)

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

☐ General permit coverage issuance
(No existing general permit coverage or coverage under a new general permit due to pending expiration of current coverage)

☐ General permit coverage major modification
(Changes to sites with existing general permit coverage, including construction or expansion)

☐ Individual permit issuance
(No existing individual permit)

☐ Individual permit reissuance
(Existing Individual permit due to expire and no desire to make any changes)

☐ Individual permit major modification
(Changes to a site with an existing Individual permit, including construction or expansion)

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: _____
Address: _____
City: _____ State: _____
Phone: _____ Zip: _____
Email: _____

Additional owner – attach additional sheets as necessary

Name: Cole Altermatt
Address: 689 Maple St.
City: Wabasso State: MN
Phone: 507-829-3141 Zip: 56293
Email: altermatt.farms@hotmail.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 address

Site Name: _____

☐ Facility is a MN Ag Water Quality Certified Farm (MAWQCP)

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

Street: _____
City: _____ State: MN
Phone: _____ Zip: _____

Contact person for day-to-day activities

Name: _____
Street: _____
City: _____ State: _____
Phone: _____ Zip: _____
Cell phone: _____
Email: _____

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

IV. Billing address

Indicate where the Permit fee invoice(s) should be mailed (check only one):

☒ Primary owner address in Section II ☐ Contact person in Section III

V. Facility location

County: Redwood Township name: Vail

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 37 W	28	NE	SW

VI. 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? ☐ Yes ☒ No
   (sinkholes, caves, disappearing springs, resurgent springs, karst windows, dry valleys, or blind valleys)
   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 the following types of wells: ☐ Yes ☒ No
   If Yes, select the applicable well type below:
   ☐ 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)

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

Mandatory environmental review is required when the addition of 1,000 or more animal units (AU) is proposed as part of the construction/expansion at any facility. The threshold when environmental review is mandatory is reduced to 500 AU when any part of the facility is located within a "sensitive area". 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 defined under Minnesota law (Minn. R. ch. 4410) as two or more projects located in the same geographic area and constructed sequentially 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. The following will assist the MPCA to evaluate if your project qualifies as a "phased action".

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" (available on the MPCA website at https://www.pca.state.mn.us/quick-links/environmental-review) and/or Minn. R. 4410 for further details.

VIII. Animal numbers and animal unit (AU) calculation

Complete the table below to identify the **maximum** number of animals housed at the 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* AU capacity: 3. Head count	*Current* AU capacity: 4. Animal units = column 2 x column 3	*Final* AU capacity (Current +/- Changes): 5. Head count	*Final* AU capacity (Current +/- Changes): 6. Animal units = column 2 x column 5
A. Dairy cattle					
Mature cow (milked or dry) over 1,000 lbs.	1.4				
Mature cow (milked or dry) under 1,000 lbs.	1.0				
Heifer	0.7				
Calf	0.2				
B. Veal					
Veal	0.2				
C. Beef cattle					
Slaughter steer/heifer, stock cow, or bull	1.0	820	820	1,420	1,420
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 *liquid* manure system					
Layer Hens or Broilers	0.033				
H. Chickens with a *dry* 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 Add all numbers in column 4 for Current AU total Add all numbers in column 6 for Final AU total			**Current AU Capacity Total** **820**		**Final AU Capacity Total** **1,420**

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

IX. Animal holding areas

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

Animal holding area ID — ***List each animal holding area in a separate column***

Facility Site Sketch ID (i.e., #1, A, Barn 1)	Barn #1	Barn #2	Barn #3	Barn #4	Working Barn #5	Open Lot #6
Status: (check one box only) *Proposed* - not permitted previously *Approved* - permitted but not yet operational *Existing* - current operational component* *Modifying* - change to a permitted component	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☒Eliminating
Distance to nearest well (ft.)	115'	220'	215'	415'	120'	285'

* for facilities without current NPDES or SDS permit coverage, this would include all current components of your registered feedlot

Type of animal holding areas (indicate dimensions and floor type) — ***Write approximate dimensions in feet in the space below*** *(width x length or area with units for irregular shapes)*

Total confinement barn (slatted floor)				242'x65'		
Total confinement barn (solid floor)	100'x90'	200'x50'	150'x148'		60'x40'	
Partial confinement barn						
Open lot with runoff controls						
Open lot without runoff controls						85'x75'
Animal Holding Area Floor Type (check all that apply)	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☐Concrete ☒Soil ☐Asphalt ☐Other

Animal numbers — ***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.

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	225	225	370	600	0 (working facility)	0
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.						
Ducks						
Other:						

Air emissions plan for animal holding areas* — ***Indicate from the list below the letter(s) of the applicable air emission control strategy(s)*** *(choose at least one strategy for each category below for each animal holding area)*

Odor control strategies currently employed	A, C, D	A, C, D	A, C, D	A, C, D	A, C, D	A, C, D
Possible additional odor control strategies** (must indicate at least one practice)	J	J	J	J	J	J

Potential practices employed to minimize emissions/odors from animal holding areas

A. Disperse/mix air with tree plantings
B. Treatment of escaping air with control technologies
C. Maintain clean, dry floors to eliminate manure buildup
D. Promptly clean up any spilled feed
E. Regular removal of manure
F. Higher oil and fat content in feed to reduce dust
G. Eliminate manure buildup under gates, feeders, etc..
H. Maintain exhaust fans and avoid manure and dust accumulation
I. Use spray oil to reduce dust
J. I will consult the MPCA to identify changes that can be made to reduce odors
K. Other: _____

* This satisfies Minn. R. 7020.0505, subp. 4 item B (1). The response to documented exceedances is satisfied by the application certification text.
** In the event that odor complaints are validated, the practices identified will be implemented pursuant to MPCA request/approval.

X. Manure handling, feed storage, and dead animal areas

Complete the table below for your manure storage, feed/silage storage areas and dead animal disposal areas on your site. If needed, continue your list on an additional copy of this page.

Manure, feed, or dead animal areas	***List each manure handling, feed storage, and dead animal area in a separate column***					
Facility Site Sketch ID (i.e., #1, A, Basin 1)	Barn #1	Barn #2	Barn #3	Barn #4	Feed Shed 7	Feed Shed 8
Status: (check one box only) *Proposed* - not permitted previously *Approved* - permitted but not yet operational *Existing* - current operational component* *Modifying* - change to a permitted component	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating
Distance to nearest well (ft.)	115'	220'	215'	415'	360'	275'

* for facilities without current NPDES or SDS permit coverage, this would include all current components of your registered feedlot

Type of liquid manure or process wastewater storage/treatment areas (indicate dimensions)	***Write approximate top dimensions in feet in the space below*** *(width x length x depth or volume with units for irregular shapes)*					
Earthen or GCL lined basin						
Below barn concrete tank						
In-ground concrete tank/basin (outdoor)				242' x 48' x 12'		
Above-ground concrete tank						
Synthetic lined (HDPE, EPDM, etc.) basin						
Steel tank (i.e., slurry-store)						
Composite lined (2 liner types) basin/tank						
Vegetated Infiltration Area						
Other (describe):						

Type of solid manure, feed storage, and dead animal areas (indicate dimensions and floor type)	***Write approximate dimensions in feet in the space below*** *(width x length or area with units for irregular shapes)*					
Permanent stockpile						
Dead animal management area						
Covered feed storage area						
Uncovered feed storage area					100' x 50'	60' x 45'
Sweet corn silage storage storage pad area						
Tonnage on site at any one time						
Other (describe): Manure Pack	100' x 90'	200' x 50'	150' x 148'			
Stockpile, feed storage, or mortality area floor/liner type (check all that apply)	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☐Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other

Air emissions plan for liquid and solid manure storage areas*	***Indicate from the list below the letter(s) of the applicable air emission control strategy(s)*** *(choose at least one strategy for each category below for each **manure storage area**)* *(this is not required for feed storage areas, vegetative infiltration areas, or dead animal management areas)*					
Odor control strategies currently employed	G, L	G, L	G, L	L, O		
Possible additional odor control strategies** (must indicate at least one practice)	O	O	O	K		

Potential practices employed to minimize emissions/odors from manure storage areas

(no practices required for feed storage areas, vegetative infiltration areas, or dead animal management areas)

Liquid storage area specific (basins, pits, etc.)

A. Maintain crust on basin by using organic bedding
B. Cover liquid manure storage area with straw
C. Cover liquid manure storage area with synthetic cover
D. Anaerobic digestion
E. Separate solids with settling basin or liquid/solid separator
F. Utilize a pit additive to break down solids

Solid storage area specific (stockpiles)

G. Reduce length of time stockpile is maintained
H. Solid manure composting
I. Cover the solid manure stockpile
J. Incinerate solid manure at approved/permitted facility

Practices applicable to solid or liquid storage areas

K. Notify neighbors of manure application periods and avoid holidays
L. Disperse/mix air with tree plantings
M. Add straw or other bedding material to reduce odor/ emissions
N. Treatment of escaping air with control technologies
O. I will consult the MPCA to identify changes that can be made to reduce odors

P. Other: _____

Q. Other: _____

R. Other: _____

* This satisfies Minn. R.7020.0505 subp. 4 item B (1). The response to documented exceedances is satisfied by the application certification text.
** In the event that odor complaints are validated, the practices identified will be implemented pursuant to MPCA request/approval.

X. Manure handling, feed storage, and dead animal areas

Complete the table below for your manure storage, feed/silage storage areas and dead animal disposal areas on your site. If needed, continue your list on an additional copy of this page.

Manure, feed, or dead animal areas ***List each manure handling, feed storage, and dead animal area in a separate column***

Facility Site Sketch ID (i.e., #1, A, Basin 1)	Silage Bunker #9	High Moisture Corn Bunker #10	Dead Animal Area #11			
Status: (check one box only) *Proposed* - not permitted previously *Approved* - permitted but not yet operational *Existing* - current operational component* *Modifying* - change to a permitted component	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☒Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating
Distance to nearest well (ft.)	225'	300'	350'			

* for facilities without current NPDES or SDS permit coverage, this would include all current components of your registered feedlot

Type of liquid manure or process wastewater storage/treatment areas (indicate dimensions)

Write approximate top dimensions in feet in the space below *(width x length x depth or volume with units for irregular shapes)*

Earthen or GCL lined basin						
Below barn concrete tank						
In-ground concrete tank/basin (outdoor)						
Above-ground concrete tank						
Synthetic lined (HDPE, EPDM, etc.) basin						
Steel tank (i.e., slurry-store)						
Composite lined (2 liner types) basin/tank						
Vegetated Infiltration Area						
Other (describe):						

Type of solid manure, feed storage, and dead animal areas (indicate dimensions and floor type)

Write approximate dimensions in feet in the space below *(width x length or area with units for irregular shapes)*

Permanent stockpile						
Dead animal management area			8' x 8'			
Covered feed storage area						
Uncovered feed storage area	150' x 40' (tarped)	130' x 50' (tarped)				
Sweet corn silage storage storage pad area						
Tonnage on site at any one time						
Other (describe):						
Stockpile, feed storage, or mortality area floor/liner type (check all that apply)	☒Concrete ☐Soil ☐Asphalt ☐Other	☒Concrete ☐Soil ☐Asphalt ☐Other	☐Concrete ☒Soil ☐Asphalt ☐Other	☐Concrete ☐Soil ☐Asphalt ☐Other	☐Concrete ☐Soil ☐Asphalt ☐Other	☐Concrete ☐Soil ☐Asphalt ☐Other

Air emissions plan for liquid and solid manure storage areas*

Indicate from the list below the letter(s) of the applicable air emission control strategy(s) *(choose at least one strategy for each category below for each **manure storage area**)*
(this is not required for feed storage areas, vegetative infiltration areas, or dead animal management areas)

Odor control strategies currently employed						
Possible additional odor control strategies** (must indicate at least one practice)						

Potential practices employed to minimize emissions/odors from manure storage areas

(no practices required for feed storage areas, vegetative infiltration areas, or dead animal management areas)

Liquid storage area specific (basins, pits, etc.)

A. Maintain crust on basin by using organic bedding
B. Cover liquid manure storage area with straw
C. Cover liquid manure storage area with synthetic cover
D. Anaerobic digestion
E. Separate solids with settling basin or liquid/solid separator
F. Utilize a pit additive to break down solids

Solid storage area specific (stockpiles)

G. Reduce length of time stockpile is maintained
H. Solid manure composting
I. Cover the solid manure stockpile
J. Incinerate solid manure at approved/permitted facility

Practices applicable to solid or liquid storage areas

K. Notify neighbors of manure application periods and avoid holidays
L. Disperse/mix air with tree plantings
M. Add straw or other bedding material to reduce odor/ emissions
N. Treatment of escaping air with control technologies
O. I will consult the MPCA to identify changes that can be made to reduce odors
P. Other: _____
Q. Other: _____
R. Other: _____

* This satisfies Minn. R.7020.0505 subp. 4 item B (1). The response to documented exceedances is satisfied by the application certification text.

XI. Changes to groundwater monitoring plan (complete only if applicable)

If groundwater monitoring is required at the facility, this application can request changes to the MPCA-approved groundwater monitoring plan. In order to request changes to the groundwater monitoring plan, please indicate the type of change requested.

☐ Elimination of monitoring ☐ Change to sampling frequency

☐ Change to sample testing protocol ☐ Other

When a change is requested, please include with this permit application documentation from a qualified professional that provides a technical analysis and justification for the requested changes.

XII. Notifications and public meetings

The notifications identified in items A and B are required to be done **before** permit issuance.

A. 500 or more AU: Notice to residents and property owners within 5,000 feet of a proposed project

When required. A 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.
- ***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 with more than 500 Animal Units* available on the MPCA website at https://www.pca.state.mn.us/feedlots.

Verification of notice.

The MPCA must verify that this notice has been completed prior to permit issuance. Documentation that this notice has been completed can be provided with the permit application (preferred) or submitted at a later date, prior to permit issuance.

When the notice has been completed prior to this application

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.

When the notice has not been completed prior to this application

Please include with this permit application the following:

- A copy of the content of the notification
- Date notification is scheduled to occur: _____

Note: The permit cannot be issued prior to receiving verification that the notice has actually taken place. This verification must be one of the three items listed above.

B. Non-delegated county public meeting minutes (Minn. Stat. § 116.07, subd. 7(l))

A county which has not accepted delegation of the feedlot program must hold a public meeting prior to issuance of a feedlot permit by the MPCA for an animal feedlot with a capacity of 300 or more animal units.

Date meeting has occurred or is scheduled to occur: May 21st 2018

Verification of public meeting.

A copy of the meeting minutes must be provided to the MPCA for verification of completion of this requirement prior to permit issuance.

XIII. Certification and signature

General permit

The Applicant certifies that, if this is an application is for a general permit, they are familiar with the requirements of the general permit. The Applicant understands that if the MPCA determines the facility does not meet the criteria for coverage under the general permit; this application will be used as an application for an individual Permit.

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.

Operation and Maintenance Plan

The Applicant certifies that the following operation and maintenance measures will be employed:

- Operate and maintain manure storage areas according to the approved design plans including:
  - Repair of damage
  - Maintenance of freeboard
  - No discharge (unless approved)
  - Control vegetation and tree growth with frequent mowing
  - Access only at designated points (i.e. concrete ramps)
- Divert surface water flow away from and prevent pooling near manure storage areas
- Operate manure storage area capacity to be consistent with the approved manure management plan
- Perform routine maintenance of manure handling/transfer equipment
- Minimize erosion and sediment transport with vegetative buffers and/or gravel/rock energy dissipation
- Minimize stormwater contact with sources of pollution
- Operate animal mortality management areas according to MN Board of Animal Health and other applicable requirements
- Dispose of solid and hazardous waste according to applicable regulations
- Perform groundwater monitoring according to the MPCA approved plan

Air Emissions Plan – response to documented exceedances *(Minn. R. 7020.0505 subp. 4, item B (1)(b))*

The Applicant certifies that, if ambient air quality monitoring indicates an exceedance of the Hydrogen Sulfide Standard, they will submit a report, at the MPCA's request, that provides documentation that one of the following will control the emissions.

Liquid manure storage areas

- Chemical additions
- Natural crusting
- Straw cover
- Synthetic cover (i.e., HDPE)
- Treatment of escaping air

Solid manure storage areas

- Synthetic cover
- Frequent manure removal
- Frequent land application
- Incineration
- Composting

The report will provide evidence that the technology will control the emissions, indicate when the technology will be installed and fully operational, and indicate what temporary measures will be taken to minimize emissions prior to installation. Alternatives may be approved at the discretion of the MPCA. The report will be immediately implemented upon MPCA approval.

Construction Stormwater (CSW) Permit

The Applicant certifies that, if this application is for a NPDES permit where construction activities will disturb one or more acres of land, it will also serve as an application for the general CSW NPDES permit, as referenced in the feedlot NPDES permit, unless a separate application for CSW NPDES permit coverage has been made. The Applicant agrees to comply with the requirements of the CSW NPDES permit.

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 MPCA, 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

Print name: Terry Aftermatt Print official title: Owner

Office phone: _____ Cell phone: 507-828-8235

Signature: Terry Aftermatt Date: 4-20-18

To sign up for electronic communications including reminders for annual reports as well as MPCA feedlot newsletters and other MPCA communications, please go to the MPCA website at https://public.govdelivery.com/accounts/MNPCA/subscriber/new.

Required enclosures (Permit applications submitted without all required enclosures are incomplete.)

All forms are available on the *NPDES and SDS permits* 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) **submitted on the MPCA's standardized form.**

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 **any** portion of 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.

Notes: The MMP requirements when ownership of manure is transferred form is incorporated into the spreadsheet to account for instances when only some of the manure is transferred.

A hand-entry version of the MPCA Manure Management Planner.

☒ C. Plans and Specifications for construction, modification, or expansion of any liquid manure storage area.

☒ D. Emergency Response Plan for response to manure spills and catastrophic animal mortality events. The plan must be completed using the MPCA's form.

☒ E. Permit application fee: (**Check payable to:** Minnesota Pollution Control Agency)

Permitting action	Application fee	Application fee when Environmental Review (EAW) is required*
General permit coverage issuance	$620	$5,270
General permit coverage major modification	$620	$5,270
Individual permit issuance	$1,860	$6,510
Individual permit reissuance	$620	$5,270
Individual permit major modification	$1,860	$6,510

*See Part VII of this application for more information regarding the need for preparation of an EAW.

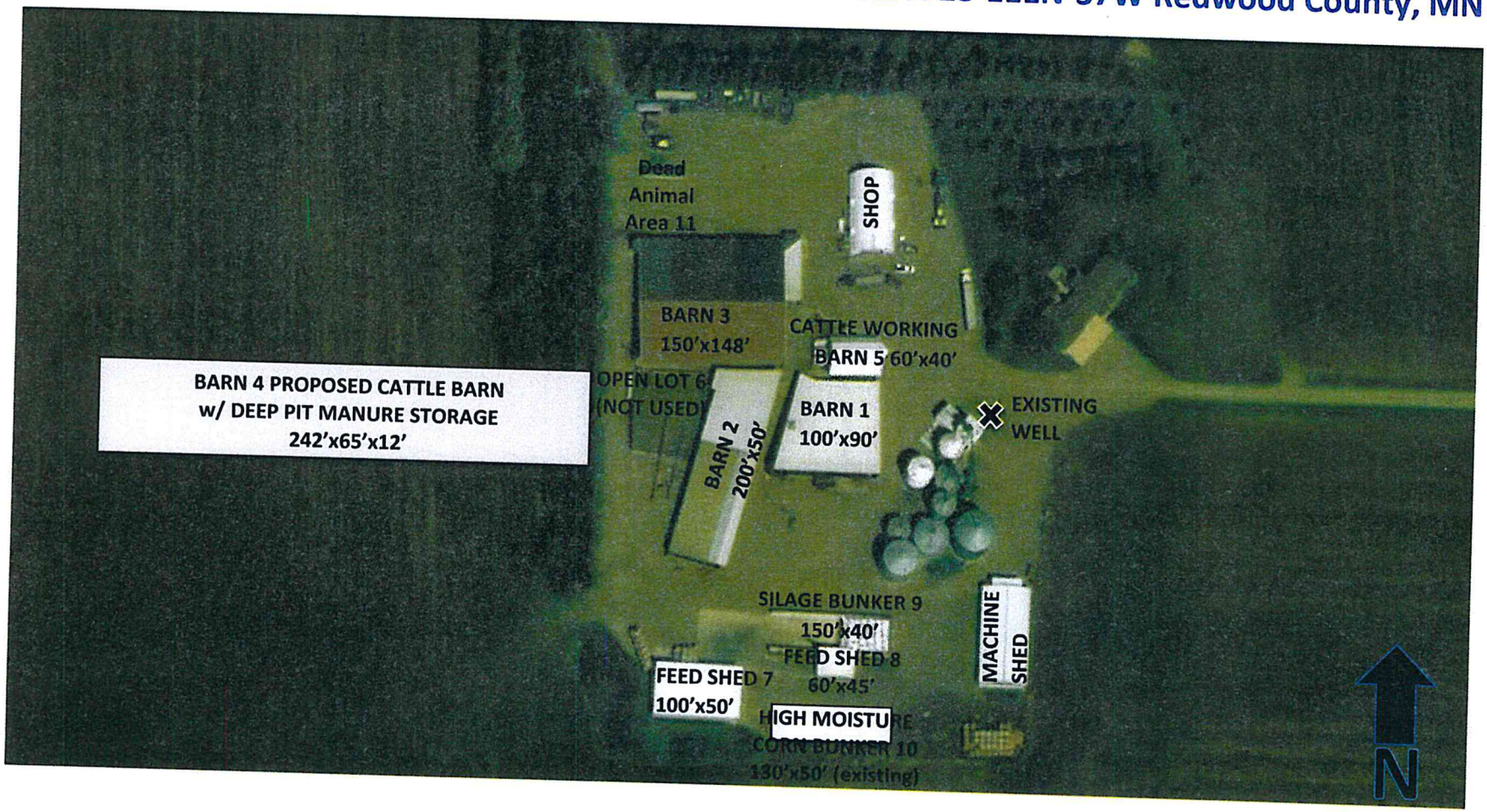
☐ F. **Conditional** – Stormwater Pollution Prevention Plan (SWPPP). Development of a SWPPP is required when construction disturbs one or more acres at any feedlot site. The SWPPP must be available at the construction site but does **not** need to be submitted with this application unless the construction disturbs 50 acres or more of land and this application is for an NPDES permit.

The MPCA has developed the *SWPPP template for feedlot construction activities* to assist in development of a SWPPP.

☐ G. **Optional** – Verification of the notifications required in part XII of this application. If not submitted with the application, the MPCA must receive the verification prior to permit issuance. It is strongly recommended that the applicable verifications be included with the permit application.

Todd, Terry & Cole Altermatt Farm Site Map

NE ¼ 28-111N-37W Redwood County, MN



NOTICE OF APPLICATION
FOR
LIVESTOCK FEEDLOT PERMIT

Notice is hereby given per Minnesota Statutes, Chapter 116, that the Todd, Terry & Cole Altermatt Farm, has made application to the Minnesota Pollution Control Agency and Redwood County for a permit to construct or expand a feedlot with a capacity of 500 animal units or more. The facility is located in the NE ¼ of Section 28 of Vail Township in Redwood County, Minnesota. The existing facility consists of (3) total confinement buildings with manure pack storage capable of holding 820 feeder cattle totaling 820 animal units. The facility also consists of (1) open lot without containment which is to be eliminated. Currently, feed is stored in (2) separate covered feed sheds, (1) 150'x40' silage bunker and (1) 130'x50' high moisture corn bunker. The proposed facility consists of (1) additional total confinement building capable of holding 600 head of feeder cattle with a total confinement deep pitted manure storage area. The total animal unit capacity of the facility will be 1,420 animal units.

This publication shall constitute as notice to each resident and each owner of real property within 5,000 feet of the perimeter of the proposed feedlot as required by Minnesota State Law.

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Emergency Response Plan

NPDES and SDS Permit Program
Feedlot Program

Doc Type: Permit Application

Applicability: This *Emergency Response Plan* is to be used in case of an emergency spill, leak, or failure at the production facility or land application area and to assist with response to catastrophic animal mortality events (barn fires, tornadoes, etc.). You must submit this form as part of an application for National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) feedlot permit coverage.

Facility name: Todd, Terry & Cole Altermatt Farm
Feedlot registration no.: 127-50027
Owner/Operator name: Todd, Terry & Cole Altermatt
Feedlot permit no.:

List of critical phone numbers and contacts

	Contact person (or Company)	Phone number
Emergency contacts		
• Fire/Ambulance	----------	**911**
• County Sheriff	Redwood County	507-637-4036
Agency contacts		
• **Minnesota Duty Officer**	----------	**1-800-422-0798**
• Minnesota Pollution Control Agency (MPCA) Field Office	Marshall Office	507-476-4268
• County Feedlot Officer (CFO)		
• Board of Animal Health Contact	MN Board of Animal Health	651-296-2942
Other contacts		
• Insurance company		507-423-6262
• Gopher State One Call	----------	**1-800-252-1166**
•		
Local vendors for spill and/or catastrophic mortality response assistance		
• Manure pumper	Dan Loose	507-828-0375
• Manure loading equipment	Tom Johanneck	507-828-4957
• Earth moving equipment	Brey Tiling & Excavation, LLC	507-537-1297
• Tiling equipment	Brey Tiling & Excavation, LLC	507-537-1297
• Containment/Absorption materials (hay, straw, cornstalks, sawdust)	Guetter Farms	507-430-7098
•		

Provide the Minnesota Duty Officer:

- Your contact information
- Incident location, date, and time
- For spills
  - spill type
  - spill amount
  - surface water or field tile impacted
- Progress made in response to the spill or catastrophic mortality event

Manure Spill Emergency Response Procedures*

1. Immediately stop the source of a liquid manure leak or spill:
   - Turn off pumps or valves
   - Clamp hoses or park tractor on hoses
2. Contain spilled manure:
   - Use skid loader or tractor with blade to make berms
   - Install bale checks and block downstream culverts
   - Insert sleeves around tile intakes (or plug/cap)
   - Use tillage equipment to work ground ahead of spill
   - Use absorptive materials
3. Make necessary phone calls as listed in the chart above:
   - Notify Minnesota Duty Officer at 1-800-422-0798
   - Notify sheriff's office if spilled on public roads or right-of-ways
4. Cleanup:
   - Clean up spill immediately from road and roadside
   - Clean up all material, including the contaminated soil, as soon as possible by scraping, or by other means
   - Land apply manure at agronomic rates or place manure back in the manure storage area/ solid manure stockpile
   - Follow recommendations of MPCA staff and/or CFO
   - Restore site to its original conditions
   - If rain is expected prior to completion of cleanup; actions need to be taken to contain manure contaminated runoff from solid manure spills
5. Document your actions:
   - Keep records of all actions related to the spill and follow up activities

**A detailed site map should be displayed on site to assist employees identify sensitive receptors near the facility (surface water, wells, tile intakes, etc.).*

Catastrophic Animal Mortality Response

1. Make necessary phone calls as listed in the chart above:
   - Notify Minnesota Duty Officer at 1-800-422-0798
   - Notify Minnesota Board of Animal Health
   - Notify MPCA and CFO
2. Cleanup
   - Dispose of mortalities according to recommendations of

If burial of animal mortalities is necessary, the burial site must meet the following:

- Located 1000 feet from lakes and 300 feet from rivers and streams
- Mortalities are not buried within 5 feet of the seasonal water table
- Mortalities are not buried within 10 feet of karst susceptible bedrock
- Soils are not sandy or gravelly

Describe approximate location(s) of potential burial site(s) below:

MN Board of Animal Health Representative
- Locate disposal area for mortalities to prevent impacts to surface and/or groundwater (consult MPCA/CFO)

3. Document your actions
   - Keep records of all actions related to the animal mortality disposal activities

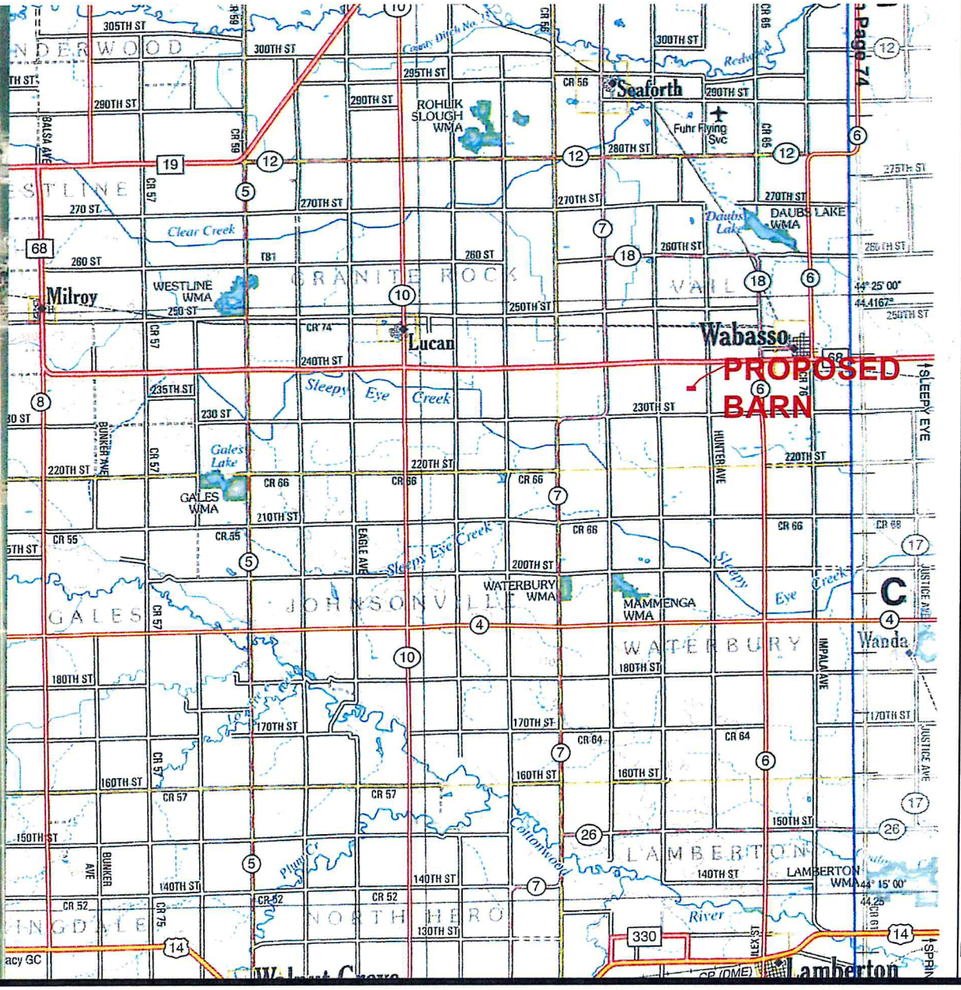
TABLE OF CONTENTS

REGISTERED PROFESSIONAL ENGINEER
46735
NICHOLAUS J. ROWE
MINNESOTA

I hereby certify that this engineering document 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.

Nicholaus J. Rowe Date 4/27/18

Nicholaus J. Rowe, P.E.
License number 46735
My license renewal date is June 30, 2018
Pages or sheets covered by this seal: Sheets 1A-4D

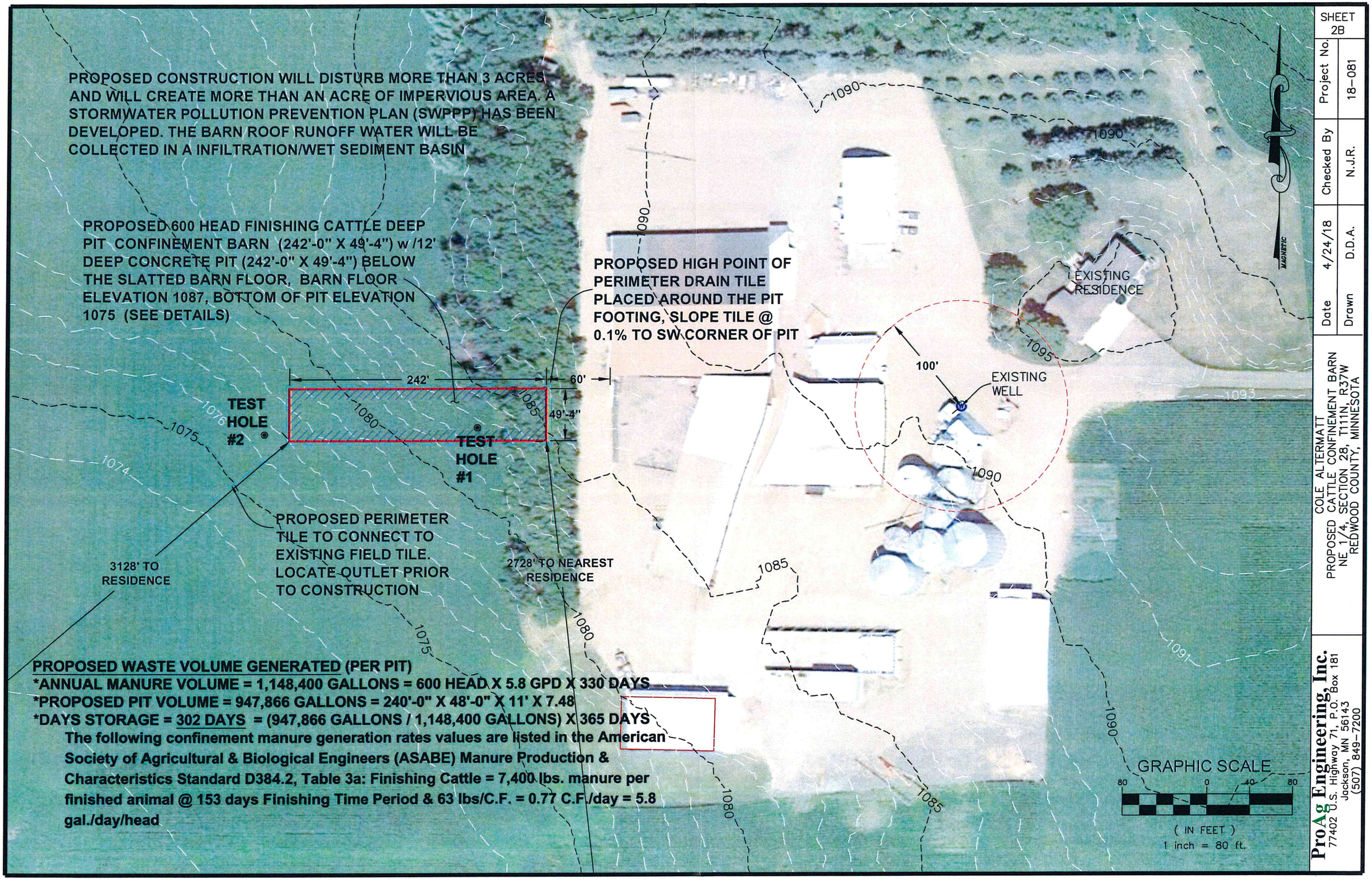


SHEET 1A

Project No.	18-081
Checked By	N.J.R.
Date	4/26/18
Drawn	D.D.A.

COLE ALTERMATT
PROPOSED CATTLE CONFINEMENT BARN
NE 1/4, SECTION 28, T111N, R37W
REDWOOD COUNTY, MINNESOTA

ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200



PROPOSED WASTE VOLUME GENERATED (PER PIT)

*ANNUAL MANURE VOLUME = 1,148,400 GALLONS = 600 HEAD X 5.8 GPD X 330 DAYS

*PROPOSED PIT VOLUME = 947,866 GALLONS = 240'-0" X 48'-0" X 11' X 7.48

*DAYS STORAGE = 302 DAYS = (947,866 GALLONS / 1,148,400 GALLONS) X 365 DAYS

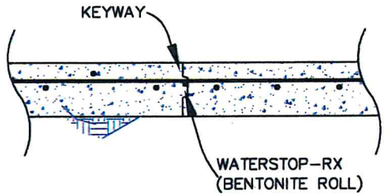
The following confinement manure generation rates values are listed in the American Society of Agricultural & Biological Engineers (ASABE) Manure Production & Characteristics Standard D384.2, Table 3a: Finishing Cattle = 7,400 lbs. manure per finished animal @ 153 days Finishing Time Period & 63 lbs/C.F. = 0.77 C.F./day = 5.8 gal./day/head

SHEET 2B

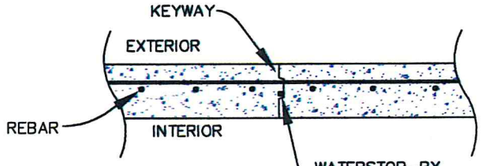
Project No.	Checked By	Date	Drawn
18-081	N.J.R.	4/24/18	D.D.A.

COLE ALTERMATT
PROPOSED CATTLE CONFINEMENT BARN
NE 1/4, SECTION 28, T111N, R37W
REDWOOD COUNTY, MINNESOTA

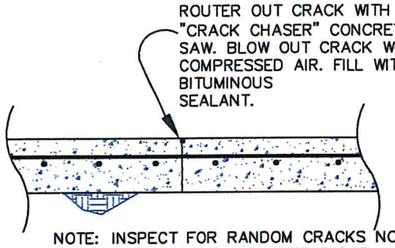
ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200



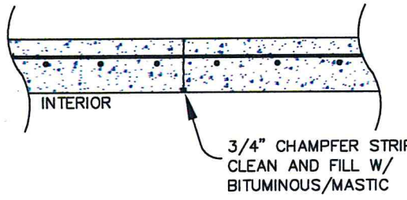
CONSTRUCTION JOINT DETAIL (SLAB)



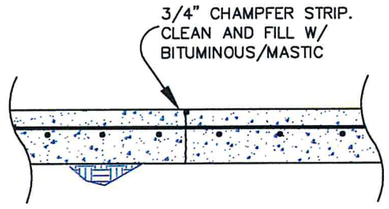
CONSTRUCTION JOINT DETAIL (WALL)



RANDOM CRACK REPAIR FOR CONCRETE PIT FLOOR
(NOT TO SCALE)



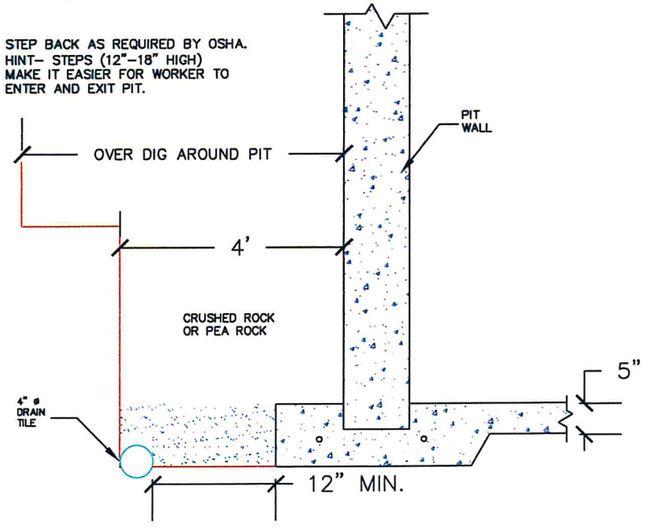
CONTRACTION JOINT DETAIL (WALL)

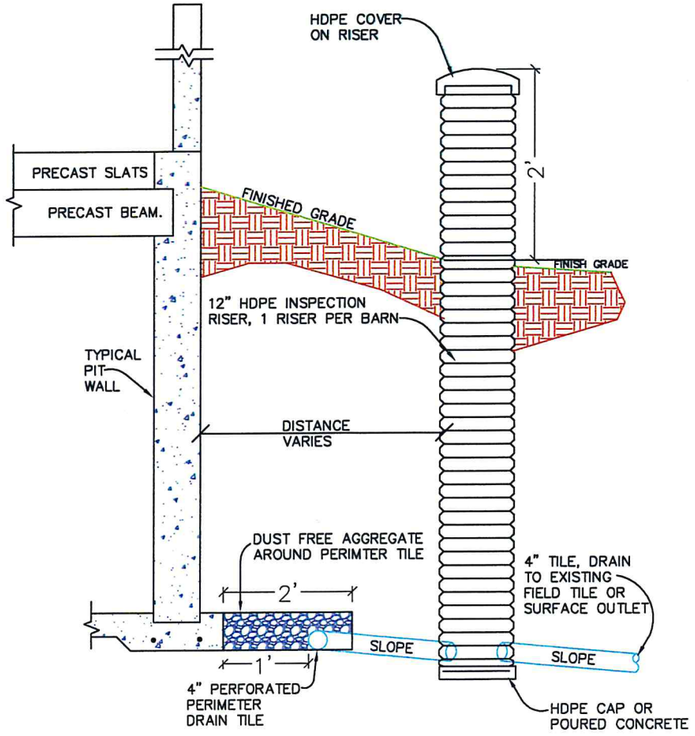


CONTRACTION JOINT DETAIL (SLAB)

PERIMETER TILE

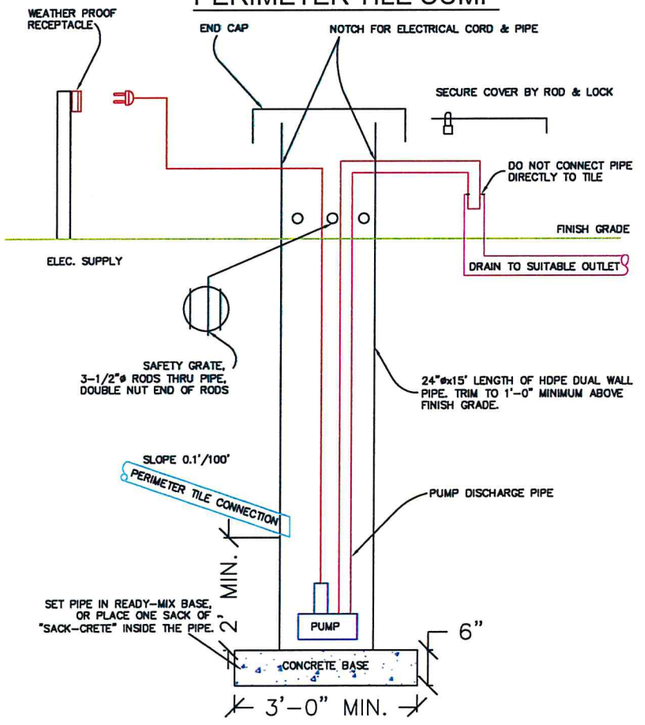
PERIMETER TILE WITH PEA ROCK COVER INSTALLED BY CONCRETE CONTRACTOR BEFORE POURING FLOOR SLAB.





INSPECTION RISER DETAIL-SECTION VIEW

PERIMETER TILE SUMP



PERIMETER TILE SYSTEM

WHERE A PERIMETER TILE SYSTEM IS REQUIRED TO CONTROL THE ELEVATION OF THE WATER TABLE OR SATURATED SOILS, IT MUST LOWER THE WATER TABLE OR SATURATED SOIL TO BELOW THE BOTTOM OF THE STORAGE LINER. PERIMETER DRAINAGE TILE SHALL BE LOCATED AT LEAST ONE FOOT OUTSIDE OF THE FOOTING OF CONCRETE-LINED MANURE STORAGE AREAS. SUMP PUMPS SHALL BE REQUIRED WHENEVER A GRAVITY OUTLET IS NOT AVAILABLE.

SHEET 3C

Project No.	18-081
Checked By	N.J.R.
Date	4/25/18
Drawn	D.D.A.

COLE ALTERMATT
PROPOSED CATTLE CONFINEMENT BARN
NE 1/4, SECTION 28, T111N, R37W
REDWOOD COUNTY, MINNESOTA

ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

CONCRETE & STRUCTURAL NOTES:

A. GENERAL

1.) NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STRUCTURAL NOTES.
2.) THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS PRIOR TO STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPENCIES.
3.) IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
4.) DESIGN CHANGES MUST BE APPROVED IN WRITING BY BOTH THE OWNER AND ENGINEER BEFORE PROCEEDING WITH THE WORK. SOME DESIGN CHANGES MAY ALSO REQUIRE MPCA, COUNTY FEEDLOT OFFICER AND/OR NRCS APPROVAL.
5.) ANCHOR BOLTS SHALL BE SET AS SPECIFIED BY BUILDING CONTRACTOR.
6.) ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
   a. UNIFORM BUILDING CODE (UBC)
   b. MINNESOTA STATE BUILDING CODE
   c. AMERICAN CONCRETE INSTITUTE (ACI)
   d. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE

B. DRAIN TILE

1.) BEFORE ANY PIT CONSTRUCTION, TRENCH AND INSTALL DRAIN AROUND THE PROPOSED PIT, THE DRAIN TILE FLOW LINE MUST BE A MINIMUM OF 12" BELOW THE TOP.
2.) THE DRAIN TILE SHALL BE HEAVY DUTY PERFORATED POLYETHYLENE TUBING 4"ø TILE WITH PEA ROCK COVER OR 4"ø TILE W/ FABRIC SLEEVE AND SAND/GRAVEL COVER.
3.) CONNECT THE DRAIN TILE TO AN EXISTING FARM TILE IF AVAILABLE; DISCHARGE TO SURFACE DRAINAGE; OR DRAIN TO A SUMP AND PUMP TO SURFACE.

C. TEMPORARY BRACING AND BACKFILL

1). PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL THE PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.
2.) BACKFILL ONLY AFTER THE FLOOR SLATS OR SOLID FLOOR HAS BEEN INSTALLED.
3.) DO NOT BACKFILL AGAINST WALL UNTIL SLATS ARE INSTALLED AND GROUTED.
4.) 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.

D. FOOTINGS, FOUNDATIONS & SUBGRADE

1.) SOIL BEARING DESIGN VALUE:.....3000 PSF (ASSUMED) ON VIRGIN SOIL OR COMPACTED FILL FOR FOOTINGS.
2.) PROTECT FOUNDATION EXCAVATIONS FROM FROST. DO NOT PLACE CONCRETE ON FROZEN GROUND.
3.). EXISTING DISTURBED SUBGRADE SHALL BE RECOMPACTED TO 95 % OF STANDARD PROCTOR DENSITY.
4.) ALL FILL UNDER FOOTINGS AND SLAB SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 % OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.
5.) SAND FILL AS REQUIRED FOR LEVELING SUBGRADES SHALL BE PROVIDED AT ALL SLAB ON GRADE AREAS.

E. REINFORCED CONCRETE

1.) ALL CONCRETE AND REINFORCING WORK SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE'S" STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", (ACI 318-05)
2.) CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF ACI 301.
3.) CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF f'C=3500 PSI FLOOR, 4000 PSI WALLS
4.) WATER CEMENT RATIO SHALL BE 0.45 MAXIMUM
5.) CEMENT SHALL CONFORM TO ASTM C150, TYPE 1.
6.) COARSE AGGREGATE SHALL BE 1".
7.) READY-MIX CONCRETE SHALL BE MIXED & DELIVERED IN ACCORDANCE WITH ASTM C94.
8.) SLUMP SHALL BE MAXIMUM OF 5"
9.) AIR CONTENT SHALL BE 5% TO 7%
10.) CONCRETE TO BE CURED WITH SONOBORN CURE AND SEAL OR EQUAL.
11.) ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER FOR THE PURPOSE OF INCREASING THE WORKABILITY BUT NOT TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. CALCIUM CHLORIDE SHALL NOT BE USED.
12.) FLOORS SHALL BE 5" THK. WITH #4, GRADE 60 REBAR @ 18" O.C.E.W IN FLOOR.
13.) REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF CONCRETE PLACEMENT UNLESS NOTED OTHERWISE. STEEL MUST BE SUPPORTED WITH APPROPRIATE CHAIRS OR CONCRETE BLOCKS.
14.) IF CONSTRUCTION JOINTS NECESSARY, COORDINATE LOCATION WITH ENGINEER.
15.) CONSTRUCTION JOINTS ARE NOT PERMITTED IN THE END WALLS OR WITHIN 3 FT. OF A PUMPOUT. THE PUMPOUT FLOOR AND FOOTING MUST BE FORMED AND POURED WITH THE PIT FLOOR. THE PUMPOUT WALLS MUST BE FORMED AND POURED WITH THE PIT WALLS.

F. STEEL

1.) F'Y = GRADE 60 (60,000 PSI) DEFORMED STEEL.
2.) REINFORCING SHALL BE CONTINUOUS AND LAP A MINIMUM OF 40 BAR DIAMETER UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL BE LAPPED A MINIMUM OF EIGHT INCHES.
3.) MINIMUM BENDING RADIUS SHALL BE 6 BAR DIAMETERS.
4.) MINIMUM BEND AROUND CORNERS FOR #4 BARS - 24", FOR #5 BARS - 30".
5.) ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY CALLED OUT AS "NOT REINFORCED". REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME STEEL AS IN SIMILAR SECTIONS OR AREAS.
6.) THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR FOR REINFORCEMENT UNLESS OTHERWISE NOTED:
   WHERE CAST AGAINST EARTH ..... 3 INCHES
   WALLS AND SLABS (EXPOSED TO EARTH OR WEATHER)..... 2 INCHES
   OTHER..... 2 INCHES

G. TOLERANCES & QUALITY CONTROL

1.) COLUMN FINISH ELEVATIONS SHALL BE + OR - 1/4" FROM DESIGN ELEVATION.
2.) WALL ALIGNMENT (HORIZONTAL) SHALL DEVIATE NO MORE THAN 1/4" IN 10 FT. NO MORE THAN 3/4" OVER THE FULL LENGTH OF WALL.
3.) WALL BEARING LEDGE ELEVATIONS SHALL BE + OR - 1/4"FROM DESIGN ELEVATION IN 10 FT. AND NO MORE THAN 1/2" OVER THE FULL LENGTH OF WALL.
4.) OVERALL FOUNDATION LENGTH & WIDTH DIMENSIONS AND DIAGONAL DIMENSIONS SHOULD BE WITHIN 1/2" OF PLAN DIMENSIONS.
5.) HONEYCOMB AND SHRINKAGE CRACKS WIDER THAN THE THICKNESS OF A PLASTIC CREDIT CARD SHALL BE FILLED WITHIN 48 HOURS WITH CEMENT GROUT SLURRY MOPPED INTO THE CRACKS. DO THE GROUTING OF FLOOR CRACKS BEFORE DIRT AND EQUIPMENT ARE BROUGHT ON THE FLOOR.

H. ELECTRICAL GROUND

1.) INSTALL REINFORCING BARS AS PER ELECTRICAL CODE GROUND AT A MINIMUM LOCATIONS AS PER ELECTRIC CODE NOTIFY THE LOCAL ELECTRICAL INSPECTOR FOR INSPECTION PRIOR TO PLACING CONCRETE.

I. COLD WEATHER CONCRETING

1.) WHEN, FOR MORE THAN 3 CONSECUTIVE DAYS, THE MEAN DAILY TEMPERATURE DROPS BELOW 40° F., THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH ACI 306.

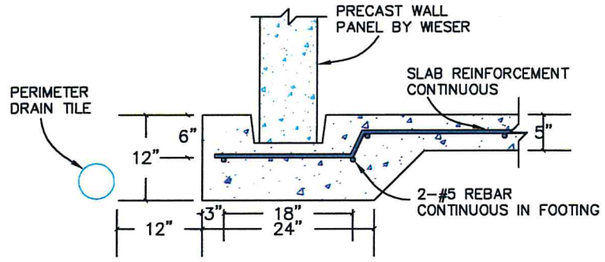
J. HOT WEATHER CONCRETING

1.) WHEN IT IS LIKELY THAT TEMPERATURE BETWEEN 75° F AND 100°F WILL BE APPROACHED OR EXCEEDED; THAT LOW RELATIVE HUMIDITY IS PRESENT; OR WIND VELOCITY WILL EXCEED 10 MPH, THE CONTRACTOR SHALL PLACE & PROTECT THE CONCRETE IN ACCORDANCE WITH CHAPTERS 4 & 5 OF ACI 305.

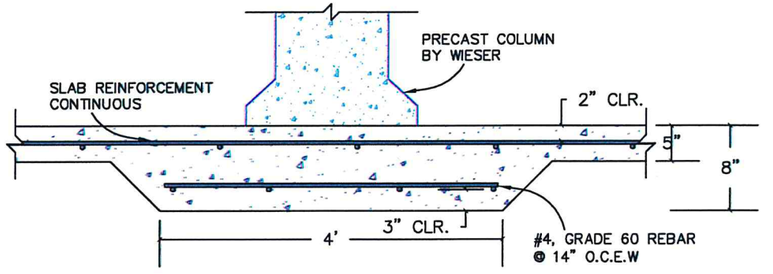
K. WATERSTOPS & SEALANTS

1.) WATERSTOP TO BE RIBBED PVC, OR BENTONITE ROLL, AT CONTRACTORS OPTION.
2.) 3/8"x3/4" BENTONITE/BUTYL RUBBER EQUAL TO WATERSTOP-RX BY AMERICAN COLLIED COMPANY WATERSTOPS SHALL BE PLACED IN ALL CONSTRUCTION JOINTS ON THE FLOOR AND IN THE WALLS. LOCATION AND NUMBER OF CONSTRUCTION JOINTS ARE TO BE DETERMINED BY THE CONTRACTOR. WATERSTOPS SHALL BE SUITABLE FOR USE WITH MANURE.
3.) MAKE PVC WATERSTOP SPLICES WITH SPLICING IRON.
4.) SEALANT TO BE ELASTOMETRIC POLYURETHANE OR BITUMINOUS ASPHALT BASED.

*****NOTE - VERIFY ALL PIT DIMENSIONS AND COLUMN LOCATIONS WITH WIESER CONCRETE DRAWINGS*****



PANEL FOOTING DETAIL
(NOT TO SCALE)



COLUMN FOOTING DETAIL
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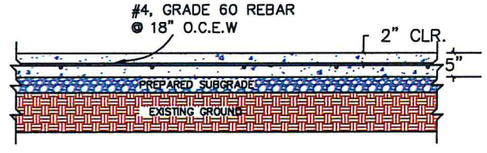


FLOOR SLAB DETAIL
(NOT TO SCALE)

SHEET	4C
Project No.	18-181
Checked By	N.J.R.
Date	4/26/18
Drawn	D.D.A.

COLE ALTERMATT
PROPOSED CATTLE CONFINEMENT BARN
NE 1/4, SECTION 28, T111N, R37W
REDWOOD COUNTY, MINNESOTA

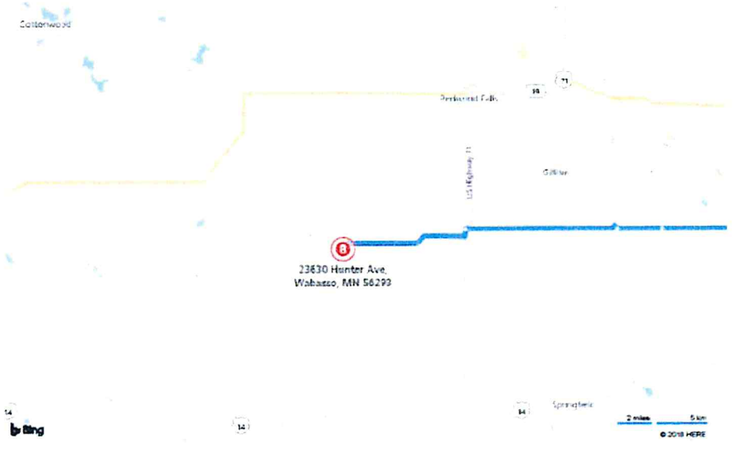
ProAg Engineering, Inc.
77402 Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

PLAN SET INDEX

DAIRY MANURE FACILITY
WIESER CONCRETE L-PANEL PIT STORAGE FACILITY

PREPARED FOR:

ALTERMATT FARMS
REDWOOD COUNTY
23630 HUNTER AVE., WABASSO, MN 56293



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DATE: 4/19/18	
FILE: L:\og products\pan-l-bilt 2018\altermatt farms - wabasso, mn\altermatt farms - wabasso, mn.dwg	

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

ALTERMATT FARMS
WABASSO, MN

SHEET NO.
1 OF 10

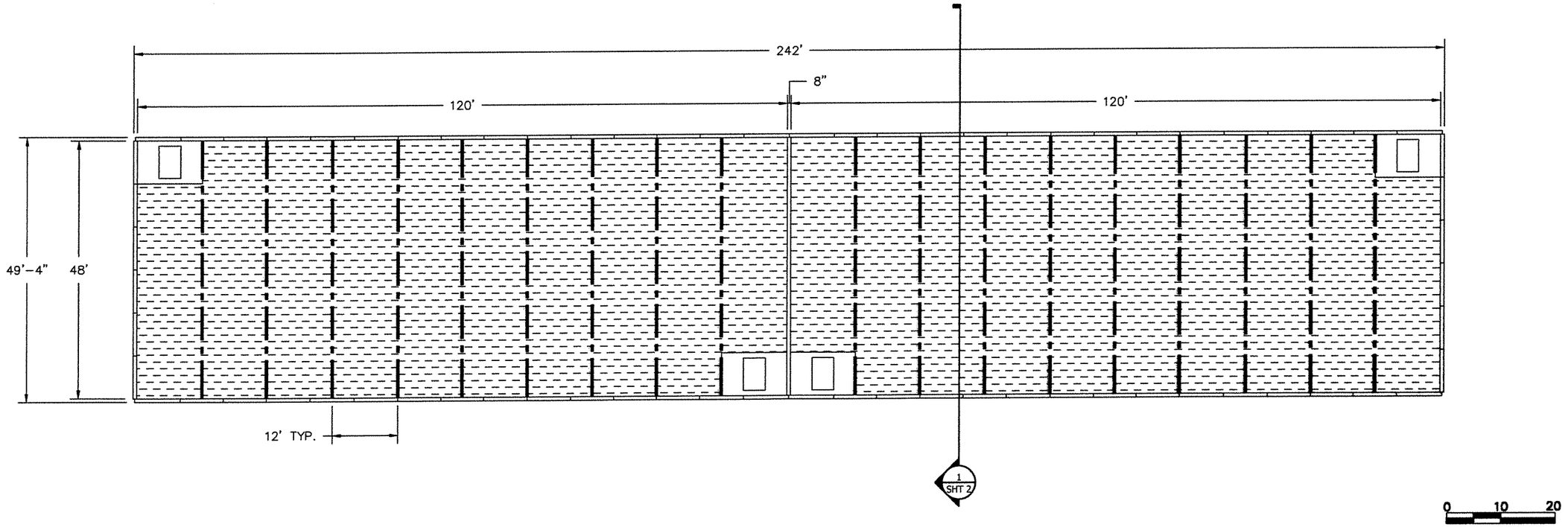
REVIEWED BY _____
REVIEW DATE _____

DRAWINGS SUBMITTED FOR APPROVAL

APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN-L-BILT MANURE SYSTEM

PLAN VIEW



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WIESER CONCRETE
W3716 US HWY10, MAIDEN ROCK, WI 54750

ALTERMATT FARMS
WABASSO, MN

SHEET
2
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REVIEWED BY _____
REVIEW DATE _____

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APPROVED BY: _____
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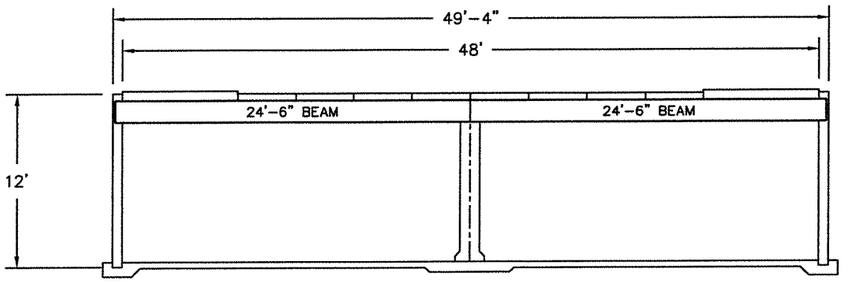
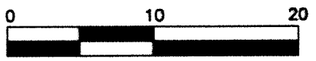
PAN–L–BILT
MANURE SYSTEM
SECTION VIEW





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WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

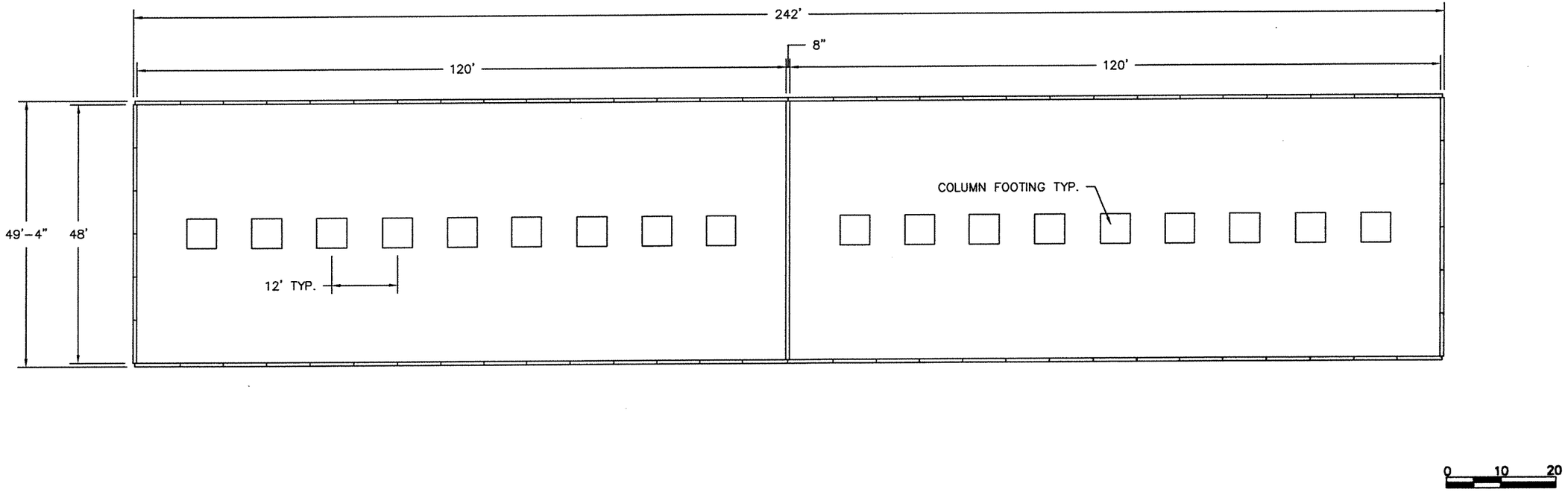
SHEET NO.
3 OF 10

REVIEWED BY _____
REVIEW DATE _____

DRAWINGS SUBMITTED FOR APPROVAL
APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN–L–BILT MANURE SYSTEM

COLUMN FOOTING PLAN VIEW



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WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

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REVIEW DATE _____

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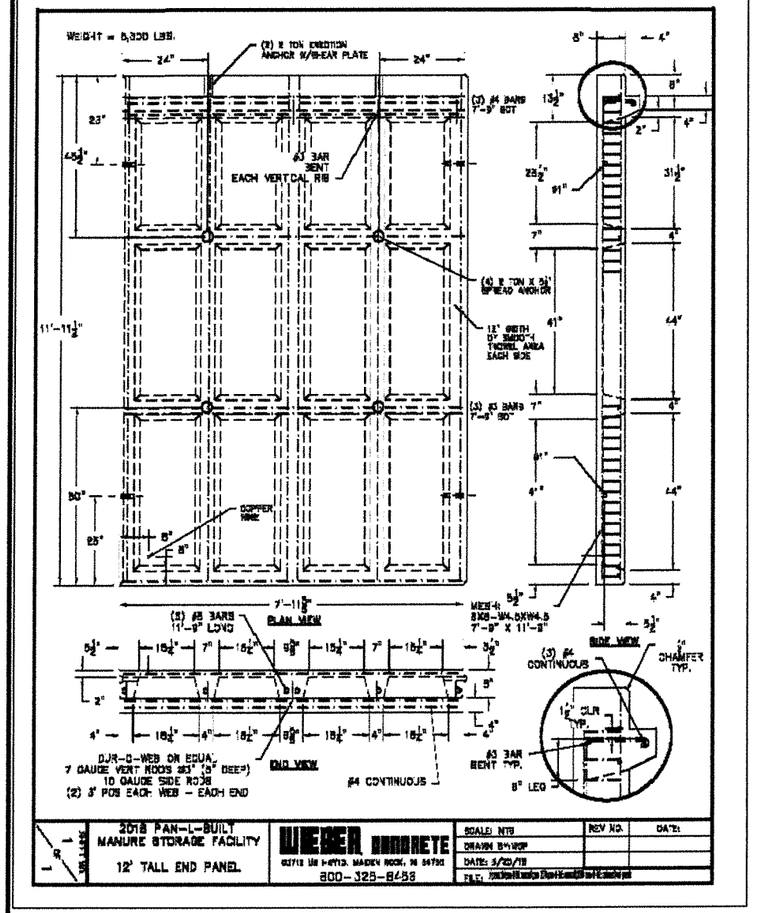
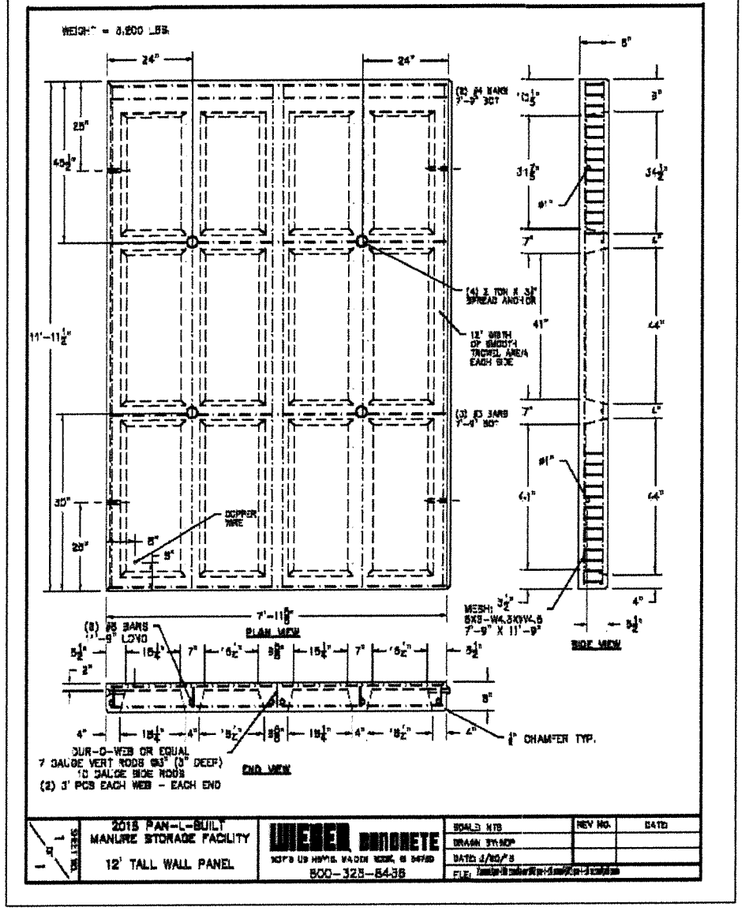
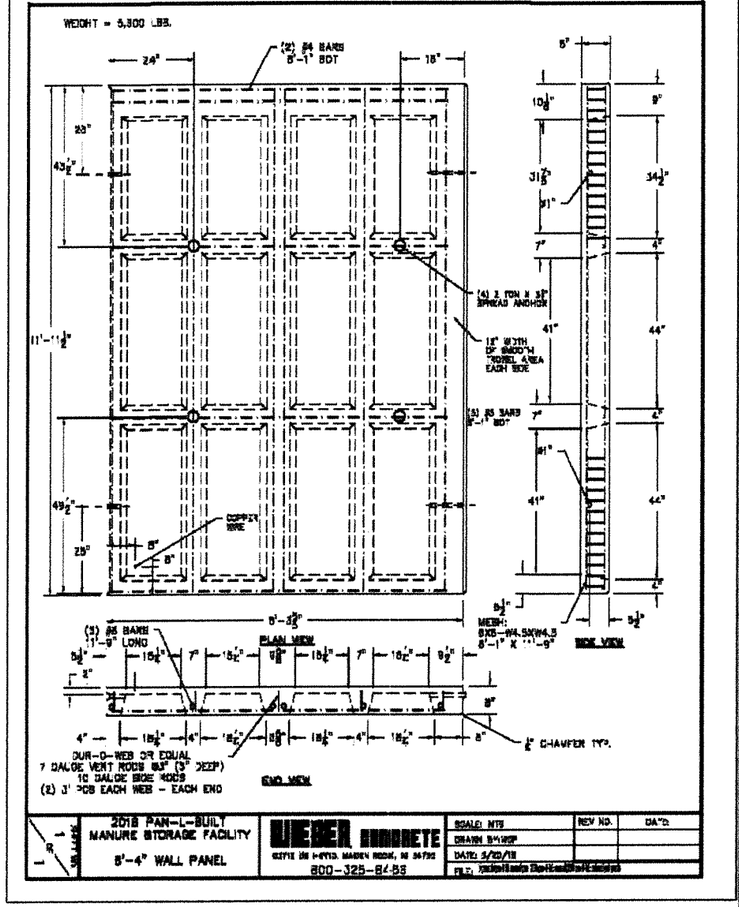
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN–L–BILT
MANURE SYSTEM
DETAIL VIEW #1







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WEISER CONCRETE
W3716 US HWY10, MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

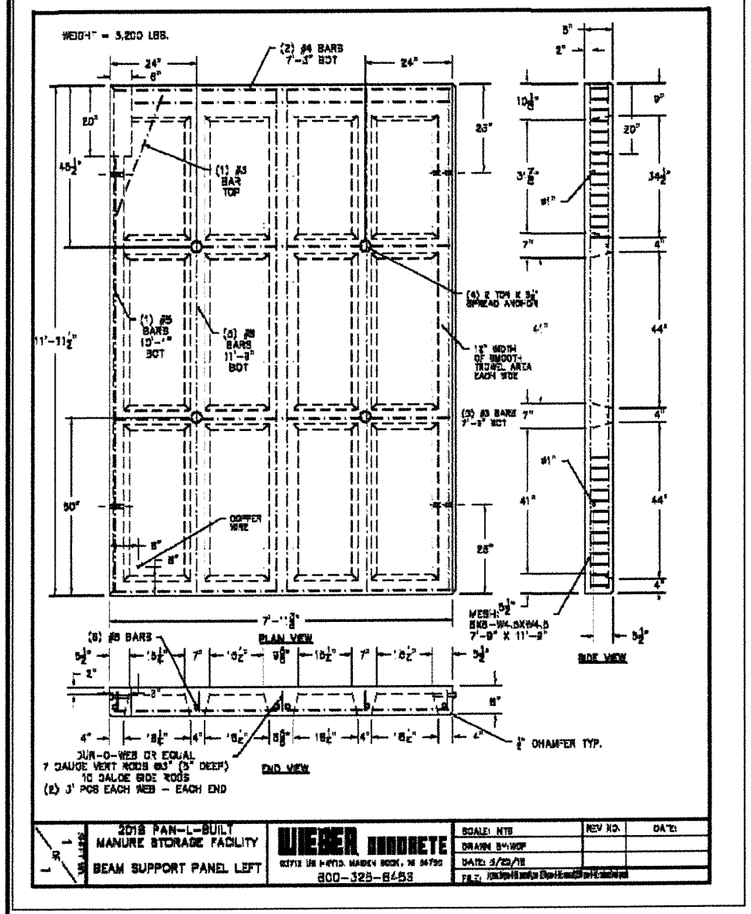
SHEET NO.
5 OF 10

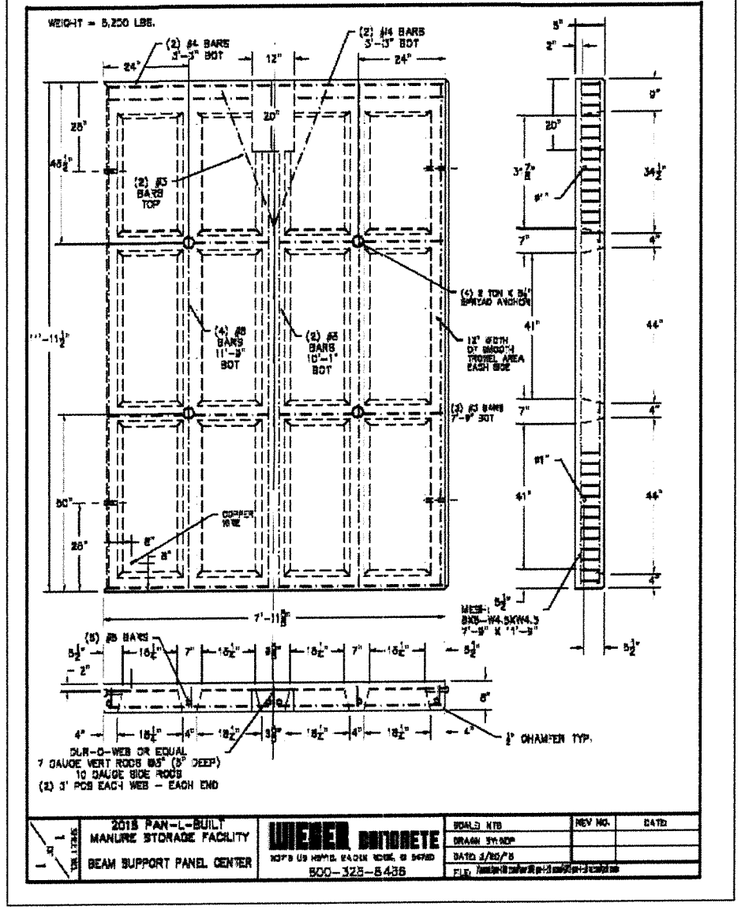
REVIEWED BY _____
REVIEW DATE _____

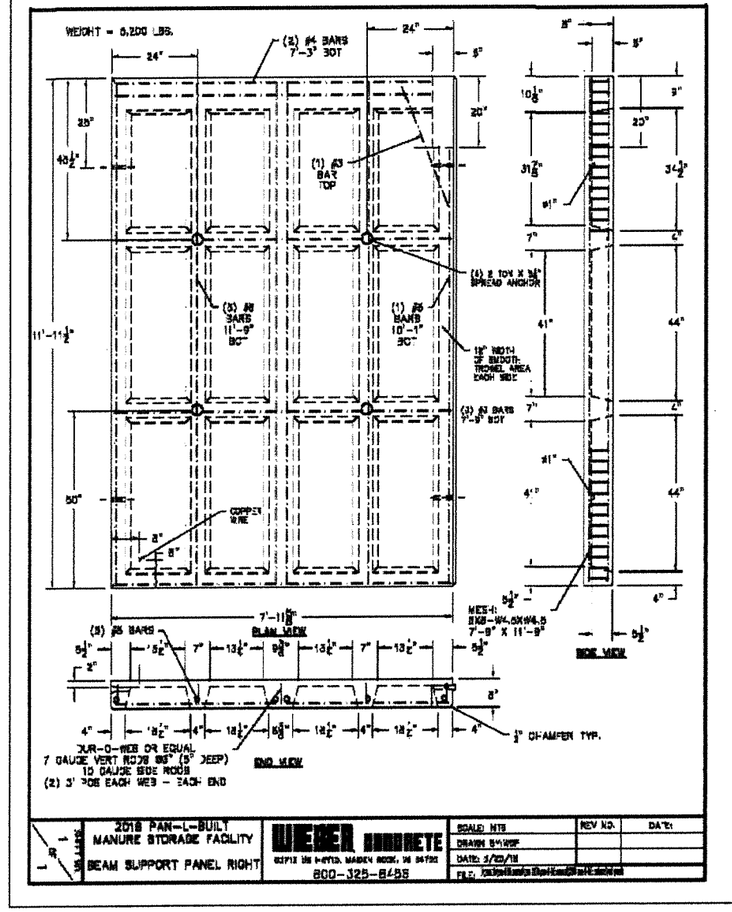
DRAWINGS SUBMITTED FOR APPROVAL

APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN–L–BILT
MANURE SYSTEM
DETAIL VIEW #1







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WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

SHEET NO.
6 OF 10

REVIEWED BY _____

REVIEW DATE _____

DRAWINGS SUBMITTED FOR APPROVAL

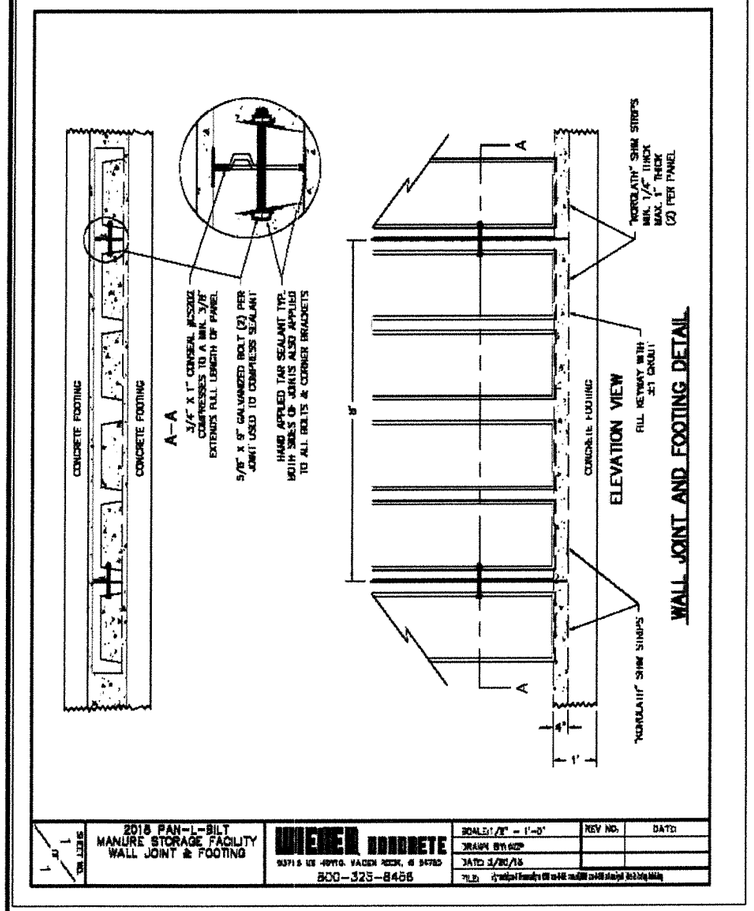
APPROVED BY: _____

APPROVAL DATE: _____

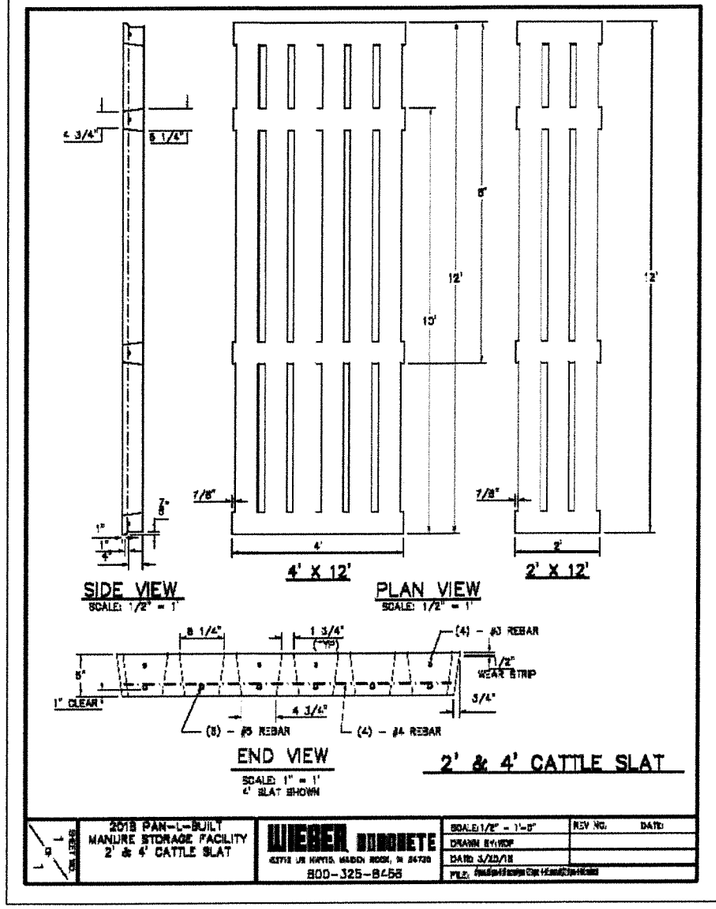
PRODUCTS NEEDED BY: _____

PAN-L-BILT MANURE SYSTEM

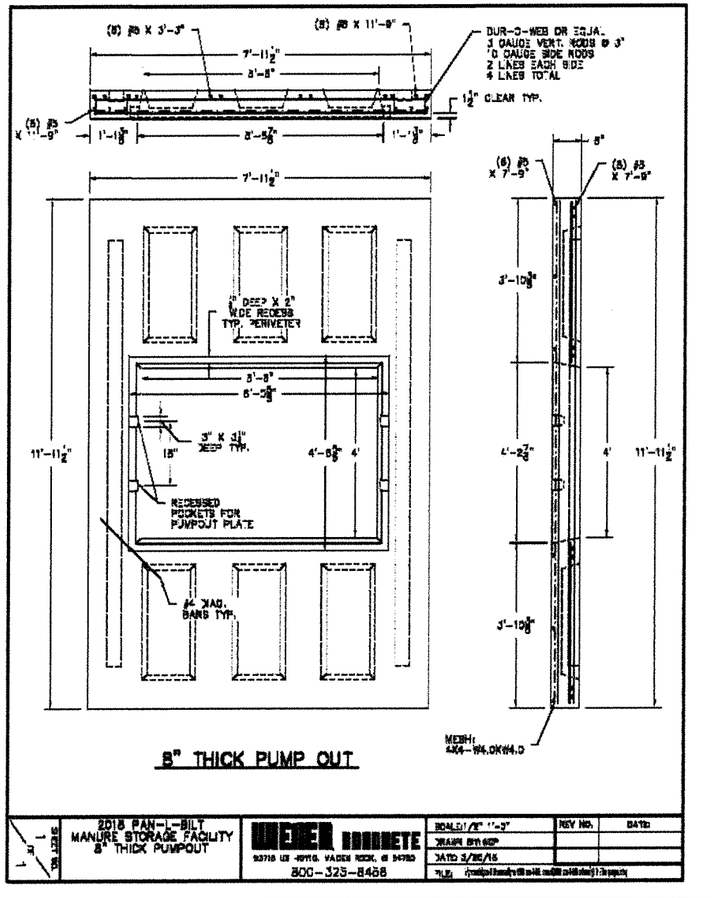
DETAIL VIEW #1



2018 PAN-L-BILT MANURE STORAGE FACILITY WALL JOINT & FOOTING	WIESER CONCRETE 93716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456	SCALE: 1/8" = 1'-0"	REV NO.	DATE
		DRAWN BY: MDP		
		DATE: 3/30/18		
		FILE:		



2018 PAN-L-BILT MANURE STORAGE FACILITY 2' & 4' CATTLE SLAT	WIESER CONCRETE 93716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456	SCALE: 1/2" = 1'-0"	REV NO.	DATE
		DRAWN BY: MDP		
		DATE: 3/30/18		
		FILE:		



2018 PAN-L-BILT MANURE STORAGE FACILITY 8" THICK PUMPOUT	WIESER CONCRETE 93716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456	SCALE: 1/8" = 1'-0"	REV NO.	DATE
		DRAWN BY: MDP		
		DATE: 3/30/18		
		FILE:		

REV NO.	DATE:

SCALE: 1" = 20'

DRAWN BY: SWT

DATE: 4/19/18

FILE: i:\pg products\pan-l-bilt 2018\altermatt farms - wabasso, mn\altermatt farms - wabasso, mn.dwg

WIESER CONCRETE

W3716 US HWY10. MAIDEN ROCK, WI 54750

800-325-8456

ALTERMATT FARMS
WABASSO, MN

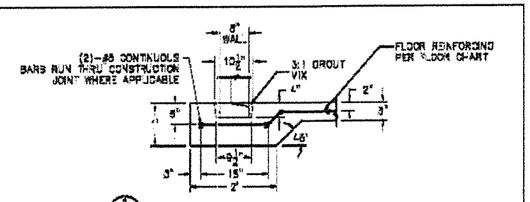
SHEET NO. 7 OF 10

REVIEWED BY _____
REVIEW DATE _____

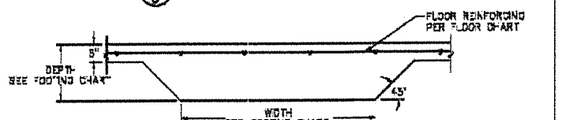
DRAWINGS SUBMITTED FOR APPROVAL

APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

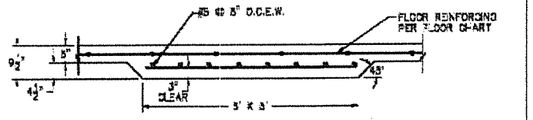
PAN–L–BILT
MANURE SYSTEM
DETAIL VIEW #1



1/6 EXTERIOR FOOTING DETAIL



2/6 NON–REINFORCED INTERIOR FOOTING DETAIL



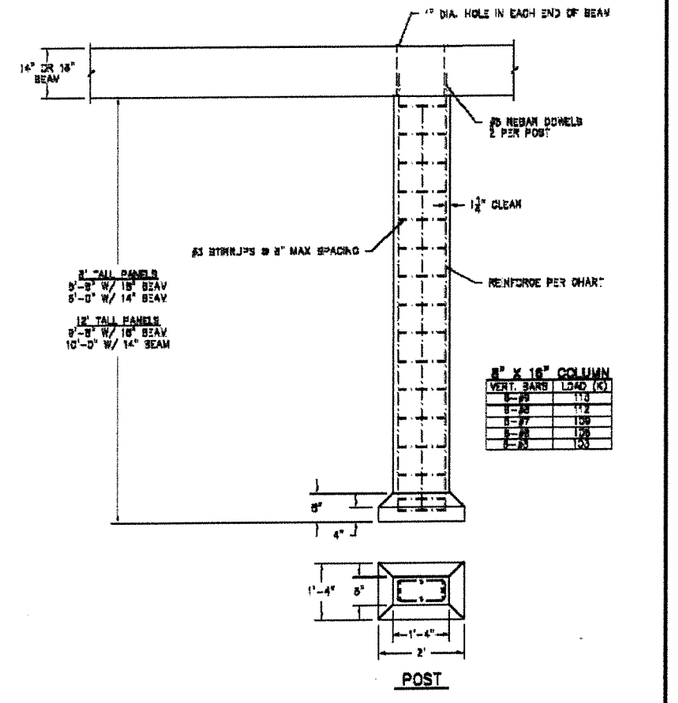
3/6 OPTIONAL REINFORCED INTERIOR FOOTING DETAIL
99 KIP CAPACITY

FOOTING CHART

FOOTING SIZE	CAPACITY (KIPS)
3' X 3' X 12"	19.8
3'–8" X 3'–8" X 12"	27.0
4' X 4' X 14"	34.9
4'–8" X 4'–8" X 15"	43.5
5' X 5' X 15"	53.5
5'–8" X 5'–8" X 20"	84.0
8' X 8' X 22"	75.4
8'–8" X 8'–8" X 24"	87.5
7' X 7' X 28"	105.3
7'–8" X 7'–8" X 28"	113.5
8' X 8' X 30"	127.9
5' X 5' X 8 1/2" REINFORCED	99.0

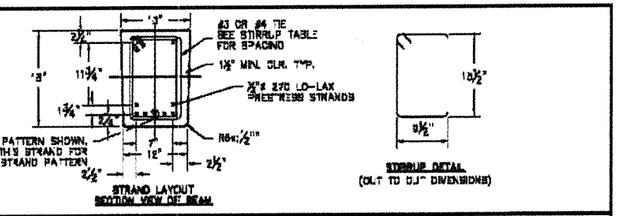
FOOTING DETAILS

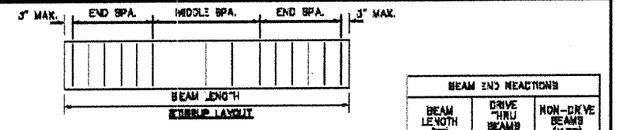
SHEET NO.	PAN–L–BILT MANURE STORAGE FACILITY FOOTING DETAILS	WIESER CONCRETE W3716 US HWY10, MAIDEN ROCK, WI 54750 800–325–8456	SCALE: 1/2" = 1'–0" DRAWN BY: BRT DATE: 7/19/18 FILE:	REV NO. / DATE



COLUMN DETAIL

SHEET NO.	2018 PAN–L–BUILT MANURE STORAGE FACILITY COLUMN DETAILS	WIESER CONCRETE 43716 US HWY10, MAIDEN ROCK, WI 54720 800–325–8456	SCALE: 1/2" = 1'–0" DRAWN BY: WDP DATED: 3/20/18 FILE:	REV NO. / DATE





BEAM DESIGN CRITERIA

NO. OF STRANDS	f'ci MIN. CONCRETE STRENGTH AT THE TIME OF PRESTRESS TRANSFER	f'c MIN. CONCRETE STRENGTH THE BEAM CAN BE TRANSPORTED AND INSTALLED
8 STRANDS	4000 PSI	6000 PSI
9 STRANDS	4500 PSI	6000 PSI

8 STRAND PATTERN IS FOR DRIVE THRU BEAMS 14' LONG OR LESS AND NON–DRIVE BEAMS 24' OR LESS.
9 STRAND PATTERN IS FOR DRIVE THRU BEAMS 15' & 15' AND NON–DRIVE BEAMS 25' & 28'.

STIRRUP SPACING

	NO. 3 BAR ALTERNATE		NO. 4 BAR ALTERNATE	
LENGTH OF BEAM	END SPA.	MIDDLE SPA.	END SPA.	MIDDLE SPA.
14'–0" OR LESS *	16 SPA. @ 3½"	10" SPA.	2 SPA. @ 8½"	10" SPA.
15'–0" *	18 SPA. @ 3½"	10" SPA.	2 SPA. @ 10"	10" SPA.
18'–0" *	24 SPA. @ 3"	10" SPA.	2 SPA. @ 10"	10" SPA.
24'–0" OR LESS **	11" SPA.	11" SPA.	11" SPA.	11" SPA.
25'–0" **	10" SPA.	10" SPA.	10" SPA.	10" SPA.
28'–0" **	10" SPA.	10" SPA.	10" SPA.	10" SPA.

* FOR DRIVE THRU BEAMS.
** FOR NON–DRIVE BEAMS.

BEAM END REACTIONS

BEAM LENGTH (FT)	DRIVE THRU BEAMS (KIPS)	NON–DRIVE BEAMS (K IPS)
5	38.9	9.4
9	39.8	9.4
10	42.3	10.5
11	44.4	11.3
12	46.4	12.6
13	46.2	13.6
14	48.9	14.7
15	51.4	15.7
16	52.9	16.8
17	---	17.8
18	---	18.8
19	---	19.9
20	---	20.2
21	---	22.0
22	---	23.0
23	---	24.1
24	---	25.1
25	---	26.2
26	---	27.2

SHEET NO.	2018 PAN–L–BUILT MANURE STORAGE FACILITY 13" X 18" HEAVY DUTY PRESTRESSED BEAM	WIESER CONCRETE 43716 US HWY10, MAIDEN ROCK, WI 54750 800–325–8456	SCALE: DRAWN BY: WDP DATED: 3/20/18 FILE:	REV NO. / DATE

SCALE: 1" = 20'
DRAWN BY: SWT
DATE: 4/19/18
FILE: E:\pg products\pan–l–bilt 2018\altermott farms – wabasso, mn\altermott farms – wabasso, mn.dwg

REV NO. / DATE:

WIESER CONCRETE
W3716 US HWY10, MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

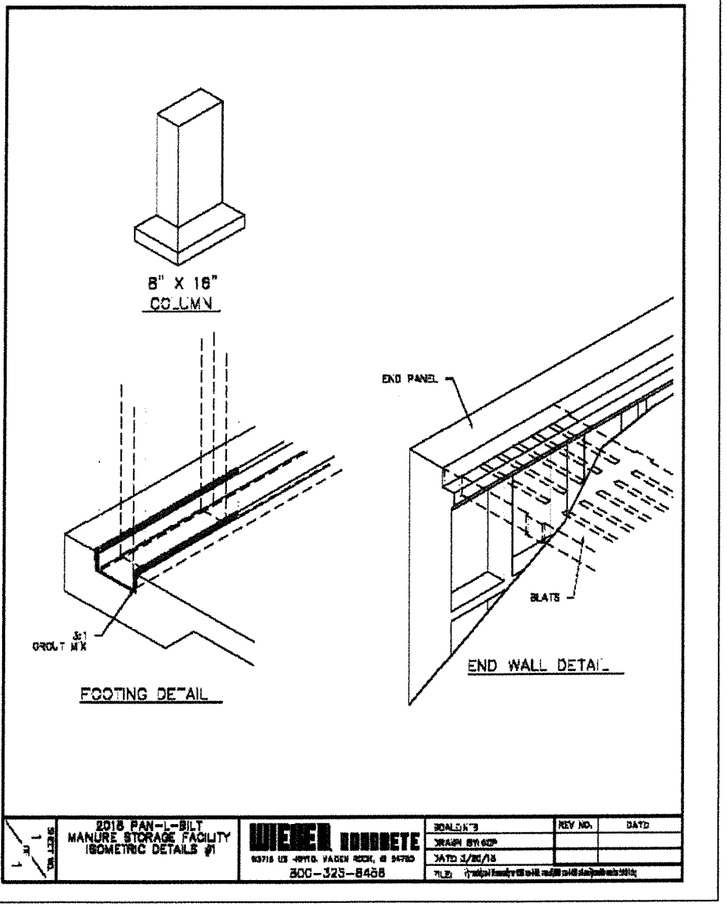
SHEET NO. 8 OF 10

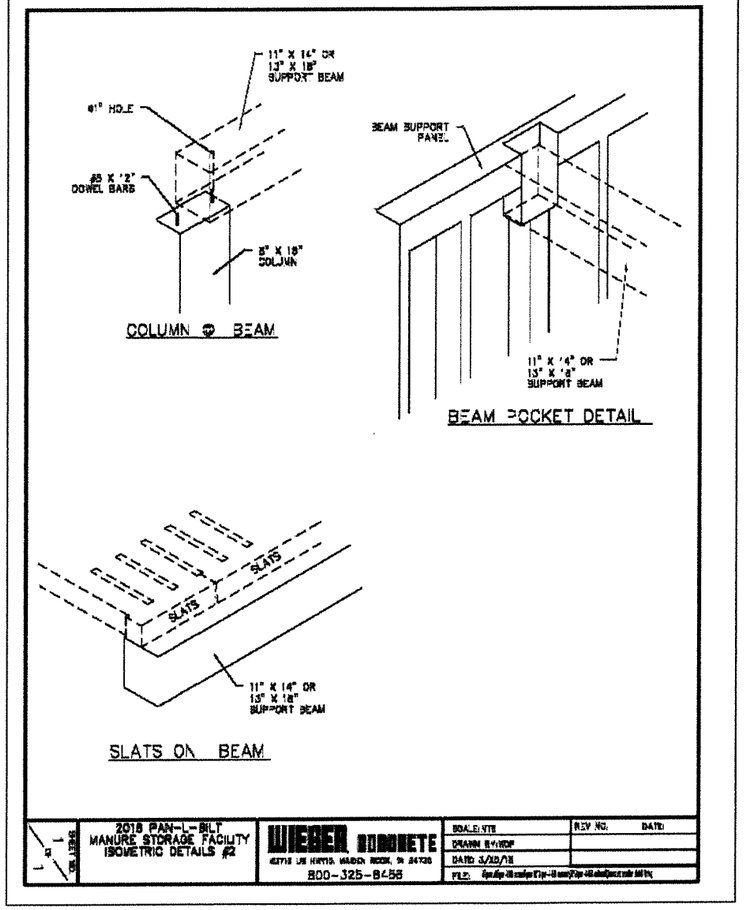
REVIEWED BY _____
REVIEW DATE _____

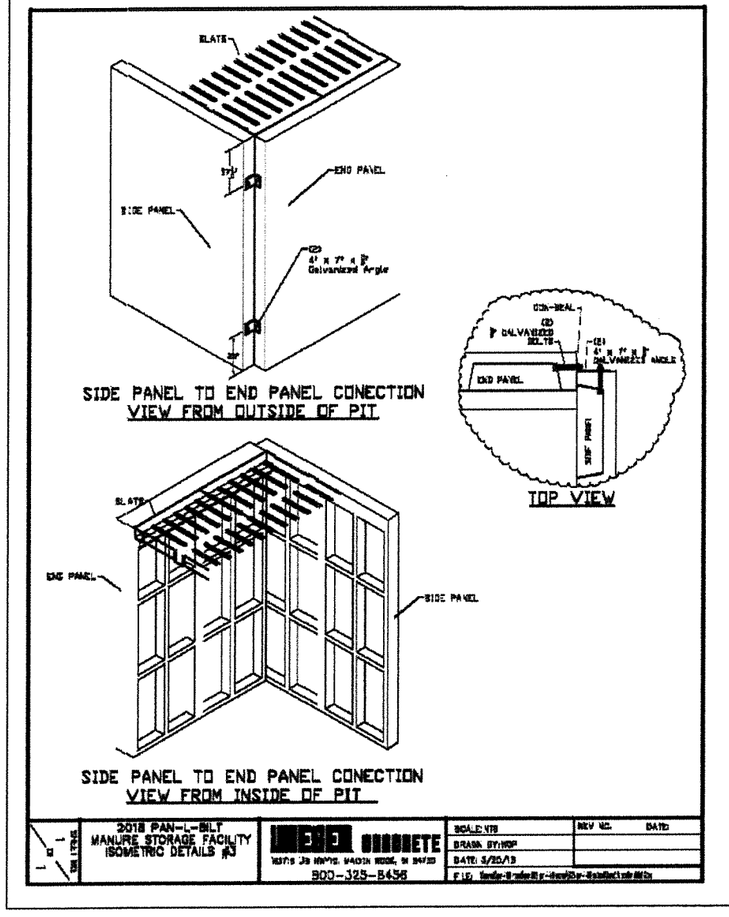
DRAWINGS SUBMITTED FOR APPROVAL

APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN–L–BILT
MANURE SYSTEM
DETAIL VIEW #1







2018 PAN-L-BILT MANURE STORAGE FACILITY ISOMETRIC DETAILS #1	WIESER CONCRETE W3716 US HWY10. MADEN ROCK, WI 54750 800-325-8456	SCALE: NTS	REV NO.	DATE
		DRAWN BY: WDP		
		DATE: 3/20/18		
		FILE:		

2018 PAN-L-BILT MANURE STORAGE FACILITY ISOMETRIC DETAILS #2	WIESER CONCRETE W3716 US HWY10. MADEN ROCK, WI 54750 800-325-8456	SCALE: NTS	REV NO.	DATE
		DRAWN BY: WDP		
		DATE: 3/20/18		
		FILE:		

2018 PAN-L-BILT MANURE STORAGE FACILITY ISOMETRIC DETAILS #3	WIESER CONCRETE W3716 US HWY10. MADEN ROCK, WI 54750 800-325-8456	SCALE: NTS	REV NO.	DATE
		DRAWN BY: WDP		
		DATE: 3/20/18		
		FILE:		

REV NO.	DATE:		
SCALE: 1" = 20'			
DRAWN BY: SWT			
DATE: 4/19/18			
FILE: i:\pg products\pan-l-bilt 2018\altermatt farms - wabasso, mn\altermatt farms - wabasso, mn.dwg			

WIESER CONCRETE
W3716 US HWY10. MADEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

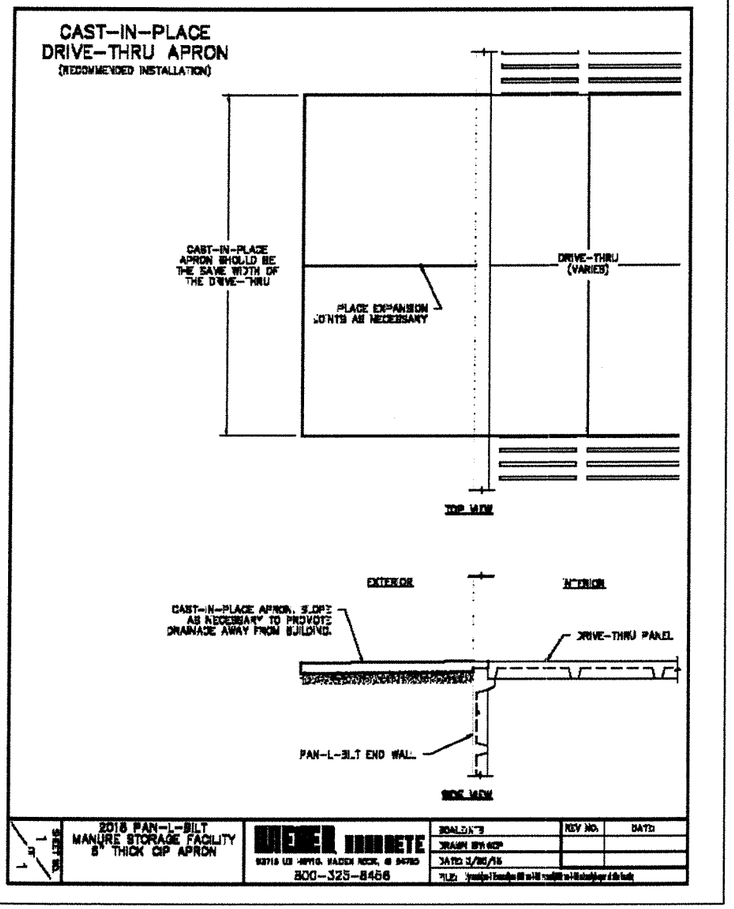
SHEET NO.
9 OF 10

REVIEWED BY _____
REVIEW DATE _____

DRAWINGS SUBMITTED FOR APPROVAL

APPROVED BY: _____
APPROVAL DATE: _____
PRODUCTS NEEDED BY: _____

PAN–L–BILT
MANURE SYSTEM
DETAIL VIEW #1



SCALE: 1" = 20'
DRAWN BY: SWT
DATE: 4/19/18
FILE: i:\ag products\pan-l-bilt 2018\altermatt farms - wabasso, mn\altermatt farms - wabasso, mn.dwg

REV NO. | DATE:

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800–325–8456

ALTERMATT FARMS
WABASSO, MN

SHEET NO.
10 OF 10

SUBSURFACE SOIL LOG

PROJECT: Cole Altermatt
BORING NO: 1

PROJECT NO: 18-081
DATE DRILLED: 4/19/2018

DRILLED BY: Contractor

CLASSIFIED BY: Taylor Salzwedel

ProAg Engineering, Inc.
77402 Highway 71, P.O. Box 181
Jackson, MN 56143 (507)-849-7200

ELEVATION (USGS)		DEPTH BELOW SURFACE	SOIL DESCRIPTION	USCS Symbol
1083.6	GRADE	0	(TOPSOIL) DARK BROWN SILTY CLAY LOAM (FROST 0-12")	CL
		2	BROWN SILTY CLAY LOAM, TRACE Fe CONCRETIONS, TRACE GRAY MOTTLES, MOIST, MEDIUM CONSISTENCY	CL
		4		
		6		
1075.0	PROPOSED BOTTOM OF PIT	8		
		10		
1072.6	GROUNDWATER ELEVATION MEASURED ON 4/19/18	12		
1070.0	BOTTOM OF TEST HOLE	14	*TEST HOLE DUG & FILLED BY BACKHOE TO PREVENT VERTICAL GROUNDWATER TRANSPORT, PER MN RULES*	
		16		
		18	*SOILS ARE SUITABLE FOR PROPOSED PIT FOUNDATION	
		20	**PERIMETER TILE REQUIRED**	
		22		
		24		
		26		
		28		
		30		
		32		

SUBSURFACE SOIL LOG

PROJECT: Cole Altermatt
BORING NO: 2

PROJECT NO: 18-081
DATE DRILLED: 4/19/2018

DRILLED BY: Contractor

CLASSIFIED BY: Taylor Salzwedel

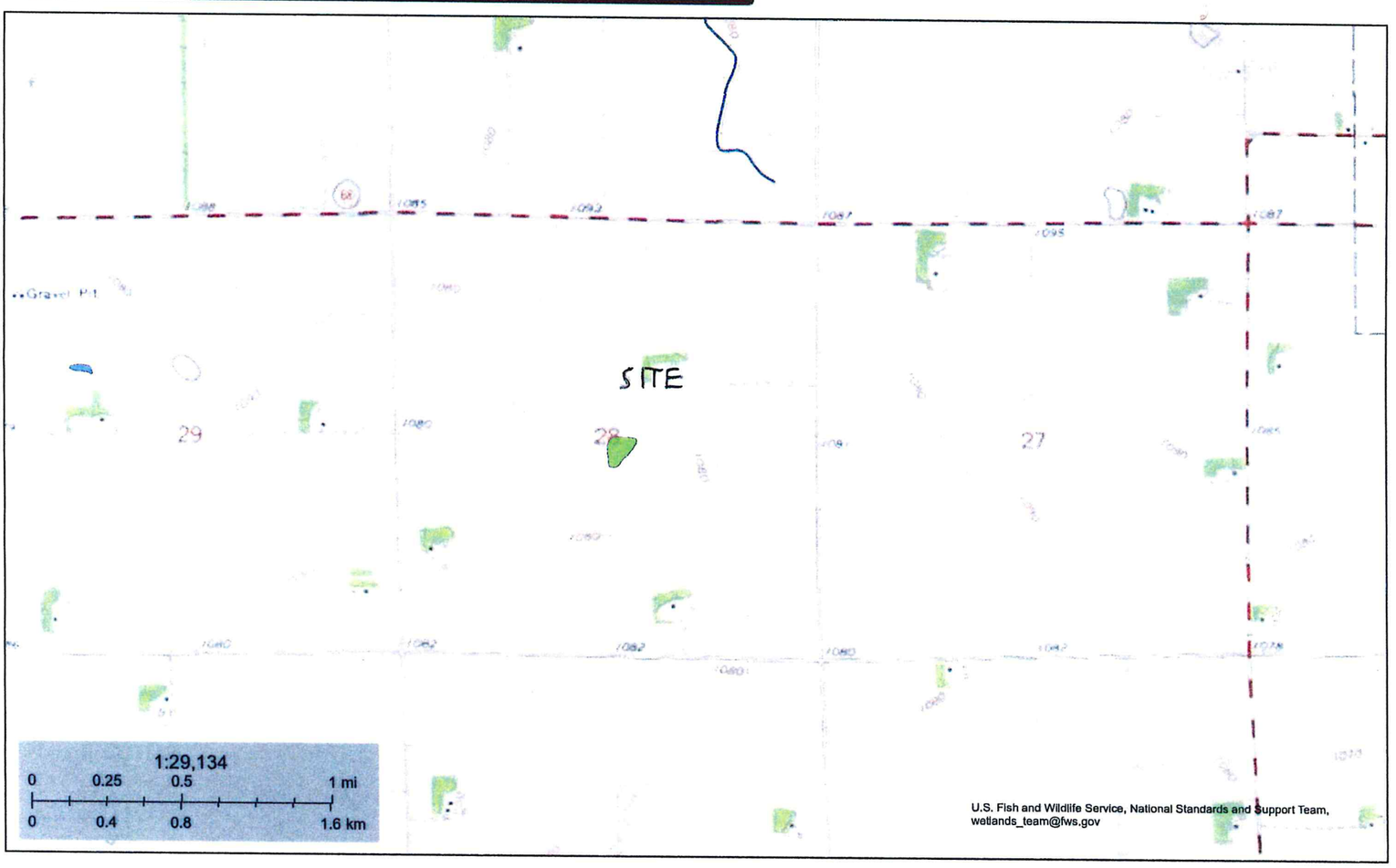
ProAg Engineering, Inc.
77402 Highway 71, P.O. Box 181
Jackson, MN 56143 (507)-849-7200

ELEVATION (USGS)		DEPTH BELOW SURFACE	SOIL DESCRIPTION	USCS Symbol
1077.4	GRADE	0	(TOPSOIL) DARK BROWN SILTY CLAY LOAM (FROST 0-12")	CL
1075.0	PROPOSED BOTTOM OF PIT	2	BROWN SILTY CLAY LOAM, TRACE Fe CONCRETIONS, TRACE GRAY MOTTLES, MOIST, MEDIUM CONSISTENCY	CL
1073.4	GROUNDWATER ELEVATION MEASURED ON 4/19/18	4		
		6		
		8		
		10		
1066.0	BOTTOM OF TEST HOLE	12	*TEST HOLE DUG & FILLED BY BACKHOE TO PREVENT VERTICAL GROUNDWATER TRANSPORT, PER MN RULES*	
		14	*SOILS ARE SUITABLE FOR PROPOSED PIT FOUNDATION	
		16	**PERIMETER TILE REQUIRED**	
		18		
		20		
		22		
		24		
		26		
		28		
		30		
		32		

U.S. Fish and Wildlife Service

National Wetlands Inventory

Quad



April 26, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

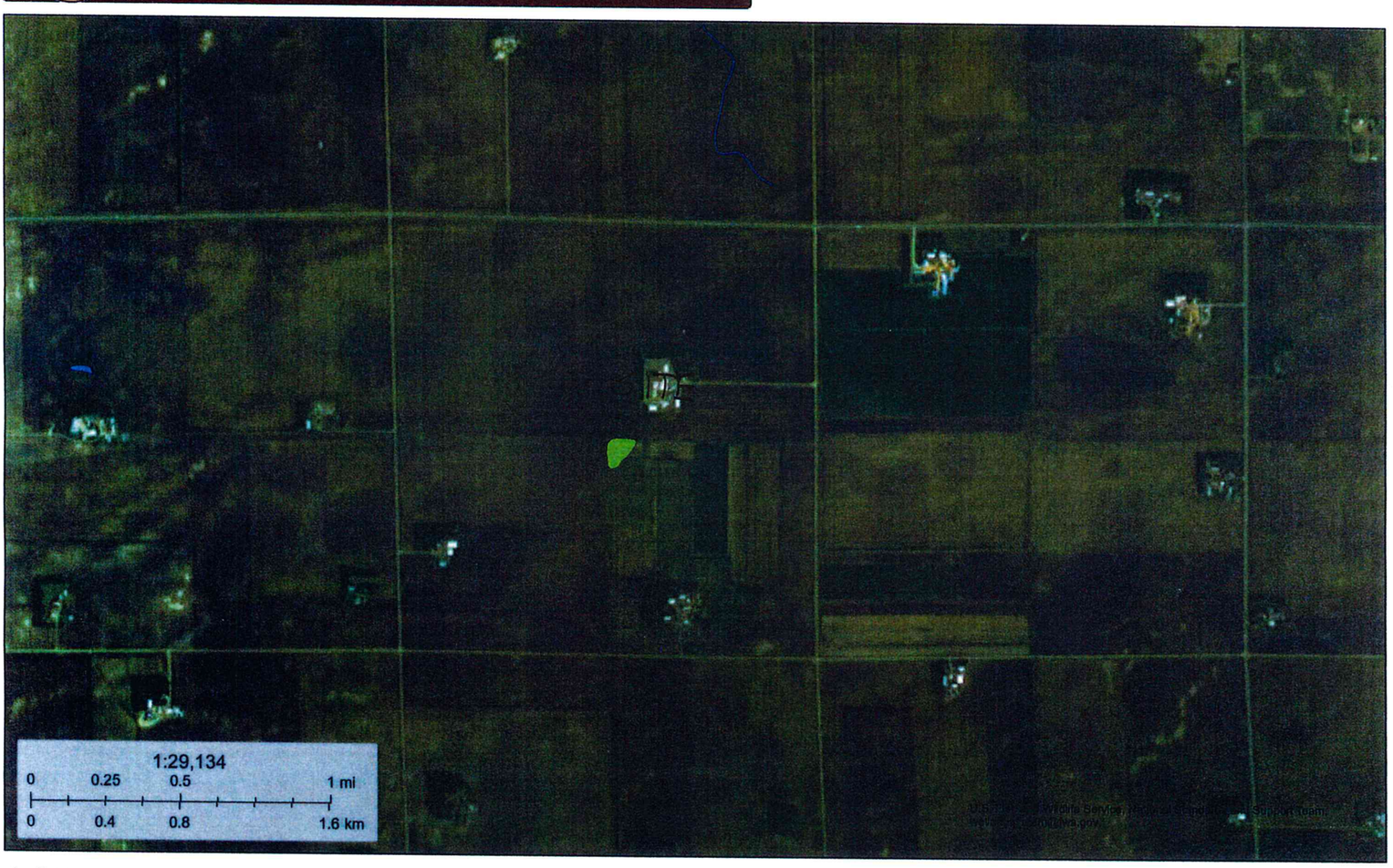
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands



April 26, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
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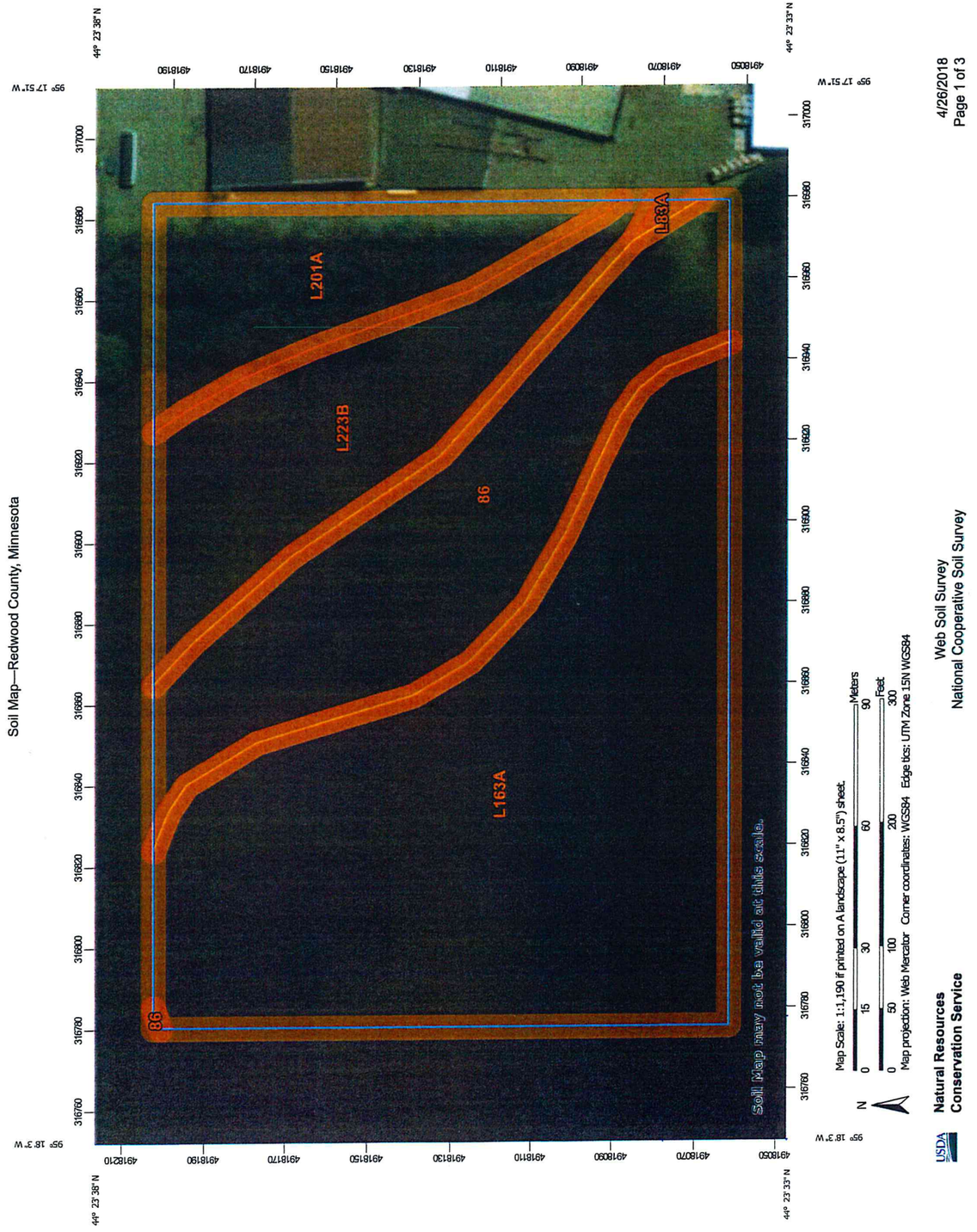
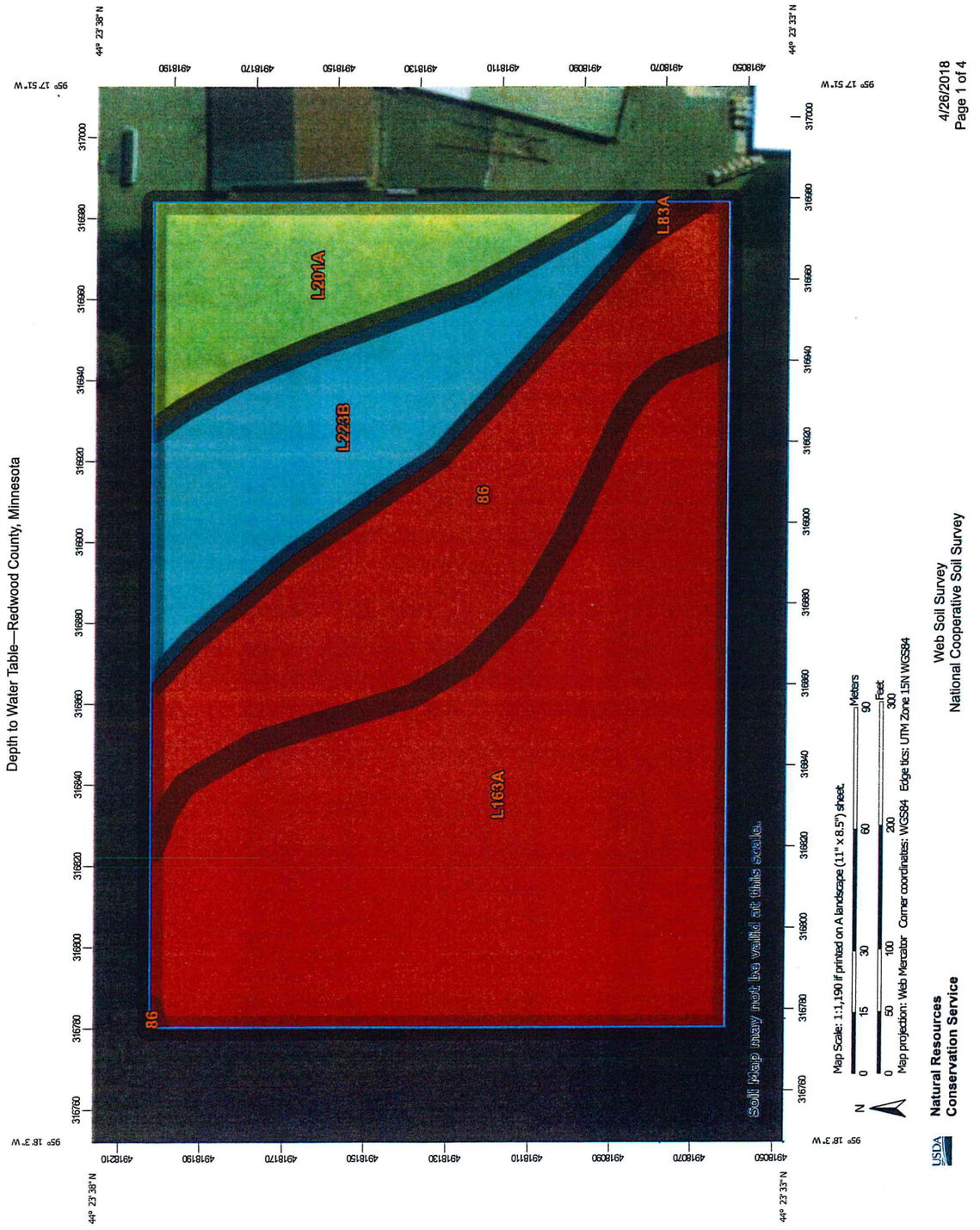
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
86	Canisteo clay loam, 0 to 2 percent slopes	1.6	22.6%
L83A	Webster clay loam, 0 to 2 percent slopes	0.0	0.2%
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	3.5	49.5%
L201A	Normania loam, 1 to 3 percent slopes	0.8	11.4%
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	1.2	16.3%
Totals for Area of Interest		**7.1**	**100.0%**



Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
86	Canisteo clay loam, 0 to 2 percent slopes	0	1.6	22.6%
L83A	Webster clay loam, 0 to 2 percent slopes	0	0.0	0.2%
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	0	3.5	49.5%
L201A	Normania loam, 1 to 3 percent slopes	70	0.8	11.4%
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	110	1.2	16.3%
Totals for Area of Interest			**7.1**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

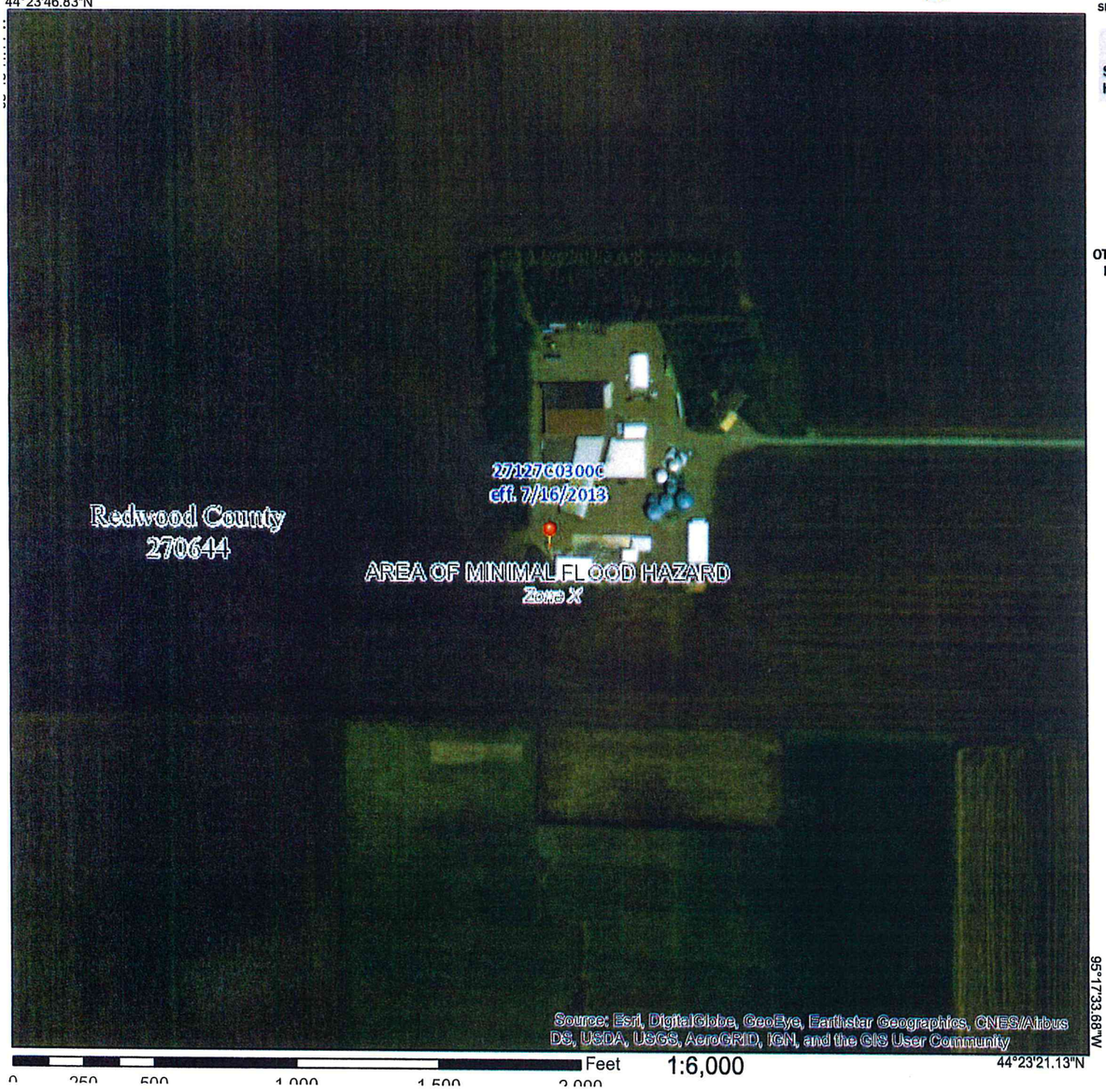
Units of Measure: centimeters

Aggregation Method: Dominant Component

National Flood Hazard Layer FIRMette

FEMA

44°23'46.83"N



95°17'33.68"W

44°23'21.13"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth
- Regulatory Floodway Zone AE, AO, AH, VE,

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Ar of 1% annual chance flood with averag depth less than one foot or with draina areas of less than one square mile Zon
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zo

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chanc
- Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2018 at 3:39:46 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ProAg ENGINEERING, INC.
77402 U.S. Hwy 71
P.O. Box 181
Jackson, MN 56143
507-841-3269
nic@proageng.com

TO: OWNER

INSTRUCTIONS FOR OWNER TO FOLLOW BEFORE—DURING—AFTER CONSTRUCTION OF MANURE STORAGE

1. Distribute only complete sets of plans and specifications: Keep a record of who gets plans because you may need to retrieve them later. Please call if you need more copies.
2. Ask your feedlot officer to send a copy of your feedlot permit to ProAg Engineering, Inc.. We need this so we know who issued the permit and where reports should be sent.
3. Each Contract for construction of the liquid manure storage (Concrete, tiling earthen basins) should include the following statement:
   - 10% of the contract amount will be held back until the MPCA Construction Inspection of Liquid Manure Area form has been signed by the Contractor and returned to the Engineer and Engineer certifies that the contract work is complete.
4. **A Pre-Construction Meeting shall be held before you start construction.** The pre-construction meeting must include the Owner, Engineer, Excavating Concrete Contractors, and County Feedlot Officer. If you start construction without a pre-construction meeting, we reserve the right to cancel our contract
5. You must notify ProAg Engineering, Inc. and the Permitting Agency:
   1. Three days before you start construction.
   2. Three days before you backfill.
   3. Within three days of completion.
6. Pictures should be taken as the work progresses. This is good protection for you because if problems develop later, you will have a record of what was done. If the Engineer finds problems during inspection, he may request copies of the pictures. Close up pictures showing details are more important than panoramic views. Suggest using single use or digital cameras.
7. MPCA requires that the design engineer submit a written construction report. We cannot do our final inspection and impact hammer test until the concrete is at least 28 days old and all accessory details shown on plans and specs are completed. Then allow at least 2 weeks for us to inspect and write our report.
8. **DO NOT** make a final payment to contractor until the Engineer's certifies that work is complete.
9. **DO NOT put manure in the structure until you have received Engineer's Construction Report.**

INSPECTIONS: ***ProAg Engineering, Inc. must inspect before pouring concrete**

Owner: _____

Location: _____

Barn or Tank Identification: _____

Date_____Comment_____Initials

Subgrade (No standing water or mud, forms set for proper floor thickness)

Floor Reinforcement (Grade, size, clean, location)

*Pouring Floor (Concrete, quality, take test cylinder

Floor (Cracks sealed)

Perimeter Tile, Monitoring Port or Sump & Pump, Tile Outlet (Functional before forming walls)

Wall Forms and Reinforcement (Grade of steel, spacing, vertical reinforcement secured)

*Pouring Walls (Concrete quality, take test cylinders)

Water Supply Lines (None permitted through pit floor or walls below the HW line)

Outside of Walls (Honeycomb patched prior to backfilling)

Inside of Walls (Honeycomb patched)

Walls (Do impact hammer test)

Columns (Honeycomb patched)

Beams Grouted (First 3 beams at end walls and each side of solid divider walls

Slats Grouted (Prior to backfilling)

Backfill (Height and slope to drain roof away from barns)

Finish Grading (Roads, drives, storm water catch basins & drainage)

ProAg ENGINEERING, INC.
Nicholaus J. Rowe, P.E.
77402 U.S. Hwy 71
P.O. Box 181
Jackson, MN 56143
507-841-3269
nic@proageng.com

PRE-CONSTRUCTION MEETING

PROJECT: _____ **DATE:** _____

LOCATION: ____1/4, SECTION ____, _____TWP._____CTY

OWNER: _____PHONE: _____
Owner's Representative _____PHONE: _____ (to conduct weekly inspections for SWPPP and notify Engineer and Feedlot Officer.)

GENERAL CONTRACTOR _____
Contact _____ PHONE: _____

EXCAVATION CONTRACTOR _____
Contact _____ PHONE: _____
Date to start excavation work _____

CONCRETE CONTRACTOR _____
Contact _____ PHONE: _____
Date to start concrete work _____

CONCRETE READY MIX _____
Contact _____ PHONE: _____

PRE-CAST CONCRETE _____
Contact _____ PHONE: _____

GROUTS, BEAMS AND SLATS _____
Contact _____ PHONE: _____

FEEDLOT OFFICER _____ PHONE: _____

ELECTRICAL INSPECTOR _____ PHONE: _____

ENGINEER _____ PHONE: _____

PRE-CONSTRUCTION MEETING CHECK LIST

OW-Owner, OR-Owner's Representative, CC-Concrete Contractor,
EC-Electrical Contractor, EN-Engineer, EX-Excavator, PC-Precast Supplier

ITEM	RESPONSIBILITY
1) Telephone directory	_____
2) Port-a-potty or Johnny-on-the-spot	_____
3) Storm Water Pollution Prevention Plan, SWPPP, weekly inspections.	_____
4) Stake out buildings and pits	_____
5) Locate underground utilities	_____
6) Call UTILITIES CALL CENTER	_____
7) Notify Engineer three days before starting	_____
8) Notify Engineer three days before backfilling	_____
9) Notify Electrical Inspector for grounding inspections	_____
10) Notify Engineer four hours before each concrete pour	_____
11) Temporary electrical power	_____
12) Temporary Water	_____
13) Telephone service	_____
14) Layout worksite, limits of worksite	_____
15) Equipment and employee parking	_____
16) Dirt stockpile area	_____
17) Construction materials stockpile area(s)	_____
18) Keep traffic off septic drainfield area(s)	_____
19) Security (daytime, night time)	_____
20) Bio-security	_____
21) Refuse disposal dumpster/burn pit	_____
22) Concrete truck wash-out area	_____
23) Does everyone have correct plans?	_____
24) At completion of construction, notify Engineer for final inspection	_____
25) Contractor sign MPCA Construction Report	_____

01001 QUALITY ASSURANCE AND CONTROL PLAN

Work under these specifications is subject to County and MPCA inspection and review.

A. BEFORE STARTING CONSTRUCTION, Owner shall:
   1. Consult the feedlot permit for required submittals, notifications and approvals.
   2. Arrange for pre-construction meeting with engineer, owner and contractors.
   3. Notify engineer, 3 days before starting construction.
   4. Notify permitting agency (MPCA or County) 3 days before starting construction.

B. DURING CONSTRUCTION, Concrete Contractor shall:
   1. Notify Engineer, minimum 4 hrs before each concrete pour.
   2. Wait for Engineer's inspection before pouring concrete.
   3. Concrete testing will occur at a minimum of one sample per 100 yards of placed concrete. Testing will include: Air/Slump/Strength per ASTM standards. Sampled concrete will be later tested at a certified testing facility to determine PSI strength requirements and quality assurance.
   4. If concrete is provided by different supplier or with different mixes, additional testing will be done on the first truck according to ASTM standards. Engineer must be notified immediately if any change does occur.

C. BEFORE POURING CONCRETE PIT FLOORS; the following must be completed:
   1. Contractor give Engineer & Electrical Inspector advance notice.
   2. Engineer inspect subgrade and floor slab thickness (full 5" thick).
   3. Engineer inspect grade and placement of reinforcing steel.
      Steel shall be supported on chairs and tied.
   4. Perimeter tile shall be laid at least 12 inches from pit wall and covered with pea rock or 1/4" – 1/2" crushed rock.
   5. Grounding inspection by Electrical Inspector.

Placement of the perimeter tile and rock cover shall be done by the Concrete Contractor. Tile and rock provided by Owner.

D. BEFORE POURING CONCRETE PIT WALLS; the following must be completed:
   1. Contractor give Engineer & Electrical Inspector advance notice.
   2. Engineer inspect forms, reinforcing steel, waterstop and tile.
   3. Tile system shall be working with (temporary or permanent) automatic sump pump or daylight outlet.
   4. Grounding inspection by Electrical Inspector.

E. BEFORE BACKFILLING; Items 1 thru 4 must be complete, then Owner notify Engineer, and MPCA or CFO and allow 3 work days for inspection.
   1. Concrete contractor shall have patched all cracks and honeycomb.
   2. Pre-cast concrete beams, slats and slabs in place and grouted.
   3. Permanent tile sump pump or inspection port set in-place, (braced if necessary) and ready for backfilling.
   4. All organic debris shall be removed from the overdig area.
   5. Engineer must inspect Items 1 thru 4 and approve before backfilling.

F. UPON COMPLETION, Owner shall notify Engineer when all of these items are done.
   1. Backfilling and finish grading completed.
   2. Pumpout covers and safety signs installed.
   3. Concrete Contractor sign MPCA Construction Inspection Form.

G. ENGINEER shall conduct inspections as specified in Section 03001.B. and submit construction report to Owner and Permitting agency.

01301 DESIGN CHANGES

Design changes must be approved in writing by both the Owner and the Engineer before proceeding with the work. Some design changes may also require MPCA, COUNTY and/or NRCS approval.

01401 SITE SURVEY

The Contractor shall be responsible for layout of the work. Bidders must visit the site and acquaint themselves with existing conditions. Contractor shall CALL GOPHER-1 and be responsible for location of existing utilities in areas of work.

01501 SUBSURFACE INFORMATION

All available data relating to the subsurface material and conditions that are based upon test borings has been obtained by the Engineer for his/her own use in designing the project. Its accuracy or completeness is not guaranteed by the Owner or Engineer and in no event is it to be considered a part of the contact plans or specifications.

02101 EARTHWORK

A. This section applies to earthwork (excavation and backfill) for concrete lined manure storage pits and tanks.

B. Remove one foot (1') of topsoil under all concrete lined manure tanks. Save topsoil for finish grading.

C. Removal of water: All excavations, fill, grading and embankments shall be maintained in a well drained condition at all times. The Contractor shall have temporary pumping equipment on site to remove water from trenches and excavations until the perimeter tile system is working.

D. Any over-excavation for concrete footings and slabs on grade shall be backfilled with compacted sand/gravel.

E. WARNING Engineer must inspect outside of wall and tile and give approval before backfilling. See Section 01001.

F. CLEAN BACKFILL TRENCH. All organic material, cardboard, wood, paper, straw, etc. shall be removed from trench before backfilling. These materials will decay and contaminate the perimeter tile system.

G. Do not backfill against concrete walls until the concrete has cured at least 7 days and all slat and slab floors and beams are in place and grouted to properly brace the walls. Exercise caution when backfilling to bring up the level uniformly on all sides of tanks and pits. Keep all heavy equipment back from the pit and tank walls a distance equal to the depth of the fill. Top off backfill with one foot (1') of topsoil, disk and leave smooth for planting grass.

02401 PERIMETER TILE SYSTEM

MPCA Rules: Where a perimeter tile system is required to control the elevation of the water table or saturated soils, it must lower the water table or saturated soils to below the bottom of the storage liner. Perimeter drainage tile shall be located at least one foot outside of the footing of the concrete-lined manure storage areas. Each manure storage area shall have a dedicated drain tile system with a dedicated riser, manhole or other access for collection of tile-water samples.

A. PERIMETER TILE shall be 4 inch (unless otherwise shown on plans) heavy duty perforated corrugated polyethylene plastic agricultural drain pipe. Tile shall be bedded and covered with pea rock or 1/4" - 1/2" crushed rock.

B. EXISTING TILE LINES intercepted during trenching for the perimeter tile system shall be removed back 10 feet from the tank wall. Existing tiles shall be connected to a suitable by-pass tile system. Do NOT connect existing area tile lines to the perimeter tile system, unless authorized by the Engineer.

C. GRAVITY OUTLET FOR PERIMETER TILE shall not be used where flood water may backup into the tile and contaminate the dedicated sampling port. The tile outlet shall have a rodent guard. The tile outlet may serve as dedicated sampling port, when it is easily accessible and will never by inundated and contaminated by flood water.

D. SUMP PUMPS shall be required whenever a gravity outlet is not available. On sites with more than one below ground manure storage structure, only one common sump pump system is required, but each structure must have an individual sampling port.

E. PUMP shall be submersible type with 20 feet heavy duty electrical cord. Pump shall have an adjustable piggy back float switch. Pump shall be capable of 25 GPM at 15 feet head. Pump shall be fitted with a discharge hose or pipe equal or larger than the discharge of the pump. Furnish and install fused weatherproof disconnect switch, plug and receptacle for each pump. Plug type connections should be used for quick exchange of pumps by farm workers.

F. ALTERNATE PLAN to dewater the site in advance of general excavation shall be decided by the owner, engineer and contractor at time of the pre-construction meeting. If the tile is installed in advance of excavation, it should be installed 4 feet out from the pit wall and at least 2 feet below the top of the pit floor. Slope the tile at 0.2 feet per 100 feet to the sump or daylight outlet. Plow type machines shall NOT be used when installing perimeter tile around concrete manure storage structures prior to general excavation, because it will loosen soil under wall footing. Use only a backhoe or trencher.

G. CLEAN BACKFILL TRENCH. All organic material, cardboard, wood, paper, straw, etc. shall be removed from trench before backfilling. These materials will decay and contaminate the perimeter tile system.

02601 SEWER SYSTEM

A. Sewer system consists of drains from the barns, cleanouts, sewer main, sewer outlet into concrete tanks and earthen basins, and level control between lagoon cells.

B. Gravity sewer pipe (non-pressurized) shall be PVC SDR-35 with gasket or glued joints. Sewer cleanouts (CO) shall be located as shown on the plan.

C. All holes for pipes passing through floors and walls shall be sealed water tight.

02701 FENCE AND GATES

All open top concrete tanks less than 4 feet of wall above ground and earthen manure storage basins shall be fenced. Fence and gates shall be child and livestock proof to prevent unsupervised access.

02801 SIGNS

The Owner shall post warning signs every 100-150 feet around open top tanks and earthen basins: "DANGER, DEEP WATER, KEEP OUT". Post warning sign at each manure pit, reception pit, pumping station and manhole where a 'confined space' may contain manure gases: "DANGER, POISONOUS GAS IN PIT, KEEP OUT".

02901 OTHER WORK

The Owner shall be responsible for putting child-proof fences around open top tanks and child-proof covers on all sumps, pump out ports and providing and utilizing safety guard fences around pump outs when open.

03000 PRECAST CONCRETE

A. The Precast manufacturer shall submit design data for checking load capacity of the precast sytem or an Engineer's Certification that the pre-cast components meet the following design loads. For design of beams, slabs and slats refer to Concrete Manure Storages Handbook, MWPS-36, by Midwest Plan Service.

Type of barn	Solid slabs & beams	Slats
Hog nursery barns	35 psf	50 plf
Hog finishing barns	60 psf	125 plf
Sow & boar barns	65 psf	150 plf
Add an additional 160 plf on the edge(s) of slabs that support farrowing stalls.		
Dairy free-stall barns	100 psf	250 plf
Dairy holding & handling pens	125 psf	312 plf

B. To properly brace pit or tank walls, space between ends of beams, slats and slabs shall be filled with grout and allowed to set 3 days before backfilling.

03001 CAST IN PLACE CONCRETE

A. READY MIX CONCRETE shall meet requirements of ASTM C-94

CONTRACTOR shall give copy of this page to Ready Mix Plant prior to bidding.

Concrete 28 day compressive strenth, f'c,psi		Aggregate, max.	Fibermesh
Footings & Floors	3,500	2"	1.5 lb/cuyd
Walls	4,000	1.5"	none
Columns	4,000	1.5"	none

Slump	3" – 6"
Air entrained	5% - 7%
Water:cement ratio	0.5

Fly Ash, maximum 20% of cementious material. Silica Fume, maximum 20% of cementious material. The combination of fly ash and silica fume shall not exceed 35% of total cementious materials. Fly ash and silica fume will increase resistance to sulfates and reduce permeability. CAUTION: fly ash slows curing, especially in cold weather.

To minimize shrinkage cracks in floors, minimize the amount of cement-water paste and maximize the amount of large aggregate. The use of water reducing plasticizers is encouraged. Contractor may order water reducing or other admixtures, except calcium chloride shall not be used.

B. INSPECTIONS AND TESTING.

1. Inspection before each concrete pour shall include evaluation of subgrade, forms, waterstop, placement and grade of reinforcing steel.

2. Concrete shall be sampled and tested for temperature, entrained air, slump and strength (test cylinders) as per ASTM C-94. Minimum of one sample per 100 yards placed.

3. The Inspector shall forward the inspection report including results of the ASTM tests to the Engineer.

4. The Engineer may request core samples be taken for any concrete of questionable strength or quality. All such concrete found to be defective shall be removed and replaced by the Contractor. If concrete is provided by different supplier or with different mixes, additional testing will be done on the first truck according to ASTM standards. Engineer must be notified immediately if any change does occur.

C. WATERSTOP shall be 3/4" x 3/8" Waterstop RX; 3/4" x 1" Swellstop; Synko-Flex; Hydro-Flex waterstop; Green-streak, Con-Seal CS-231, 220 or 102, or approved equal. These materials come in paper-backed coil or strips and shall be applied as per manufacturer's instructions.

D. All steel in the concrete floors and walls in livestock buildings must form an EQUIPOTENTIAL PLANE and be bonded to the electrical system. This must be coordinated with the Electrical Contractor and will require inspection by the Electrical Inspector prior to each pour of concrete.

E. REINFORCING STEEL shall be deformed bars, fy = 60,000 psi (Grade 60)

Steel details for deformed rerods	#4 bars	#5 bars
Bar bending radius, minimum 6d3"	4"	
Lap splices, minimum 40d	20"	25"
Bend around corner, minimum	24"	30"
Rods through construction joints	30"	36"

F. Steel reinforcement shall be tied and supported on chairs, bolsters, spacers and other devices. Dowels and rods extending through construction joints shall be secured in positions against displacement before concrete is placed and shall be cleaned before subsequent pouring.

G. Preparation of Forms and Subgrade: Prior to placement of concrete, the forms and subgrade shall be free of wood chips, sawdust, debris, standing water, ice, snow, extraneous oil, mortar and other harmful substances or coatings. Placement of concrete on mud, dried earth, un-compacted fill or frozen subgrade will not be permitted.

H. Excavations shall be made to the dimensions and elevations indicated on the drawings. Should excavation through error be carried to a greater depth or size than indicated or required, such additional depth or size shall be filled with concrete at the CONTRACTOR'S EXPENSE.

I. Tolerances: Elevations of floor slabs, top of walls, slat ledges, beam pockets and top of columns ± 1/4". Horizontal length and width of top of wall, location of beam pockets and columns ± 1/2". Straightness of top of wall ± 1/4". Anchor bolt spacing ± 1", centered in stem wall ± 1/2". Thickness of floor slab shall not be less than 5 inches at any point.

J. Shrinkage cracks and honeycomb areas shall be filled with a mixture of masonry cement and water of medium consistency and brushed into the cracks with a stiff brush. Honeycomb areas shall: 1) have loose stones hammered out, 2) be wetted by brushing in a watery paste of masonry cement, 3) and filled and sealed with mixture of masonry cement with sand.

K. COLD WEATHER. When for more than 3 consecutive days the mean daily temperature drops below 40*F, the contractor shall place and protect the concrete in accordance with ACI 306.

L. HOT WEATHER CONSTRUCTION. When it is likely that temperature between 80*F and 100*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.

M. Freeze/Thaw & Non-Use Protection, Long & Short Term After Construction: After the concrete pit is constructed and prior to its use or during non-use, the concrete floor and subgrade must be protected from freezing. If the pit is empty when the ground surface around the pit begins to freeze, a minimum liquid depth of 2 feet must be added to the pit to prevent freezing the subgrade below the floor. If the barn and pit are not being used for any extended period of time throughout the year (minimum of 60 days), a minimum liquid depth of 2 feet must be maintained in the pit to prevent freezing, groundwater pressure heaving, etc. The barn can also be heated during non-use times during cold weather to prevent freezing in the bottom of the pit instead of placing or leaving additional liquid in the pit.

OPERATION, INSPECTION AND MAINTENANCE PLAN

NEED FOR OPERATION, INSPECTION AND MAINTENANCE PLAN

Although this Waste Storage Structure has been designed in accordance with MPCA recommendations and its based upon the best available technical knowledge, it must be recognized that any Waste Storage Structure needs to be properly maintained, including periodic inspection. You, the Owner, are responsible for this Waste Storage Structure. The following guidelines for safe operation and maintenance are recommended.

(1) routine inspections, maintenance and record keeping to be completed to identify and document damage to the liner.

(2) methods to be used to repair areas of damaged liner;

(3) methods used to monitor the liquid level in the basin to evaluate proper operation and adequate available storage capacity; and

(4) routine inspections of perimeter tile line outlets and inspection manholes to ensure proper operation of the system.

Annually, the liquid will be mixed and removed for land application. Liquid level in the pit(s) shall be monitored quarterly (4 times per year) and after any water line breaks or abnormal additions to the pit. The level shall be measured using a rod or wood stick and the depth recorded.

SEMI-ANNUAL INSPECTION OF LIQUID STORAGE AND HANDLING SYSTEMS

Establish a time each spring and fall for a thorough inspection of the liquid storage and handling systems. DO NOT ENTER COVERED PITS & TANKS.

All concrete storage tanks and reception pits shall be inspected to evaluate the outside of structures for cracks and deterioration of concrete. Any cracks showing discharge of liquid shall be inspected by an engineer and repairs done as prescribed by the engineer.

Maintain the following in proper working order:

1) Finish earthwork around the structure should be designed to carry runoff away from the foundation. Rainwater diversions to direct 'clean' water away and 'dirty' water into storage facilities. Grass should be established in those areas not covered by concrete and gravel.
2) Childproof covers must be placed upon the pumpouts. Open pumpouts should never be left unattended.
3) Warning signs shall be posted to prevent children and others from using the pit other than the intended use.
4) Animal wastes shall be handled and utilized as specified in the Manure Management Plan.
5) The Waste Storage Structure requires continuous ventilation to safely remove poisonous and noxious gases. Manure agitation will release large amounts of gas and may create a hazardous situation. Ensure that the ventilation fans are operating before agitation and, if possible, evacuate the building.
6) Manure pits that contain bearing divider walls should be emptied using a modified pumping plan. All manure sections should be partially emptied to prevent possible divider wall failure. Removal of about 3' of manure is recommended from each section before complete emptying of any one section is undertaken.
7) No person should enter a Waste Storage Structure without proper training and without wearing a self-contained breathing device. A second person should remain outside of the structure and should have an immediate means of removing the person inside the structure in an emergency.
8) Regular quarterly inspections should be made of the structure and its surroundings for leaks, concrete deterioration and pumpout cover conditions. Inspection of the slats for signs of deterioration is advised.
9) Concrete should be inspected for large cracks and exposed reinforcing steel. Joints should be checked for unusual openings.
10) Concrete surfaces should be quarterly inspected for erosion, scaling and exposed reinforcing steel.

11) Perimeter tile, sump pumps, sampling ports and rodent guards at outlets.
12) The structure walls are designed to resist earth loads only. Do not operate any equipment on this surface.
13) The beam and flooring system is designed for animal loads only. Do not operate any equipment on this surface.
14) If, during the inspection, serious defects are discovered, remedial actions may be required. The County Feedlot Officer and Engineer should be contacted and possible the MPCA.

RECORDS

Record the inspections, evaluations and maintenance done in a spiral bound notebook. Also take and date pictures before and after any maintenance work is done on cover and liquid storage and handling facilities.

PERIMETER TILE MONITORING AND CONTINGENCY PLAN

INSPECT PERIMETER TILE AT LEAST ONE WEEK BEFORE EMPTYING STORAGE

All below ground waste storage structures require perimeter tile to relieve the hydrostatic pressures which would otherwise damage the sides of the concrete tanks and manure storage pits under barns. There is a serious problem if the water level in the sump or inspection port is above the pit floor.

It is very important that the ground water level be lowered prior to emptying the manure storage pit. It may take a week or more for the system to lower the ground water pressure once the problem has been corrected.

BASE LINE SAMPLING

It is recommended that base line sampling be done before manure is put in the storage facility to document any pre-existing contamination that may be in the soil. This is especially important if the site is in an old barn-yard area or has received heavy applications of manure for many years.

Base line samples should be collected at least two (2) times prior to the addition of manure into the waste storage structure. If there is no flow from the tile, sampling shall begin as soon as water is available for sampling. Each 'base line' sampling event shall be scheduled at least two (2) weeks apart.

1. The Owner shall contract with an independent laboratory to collect and analyze the samples. The laboratory must be certified. The laboratory report shall include: Chain of custody record, date, parameter, method used, results, units.

2. The water quality parameters to be monitored are:

Total Kjeldahl Nitrogen	Nitrate Nitrogen
Nitrite Nitrogen	Ammonium Nitrogen
Dissolved Oxygen	Chloride
Sulfate	Total Phosphorus
Fecal Coliform	pH
Temperature	Specific Conductivity

Flow (as determined by time to fill 5 gallon pail)

CHANGE IN TILE WATER COLOR OR ODOR

If visual observation of the tile water indicates a change in color or odor, then a more urgent response is necessary. A change in color or odor may be caused by either soil and/or manure water. If this should occur, immediately stop all discharge to field tile. Notify the MPCA or Engineer immediately.

Install a sump pump and discharge the tile water onto a vegetated filter strip area. If necessary, plug the line going to field tile with bentonite 'chips'. Bentonite chips may be obtained from your well driller.

*These are recommendations and are not intended to meet the requirements of a site specific SWPPP for an NPDES Storm Water Discharge Permit.

Description of the site:

The site is currently cropland. The project consists of construction of a cattle confinement operation with multiple deep pits. After construction, the area surrounding pit will be planted to grass.

Construction Sequence and Best Management Practices (BMP's)

1. The construction site shall be planted to grass (or cover crop) prior to commencement of construction. See Grass Seeding Guidelines.
2. Areas not to be disturbed during construction shall be staked and marked. Considerable rain water and sediment can be trapped on areas planted to grass and not compacted by construction traffic.
3. Install silt fence as shown on the site plan as needed to prevent erosion.
4. All drive entrances shall be protected with rock. Install road culvert(s) as per highway department specifications.
5. Build a berm to prevent field water from entering the construction site. Make berm 18-24" high with 3:1 side slopes. Use loose top soil from the barn area. A berm is an alternative to using silt fence. The loose soil will absorb a lot of water. Construct the berm on the contour with no channel on the up-hill side of the berm.
6. Temporary stockpiles shall have silt fence or other effective sediment controls and cannot be placed in stormwater conveyances, ditches or grass waterways.
7. Dewatering of pits and basins shall be done in a manner that does not cause nuisance conditions or discharge onto down-slope property. Rain and ground water in pit excavations shall not be allowed to flow direct into open tile, unless the tile inlet has silt fence or other protection or the perimeter tile is installed and covered with pea rock or crushed rock.
8. After backfilling and final grading is done, those areas shall be planted to grass. Slopes steeper than 5:1 shall be mulched. All seeding and mulching operations shall commence within 1 week after completion of each portion of the construction or as soon as soil conditions permit. See Grass Seeding Guidelines.
9. After berms are removed and backfill around barns is re-graded (the following spring) those areas shall be re-seeded to grass.
10. Final stabilization is achieved when soils have been stabilized by a uniform perennial vegetative cover over at least 70% of the pervious area, and all drainage ditches and grass waterways have been stabilized, then the silt fence may be removed.
11. The Owner shall keep the plans and records on file for a minimum of six (6) years.

Maintenance of BMP's

1. Owner shall inspect all BMP's weekly and within 24 hours after each rain event of 1/2" or more in 24 hours.
2. Silt shall be removed from behind silt fences within 24 hours of when the depth reaches 1/3 the height of the fence.
3. Mud and crushed rock are tracked onto public roads, it shall be removed within 24 hours.
4. If sediment escapes the site, off-site accumulations must be removed in a manner and frequency sufficient to minimize off-site impacts.

Assignment of Responsibilities for Execution of the SWPPP

1. Owner shall be responsible for execution, inspection, record keeping and up-dating The SWPPP as required in Appendix C of the NPDES Feedlot Permit. See form for the Storm Water Pollution Prevention Plan Record.
2. Owner shall inspect all BMP's weekly and within 24 hours after each rain event of 1/2" or more in 24 hours and supervise proper maintenance of erosion and sediment control practices.
3. Earthwork Contractor shall be responsible for implement, manage and maintain both temporary and permanent erosion and sediment control BMP's (except seeding) until final grading has been completed on site.
4. Owner shall be responsible for seedbed preparation, planting and mulching operations prescribed by the SWPPP.
5. Changes to the SWPPP shall be approved and recorded by Owner prior to implementation.

Grass Seeding Guidelines

All inplace topsoil shall be salvaged to the maximum extent possible. It is ideal to place 6 inches of top soil in areas to be seeded. Harrowing before and packing with roller after planting will help germination, make the ground smoother and easier to mow. Seeding mixture and rates are recommendations based on DOT specs. Fertilizer is important for quick growth. Mixtures 250 and 280 can be mowed.

Temporary seeding: Fertilizer 10-10-20 at 200 lbs/acre.

- Oats at 100 lbs/ac for spring/summer seeding of areas that will be left undisturbed for 21 days or more.
- Winter wheat at 100 lbs/ac for fall seeding of areas that will be disturbed again in the spring, such as backfill around barns.

Turf and agricultural grasses: Fertilizer 20-10-20 at 350 lbs/acre.

General Roadside mix.

Brome grass, smooth	9.8 lbs/ac	14.0%
Bluegrass, Kentucky "Certified Park"	20.3	29.0
Bluegrass, Canada	9.8	14.0
Switch grass	2.1	3.0
Wheat-grass, slender	2.8	4.0
Rye-grass, perennial	14.7	21.0
Timothy	2.1	3.0
Redtop	2.1	3.0
Alfalfa, creeping	4.2	6.0
White clover	2.1	3.0
Total	70 lb/ac	

Agricultural Roadside mix.

Alfalfa, creeping	15 lb/ac	30.0%
Brome grass, smooth	10	20.0
Redtop	3	6.0
Rye-grass, perennial	15	30.0
Switch grass	2	4.0
Timothy	2	4.0
Wheat-grass, slender	3	6.0
Total	50 lb/ac	

MANURE APPLICATION LEASE AGREEMENT

This Lease Agreement, made and entered into this 24th **day of** April , 2018 **between** Colleen Johnson and LaVern Johnson Jr. **hereinafter described as Landowner, and** Terry Altermatt, Todd Altermatt, Cole Altermatt **hereinafter described as Tenant, agree as follows:**

1. Landowner leases to the Tenant the following described real property situated in Redwood County, Minnesota for the sole purpose of spreading solid and/or liquid animal manure on the said premises.

Field Location (1/4 Section, Township, Range)	Acres Available	Landuse
W½ SW¼, less 9.99 acre building site 14-110-38	68.23	Corn / Soybeans
Total Acres (more or less)	68.23	

2. Tenant shall be allowed to spread manure on the property owned by the Landowner described above at such regular intervals as are mutually agreeable by both parties. The spreading of manure, however, shall not interfere with the productivity, planting, growing and harvesting of crops on the above described premises.

3. Tenant and Landowner jointly agree to apply manure and/or commercial fertilizer at rates not to exceed crop nutrient needs using current soil and manure test results.

4. Tenant further agrees to comply with all local ordinances and state and federal environmental laws in the hauling and spreading of said animal manure.

5. This lease shall commence April 24 , 2018 and terminate in 1 years on February 28 , 2019. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before November 1 of any given year of an election not to renew this Lease.

6. It is agreed that the Tenant listed above has sole authorization of spreading manure on the above described premises.

7. Other Conditions (Describe): 100% of manure and manure application cost is the responsibility of the tenant.

Colleen Johnson and LaVern Johnson Jr.
LANDOWNER by NFMC Agent by Jeff Erickson (Signature) **TENANT** Cole Altermatt (Signature)

Address: 301 S. O'Connell St
City State Zip: Marshall, MN 56258
Phone: 507-532-5120

Address: 23630 HUNTER AVE
City State Zip: WABASSO, MN 56293
Phone: (507) 829-3141

MANURE APPLICATION LEASE AGREEMENT

This Lease Agreement, made and entered into this 23rd **day of** April , 2018 **between** Dennis E. Rossing and Sharon L. Rossing Revocable Living Trust **hereinafter described as Landowner, and** Todd Altermatt, Terry Altermatt, Cole Altermatt **hereinafter described as Tenant, agree as follows:**

1. Landowner leases to the Tenant the following described real property situated in Redwood County, Minnesota for the sole purpose of spreading solid and/or liquid animal manure on the said premises.

Field Location (1/4 Section, Township, Range)	Acres Available	Landuse
E½ SW¼ & W½ SE¼ 21-110-35	160	Corn / Soybeans
NE¼ NW¼ 28-110-38	40	Corn / Soybeans
Total Acres (more or less)	200	

2. Tenant shall be allowed to spread manure on the property owned by the Landowner described above at such regular intervals as are mutually agreeable by both parties. The spreading of manure, however, shall not interfere with the productivity, planting, growing and harvesting of crops on the above described premises.

3. Tenant and Landowner jointly agree to apply manure and/or commercial fertilizer at rates not to exceed crop nutrient needs using current soil and manure test results.

4. Tenant further agrees to comply with all local ordinances and state and federal environmental laws in the hauling and spreading of said animal manure.

5. This lease shall commence 4-23 , 2018 and terminate in 1 years on February 28 , 2019. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before November 1, of any given year of an election not to renew this Lease.

6. It is agreed that the Tenant listed above has sole authorization of spreading manure on the above described premises.

7. Other Conditions (Describe): 100% of manure and manure applicaton cost is the tenant's.

LANDOWNER Dennis E Rossing and Sharon L. Rossing Revocable Living Trust by NFMC Agent by Taylor Erickson (Signature)

Address: 301 S. O'Connell St

City State Zip: Marshall, MN 56258

Phone: 507-532-5120

TENANT Cole Altermatt (Signature)

Address: 23630 HUNTER AVE

City State Zip: WABASSO, MN 56293

Phone: (507) 829-3141

MANURE APPLICATION LEASE AGREEMENT

This Lease Agreement, made and entered into this 19TH **day of** APRIL **, 20**18
between ARLENE SCHULTZ **hereinafter described as Landowner, and** TODD, TERRY, & COLE ALTERMATT **hereinafter described as Tenant, agree as follows:**

1. Landowner leases to the Tenant the following described real property situated in REDWOOD County, Minnesota for the sole purpose of spreading solid and/or liquid animal manure on the said premises.

Field Location (1/4 Section, Township, Range)	Acres Available	Landuse
26 112N 37W	73.2	CORN/SOY
25 112N	150.43	CORN/SOY

Total Acres (more or less) 223.63

2. Tenant shall be allowed to spread manure on the property owned by the Landowner described above at such regular intervals as are mutually agreeable by both parties. The spreading of manure, however, shall not interfere with the productivity, planting, growing and harvesting of crops on the above described premises.

3. Tenant and Landowner jointly agree to apply manure and/or commercial fertilizer at rates not to exceed crop nutrient needs using current soil and manure test results.

4. Tenant further agrees to comply with all local ordinances and state and federal environmental laws in the hauling and spreading of said animal manure.

5. This lease shall commence 4-19 , 2018 and terminate in 5 years on 5-1 , 2023 Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before SEPTEMBER 1 of any given year of an election not to renew this Lease.

6. It is agreed that the Tenant listed above has sole authorization of spreading manure on the above described premises.

7. Other Conditions (Describe): _____

LANDOWNER Arlene Schultz

(Signature)

Address: 29058 Co Hwy 6

City State Zip: Redwood Falls Mn 56283

Phone: 507-829-8980

TENANT Terry Altendorf

(Signature)

Address: _____

City State Zip: _____

Phone: _____

MANURE APPLICATION LEASE AGREEMENT

This Lease Agreement, made and entered into this 19th **day of** April **, 20**18 **between** Charles F Galles Co **hereinafter described as Landowner, and** Todd Altermatt, Terry Altermatt, Cole Altermatt **hereinafter described as Tenant, agree as follows:**

1. Landowner leases to the Tenant the following described real property situated in Redwood County, Minnesota for the sole purpose of spreading solid and/or liquid animal manure on the said premises.

Field Location (1/4 Section, Township, Range)	Acres Available	Landuse
N½ and E½ SE¼ 1-111-37	360	Corn / Soy
W½ Section 4-111-37	274	Corn / Soy

Total Acres (more or less) 634

2. Tenant shall be allowed to spread manure on the property owned by the Landowner described above at such regular intervals as are mutually agreeable by both parties. The spreading of manure, however, shall not interfere with the productivity, planting, growing and harvesting of crops on the above described premises.

3. Tenant and Landowner jointly agree to apply manure and/or commercial fertilizer at rates not to exceed crop nutrient needs using current soil and manure test results.

4. Tenant further agrees to comply with all local ordinances and state and federal environmental laws in the hauling and spreading of said animal manure.

5. This lease shall commence 4-23, 2018 and terminate in 5 years on 5-1, 2023 Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before September 1 of any given year of an election not to renew this Lease.

6. It is agreed that the Tenant listed above has sole authorization of spreading manure on the above described premises.

7. Other Conditions (Describe): ______________________________

LANDOWNER Charles F Galles Co & NFM Co Agent by Corey [signature] Pres (Signature) **TENANT** Terry Altermatt (Signature)

Address: 301 S O'Connell St **Address:** ____________

City State Zip: Marshall, MN 56258 **City State Zip:** ____________

Phone: 507-532-5120 **Phone:** ____________

Frame Building Offer To Purchase And Request For Proposal

Behlen Mfg. Co.
4025 E. 23rd Street
Columbus, NE 68602-0569
Phone: (800) 228-0340
Fax: (402) 563-7242
Web: www.behlenedge.com
Email: eos@behlenedge.com

Job Number:
District Manager: LARRY BUNTGEN
Quoted By: LARRY BUNTGEN
Quote No.: 2050475A

1
Date: 4/4/2018
Builder: Steve Heiling Construction
Address: 31843 State Hwy 68
PO Box:
City, State, Zip: Redwood Falls, MN 56283
Other:

Builder Account: 30269
Contact Name: Steve Heiling
Mobile/Cell: (507) 430-1857
Phone: (507) 644-5731
Fax: (507) 342-5751
Email: jheiling@redred.com

2
Job Name: COLE ALTERMATT
Address:
City, State, Zip: WABASO, MN 56293
Job Site (City or Rural): Rural County: Redwood
Building Usage:

Other info:

3
Plans and/or Specifications: ☐ Yes (S-3 must be included) ☑ No
Delivery notice: Phone:
Ship Via: BMC Requested Delivery Date:

Drawings & Additional Mailing

4

	Yes	No	Qty
Approval drawings:			
Permit Plans:			
Final Plan Sets:			
Design Calculations		X	
AB w/ Reactions in Advance:			
Drawing Size "B" (11 X 17)	Drawing Size:		
Drawing Size "C" (17 X 22)	Email A.B./Plans:		

Additional Mailing Information
Name:
Address:
PO Box:
City, State, Zip: , ,
Phone:
Other info:

Building Information

5 **SIZE** (Dwgs/sketch must be inc.)
Width: 65'-0" Length: 243'-4"
Eave Ht. Left*: 16'-0" Eave Ht. Right*: 26'-10"
Min.Clear (if critical)
Peak Offset from back sidewall: 65'-0"
Roof Slope Left*: 2.0:12 Roof Slope Right*:
* Building viewed by facing left endwall

Bay Spacing (Left EW to Right EW):
1 at 24'-8", 1 at 24'-0", 1 at 26'-0", 1 at 24'-0", 2 at 23'-0", 1 at 24'-0", 1 at 26'-0", 1 at 24'-0", 1 at 24'-8",

6 **BUILDING TYPE**
Left Endwall Type: Bearing (Spacing Below; BSW to FSW) ☐ LEW Expandable
1 at 16'-0", 2 at 24'-6",

Right Endwall Type: Bearing (Spacing Below; FSW TO BSW) ☐ REW Expandable
2 at 24'-6", 1 at 16'-0",

Framing Type (Rigid or Lean-to): Rigid Frame

Column Type:	Frame Qty:	Frame X-section	Frame Qty:
Tapered	9	Clear	0
Constant	0	Modular	9

Left Endwall Base*:	60 in
Front Sidewall Base*:	0 in
Right Endwall Base*:	60 in
Back Sidewall Base*:	36 in

(Please fill in Modular Column Location Below)
Column Location:

Frame lines:	Interior Column Location from Back Sidewall	Interior Column Elev*:
2 3 4 5 6 7 8 9 10	15'-0"	0 in
		0 in
		0 in
		0 in
		0 in
		0 in

*Dim is from Finish Floor +/-

Other Info:

7 BUILDING CODE

Building Code & Year: 2015 Minnesota Building Code

COMPLIANCE BASIS: ☑ Strictly BBS Order Document ☐ BBS Stds. W/Conceptual Plans/Specs (S-3 Req) ☐ Plans/Specs w/Exception (S-3 Req)

"Strictly BBS Order Document" means only this BBS Order Document will be used to fill this order; "BBS Stds. w/Conceptual Plans/Specs(S-3 Req)" means Plans and/or Specifications will be used only as general guidelines, BBS standard products and practices govern unless explicit notes are included on this Order Document (A fully executed S-3 Form is required with this option); "Plans/Specs w/Exceptions (S-3 Req)" means Behlen will adhere to Plans and/or Specifications and they will control any discrepancies between this Order Document and the Plans and/or Specifications except as noted on the S-3 Form (A fully executed S-3 Form is required with this option).

8 LOAD REQUIREMENTS Occupancy Category/Risk Category: I

Building Enclosure:	Enclosed			Roof Live(L_r):	20.0 psf	Reducible: Yes			
Grnd Snow (P_g):	50.0 psf	C_e:	1.00	C_t:	1.20	C_s:	1.00	Snow Importance:	0.80
Unif Roof Snow:	0.0 psf			Rain on Snow:	0.0 psf	Total Collateral:	0.0 psf		
Wind Velocity:	105 mph			Wind Exposure:	C			Wind Importance:	1.00
Seismic Site:	D	Ss (%g)=	6.3	S1 (%g)=	3			Seismic Importance:	1.00

Additional loads: ☐ Snow Drift ☐ Other loads

☐ Rooftop Units (Complete box 27 on S-9 form) Kzt =1.0 unless noted otherwise.

☐ Crane (see S-1 Form) ☐ Mezzanine (see S-2 Form) ☐ Masonry Wall (see S-5 Form)

Are there other buildings or site features within 20'? ☐ Check if yes, please provide a sketch

9 SPECIAL DEFLECTION REQUIREMENTS (Behlen Std unless noted otherwise)

Other info:

10 GIRTS

	Type	Offset	Projection
Left Endwall:	Flush	0 in	0 in
Front Sidewall:	Flush	0 in	0 in
Right Endwall:	Flush	0 in	0 in
Back Sidewall:	Flush	0 in	0 in

Notes: Use section 21 for wall deletions

Bypass girts have a projection equal to member depth

Other info:

11 WALL PANEL: Gauge: 0

Panel Type: 0 Finish/Color:

WAINSCOT:	Bay ID Start	Bay ID End	Height	*Top Girt	Panel Type	**Panel	Color	Trim Base	Trim Left	Trim Right	Trim Top
LEW											
FSW											
REW											
BSW											

*Top Girt: C-Cee, Z-Zee, **Panel, B-Break, L-Lap

Other Info:

12 WALL INSULATION: ☐ By Behlen ☐ By Others ☑ None

Type: Thickness Over Girts: Optional Flange Brace Attachment ☐ Yes ☑ No

Other Info:

13 ROOF PANEL: Gauge: Screw Option*: --

Panel Type: Finish/Color: #N/A *only applies to ADP1 panel

Other Info: ROOF AND WALL PANELS BY OTHERS

14 ROOF INSULATION: ☐ By Behlen ☐ By Others ☑ None

Type: Thickness Over Purlins*: Optional Flange Brace Attachment ☐ Yes ☑ No

*If roof is a standing seam panel, see pricing manual on pages Thermal Blocks ☐ Yes ☑ No

Other Info:

15 GUTTER **DOWNSPOUTS:** **STYLE=Standard**

Front Sidewall: Color: Qty. Front Sidewall: Color:

Back Sidewall: Color: Qty. Back Sidewall: Color:

Note: Gutters are 26 gage standard and downspouts are 26 gage standard.

16 TRIM COLOR All trim 26 ga unless noted otherwise

Eave Trim: SC Jamb/Header Trim: SC Base Trim: SC

Rake Trim: SC Corner Trim: SC

Other Info: ALL TRIM BY OTHERS

17 BASE CONDITION Concrete Notch: 0.000 in

Use Base Angle: Yes Use Base Cee: No Use Base Seal: No Use One Pc. Base Angle/Seal (trim): No

Quote No.: 2050475A

18 WIND BRACING (Special bracing requirements, no bracing areas, etc. must be specifically described on the sketch.)

Roof		Left Endwall		Front Sidewall		Right Endwall		Back Sidewall	
Type:	X-Bracing	Type:	X-Bracing	Type:	X-Bracing	Type:	X-Bracing	Type:	X-Bracing
Bays:		Bays:		Bays:		Bays:		Bays:	
Other:		Other:		Other:		Other:		Other:	

19 FRAMED OPENINGS Locations must be dimensioned on plans or sketch

Wall Id	Bay Id	Width	x	Header Height	Offset	F.O. Use	Sill Elev	Base Elev	F.O. Type
LEW	1	14'-0"	x	12'-0"	1'-0"	OHD	0'-0"	0"	Y
REW	3	14'-0"	x	12'-0"	1'-0"	OHD	0'-0"	0"	Y
			x						
			x						
			x						
			x						
			x						
			x						
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			x						
			x						
			x						
			x						
			x						

Jamb/Hdr. Cover come Std with the OHD & RU

F.O. Use Table

Use	Description
WD	Walk Door
WNDW	Window
OHD	Low Head Rm
	Std Lift
	Vert. Lift
	Hi Lift
RU	Roll-up
LV	Louver

F.O. Type Table

F = Field Located; Panels/Girts Remain
G = Factory Located; Panels/Girts Remain
N = Factory Located; Only Panels Remain
Y = Factory Located; Panels/Girts Deleted

Other info:

20 WIDE DOORS (Factory located unless noted below) Locations must be dimensioned on plans or sketch

Wall Id	Bay Id Start	Bay Id End	Width	Height	Panel Supplied	Trim Color	Door type Bi-fold	Door type Hydraulic
							☐	☐
							☐	☐
							☐	☐

Other info:

Quote No.: 2050475A

21 WALL DELETIONS Location must be dimensioned on plans or sketch

FULL DELETION

Full Wall Deletion		Full Wall Component Deletion			Full Height Single Bay Deletions		
Wall	Delete Full Height	Delete Girts	Delete Panels	Open For	Wall Id	Bay Id	Open For
LEW	N	N	Y	BY OTHERS			
FSW	N	Y	Y	PERM.			
REW	N	N	Y	BY OTHERS			
BSW	N	N	Y	PERM.			

PARTIAL DELETION

Partial Wall Deletion				
Wall	Bay Id Start	Bay Id End	Height	Open For
LEW	1	3	2'-0"	STEM WALL
FSW				
REW	1	3	2'-0"	STEM WALL
BSW				

Note: All Wall Panel Deletions must show size , location, and whether deleted areas will remain open or be closed. In addition what material will be in the wall deletion. The information must be shown on a sketch. Special bracing requirements, unsupported columns, no bracing areas, etc must also be specifically described on a sketch. Form S-5 must be included if masonry wall is used (full or partial height).

Other Info:

22 CANOPIES Locations must be dimensioned on plans or sketch

	Bay					Roof Panel			Soffit			
Wall Id	Start	End	Width	Height*	Slope	Panel	Gage	Color	Panel	Gage	Color	Clear Height
LEW												
FSW												
REW												
BSW												

* Height is at the elevation of where the roof steel line and wall steel line meet.

Other Info:

23 SIDEWALL EAVE EXTENSION & ENDWALL/GABLE EXTENSIONS Locations must be dimensioned on plans or sketch

	Bay			Purlin	Soffit			Other info:
Wall Id	Start	End	Width	Type	Panel	Gage	Color	
LEW								
FSW								
REW								
BSW	1	10	3'-0"		NONE	0	#N/A	

24 PRE-ASSEMBLED WINDOWS / INSULATED WALK DOORS
Locations must be dimensioned on plans or sketch ☐ Yes (see S-8A form) ☑ No

25 LINER PANEL Location must be dimensioned on sketch

Location	Pnl Type	Ga	Color	Start*	End	Height**	Top Trim	Bottom Trim required?
Left Endwall								☐ Yes ☐ No
Front Sidewall								
Right Endwall								
Back Sidewall								
Ceiling								

Optional Flange Brace Attachment ☐ Yes ☐ No * From Left Looking From Outside, **7'-9" Minimum

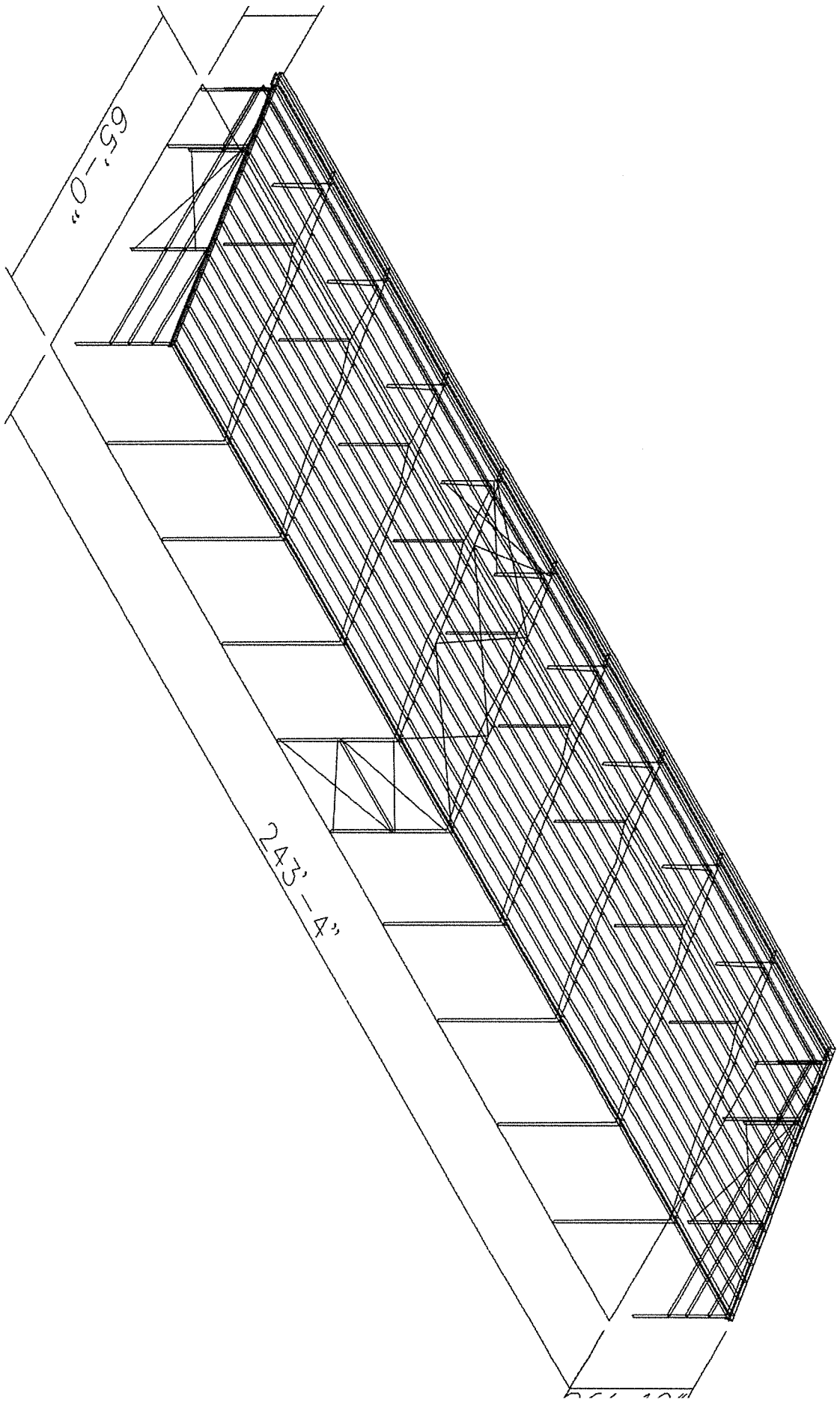
Other Info:

26-29 PARTITIONS, ROOF FRAMED OPENINGS, TRANSLUCENT PANELS & PARAPETS ☐ Yes (see S-9 form) ☑ No

30 ADDITIONAL ITEMS NOT INCLUDED IN PREVIOUS PAGES OR S-FORMS

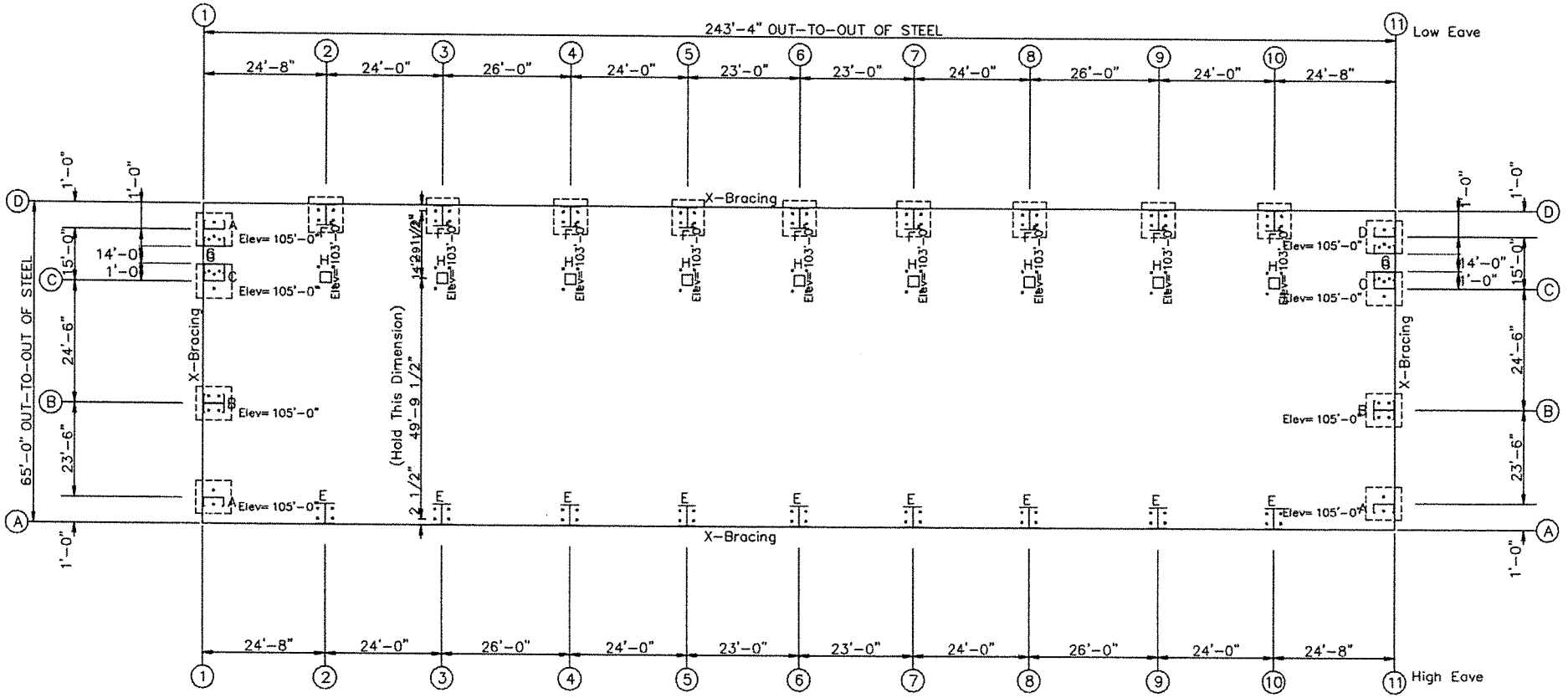
Description

Quote No.: 2050475A


16'-0"
65'-0"
243'-4"

○ Dia= 1/2"

⊠ Dia= 3/4"

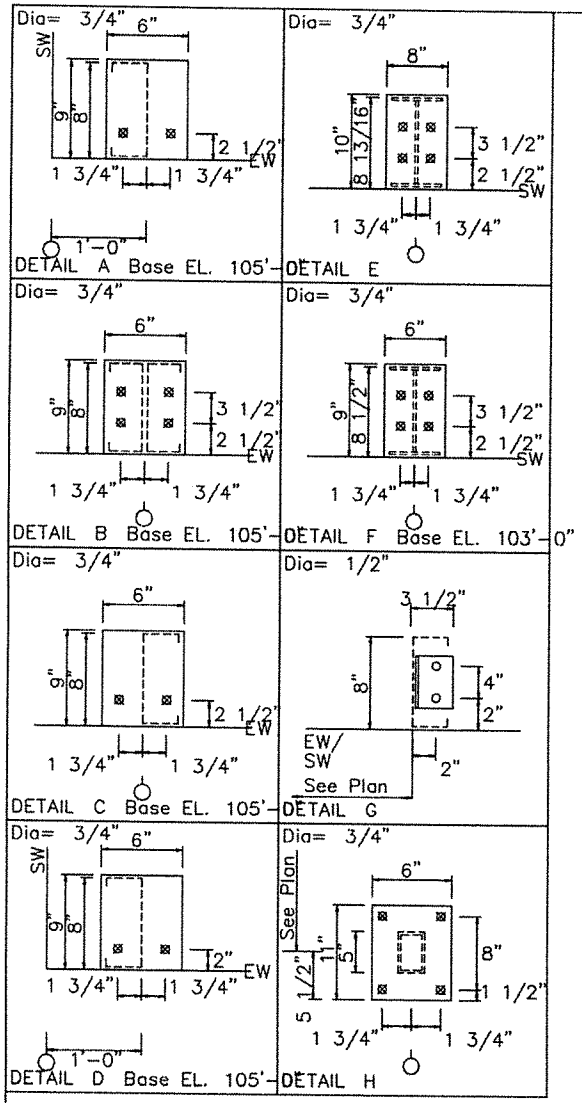


ANCHOR BOLT PLAN

NOTE: All Base Plates @ 100'-0" (U.N.)

NOT FOR CONSTRUCTION

BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	ANCHOR BOLT PLAN		
ID	2050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF



NOT FOR CONSTRUCTION

BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	ANCHOR BOLT DETAILS		
ID	2050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF

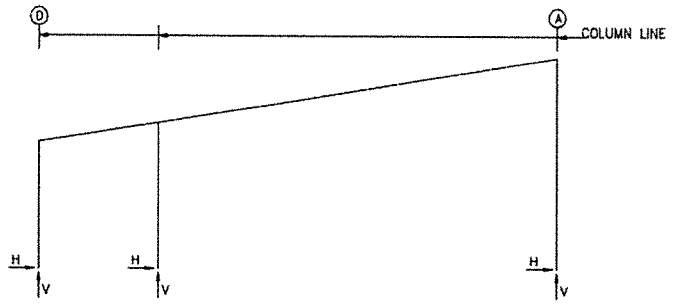
NOTES FOR REACTIONS

Building reactions are based on the following building data:

Width (ft)	= 65.0
Length (ft)	= 243.3
Eave Height (ft)	= 16.0/ 26.8
Roof Slope (rise/12)	= 2.0
Dead Load (psf)	= 2.5
Collateral Load (psf)	= 0.0
Roof Live Load(psf)	= 20.0
Frame Live Load(psf)	= 17.1
Snow Load (psf)	= 33.6
Wind Speed (mph)	= 105.0
Wind Code	= MNBC 15 (IBC 12)
Exposure	= C
Closed/Open	= C
Importance Wind	= 1.00
Importance Seismic	= 1.00
Seismic Zone	= A

ID	Description
1	Dead+Collateral+Snow
2	Dead+Collateral+0.75Snow+0.45Wind_Left1
3	Dead+Collateral+0.75Snow+0.45Wind_Right1
4	0.6Dead+0.6Wind_Right1
5	0.6Dead+0.6Wind_Left2
6	0.6Dead+0.6Wind_Right2
7	0.6Dead+0.6Wind_Long1
8	0.6Dead+0.6Wind_Long2
9	Dead+Collateral+Snow/2+F1PAT_SL_2
10	0.6Dead+0.6Wind_Left1+0.6Wind_Suction
11	0.6Dead+0.6Wind_Pressure+0.6Wind_Long1
12	Dead+Collateral+Snow+Seismic_Left
13	0.6Dead+0.6Wind_Left2+0.6Wind_Suction
14	Dead+Collateral+Snow+Seismic_Right
15	0.6Dead+0.6Wind_Suction+0.6Wind_Long1
16	0.6Dead+0.6Wind_Right2+0.6Wind_Suction
17	0.6Dead+0.6Wind_Right1+0.6Wind_Suction

FRAME LINES: 2 3 4 5 6 7 8 9 10



RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Base Elev (in)
2*	D	3	5.6	3.7	5	-3.4	-1.5	4	0.750	6.000	9.000	0.375	36.0
		4	5.5	5.4	9	2.2	-6.5						
2*	A	6	2.8	-0.5	2	-3.2	11.8	4	0.750	8.000	10.00	0.375	0.0
		9	-2.1	21.3	8	-1.7	-9.2						
2*	@15.0	7	0.0	-13.6	7	0.0	-13.6	4	0.750	6.000	11.00	0.625	0.0
		1	0.0	48.3									

2* Frame lines: 2 3 4 5 6 7 8 9 10

ENDWALL COLUMN REACTIONS(k)

MAXIMUM DOWN	= 13.3
MAXIMUM UP	= -6.8
MAXIMUM HORIZONTAL	= 2.6

ANCHOR BOLT SUMMARY

	Qty	Locate	Dia (in)	Type	Proj (in)
O	8	Jamb	1/2"	A307	1.00
⊠	20	Endwall	3/4"	A307	2.50
⊠	108	Frame	3/4"	A307	2.50

BUILDING BRACING REACTIONS

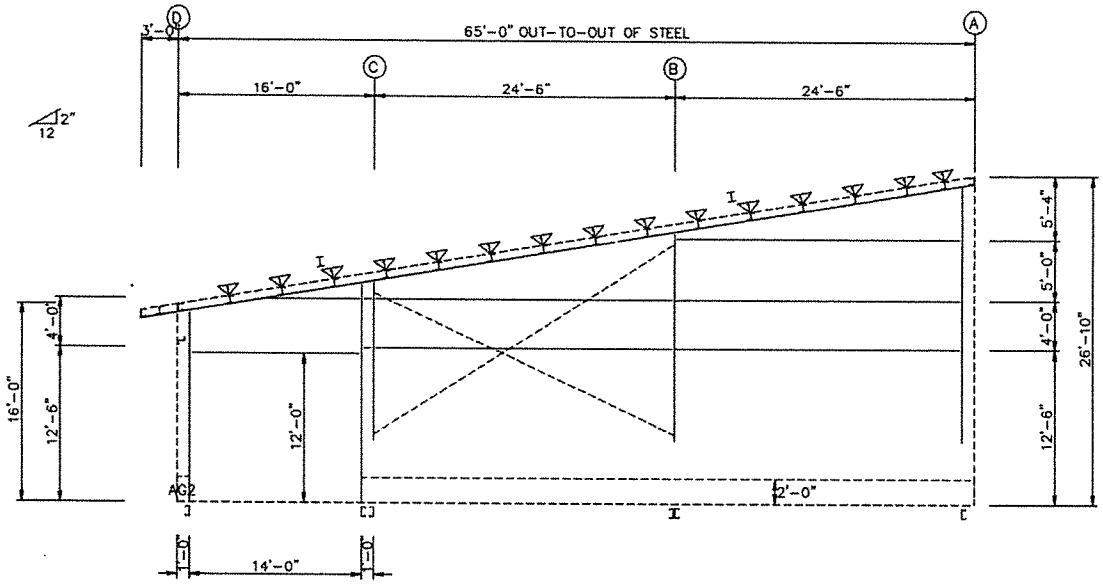
Wall Loc	Wall Line	Col Line	± Reactions(k) Wind Horz	Wind Vert	Seismic Horz	Seismic Vert	Panel_Shear (lb/ft) Wind	Seis
L_EW	1	C,B	6.8	5.9	0.1	0.1		
F_SW	A	5,6	6.7	7.1	0.0	0.0		
R_EW	11	B,C	6.8	5.9	0.1	0.1		
B_SW	D	6,5	5.4	2.5	0.0	0.0		

NOT FOR CONSTRUCTION

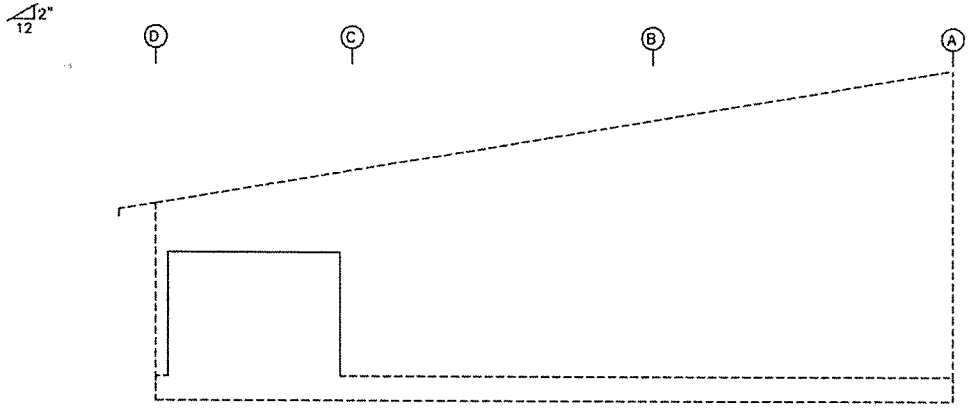
BEHLEN MFG. CO.			
PROJECT	COLE ALTERMATT	ANCHOR BOLT REACTIONS	
ID	2050475A	DESIGN: DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET OF

BOLT TABLE FRAME LINE 1				
LOCATION	QUAN	TYPE	DIA	LENGT
ER-1/ER-2	8	A325	5/8"	2 1/4
Columns/Raf	8	A325	1/2"	1 1/2
Jamb	4	A307	1/2"	1 1/4

FLANGE BRACE TABLE FRAME LINE 1		
▽ID	MARK	LENGTH
1	FB180A	1'-6"



LEFT ENDWALL FRAMING: FRAME LINE 1



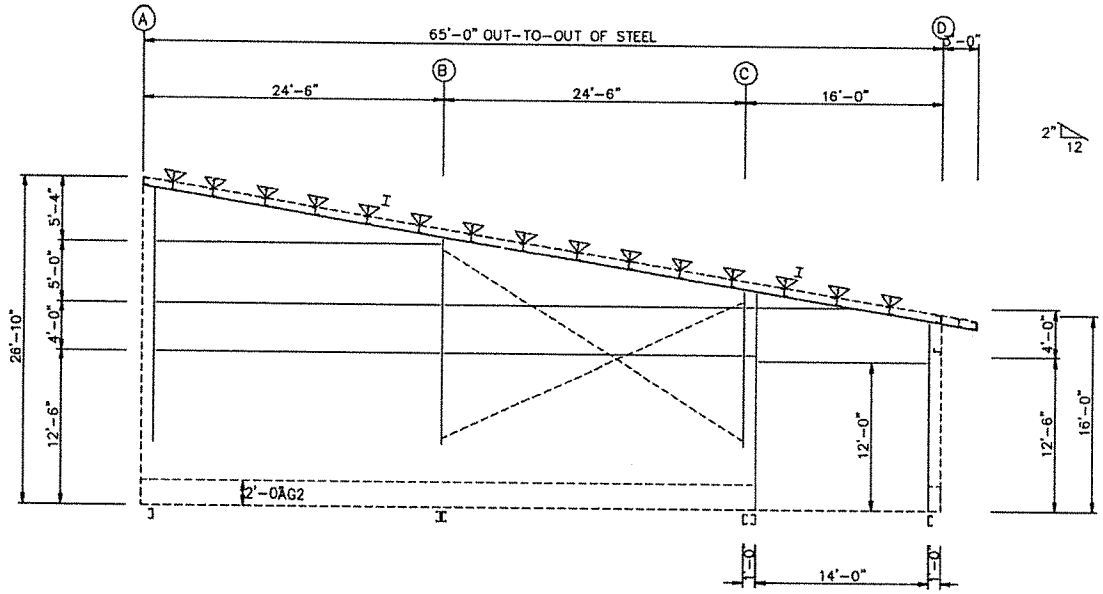
LEFT ENDWALL SHEETING & TRIM: FRAME LINE 1

NOT FOR CONSTRUCTION

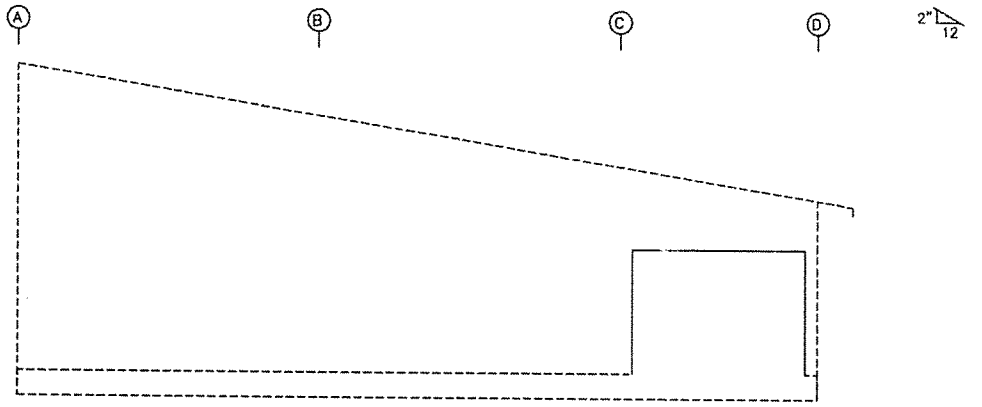
BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	ENDWALL FRAMING		
ID	20504754	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF

BOLT TABLE FRAME LINE 11				
LOCATION	QUAN	TYPE	DIA	LENG
ER-1/ER-3	8	A325	5/8"	2 1/
Columns/Raf	8	A325	1/2"	1 1/
Jamb	4	A307	1/2"	1 1/

FLANGE BRACE TABLE FRAME LINE 11		
▽ID	MARK	LENGTH
1	FB180A	1'-6"



RIGHT ENDWALL FRAMING: FRAME LINE 11



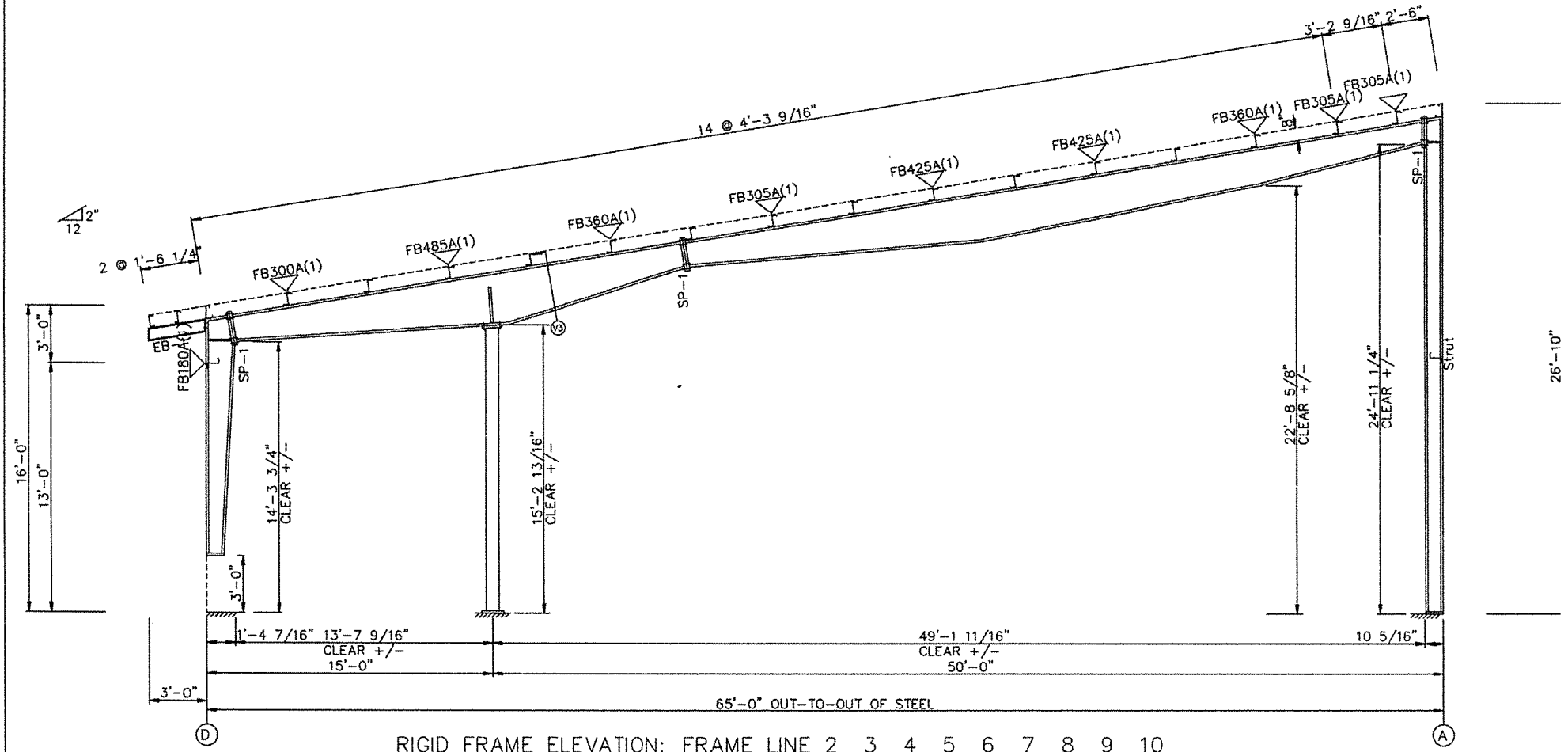
RIGHT ENDWALL SHEETING & TRIM: FRAME LINE 11

NOT FOR CONSTRUCTION

BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	ENDWALL FRAMING		
ID	20050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF

SPLICE BOLT TABLE							CAP PLATE BOLTS				
Mark	Qty Top	Bot	Int	Type	Dia	Length	Mark	Qty	Type	Dia	Length
SP-1	4	4	0	A325	0.750	2.50		4	A325	0.500	1.50

FLANGE BRACES: Both Sides(U.N.)
A – L1.5x16G

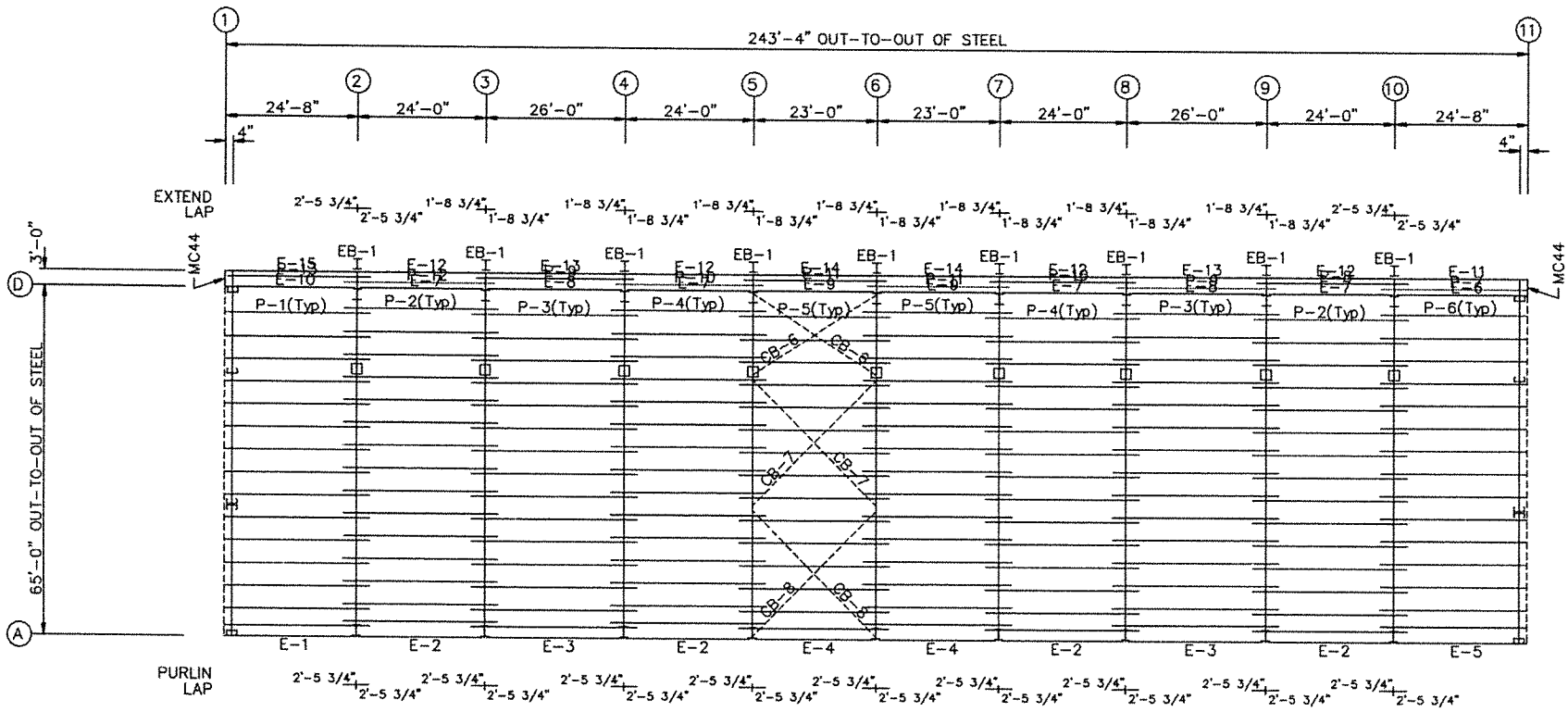


RIGID FRAME ELEVATION: FRAME LINE 2 3 4 5 6 7 8 9 10

NOT FOR CONSTRUCTION

BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	RIGID FRAME ELEVATION		
ID	2050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF

EXTENSION/CANOPY BOLTS ROOF PLAN				
MARK	QUAN	TYPE	DIA	LENGTH
EB-1	4	A325	1/2"	1 1/2"



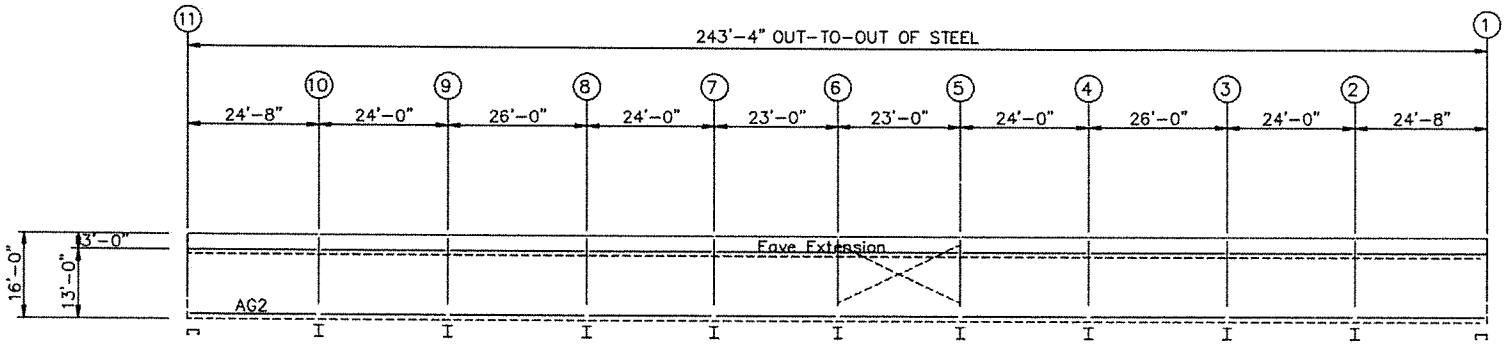
ROOF FRAMING PLAN

ROOF SHEETING

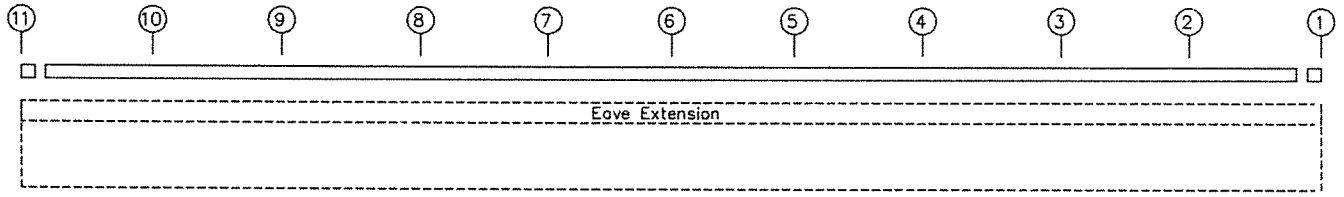
PANELS: 26 Ga. GALVALUME

NOT FOR CONSTRUCTION

BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	ROOF FRAMING		
ID	2050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF



BACK SIDEWALL FRAMING: FRAME LINE D



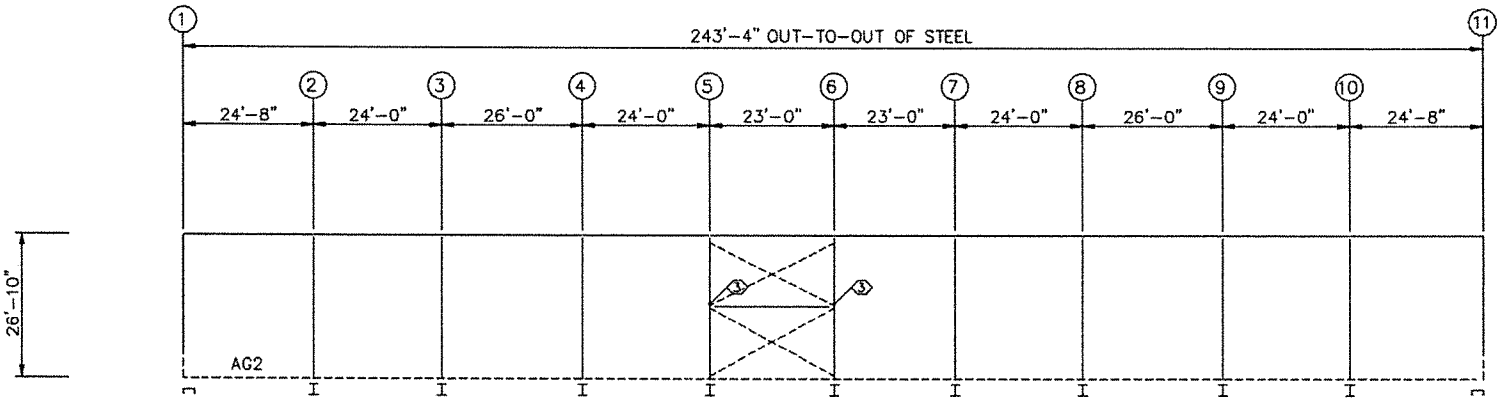
BACK SIDEWALL SHEETING & TRIM: FRAME LINE D

NOT FOR CONSTRUCTION

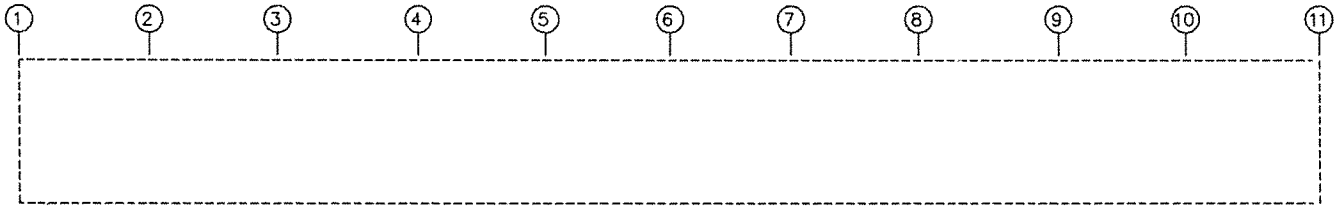
BEHLEN MFG. CO.				
PROJECT	COLE ALTERMATT	SIDEWALL FRAMING		
ID	2050475A	DESIGN:	DRAFT:	CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET	OF

BOLT TABLE FRAME LINE A				
LOCATION	QUAN	TYPE	DIA	LENGT
Strut	2	A325	3/4"	1 1/2

SPECIAL BOLTS					
ID	QUAN	TYPE	DIA	LENGTH	WAS
3	2	A325	5/8"	2 1/4"	0



FRONT SIDEWALL FRAMING: FRAME LINE A

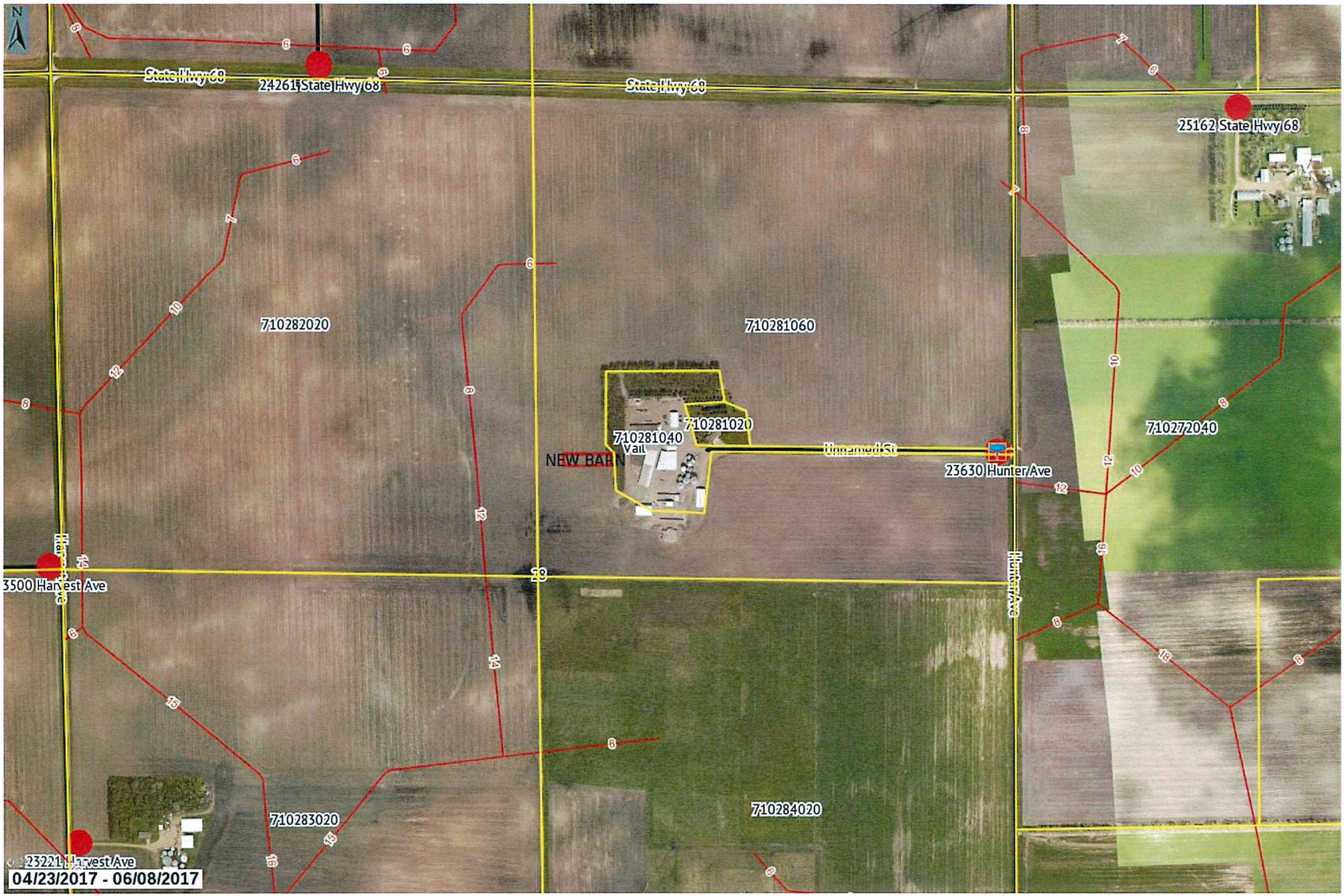


FRONT SIDEWALL SHEETING & TRIM: FRAME LINE A

NOT FOR CONSTRUCTION

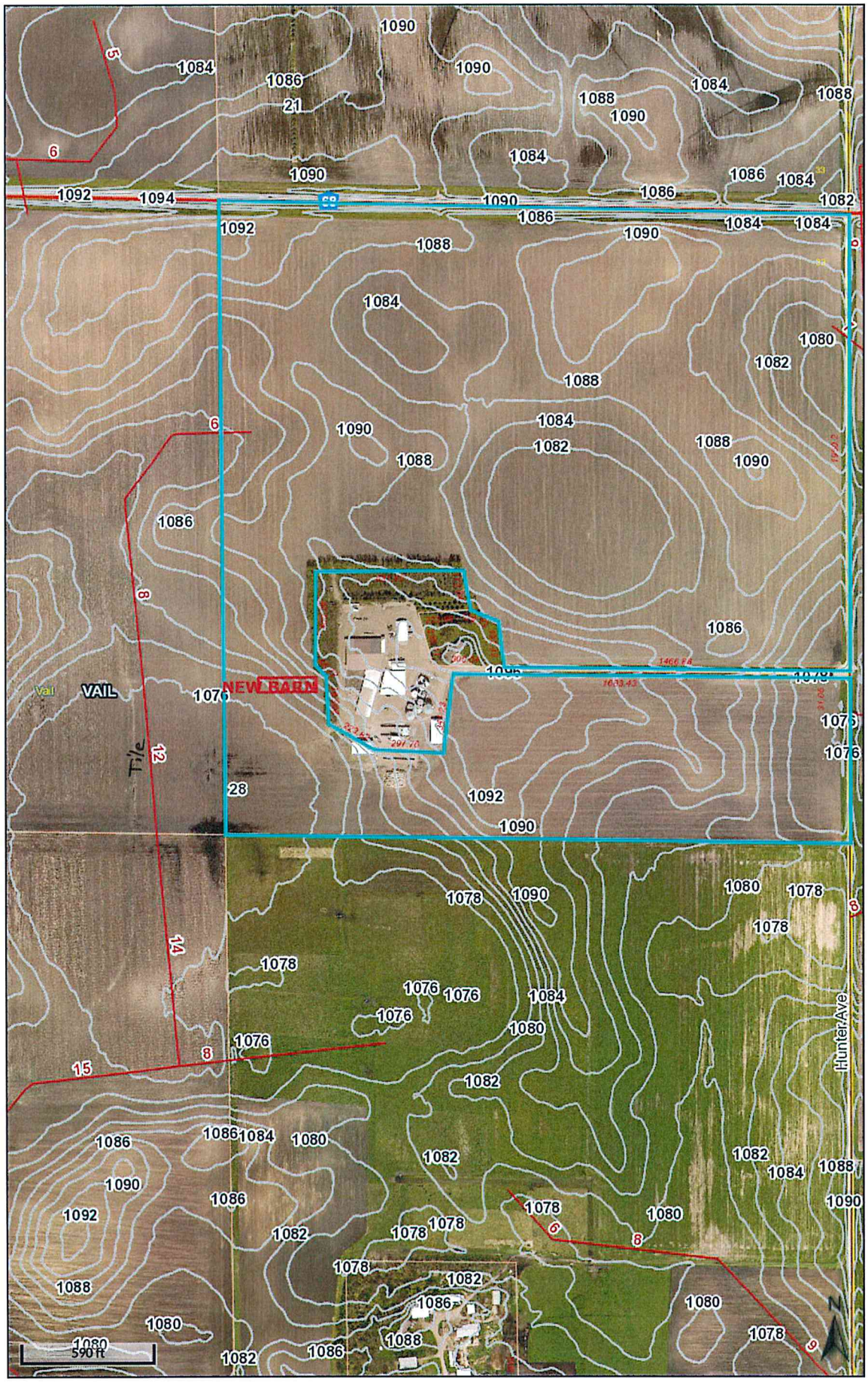
BEHLEN MFG. CO.			
PROJECT	COLE ALTERMATT	SIDEWALL FRAMING	
ID	2050475A	DESIGN:	DRAFT: CHECK:
PROJECT ADDRESS		DATE: 4/ 4/18	SHEET OF

Alternate Area Map

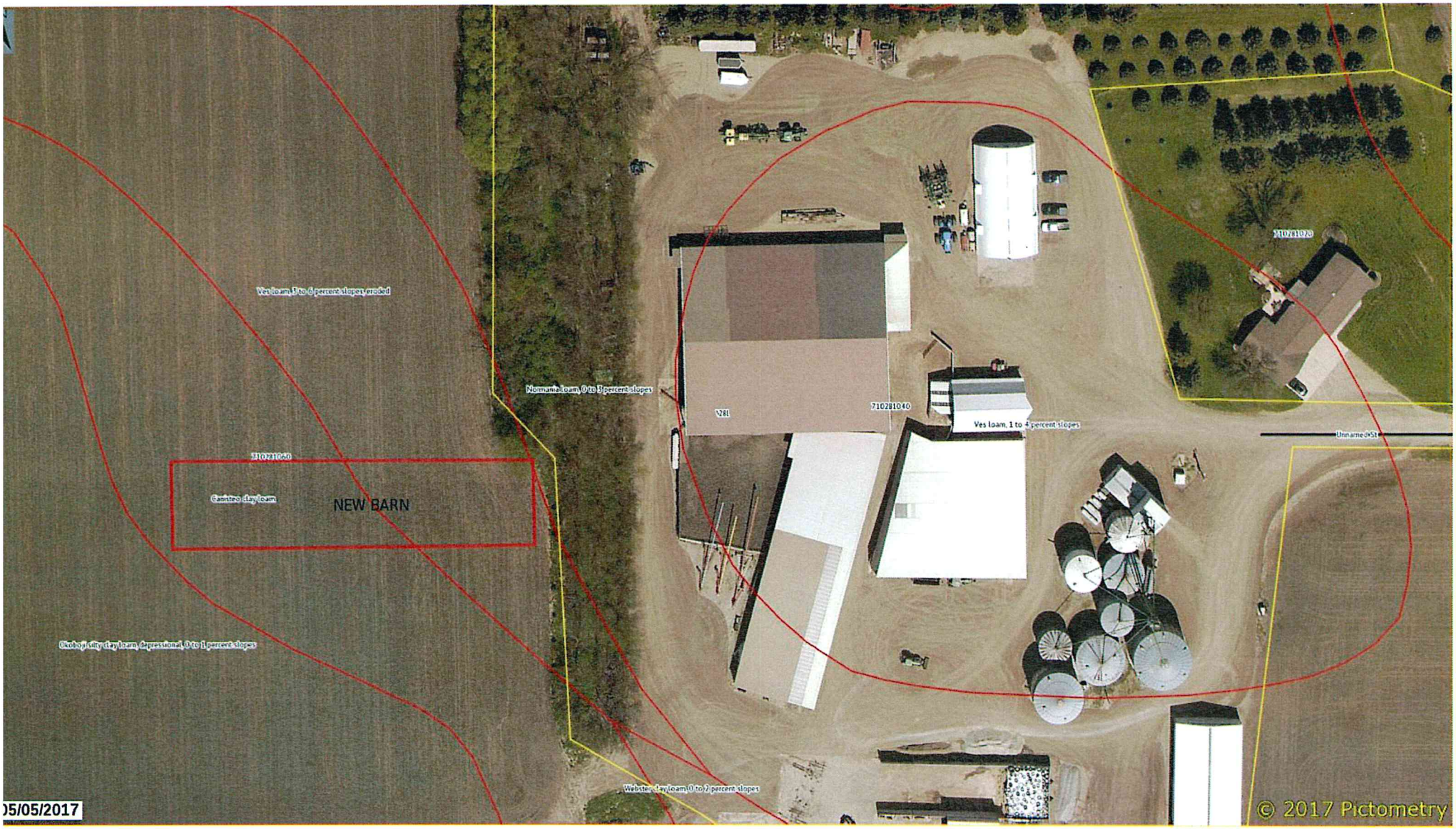


ALTERMATT FEEDLOT

Alternate Elevation Map



ALTERMATT SOIL MAP



Manure Storage, Handling, and Testing Information

Minnesota Pollution Control Agency

Facility Name: TT&C Altermatt Farm

Owner/Operator Name: Todd, Terry and Cole Altermatt

NPDES or SDS Permit? Yes

Permit Number:

Date Last Revised: 4/10/2018

Registration Number: 127-50027

Version 7.05 Last Updated: 10/12/16

Manure Sources	Manure Source #1	Manure Source #2	Manure Source #3	Manure Source #4
Description of Manure Source Group sources with similar nutrient content if they have identical animal type, water usage, feed rations, and manure storage	Pen Pack	Deep Pit		
Livestock Information				
Predominate Animal Type (Contributing to Manure Source)	Beef Feeder (High Forage)	Beef Feeder (High Forage)		
Average Animal Weight	1,200 lbs	1,200 lbs	lbs	lbs
Animal Number	820	600		
Length of Time Livestock Spend In Facility	365 days/yr	365 days/yr	days/yr	days/yr
Additional Animal Type Contributing to Manure Source)				
Average Animal Weight	lbs	lbs	lbs	lbs
Animal Number				
Length of Time Livestock Spend In Facility	days/yr	days/yr	days/yr	days/yr
Storage Information				
Storage Type	Manure Pack	Outdoor Concrete Pit/Tank		
Capacity	tons	1,045,440 gals		
Storage Length	12 months	10 months		
Application Methods				
Commercial Applicator (Yes/No or Name)	No	Yes		
Spreader Type	Solids Spreader	Liquid Tanker		
How Volume/Tonnage Determined per Load	Spreader Volume	Commercial Applicator		
How Application Rate is Calibrated	Loads Applied per Field	Commercial Applicator		
Manure Analysis - Existing facilities should use actual manure test results				
Sampling Frequency	Every Year	Every Year		
Sampling Methods				
Date Last Analyzed				
Basis for N,P, & K Values Below	Book Value	Book Value		
Total N - (do not enter lab estimated availability)	11 lbs/ton	11 lbs/1000 gal		
Total P_2O_5 - (do not enter lab estimated availability)	7 lbs/ton	7 lbs/1000 gal		
Total K_2O - (do not enter lab estimated availability)	11 lbs/ton	11 lbs/1000 gal		
Annual Generation - Existing facilities should use actual production values				
Total Manure Produced per Year (Estimated)	5,634 tons	1,542,556 gals		
Total Manure Produced per Year (Actual)	5,796 tons	1,543,500 gals		
Annual N Produced	63,756 lbs	16,979 lbs		
Annual P_2O_5 Produced	40,572 lbs	10,805 lbs	lbs	lbs
Annual K_2O Produced	63,756 lbs	16,979 lbs	lbs	lbs

Average Book Values	
N	11
P_2O_5	7
K_2O	11

Average Book Values	
N	29
P_2O_5	18
K_2O	26

Average Book Values	
N	
P_2O_5	
K_2O	

Average Book Values	
N	
P_2O_5	
K_2O	

General Field Information (Fie[illegible]1-35)

Minnesota Pollution Control Agency

Unique Field ID Attach Aerial Photo or Map With Location Description (twp-rng-sec)	Field Acreage	Sensitive Features (Identify on Aerial Photo or Sketch) ***Insert a check mark by double-clicking the appropriate cells*** Tile Intakes	Drainage Ditch	Lake, River, Stream	Intermittent Stream (If farmed call MPCA)	Wetland (non-farmed)	Coarse-Textured Soil (soil type ends in "sand")	Floodplain	Public Well Management Area	Shallow Bedrock	Sinkhole	Well, Mine, or Quarry	Other Conduit to Water	Soils Information (Test required once every 4 yrs) Year of Soil Test	Soil Test Phosphorus (P) Field Average (ppm)		Organic Matter	Irrigation?	Anticipated Manure Application Timing NOTE: NPDES & SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Winter Application Field Info (If Applicable) Distance from Field to Waters		Field Slope (%)
Example	80	✔	***You must double-click cells to insert a check mark***											2005	30	Olsen	Med/High	No	Late Fall	800	ft	3%
Chet's Home	150	✔												2015	22	Olsen	Med/High	No	Late Fall	300	ft	1%
Chet's West	149	✔			✔	✔										Olsen		No	Late Fall	300	ft	3%
Frank Farm	147	✔	✔													Olsen		No	Late Fall	300	ft	1%
Galles 1 West	208	✔														Olsen		No	Late Fall	300	ft	1%
Galles 1 East	156	✔														Olsen		No	Late Fall	300	ft	1%
Galles 2	269	✔	✔													Olsen		No	Late Fall	300	ft	1%
ome	147	✔														Olsen		No	Late Fall	300	ft	1%
ohnson Farm	68	✔														Olsen		No	Late Fall	300	ft	1%
arker Farm	146	✔	✔											2015	5	Olsen	Med/High	No	Late Fall	300	ft	1%
ossing 40	39	✔												2014	6	Olsen	Med/High	No	Late Fall	300	ft	3%
ossing Qtr.	163	✔												2015	17	Olsen	Med/High	No	Late Fall	300	ft	1%
eaforth Farm N	140	✔	✔											2015	15	Olsen	Med/High	No	Late Fall	300	ft	2%
eaforth Farm S	198	✔	✔											2015	18	Olsen	Med/High	No	Late Fall	300	ft	2%
tate Farm	89	✔														Olsen		No	Late Fall	300	ft	1%
agner	322	✔	✔													Olsen		No	Late Fall	300	ft	1%

al Acres (Fields 1 - 35) 2,391

Field Specific Info for Methodology Portion of MMP (Fields 1 - 35)

Minnesota Pollution Control Agency

Unique Field ID *Consistent with maps or aerial photos*	Crops Grown (Indicate all crops that will likely be grown during the permit period) *** Double-Click cells to insert check mark***															Planned Manure Application (Indicate all timings and methods that could occur) Timing ***Double-Click cells to insert check mark**					Method (follow setbacks) ***Double-Click cells to insert check mark***				Emergency Winter Application of Liquid Manure ***Double-Click cells to insert check mark***			
	Corn (grain)	Corn (silage)	Sweet corn	Soybeans	Alfalfa	Grass/legume hay	Oats	Wheat	Edible beans	Potatoes	Rye	Sugarbeets	Other:	Other:	Other:	Fall	Srping	Summer (with cover crop)	Winter (Solid Manure Only)	MN P Index Value (attach input & output)	Injection	Incorp. within 24 hrs & before rainfall	Incorporation within 4 days	No Incorporation	Potential App Site?	Distance from App Area to Waters (at least 300 ft)		Field Slope (%)
Example	✔	✔		✔	✔			✔																	✔	800	ft	2 %
Chet's Home	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.4	✔	✔	✔	✔	✔	300	ft	%
Chet's West	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Frank Farm	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Galles 1 West	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Galles 1 East	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Galles 2	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Home	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Johnson Farm	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Parker Farm	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.2	✔	✔	✔	✔	✔	300	ft	%
Tossing 40	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.2	✔	✔	✔	✔	✔	300	ft	%
Tossing Qtr.	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.3	✔	✔	✔	✔	✔	300	ft	%
Veaforth Farm N	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.3	✔	✔	✔	✔	✔	300	ft	%
Veaforth Farm S	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	0.3	✔	✔	✔	✔	✔	300	ft	%
Wate Farm	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%
Wagner	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔		✔	✔	✔	✔	✔	300	ft	%

Field Specific Info for Methodology Portion of MMP (Fie[illegible]not in 1 Year Planning Portion of MMP)

Minnesota Po[illegible] Control Agency

Unique Field ID *Consistent with maps or aerial photos*	Crops Grown (Indicate all crops that will likely be grown during the permit period) *** Double-Click cells to insert check mark***															Planned Manure Application (Indicate all timings and methods that could occur) Timing ***Double-Click cells to insert check mark**					Method (follow setbacks) ***Double-Click cells to insert check mark***				Emergency Winter Application of Liquid Manure ***Double-Click cells to insert check mark***			
	Corn (grain)	Corn (silage)	Sweet corn	Soybeans	Alfalfa	Grass/legume hay	Oats	Wheat	Edible beans	Potatoes	Rye	Sugarbeets	Other:	Other:	Other:	Fall	Spring	Summer (with cover crop)	Winter (Solid Manure Only)	MN P Index Value (attach input & output)	Injection	Incorp. within 24 hrs & before rainfall	Incorporation within 4 days	No Incorporation	Potential App Site?	Distance from App Area to Waters (at least 300 ft)	Field Slope (%)	

Nutrient Management Info for Methodology Portion of MMP

Nitrogen and Phosphorus Management

Minnesota Pollution Control Agency

Even though no data entry or acknowledgement is required, this information is required as part of a complete MMP and must be followed.

Nitrogen Management - Nitrogen Management - Nitrogen Management - Nitrogen Management

Based on the crop rotation, nutirent application rates will not exceed the nitrogen needs/removal of the crops as derived from the following MN Extension Service publications: "Manure Management in Minnesota" publication "WW-03553-C, Revised 2012", "Fertilizer Guidelines for Agronomic Crops in Minnesota" publication "BU-06240-S, Revised 2011", and "Nutrient Management for Commercial Fruit & Vegetable Crops in Minnesota" publication BU-05886, Revised 2005.
Note: these publications have been incorporated into this planner.

Manure application rates will be calculated using the following factors:

1) Maximum Nitrogen needs for non-legumes and nitrogen removal for legumes will follow Tables A & C (included as part of planner)
2) Manure analysis test results (most recent or historical average)
3) Soil test results (where applicable)
4) First year nitrogen availability will be based on animal species and method of application as indicated in Table B (included as part of this planner)
5) If applicable, credits for previous crops and/or manure applications will be accounted for according to Tables A, B, & C (included as part of this planner)
6) If applicable, any fertilizer nitrogen applied will be accounted for in the calculations.

Any deviation from the maximum nitrogen applied will follow the standards allowed in Minn Rule 7020.2225, subp. 3 (A)(2) and the issued permit

Phosphorus Management - Phosphorus Management - Phosphorus Management - Phosphorus Management

Phosphorus will be managed for all manure applications according to the following :

Manure application rates will be calculated using the following factors:

1) The calculations to determine crop P_2O_5 removal rate will be based on Table C (included as part of this planner)
2) For all animal species and all methods of application, the availability factor for phosphorus is 80 percent.
3) If applicable, any fertilizer P_2O_5 will be accounted for in the calculations.
4) When soil P test levels exceed 75 ppm Bray P1 (60 ppm Olsen) within 300 feet of an open tile intake, lake, stream, intermittent stream, drainage ditch without protective berms, or a public waters wetland, I will follow protocols listed in the issued permit.
5) When soil P test levels exceed 150 ppm Bray P1 (120 ppm Olsen) on any land, I will follow protocols listed in the issued permit.
6) Where winter-time manure application is approved, phosphorus management will follow rate restrictions listed in the the issued permit.
7) In addition to items 1-6 I will manage Phosphorus according to one of the following options (either option is acceptable):

A) Minimum Phosphorus Management Based on Minnesota Rules

When the table below indicates soil test levels indicate phosphorus management is required, I will manage the rate and frequency of manure applications to not allow soil P build-up over any 6 year period, as required in the issued permit

B) Crop Phosphorus Removal Rates (over the rotation)

All manure will be applied according to phosphorus based rates, so that the rate and frequency of P_2O_5 applications will not exceed the expected crop P_2O_5 removal over the course of the crop rotation.

Minimum P_2O_5 Requirements

Bray P-1 (ppm)	Less than 22	22-75	76-150	Greater than 150
Olsen (ppm)	Less than 17	17-60	61-120	Greater than 120
More than 300 feet from waters*	No Phosphorus management requirements	No Phosphorus management requirements	No Phosphorus management requirements	Follow NPDES permit requirements
Less than 300 feet waters*	No Phosphorus management requirements	Prevent long-term build-up of soil P over a 6-year period (except open tile intakes)	Follow NPDES permit requirements	Follow NPDES permit requirements

* waters include: open tile lakes, streams, intermittent streams, protected wetlands, or unbermed drainage ditches

Sensitive Features Management Worksheet

Minnesota Pollution Control Agency

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.

Tile Intakes

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

Drainage Ditches

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)

Lakes, Rivers, and Streams

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

Intermittent Streams and/or Public Waters Wetlands (over 10 acres)

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

Wells, Mines, or Quarry

Option A - 50 ft setback - minimum (100 ft if NPDES permitted)

Sinkholes

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

Application of Manure During the Summer Months (June, July, and August)

Option A - A cover crop will be planted on all fields that receive manure applications during June, July, and August

Other Conduits to Water

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)

Early Fall Land Application - 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.

Soil Erosion Conservation Measures - Required for ANY field used for winter application and for ALL fields at NPDES permitted sites

Option A - Establish grassed waterways
Option B - Contour stripcropping
Option C - No-Till cropping
Option D - Terracing
Option E - Meet tolerable soil erosion rates ("T") as defined by NRCS
Option F - Use rotations that include other than row crops (alfalfa, grass, etc)
Option G - Chisel or disk tillage with residue
Option H - Field edge buffers
Option I - Contour buffer strip
Option J - Sediment control basin
Option K - Plant a cover crop on bare ground

Sensitive Features Management Worksheet

Minnesota Pollution Control Agency

Even though no specific measures are required in Minnesota Rule, a complete MMP is required to identify measures that will be used to provide protection to the following areas. This worksheet will assist you in identifying which techniques will be used to provide protection to the following sensitive features even though **no specific practices are required** in Minnesota Rules.

This worksheet identifies possible techniques that can be used to provide protection to the following sensitive features.
One of the following measures will be employed for the applicable sensitive feature. Any of the identified practices are acceptable.

Wetlands Under 10 Acres (uncultivated)

No specific state requirements unless a public waters wetland or other permit conditions apply.

Option A - Observe a non-manured setback
Option B - Maintain a grass buffer
Option C - Incorporate manure near the wetland
Option D - Prevent long term soil P buildup
Option E - Utilize soil conservation practices
Option F - Other: _____

Public Well Management Area & Drinking Water Supply Management Areas

No specific state requirements unless other permit conditions apply.

Option A - Observe a non-manured setback
Option B - Follow practices recommended in city wellhead protection plan
Option C - Soil nitrate test will be used to refine nitrogen rate management decisions
Option D - Apply no earlier than late October or when soil temperatures are less than 50°F
Option E - Other: _____

Shallow Bedrock - less than 3 feet of soil over limestone bedrock

No specific state requirements unless other permit conditions apply.

Option A - Use composted manure or other process which kill bacteria
Option B - Maximize separation between fractured bedrock and manure
Option C - Incorporate manure
Option D - Other: _____

Floodplain

No specific state requirements unless other permit conditions apply.

Option A - Avoid manure application during peak flooding periods
Option B - Incorporate or inject manure when there is a risk of flooding
Option C - Avoid winter-time manure applications
Option D - Other: _____

Sensitive Features Management Worksheet
Winter Application of Manure at NPDES& SDS Permitted Sites

Minnesota Pollution Control Agency

Winter Application *(frozen or snow-covered soils after November 30)*

Solid Manure Applications - Solid Manure Applications - Solid Manure Applications - Solid Manure Applications

These practices are required for all fields that receive winter applications of **solid** manure:

1) No manure application within 300 feet of lakes, streams, intermittent streams, drainage ditches without berms, open tile intakes, wells, wetlands, and sinkholes
2) No manure application during snowmelt that creates runoff
3) No manure application when rainfall is likely within 24 hours
4) Only apply manure to areas of the field with slopes less than or equal to 6%
5) No manure application when ice/water completely fills furrows or depressional areas

Indicate why winter application of **solid** manure is necessary and why other alternatives are not feasible (stockpiling and/or applications during non-winter periods) required

a) Winter application is only done as necessary and on acres suitable for application. It is necessary at times as no aternative storage is present on the site at
b) this point. In field stockiling may be an option if it is evaluated and determined to be a better environmental option.
c)
d)
e)

The Minnesota Phosphorus Index must be completed for all fields for winter application of **solid** manure.

All fields must meet a low to very low relative phosphorus loss risk index level (2 or less on average).
Include a copy of the P index input and outputs to verify the result
The Minnesota Phosphorus Index can be downloaded at the following link: https://www.swac.umn.edu/extension-outreach/phosphorusloss

Emergency Liquid Manure Applications - Emergency Liquid Manure Applications - Emergency Liquid Manure Applications

Winter application of **liquid** manure is prohibited by the NPDES & SDS permits except for emergency situations (as defined by the permit)

Emergencies include land application necessary to prevent Manure storage overflows at a site designed, constructed and managed to contain Manure during the winter, and where other options for additional temporary storage are not feasible. Emergencies are considered only those situations that are beyond the control of the permittee, such as unusual weather or unavoidable equipment failure.

Identify management alternatives that will be used to prevent and minimize needed emergency **liquid** applications during the winter (check all that apply)

- ☐ Transfer manure to other liquid manure storage at the facility.
- ☐ Transfer manure to other liquid manure storage not at the facility.
- ☐ Manure storage area will be pumped in fall to maximize capacity entering the winter season.
- ☑ Only the minimum amount of manure will be applied to alleviate the emergency situation; remaining manure will be applied after spring thaw.
- ☐ Other:

Requirements when emergency **liquid** applications are necessary (all management alternatives identified above have been exhausted)

1) Call both the **Minnesota Duty Officer** (800-422-0798) and the **MPCA** within 24 hours of an emergency application
2) No manure application within 300 feet of lakes, streams, intermittent streams, drainage ditches without berms, open tile intakes, wells, wetlands, and sinkholes
3) Only apply manure to areas of the field with slopes less than or equal to 4%
4) Maximum application rate of 3,500 gallons/acre/winter season not to exceed 60 pounds of P_2O_5/acre/winter season.
5) Utilize an application rate that prevents ponding or runoff during the application process.

6 Year Soil Phosphorus Management Plan

Minnesota Pollution Control Agency

When soil phosphorus levels are required to be maintained (or reduced) over a 6 year period, one of the following crop rotation sceanrios 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.

☑ 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

(when checked there is no need to complete scenarios below - text will be gray if not applicable due to extremely high soil P test)

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Crop (Year 1)	Corn							
Yield	200 bu							
Manure Application Source (1-12) & Rate	2 20000 gals							
2nd Manure Application								
Fertilizer P (total)	lbs							
Crop (Year 2)	Soybeans							
Yield	55 bu							
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)	lbs							
Crop (Year 3)	Corn							
Yield	200 bu							
Manure Application Source (1-12) & Rate	2 20000 gals							
2nd Manure Application								
Fertilizer P (total)	lbs							
Crop (Year 4)	Soybeans							
Yield	55 bu							
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)	lbs							
Crop (Year 5)	Corn							
Yield	200 bu							
Manure Application Source (1-12) & Rate	2 20000 gals							
2nd Manure Application								
Fertilizer P (total)	lbs							
Crop (Year 6)	Soybeans							
Yield	55 bu							
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)	lbs							

Results

Applied over 6 Yrs	336 lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Removed over 6 Yrs	345.3 lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Rotation Build Soil Phosphorus Levels?	No							

Crop and Nutrient Planning Worksheet (Fields 1-35)

Minnesota Pollution Control Agency

Cropping Year: September 1, 2018 to August 31, 2019 Crop Land Manager's Name: _____

Field Information	Crop Information				Last Year's Manure App (Nutrients for 2018 Crop) leave blank if none applied			Nutrient Recommendations and Credits N (lb/ac)						P_2O_5 (lb/ac)		Irrigated Sands Alternate N Needs displayed if applicable	
Field ID	Crop Grown to Utilize the Nutrients Applied 2019 Crop	Expected Yield (per acre) crop receiving nutrients	Crop Most Recently Harvested 2018 Crop	Crop Grown 2 Years Ago 2017 Crop	Last Year's Manure Test N	Animal Type of Manure Applied Last Year	Last Year's Application Rate (per acre) Typically 9/1/17 to 8/31/18	N Recommendation after 2018 crop credits	Legume-N Credit from the 2017 Crop	N Credit from Manure Applied to 2018 Crop	N Credit from Irrigation Water	N Needs after all credits	N Removal after all credits	P_2O_5 Needs (based on soil test data)	P_2O_5 Removal (based on crop uptake)	N Needs for Corn on Irrigated Sands after all credits	Use Irrigated Sands N Needs instead of typical N Needs
Example	Corn	180 bu	Corn	Alfalfa-Good	25	Dairy	15,000 gal	180	75	94	---	11	---	0	63	---	
Chet's Home	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	0	45	---	
Chet's West	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	140	70	---	
Frank Farm	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	140	70	---	
Galles 1 West	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	96	45	---	
Galles 1 East	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	140	70	---	
Galles 2	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	96	45	---	
Home	Corn	200 bu	Corn	Corn	11	Beef	12 ton	180	0	33	---	147	---	140	70	---	
Johnson Farm	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	96	70	---	
Parker Farm	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	87	70	---	
Crossing 40	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	0	45	---	
Crossing Qtr.	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	4	45	---	
Heaforth Farm N	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	0	45	---	
Heaforth Farm S	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	140	70	---	
State Farm	Soybeans	55 bu	Corn	Soybeans				---	0	---	---	---	193	96	45	---	
Wagner	Corn	200 bu	Corn	Corn	11	Beef	12 ton	180	0	33	---	147	---	140	70	---	

Nutrient Application Planning Worksheet (Fields 1-25)

Minnesota Pollution Control Agency

Manure Source Summary

Source 1:	Pen Pack (11-7-11)	Source 5:		Source 9:	
Source 2:	Deep Pit (11-7-11)	Source 6:		Source 10:	
Source 3:		Source 7:		Source 11:	
Source 4:		Source 8:		Source 12:	

☐ I will transfer ownership of some of the manure.

Field Information Summary		Crops Grown Summary		Nutrients Needed to Meet Yield Goal (lb/acre) after credits for nutrients from previous crops and manure applications			Manure Application Information (Nutrients for the 2019 Crop) Application Typically 9/1/2018 to 8/31/2019					Nitrogen (lb N/ac)				Phosphorus (lb P_2O_5/ac)			
Field ID	Acres After Setbacks	Crop Grown to Utilize the Nutrients Applied — 2019 Crop	Crop Most Recently Harvested — 2018 Crop	Nitrogen Needs	Nitrogen (Removal)	Phosphorus (Needs)	Manure Source (1-12)	Method of Application and Incorporation — NPDES/SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Acres Receiving Manure (reduce to split the field)	Manure Application Rate (gals/tons per acre) Calculated Max Rate — based on Nitrogen	Manure Application Rate (gals/tons per acre) Planned Rate — max used if blank	N from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	Excess Available N (negative for deficiency)	P from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	P in Excess of Removal (negative for deficiency)
Chet's Home	150	Soybeans	Corn	---	193	0				---		---			-193	---			-45
Chet's West	149	Corn	Soybeans	140	---	140				---		---			-140	---			-70
Frank Farm	147	Corn	Soybeans	140	---	140				---		---			-140	---			-70
Halles 1 West	208	Soybeans	Corn	---	193	96				---		---			-193	---			-45
Halles 1 East	156	Corn	Soybeans	140	---	140				---		---			-140	---			-70
Halles 2	269	Soybeans	Corn	---	193	96				---		---			-193	---			-45
Home	147	Corn	Corn	147	---	140	2	Sweep Injection	147	21,561	10500	69	4.7	0	-73	59	15.8	0	5
Johnson Farm	68	Corn	Soybeans	140	---	96				---		---			-140	---			-70
Parker Farm	146	Corn	Soybeans	140	---	87				---		---			-140	---			-70
Possing 40	39	Soybeans	Corn	---	193	0				---		---			-193	---			-45
Possing Qtr.	163	Soybeans	Corn	---	193	4				---		---			-193	---			-45
Seaforth Farm N	140	Soybeans	Corn	---	193	0				---		---			-193	---			-45
Seaforth Farm S	198	Corn	Soybeans	140	---	140				---		---			-140	---			-70
State Farm	89	Soybeans	Corn	---	193	96				---		---			-193	---			-45
Wagner	322	Corn	Corn	147	---	140	1	Incorp. within 4 days	322	29	18	89	4.7	0	-53	101	15.8	0	47

Nutrient Application Planning Worksheet (Fields 26-50)

Minnesota Pollution Control Agency

Field Information Summary		Crops Grown Summary		Nutrients Needed to Meet Yield Goal (lb/acre) after credits for nutrients from previous crops and manure applications			Manure Application Information (Nutrients for the 2019 Crop) Application Typically 9/1/ to 8/31/2019					Nitrogen (lb N/ac)				Phosphorus (lb P_2O_5/ac)			
Field ID	Acres After Setbacks	Crop Grown to Utilize the Nutrients Applied 2019 Crop	Crop Most Recently Harvested 2018 Crop	Nitrogen Needs	Nitrogen (Removal)	Phosphorus (Needs)	Manure Source (1-12)	Method of Application and Incorporation NPDES/SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Acres Receiving Manure (reduce to split the field)	Manure Application Rate (gals/tons per acre) Calculated Max Rate based on Nitrogen	Manure Application Rate (gals/tons per acre) Planned Rate max used if blank	N from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	Excess Available N (negative for deficiency)	P from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	P in Excess of Removal (negative for deficiency)

Total Acres (Fields 1 - 50) = 2,391

	Amount Applied	Amount Remaining	Acres Applied
rce 1:	5,796	0	322
rce 2:	1,543,500	0	147
rce 3:	---	---	---
rce 4:	---	---	---

	Amount Applied	Amount Remaining	Acres Applied
Source 5:	---	---	---
Source 6:	---	---	---
Source 7:	---	---	---
Source 8:	---	---	---

☐ I will transfer ownership of the remaining amount of manure.

	Amount Applied	Amount Remaining	Acres Applied
Source 9:	---	---	---
Source 10:	---	---	---
Source 11:	---	---	---
Source 12:	---	---	---

Animal Mortality Management Worksheet

Minnesota Pollution Control Agency

Indicate with a check mark the anticipated method(s) of dead animal disposal.

☑ **Rendering**

Carcasses at the pick-up point will comply with the following:

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

☐ **Composting**

The composting area will comply with the following:

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, but if sawdust or other water-repelling material is used as the bulking agent, a roof may not be necessary.
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.
Other: _____

☐ **Burial**

The following operational practices will be implemented

Stay 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.
Other: _____

☐ **Incineration**

The incinerator will meet the following:

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**

The following operational practices will be implemented (describe the alternative method below)

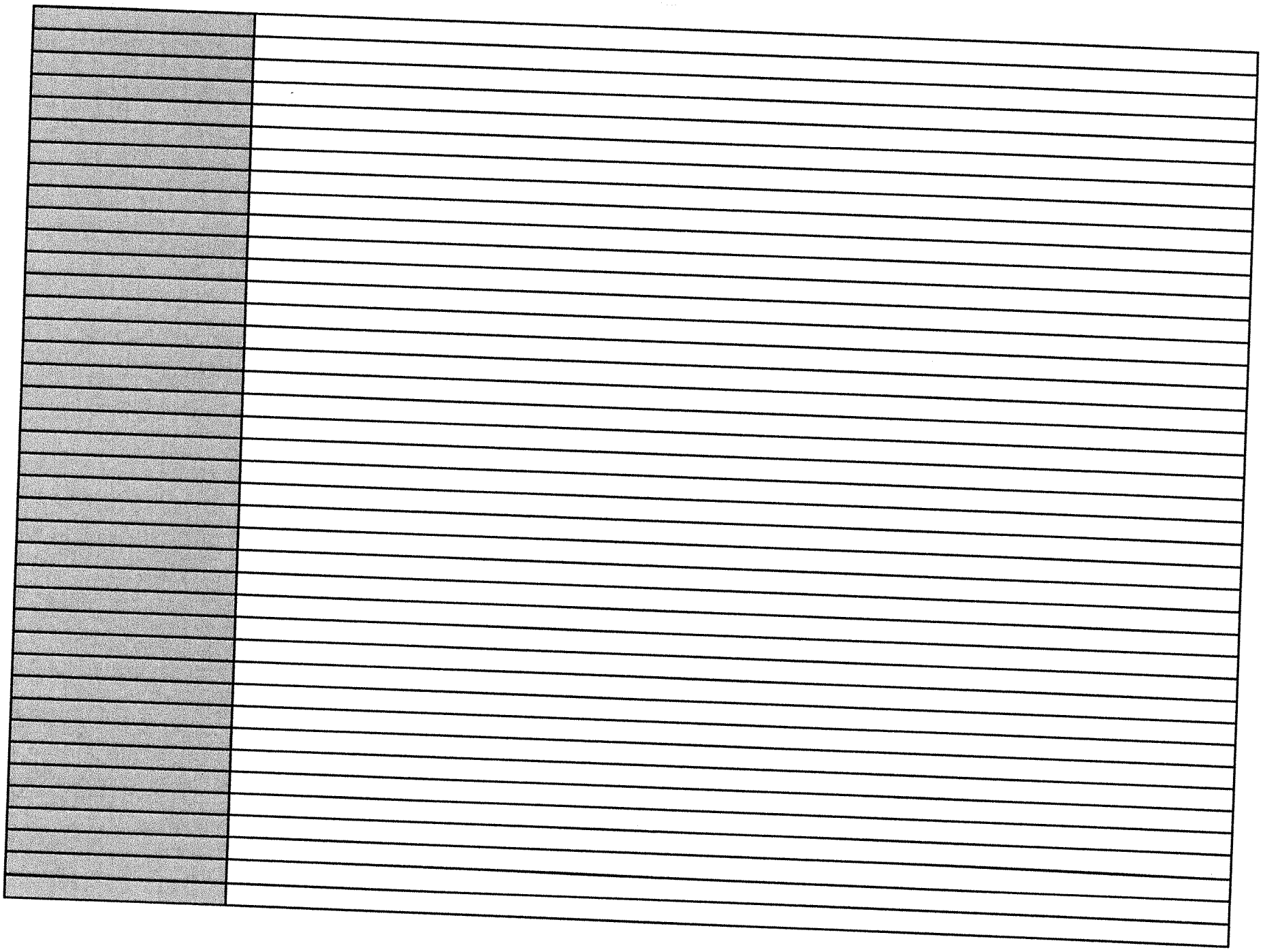
MMP NOTES

Minnesota Pollution Control Agency

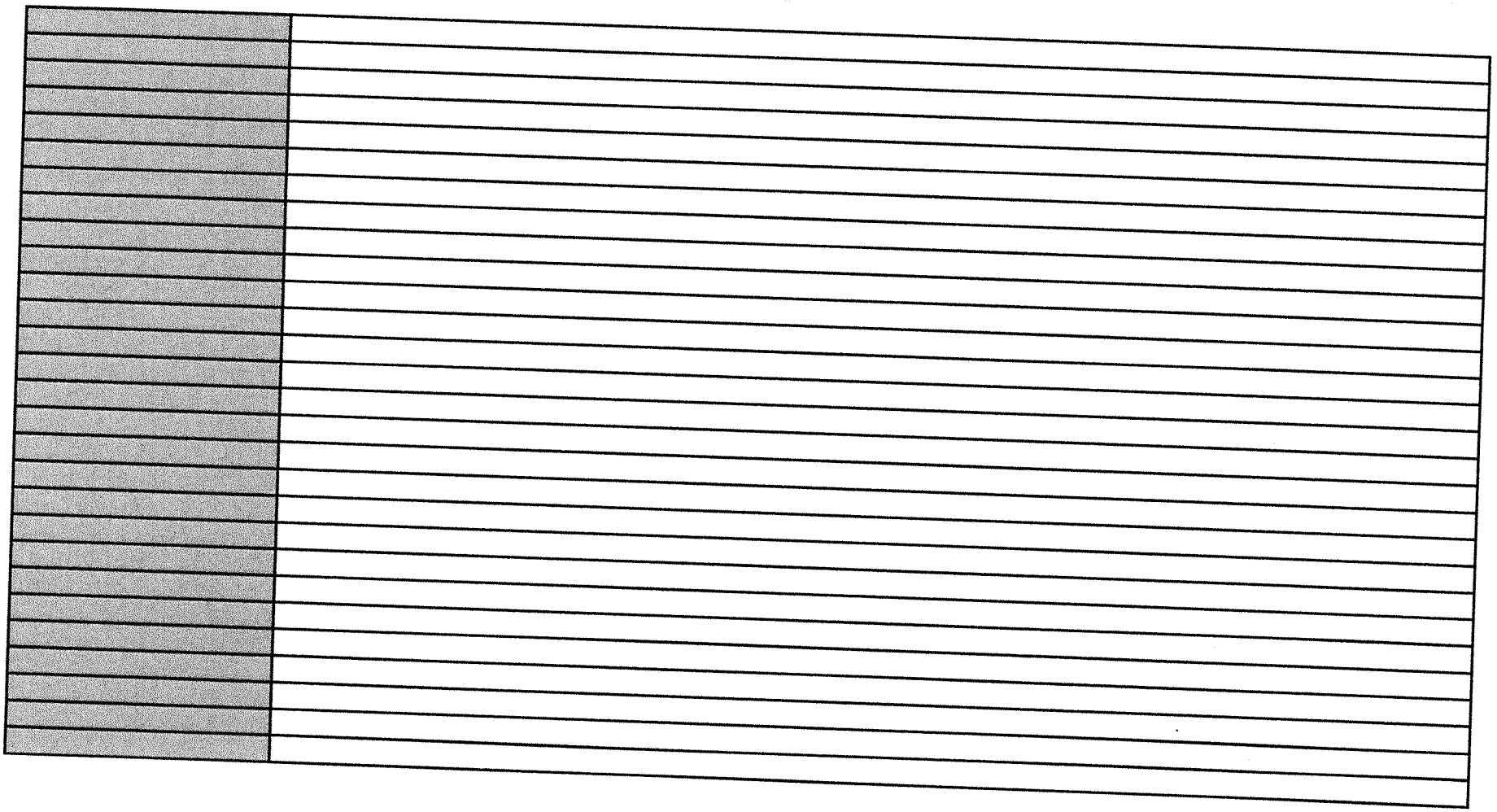
This worksheet will allow entry of notes related to the MMP. This can be used to explain a part of the plan, notes regarding fertilizer/pesticide applications, or any other item that is applicable.

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

Misc. Notes for all Fields *(Enter applicable notes for specific field ID's below)*	
Chet's Home	
Chet's West	Soil test & P index will be updated Spring/Summer of 2018
Frank Farm	Soil test & P index will be updated Spring/Summer of 2018
Galles 1 West	Soil test & P index will be updated Spring/Summer of 2018
Galles 1 East	Soil test & P index will be updated Spring/Summer of 2018
Galles 2	Soil test & P index will be updated Spring/Summer of 2018
Home	Soil test & P index will be updated Spring/Summer of 2018
Johnson Farm	
Parker Farm	
Rossing 40	
Rossing Qtr.	
Seaforth Farm N	
Seaforth Farm S	Soil test & P index will be updated Spring/Summer of 2018
State Farm	Soil test & P index will be updated Spring/Summer of 2018
Wagner	Soil test & P index will be updated Spring/Summer of 2018



MMP Notes



Minnesota P Index Report

Farm : Altermatt
Field : Parker Farm
County : Redwood

Average P Index:

Total P Index:	0.2
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.0
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	6 ppm Olsen P
Sediment traps:	Buffer/Filter Strip
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

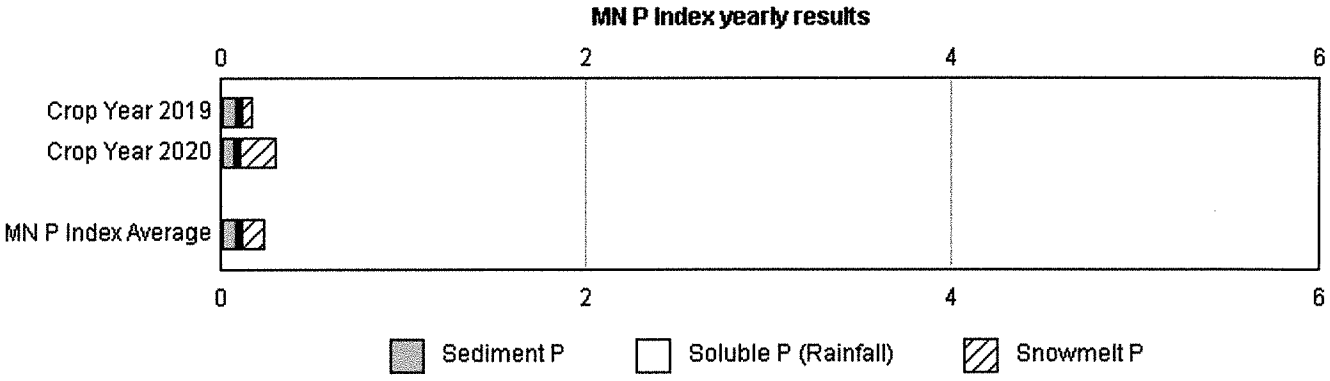
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	954C2 Storden loam	94B Terril loam	86 Canisteo clay loam
Slope:	100 feet @ 8 %	100 feet @ 3 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	7 ppm Olsen P	5 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.2	0.3
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.0	0.0
Snowmelt P:	0.1	0.2

Recommendations

0.2 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Parker Farm



From File Name :

Minnesota P Index Report

Farm : Altermatt
Field : Johnson Farm
County : Redwood

Average P Index:

Total P Index:	0.2
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.0
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	5 ppm Olsen P
Sediment traps:	None
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

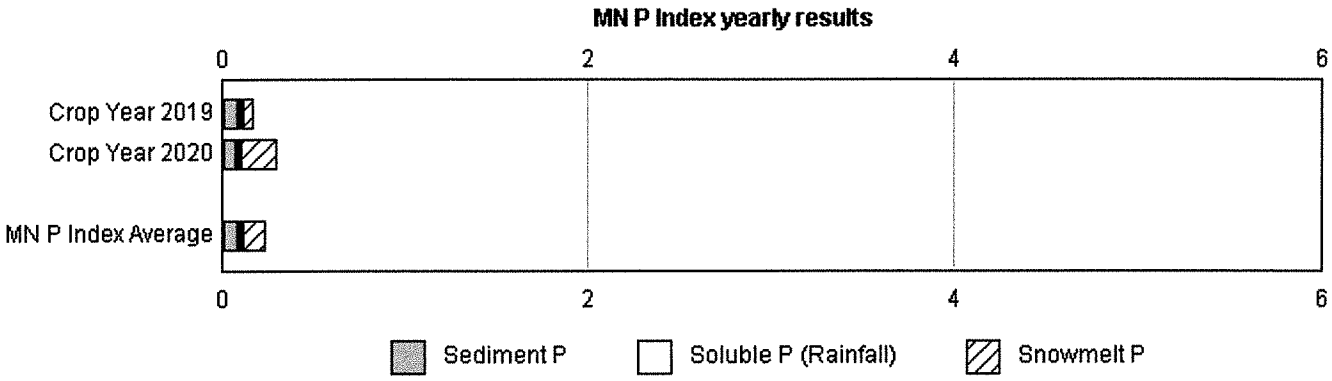
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	421B Ves loam	423 Seaforth loam	86 Canisteo clay loam
Slope:	100 feet @ 2 %	100 feet @ 1 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	6 ppm Olsen P	4 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.2	0.3
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.0	0.0
Snowmelt P:	0.1	0.2

Recommendations

0.2 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Johnson Farm



From File Name :

Minnesota P Index Report

Farm : Altermatt
Field : Chet's Home
County : Redwood

Average P Index:

Total P Index:	0.4
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.1
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	22 ppm Olsen P
Sediment traps:	None
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

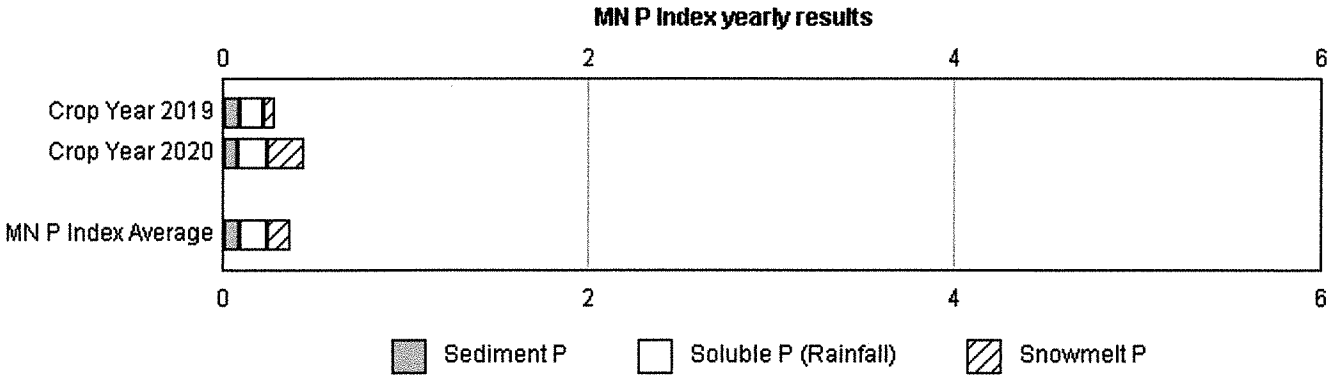
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	86 Canisteo clay loam	silty clay loam (high OM)	loam (high OM)
Slope:	100 feet @ 1 %	100 feet @ 0 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	23 ppm Olsen P	21 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.3	0.4
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.1	0.2
Snowmelt P:	0.1	0.2

Recommendations

0.4 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Chet's Home



From File Name :

Minnesota P Index Report

Farm : Altermatt
Field : Seaforth Farm N
County : Redwood

Average P Index:

Total P Index:	0.3
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.1
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	18 ppm Olsen P
Sediment traps:	None
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

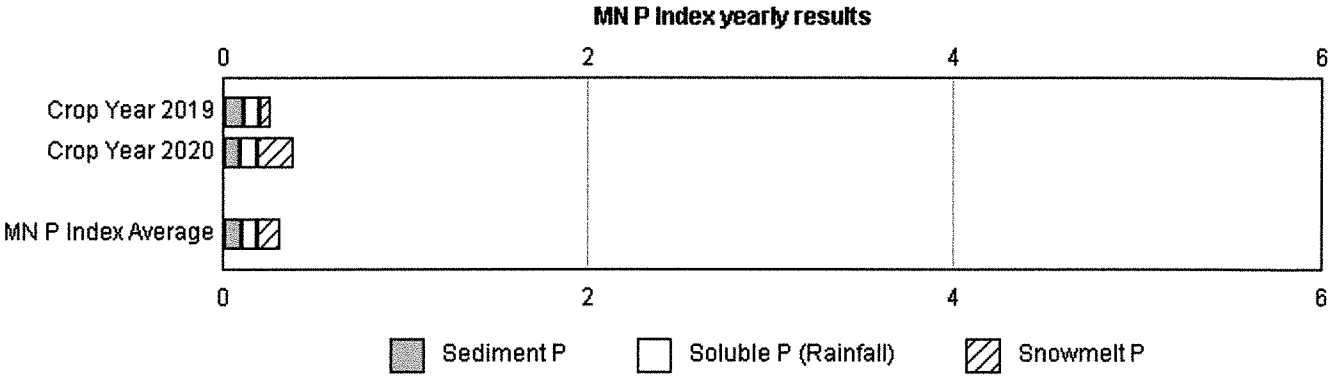
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	loam (high OM)	421B Ves loam	86 Canisteo clay loam
Slope:	100 feet @ 3 %	100 feet @ 2 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	19 ppm Olsen P	17 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.3	0.4
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.1	0.1
Snowmelt P:	0.1	0.2

Recommendations

0.3 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Seaforth Farm N



From File Name :

Minnesota P Index Report

Farm : Altermatt
Field : Rossing Qtr.
County : Redwood

Average P Index:

Total P Index:	0.3
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.1
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	15 ppm Olsen P
Sediment traps:	None
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

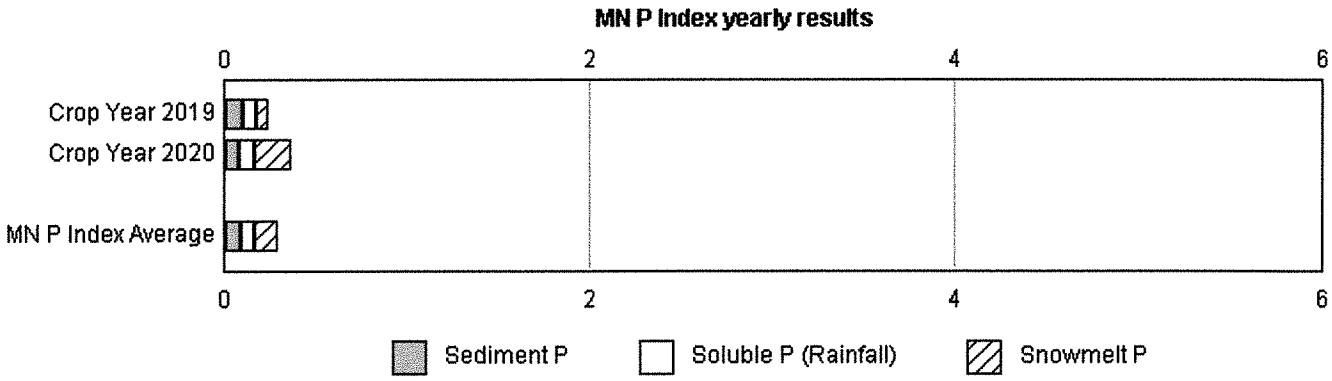
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	loam (high OM)	423 Seaforth loam	86 Canisteo clay loam
Slope:	100 feet @ 3 %	100 feet @ 2 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	16 ppm Olsen P	14 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.2	0.4
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.1	0.1
Snowmelt P:	0.1	0.2

Recommendations

0.3 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Rossing Qtr.



From File Name :

Minnesota P Index Report

Farm : Altermatt
Field : Rossing 40
County : Redwood

Average P Index:

Total P Index:	0.3
Sediment-bound P:	0.1
Soluble P (Rainfall):	0.1
Snowmelt P:	0.1

Site characteristics:

Initial soil test P:	17 ppm Olsen P
Sediment traps:	None
Depressions and inlets:	Open Surface Tile Inlets (1%)
Tillage orientation:	Cross slope
Distance to water:	300 feet

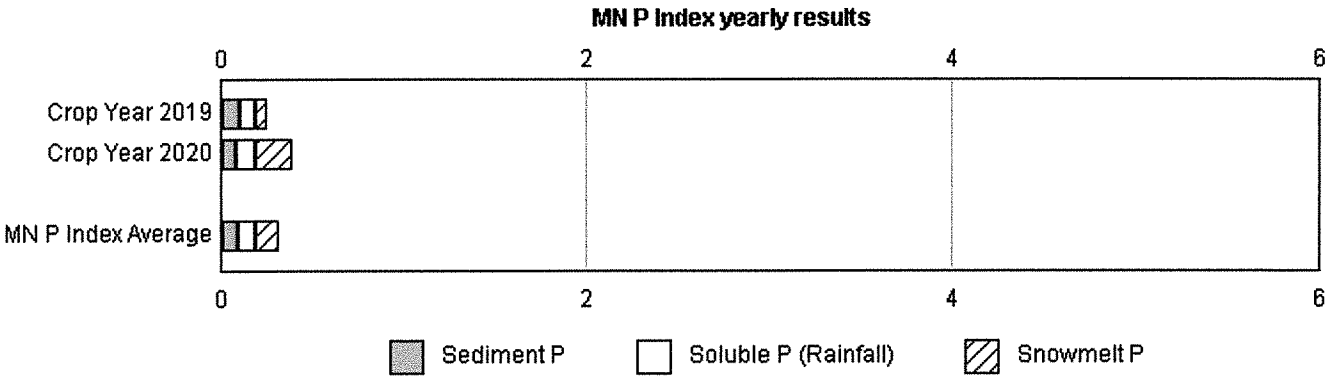
Soil and slope	Slope Segment 1	Slope Segment 2	Slope Segment 3
Soil series	loam (high OM)	loam (high OM)	loam (high OM)
Slope:	100 feet @ 3 %	100 feet @ 3 %	50 feet @ 1 %

Management	2019	2020
Crop:	Corn, grain	Soybeans, wide row
Yield:	200 bu/ac	55 bu/ac
Annual manure app:	56 lbs P2O5 / acre	None
Manure app method:	Injected or Planter Applied	
Annual fert app:	16 lbs P2O5 / acre	None
Fert app method:	Injected or Planter Applied	
Previous fall tillage:	Light Disk	Chisel or Heavy Disk
Previous fall N:	No Anhydrous	No Anhydrous
Results		
Adjusted soil test P:	18 ppm Olsen P	16 ppm Olsen P
Sediment delivery:	0.4 t/ac/yr	0.3 t/ac/yr
Total P Index:	0.3	0.4
Sediment-bound P:	0.1	0.1
Soluble P (Rainfall):	0.1	0.1
Snowmelt P:	0.1	0.2

Recommendations

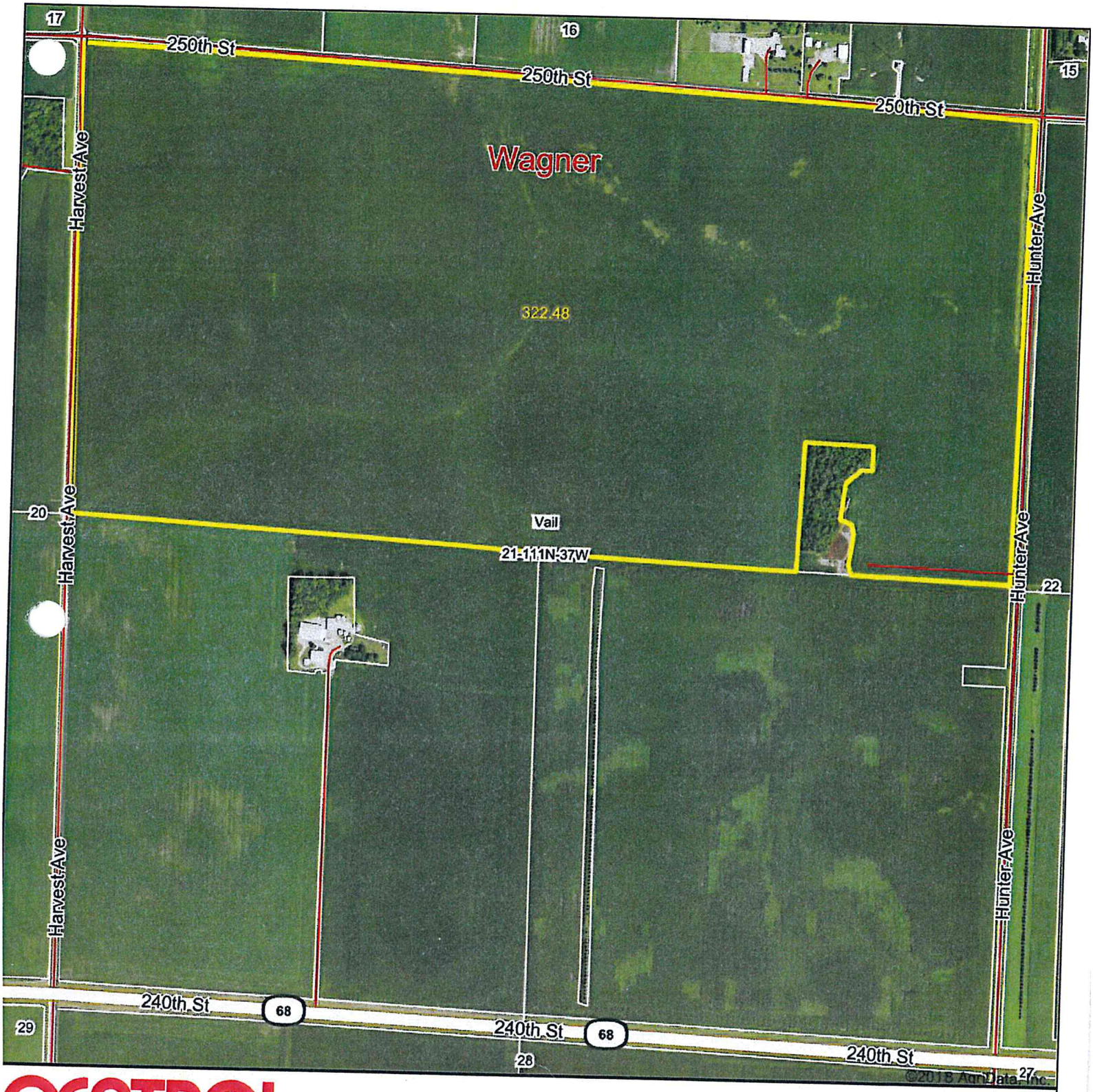
0.3 is a very low risk rating. No management changes are recommended.

Farm : Altermatt, Field : Rossing 40



From File Name :

Aerial Map



CENTROL® CROP CONSULTING

Map created By: surety® CUSTOMIZED ONLINE MAPPING

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map center: 44° 24' 23.34, -95° 18' 0.68

0ft 856ft 1713ft

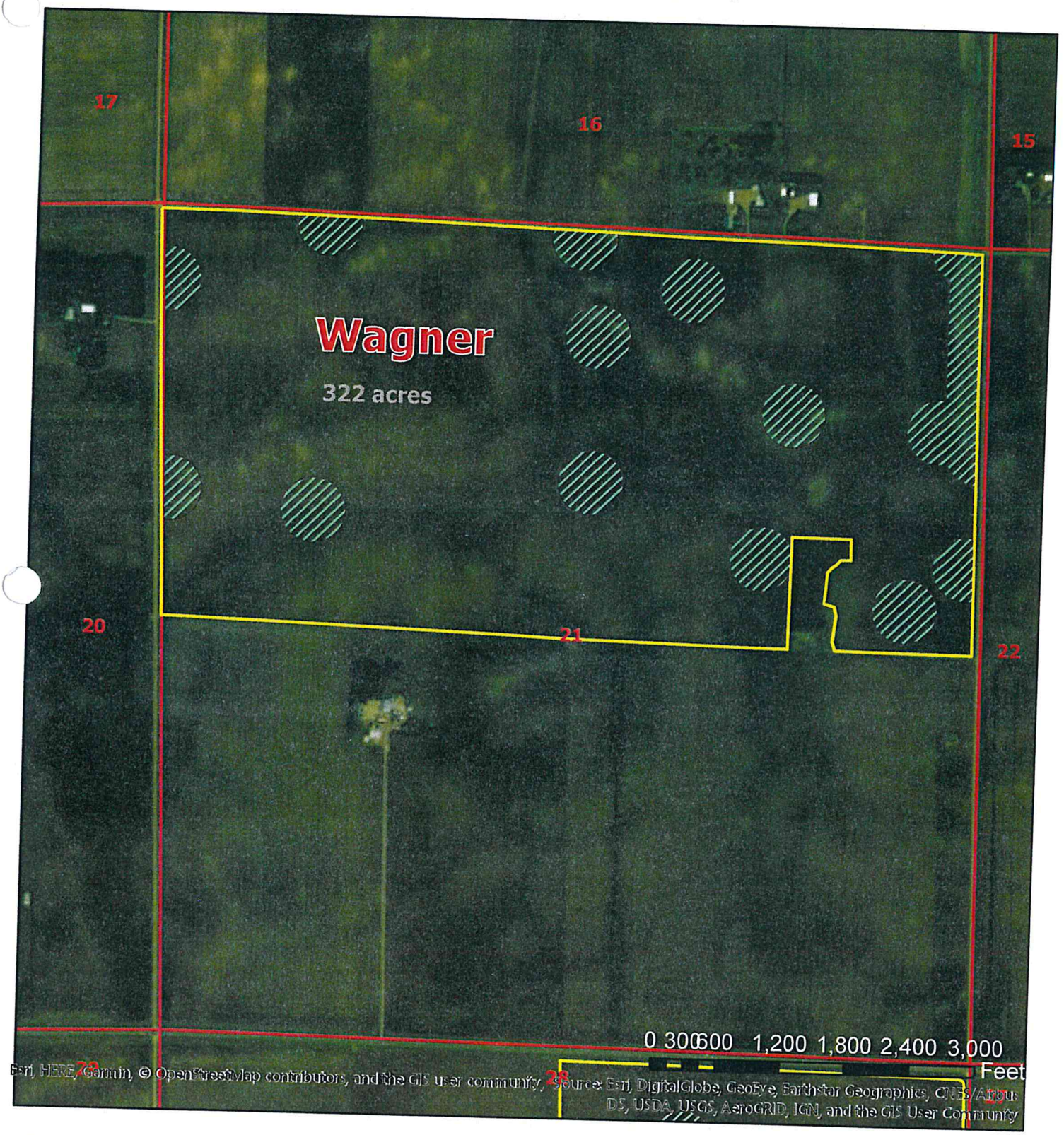
21-111N-37W
Redwood County
Minnesota

N W E S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



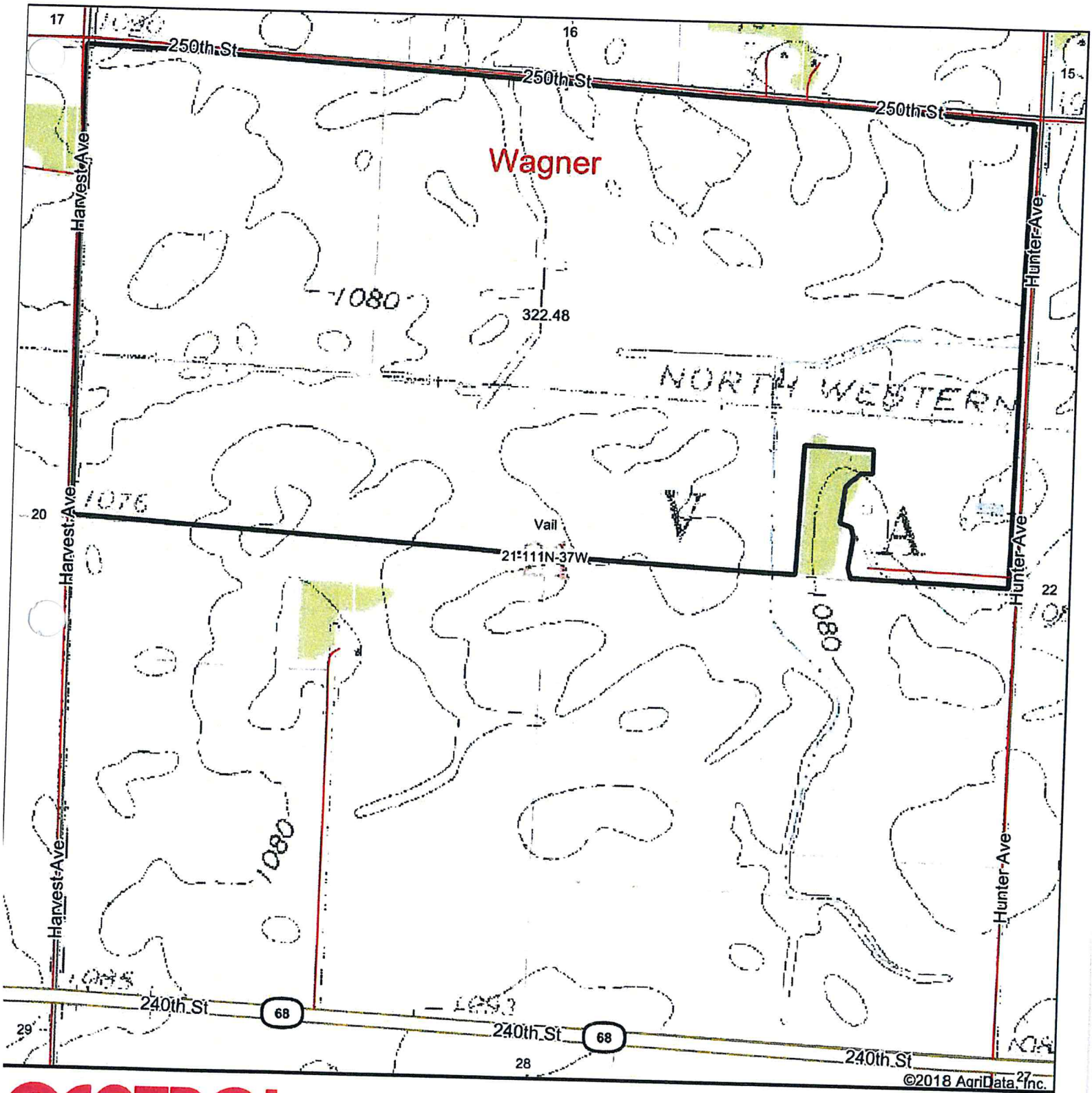
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
21-111N-37W
Redwood County, MN

Topography Map



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Map ed By: surety® CUSTOMIZED ONLINE MAPPING

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map center: 44° 24' 23.34, -95° 18' 0.68

0ft 856ft 1713ft

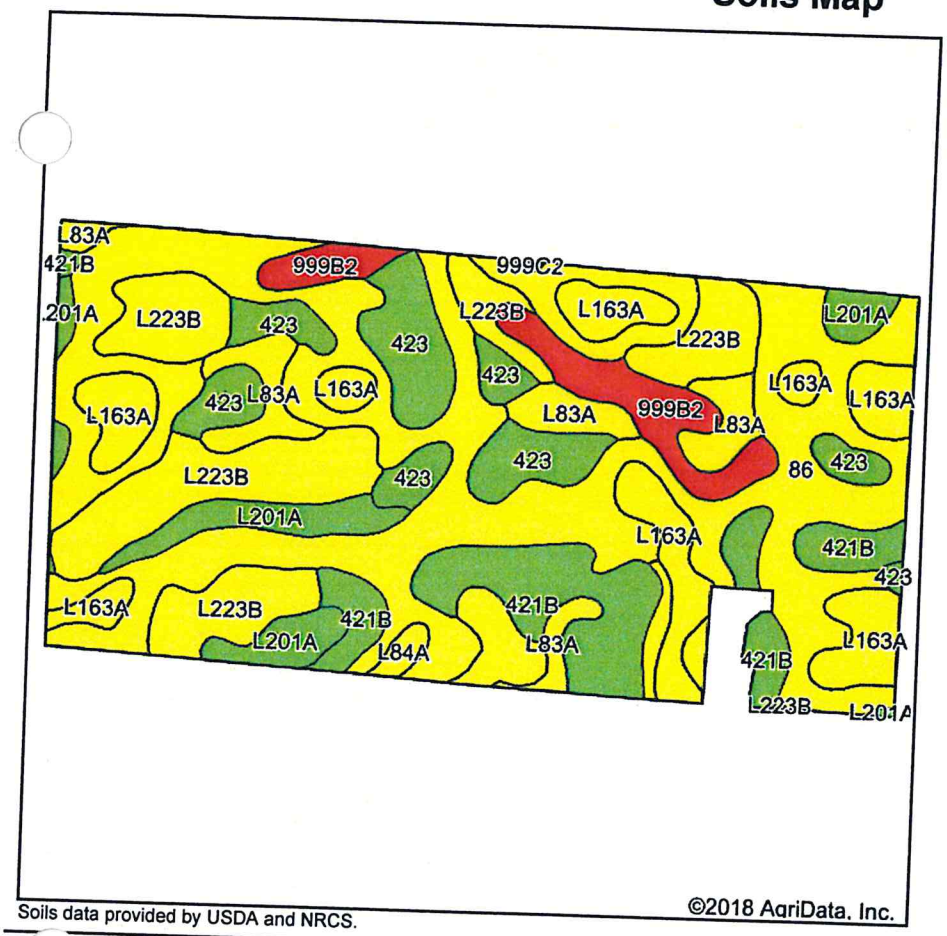
21-111N-37W
Redwood County
Minnesota

N W E S

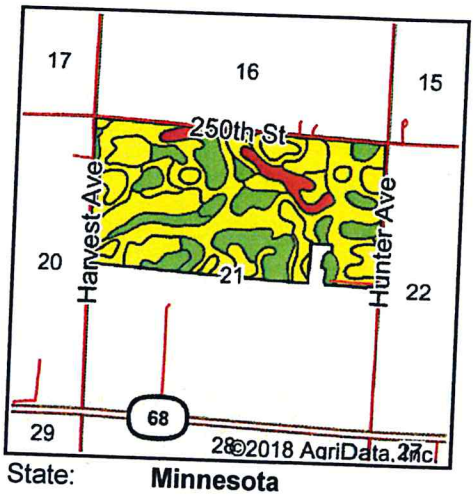
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **21-111N-37W**
Township: **Vail**
Acres: **322.48**
Date: **4/2/2018**

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N W E S

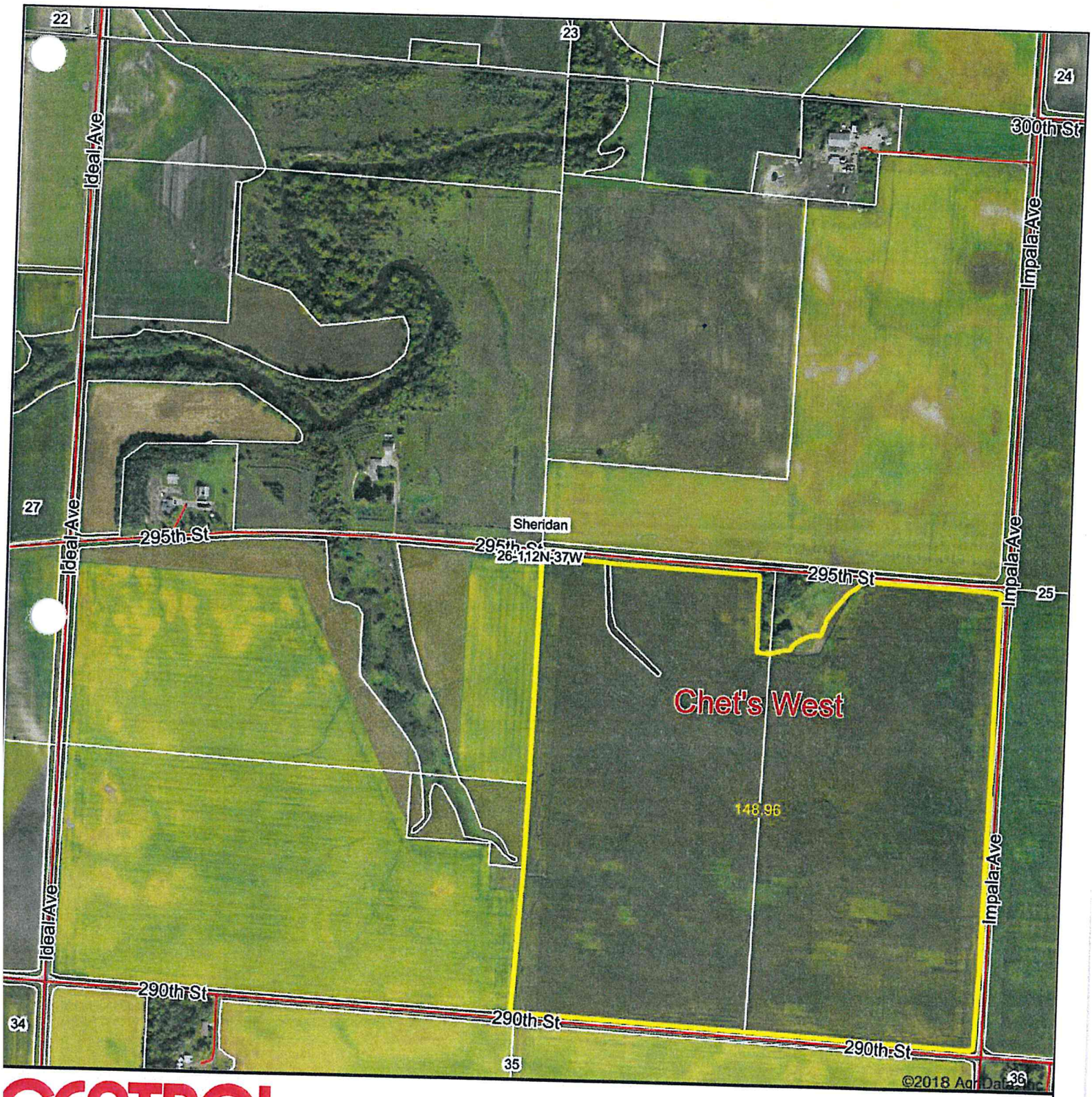
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	119.10	36.9%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	53.69	16.6%		IIe	92
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	32.90	10.2%		IIIw	86
421B	Amiret loam, 2 to 6 percent slopes	32.25	10.0%		IIe	98
423	Seaforth loam, 1 to 3 percent slopes	31.31	9.7%		IIs	95
L83A	Webster clay loam, 0 to 2 percent slopes	18.92	5.9%		IIw	93
L201A	Normania loam, 1 to 3 percent slopes	16.45	5.1%		Ie	99
999B2	Ves-Estherville-Storden complex, 3 to 6 percent slopes, eroded	16.14	5.0%		IIe	69
L84A	Glencoe clay loam, 0 to 1 percent slopes	1.56	0.5%		IIIw	86
999C2	Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded	0.16	0.0%		IIIe	63
					Weighted Average	**91.9**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



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Maps Created By:
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map center: 44° 28' 42.43, -95° 15' 35.8

0ft 850ft 1699ft

26-112N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

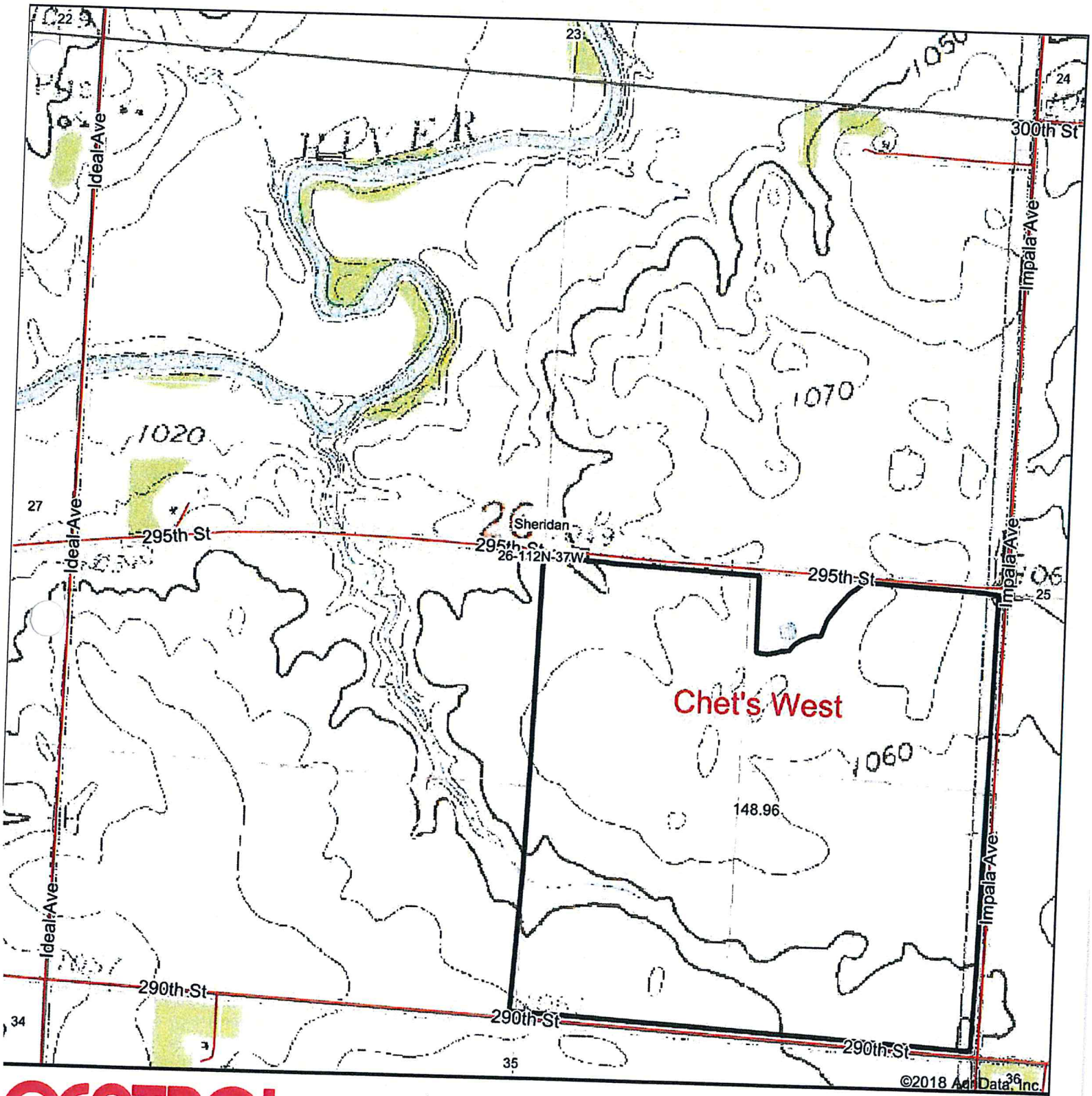
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
26-112N-37W
Redwood County, MN

Topography Map



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map center: 44° 28' 42.43, -95° 15' 35.8

0ft 850ft 1699ft

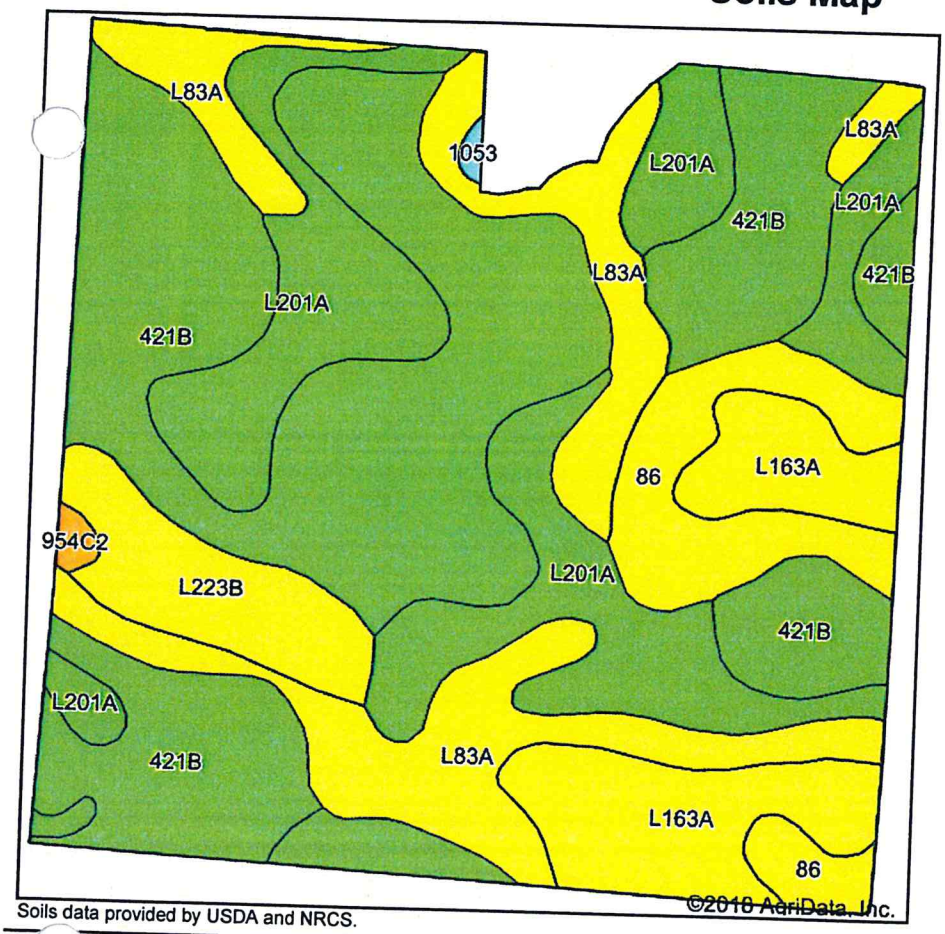
26-112N-37W
Redwood County
Minnesota

N W E S

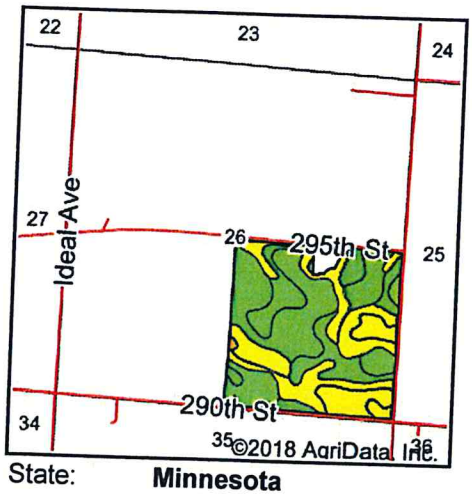
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **26-112N-37W**
Township: **Sheridan**
Acres: **148.96**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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N W E S

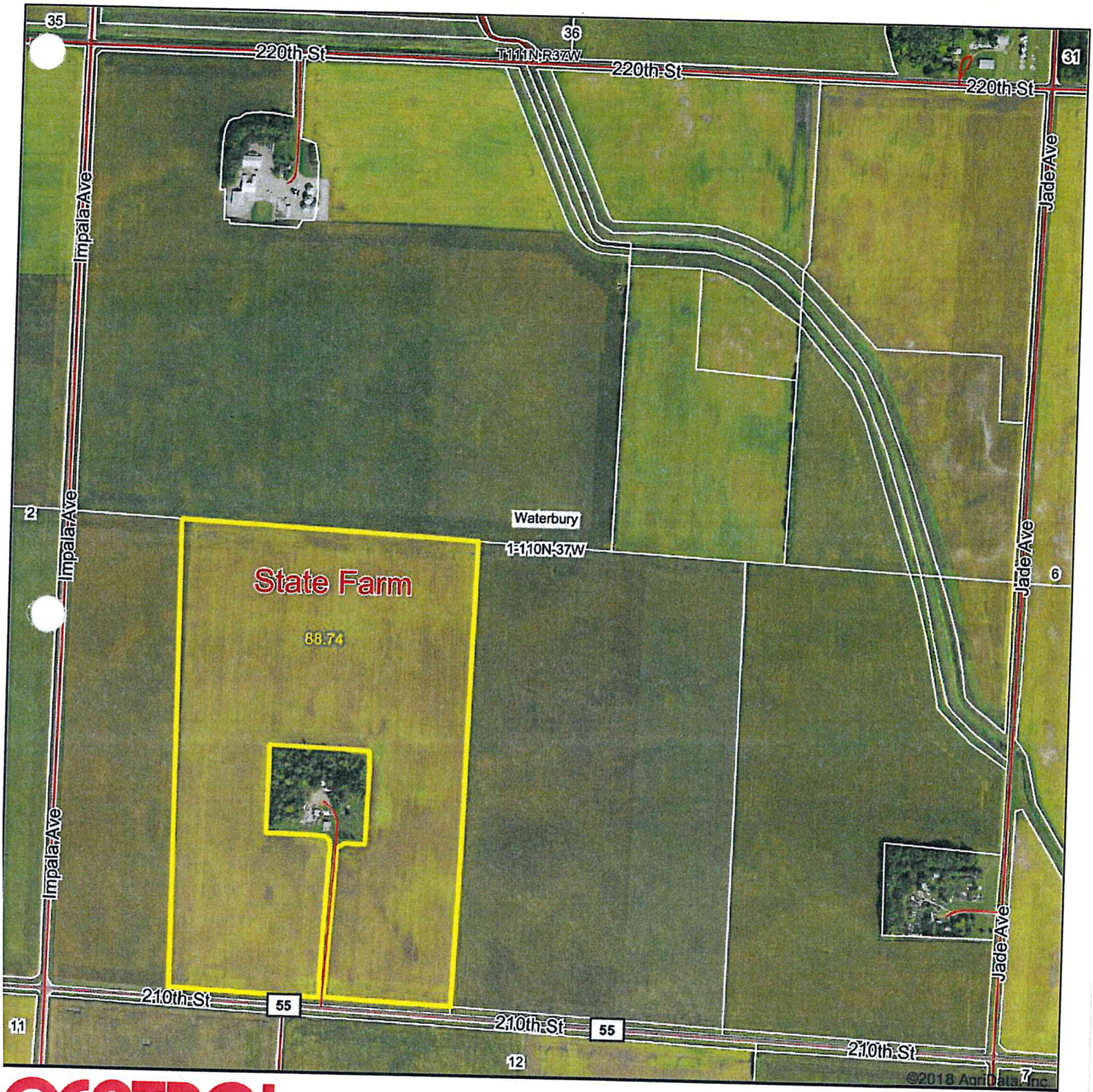
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
421B	Amiret loam, 2 to 6 percent slopes	60.63	40.7%		IIe	98
L201A	Normania loam, 1 to 3 percent slopes	32.16	21.6%		Ie	99
L83A	Webster clay loam, 0 to 2 percent slopes	23.88	16.0%		IIw	93
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	13.64	9.2%		IIIw	86
86	Canisteo clay loam, 0 to 2 percent slopes	10.56	7.1%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	7.38	5.0%		IIe	92
954C2	Storden-Ves complex, 6 to 10 percent slopes, moderately eroded	0.47	0.3%		IIIe	77
1053	Aquolls, ponded	0.24	0.2%			5
					Weighted Average	**95.4**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 21' 43.92, -95° 14' 17.28

0ft 840ft 1680ft

1-110N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

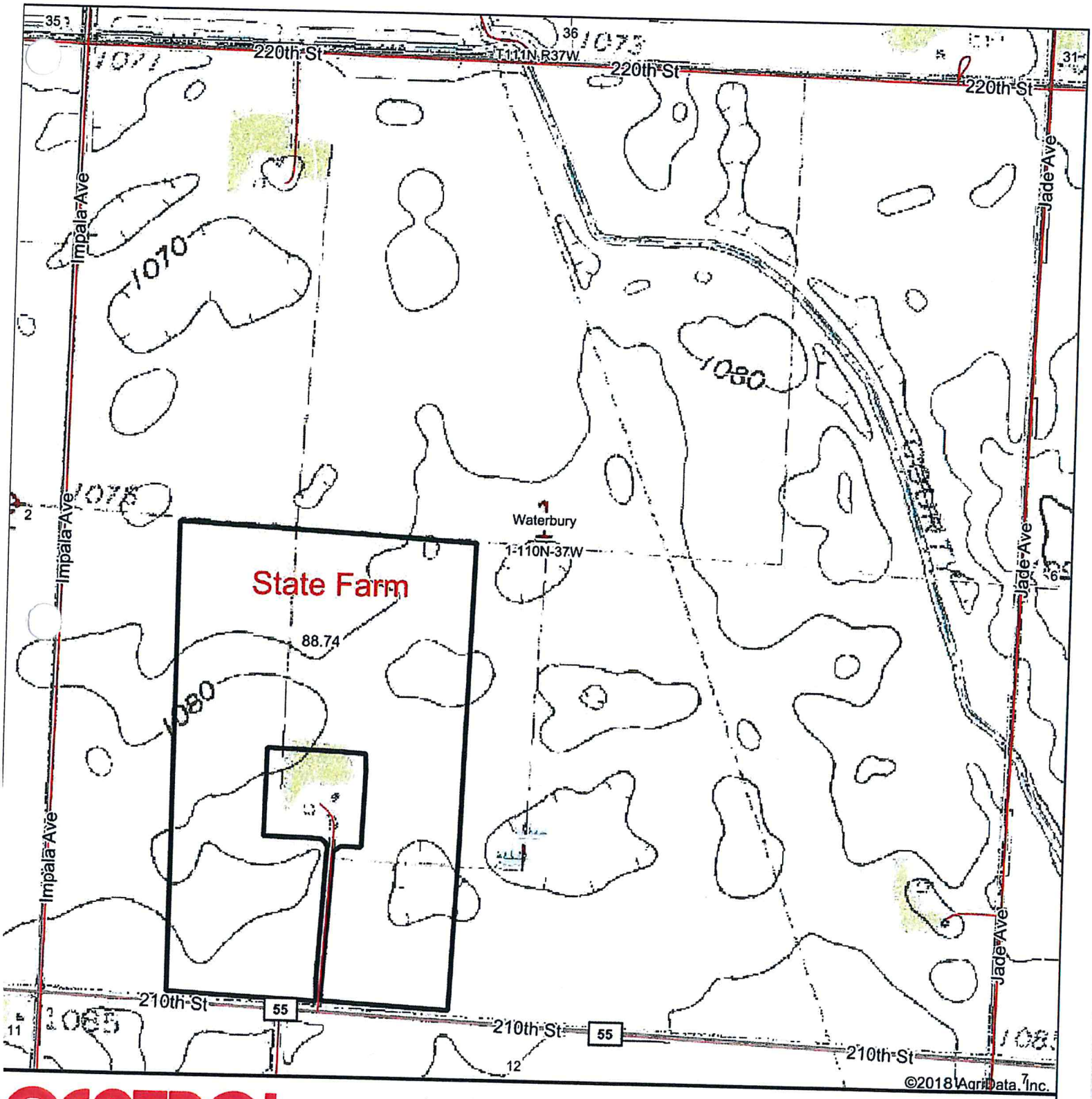
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
1-110N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 21' 43.92, -95° 14' 17.28

0ft 840ft 1680ft

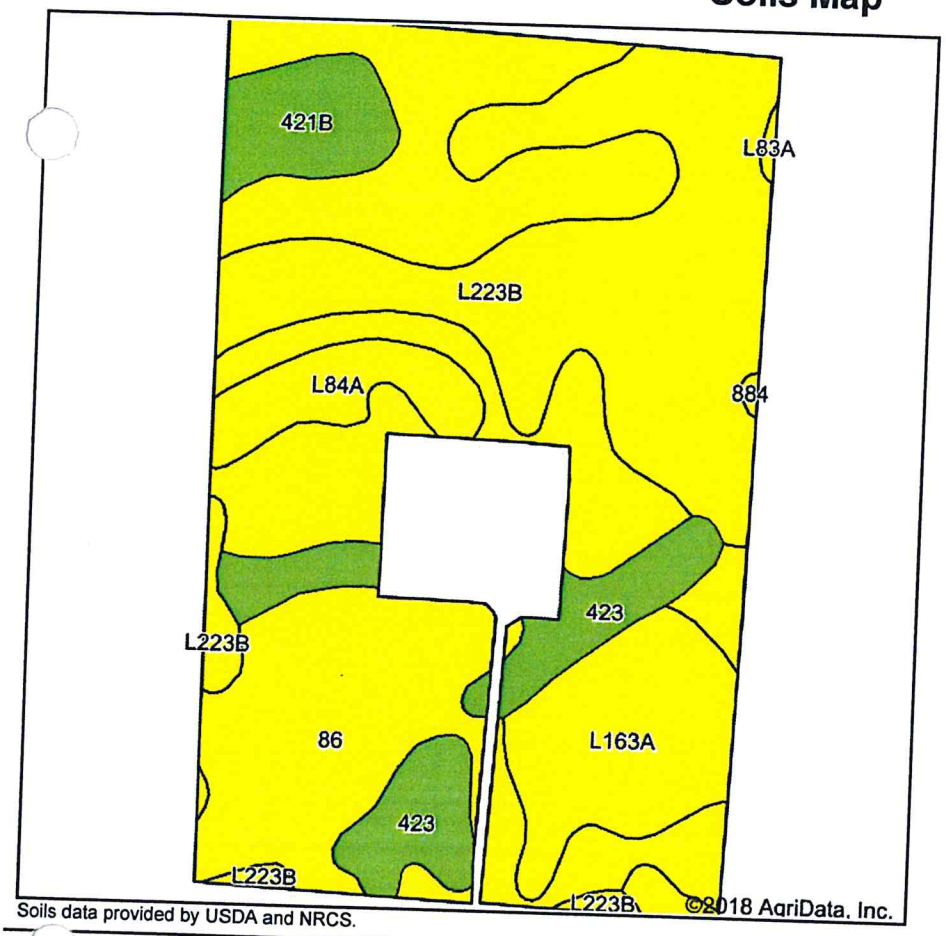
1-110N-37W
Redwood County
Minnesota

N W E S

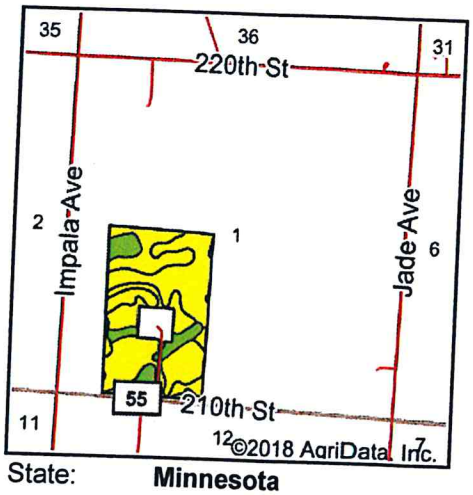
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **1-110N-37W**
Township: **Waterbury**
Acres: **88.74**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

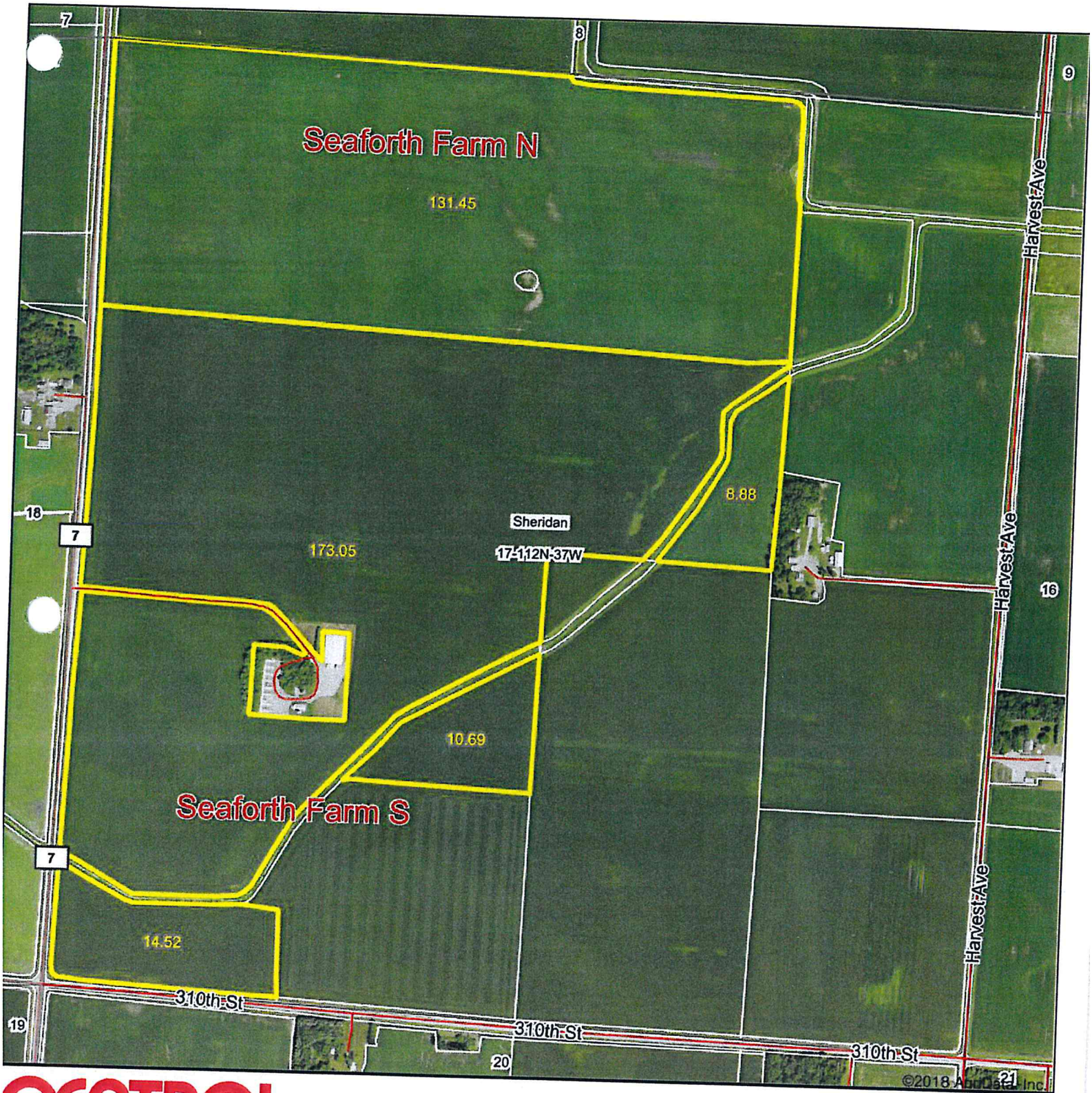
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	39.52	44.5%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	24.38	27.5%		IIe	92
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	8.49	9.6%		IIIw	86
423	Seaforth loam, 1 to 3 percent slopes	7.85	8.8%		IIs	95
421B	Amiret loam, 2 to 6 percent slopes	3.82	4.3%		IIe	98
L84A	Glencoe clay loam, 0 to 1 percent slopes	3.80	4.3%		IIIw	86
L83A	Webster clay loam, 0 to 2 percent slopes	0.76	0.9%		IIw	93
884	Webster-Delft complex, 0 to 2 percent slopes	0.12	0.1%		IIw	94
					Weighted Average	**92.1**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



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CENTROL® CROP CONSULTING

Map provided By:

surety® CUSTOMIZED ONLINE MAPPING

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www.AgriDataInc.com

map center: 44° 30' 31.63, -95° 19' 12.86

0ft 843ft 1686ft

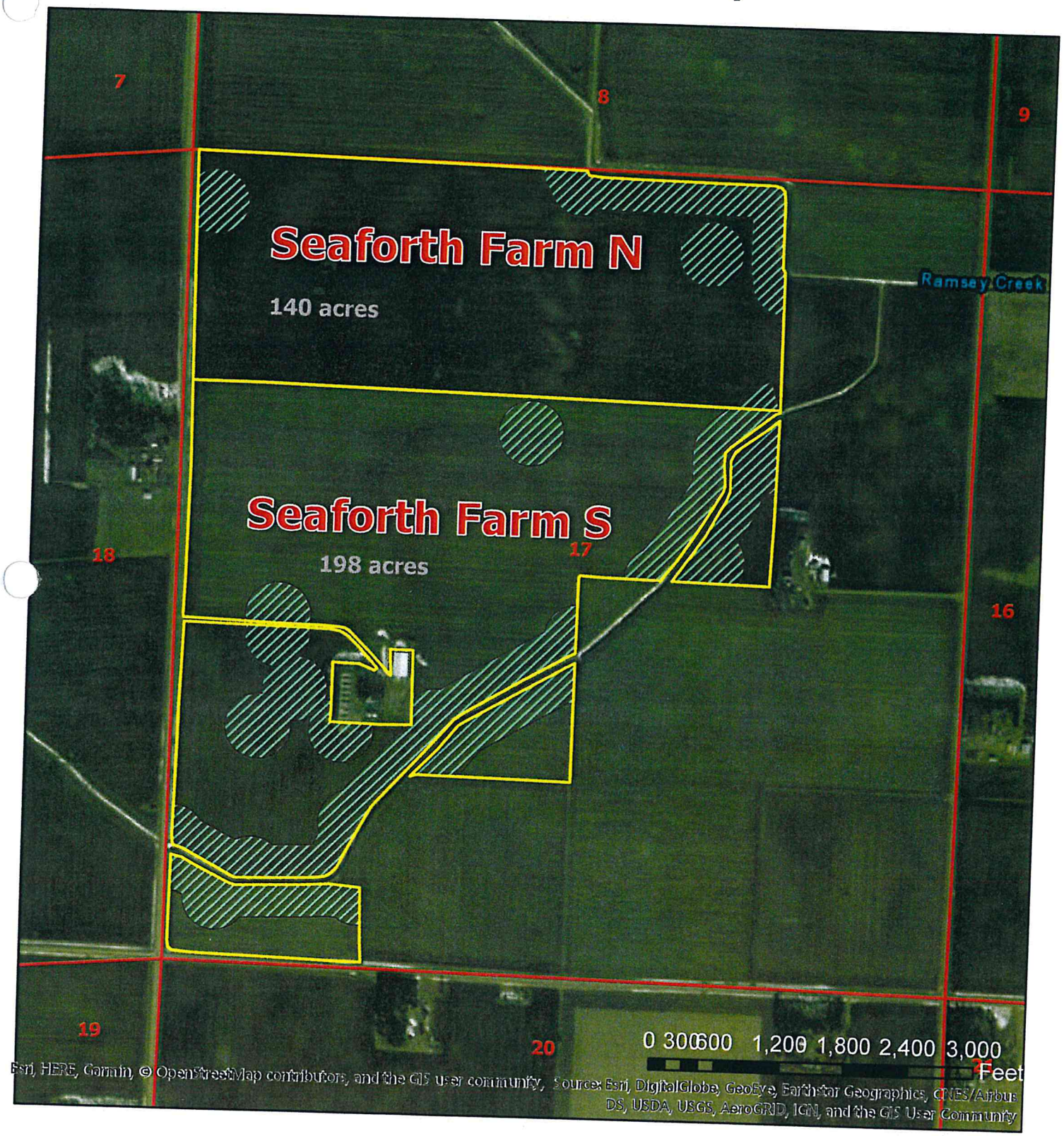
17-112N-37W
Redwood County
Minnesota

N W E S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



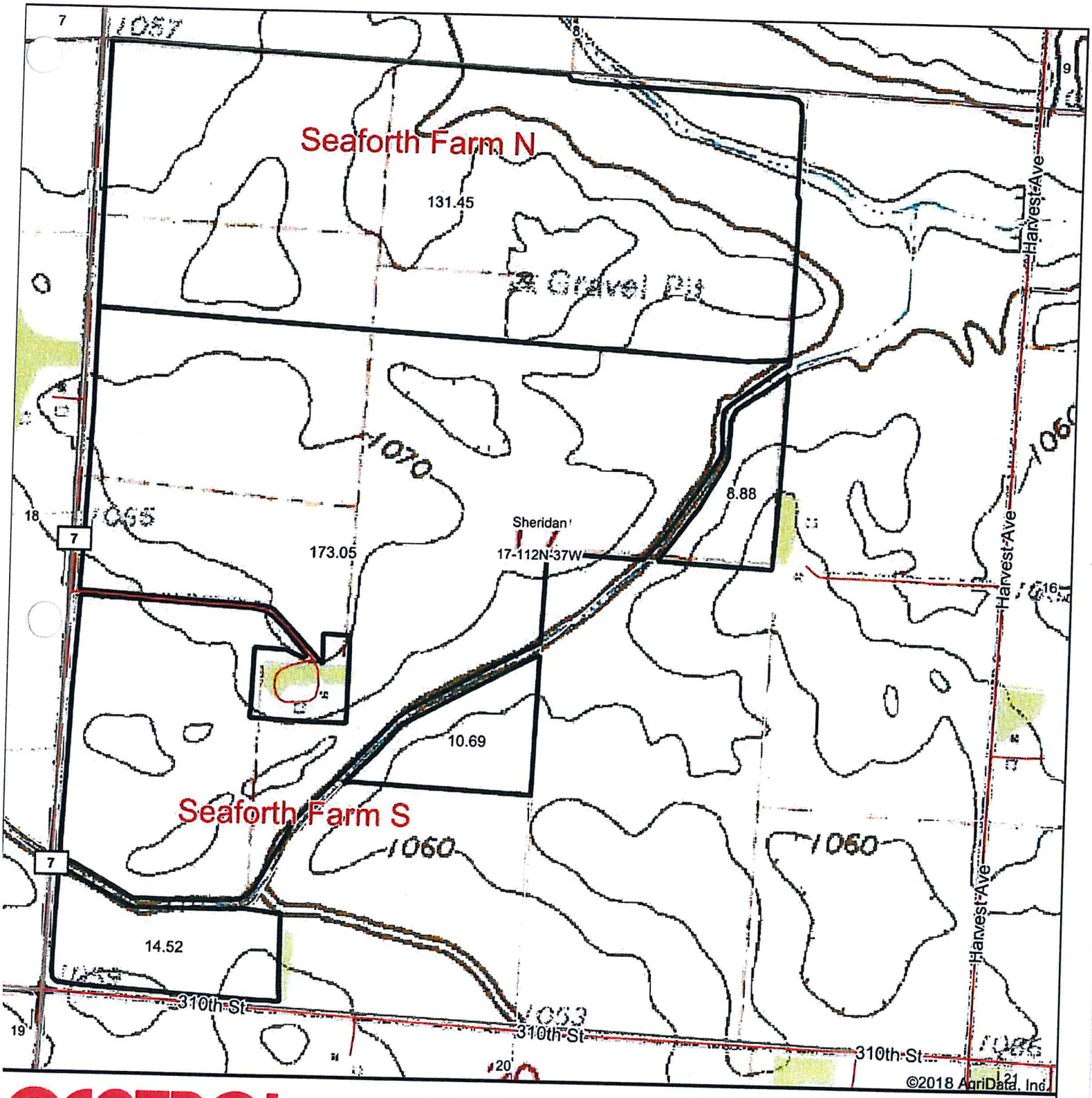
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
17-112N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map provided by: surety® CUSTOMIZED ONLINE MAPPING

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www.AgriDataInc.com

map center: 44° 30' 31.63, -95° 19' 12.86

0ft 843ft 1686ft

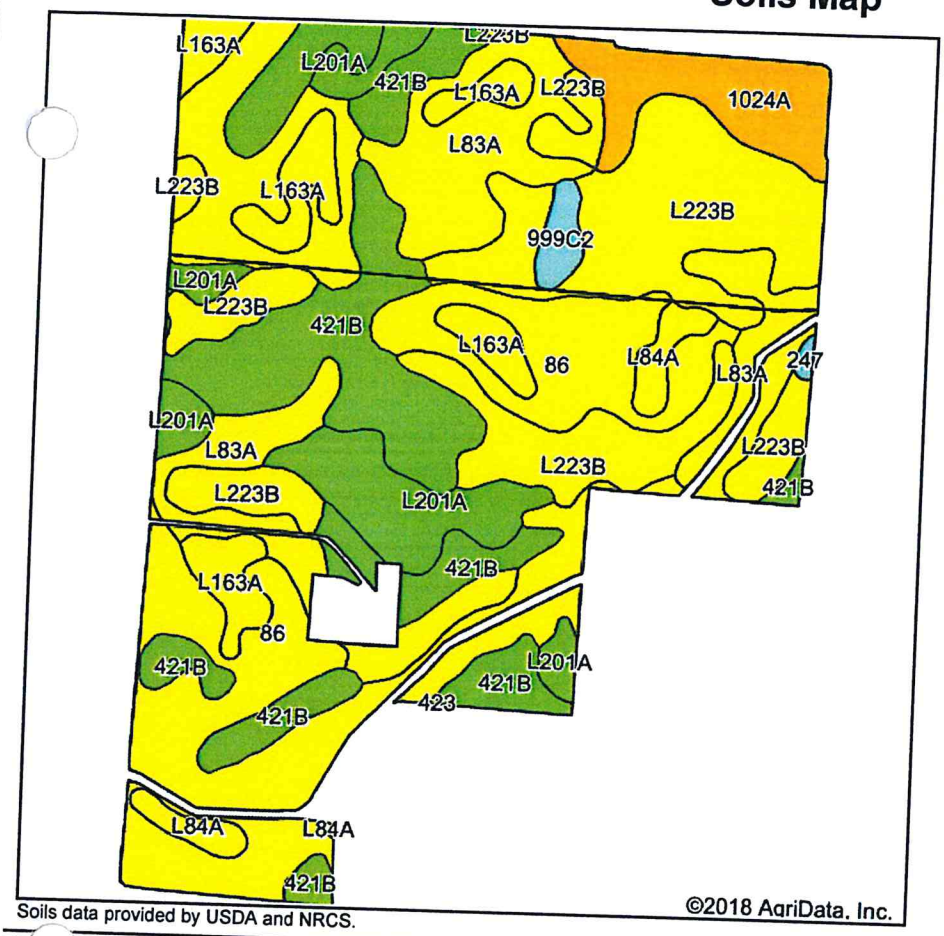
17-112N-37W
Redwood County
Minnesota

N W E S

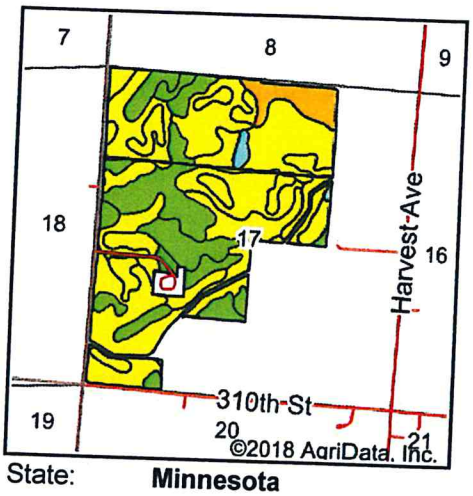
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **17-112N-37W**
Township: **Sheridan**
Acres: **338.59**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By: surety® CUSTOMIZED ONLINE MAPPING www.AgriDataInc.com

© Agridata, Inc. 2018

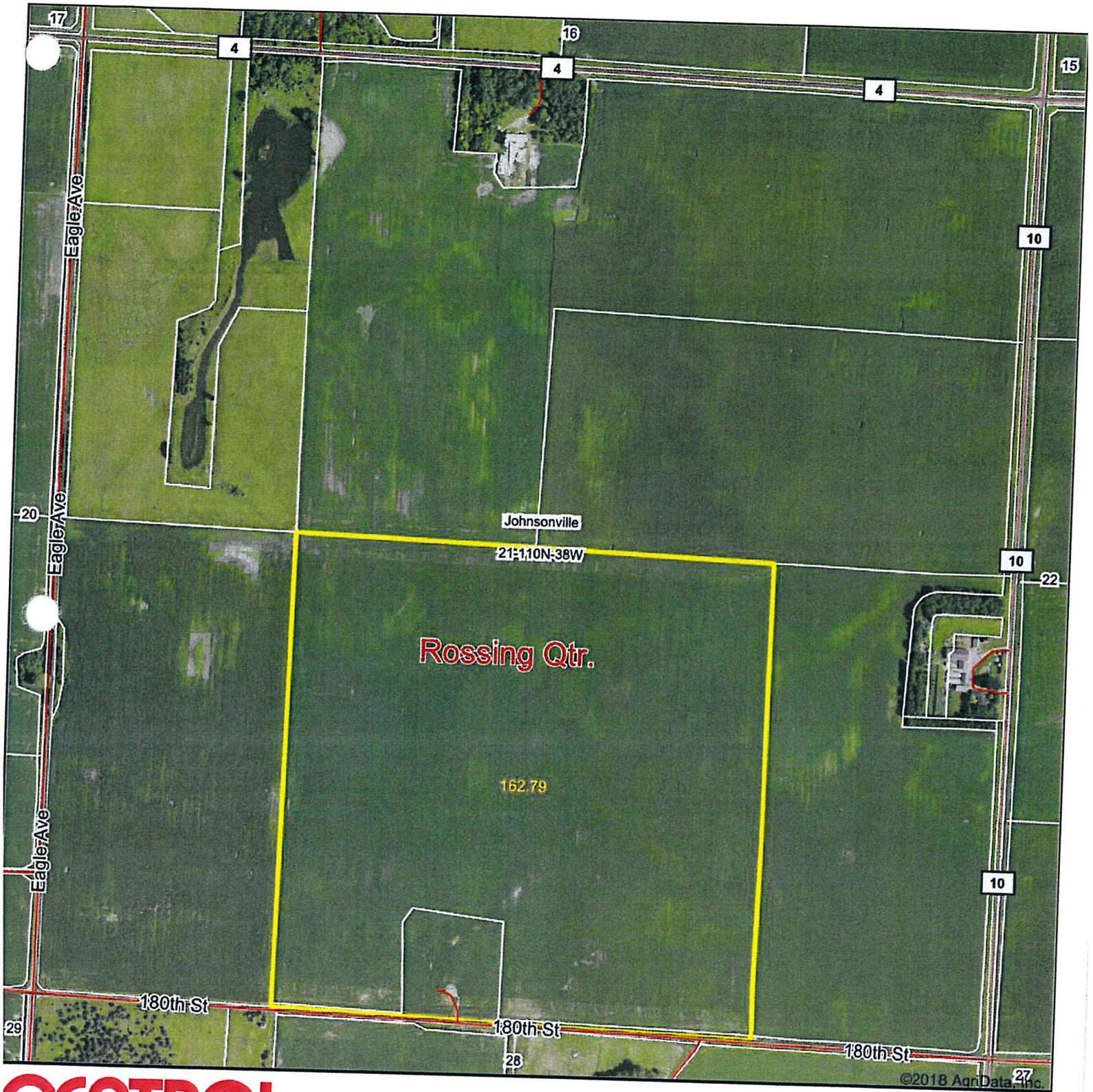
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	89.52	26.4%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	71.49	21.1%		IIe	92
421B	Amiret loam, 2 to 6 percent slopes	62.60	18.5%		IIe	98
L83A	Webster clay loam, 0 to 2 percent slopes	45.56	13.5%		IIw	93
L201A	Normania loam, 1 to 3 percent slopes	23.90	7.1%		Ie	99
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	19.95	5.9%		IIIw	86
1024A	Havelock clay loam, 0 to 2 percent slopes. occasionally flooded	16.16	4.8%		IIw	75
L84A	Glencoe clay loam, 0 to 1 percent slopes	5.92	1.7%		IIIw	86
999C2	Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded	2.96	0.9%		IIIe	63
247	Linder loam	0.53	0.2%		IIs	60
					Weighted Average	**92.4**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 19' 9.45, -95° 25' 14.3

0ft 840ft 1680ft

21-110N-38W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

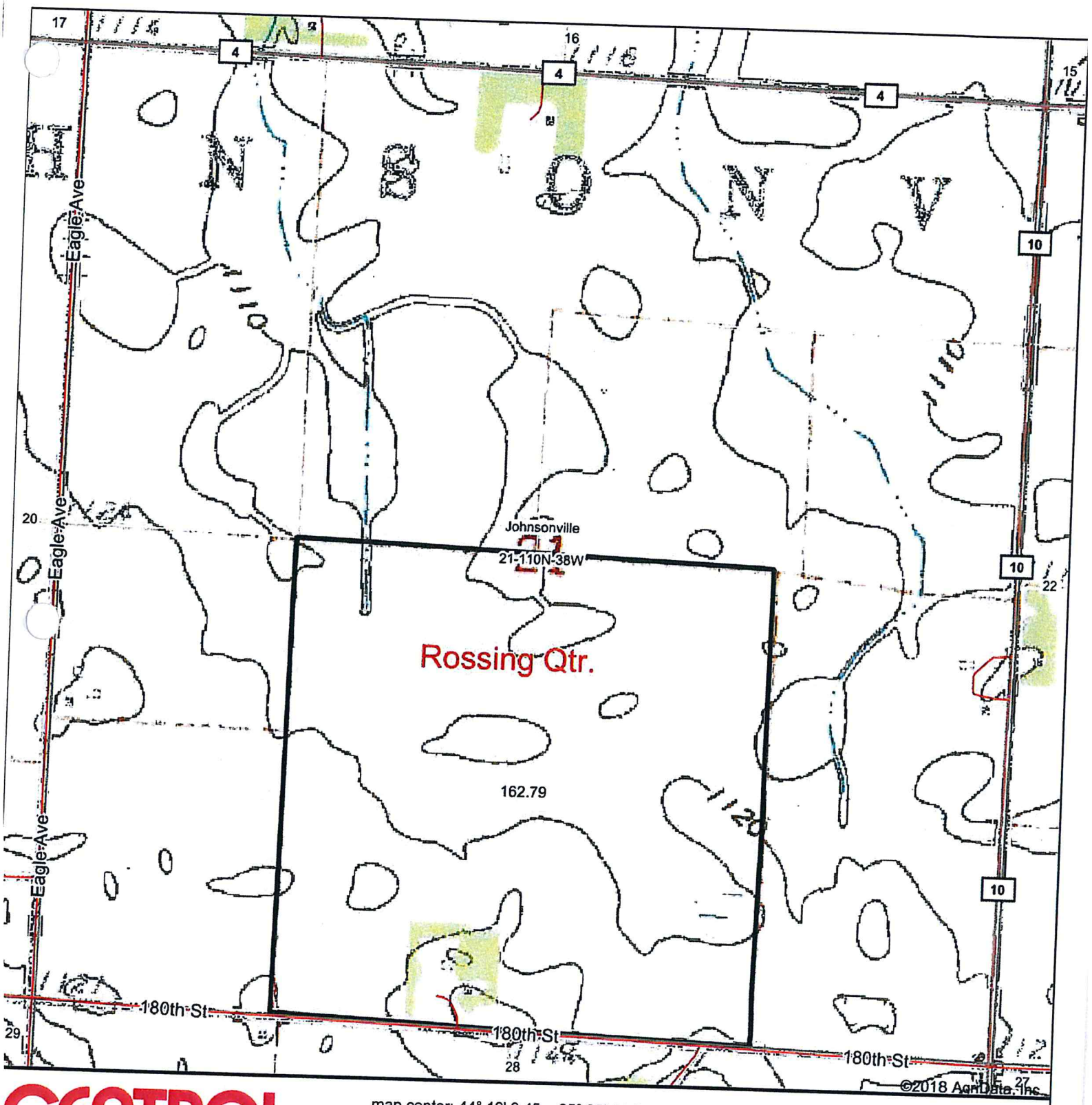
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
21-110N-38W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map provided By:

surety® CUSTOMIZED ONLINE MAPPING

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map center: 44° 19' 9.45, -95° 25' 14.3

0ft 840ft 1680ft

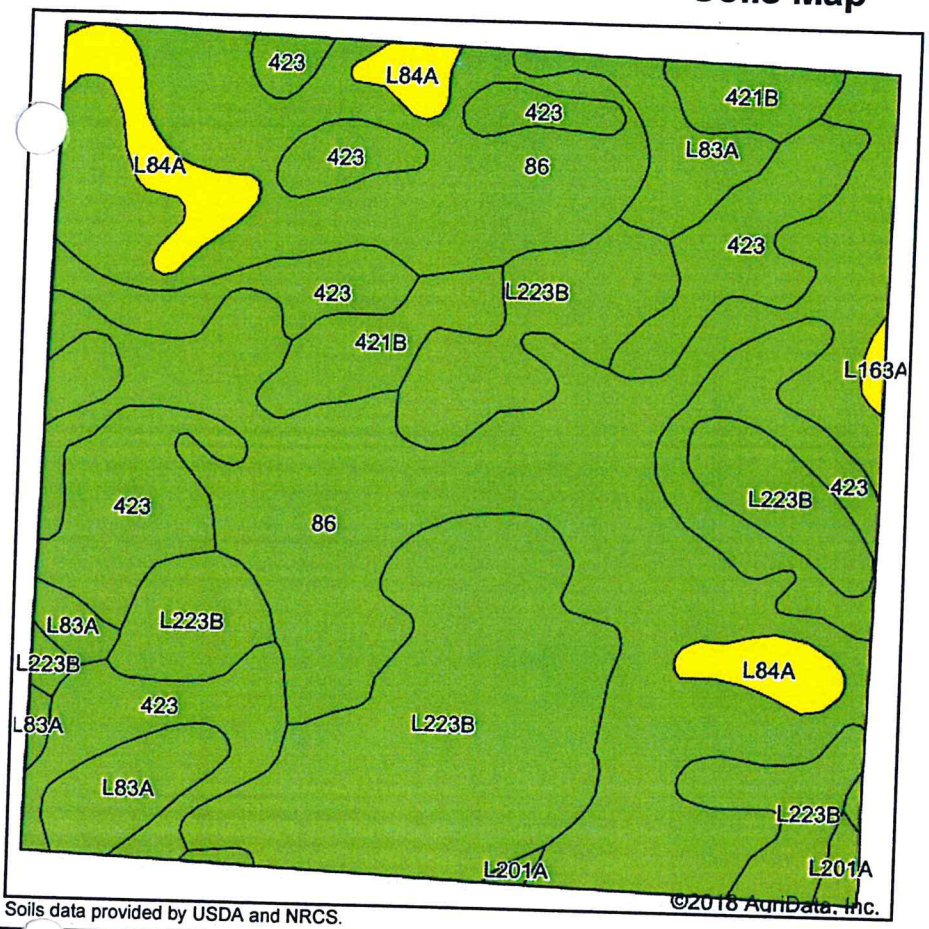
21-110N-38W
Redwood County
Minnesota

N
W E
S

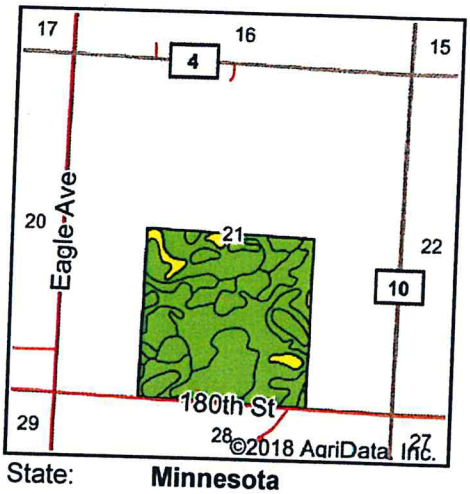
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **21-110N-38W**
Township: **Johnsonville**
Acres: **162.79**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	67.10	41.2%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	40.07	24.6%		IIe	92
423	Seaforth loam, 1 to 3 percent slopes	32.83	20.2%		IIs	95
L83A	Webster clay loam, 0 to 2 percent slopes	8.60	5.3%		IIw	93
L84A	Glencoe clay loam, 0 to 1 percent slopes	6.48	4.0%		IIIw	86
421B	Amiret loam, 2 to 6 percent slopes	6.43	3.9%		IIe	98
L201A	Normania loam, 1 to 3 percent slopes	0.91	0.6%		Ie	99
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	0.37	0.2%		IIIw	86
					Weighted Average	**93.1**

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 18' 16.69, -95° 25' 13.82

0ft 843ft 1686ft

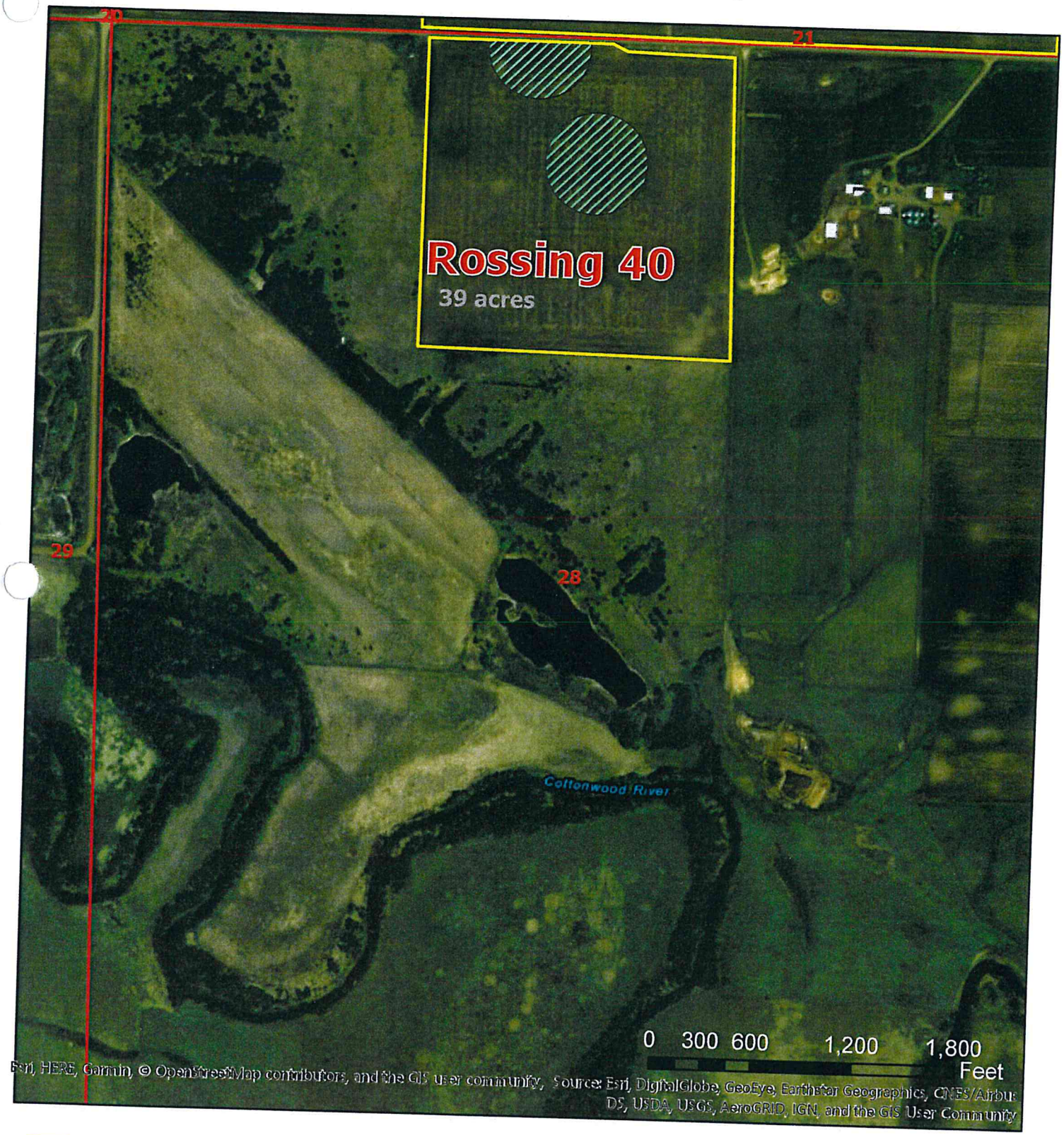
28-110N-38W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



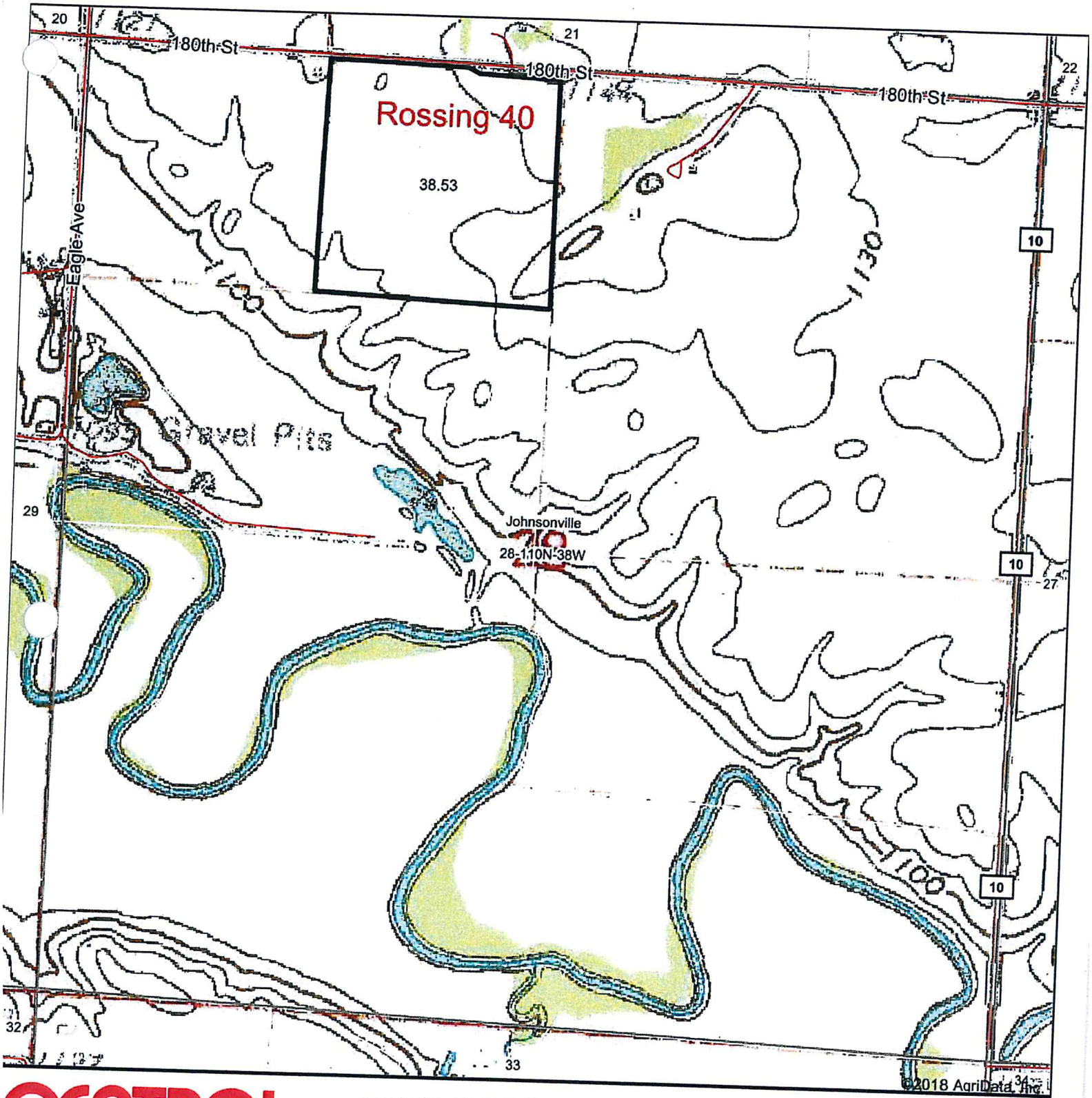
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
28-110N-38W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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© Agridata, Inc. 2018

map center: 44° 18' 16.69, -95° 25' 13.82

0ft 843ft 1686ft

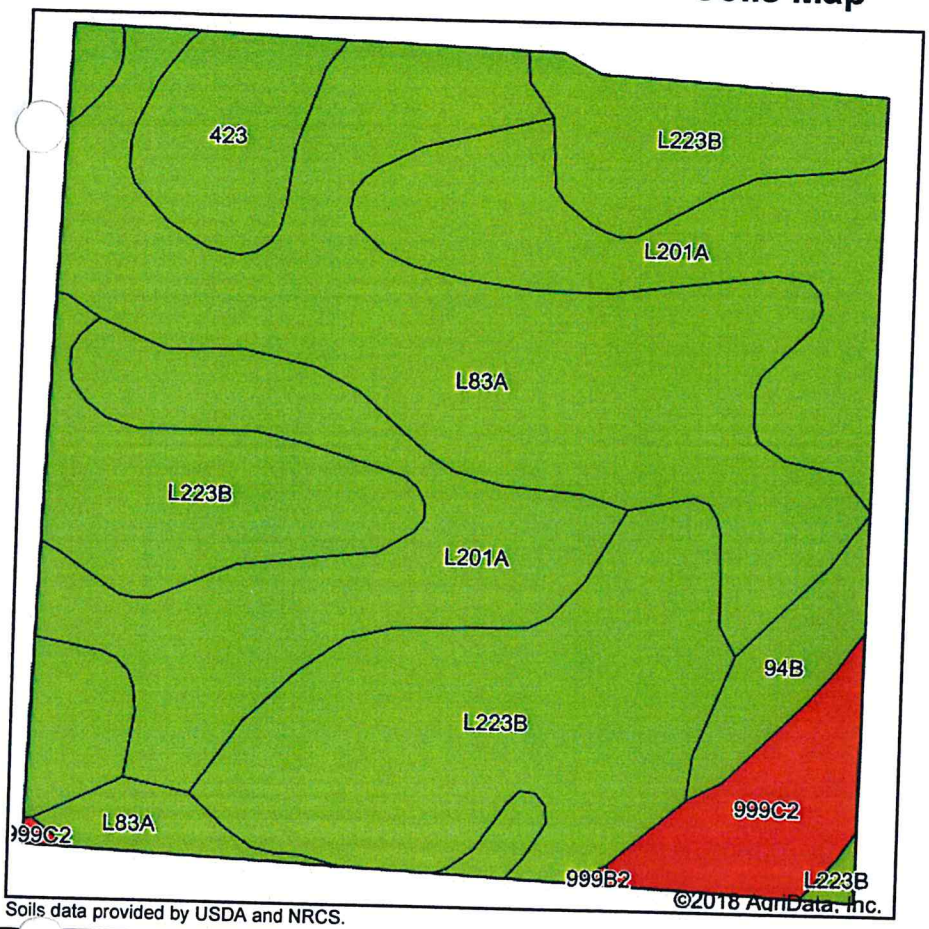
28-110N-38W
Redwood County
Minnesota

N W E S

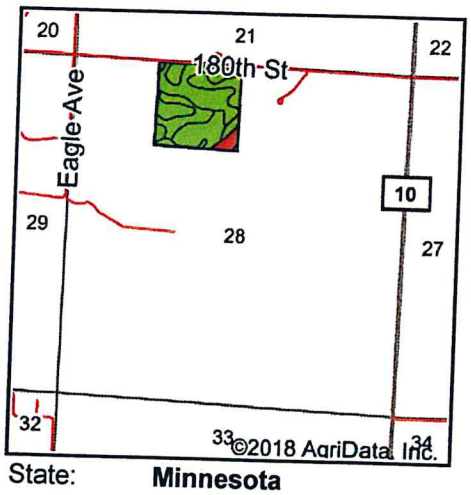
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **28-110N-38W**
Township: **Johnsonville**
Acres: **38.53**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

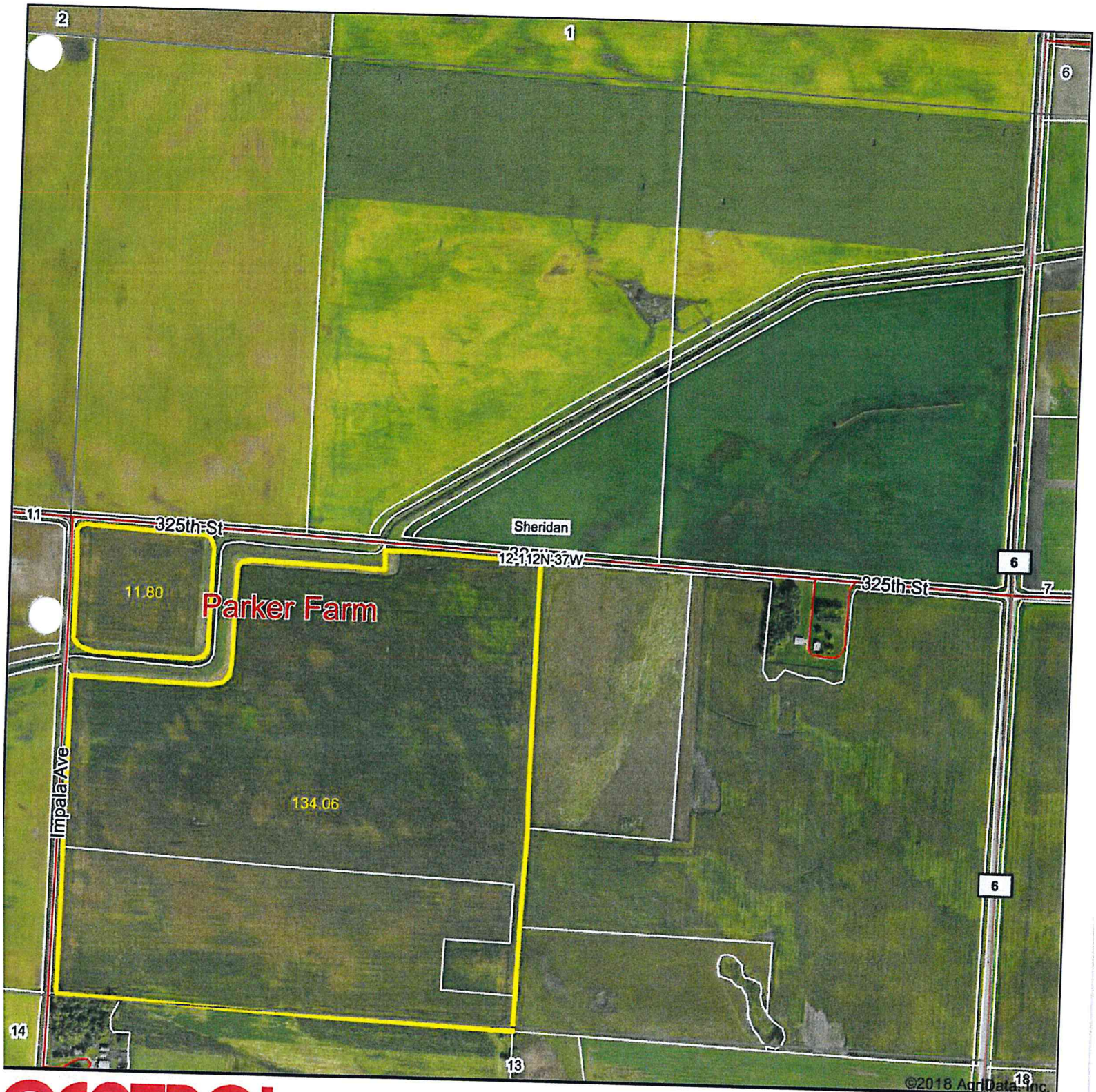
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	12.90	33.5%		IIe	92
L83A	Webster clay loam, 0 to 2 percent slopes	10.95	28.4%		IIw	93
L201A	Normania loam, 1 to 3 percent slopes	9.78	25.4%		Ie	99
423	Seaforth loam, 1 to 3 percent slopes	2.02	5.2%		IIs	95
999C2	Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded	1.82	4.7%		IIIe	63
94B	Terril loam, 2 to 6 percent slopes	1.06	2.8%		IIe	99
					Weighted Average	**93**

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



CENTROL® CROP CONSULTING

Map Provided By:
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map center: 44° 31' 17.5, -95° 14' 21.78

0ft 840ft 1680ft

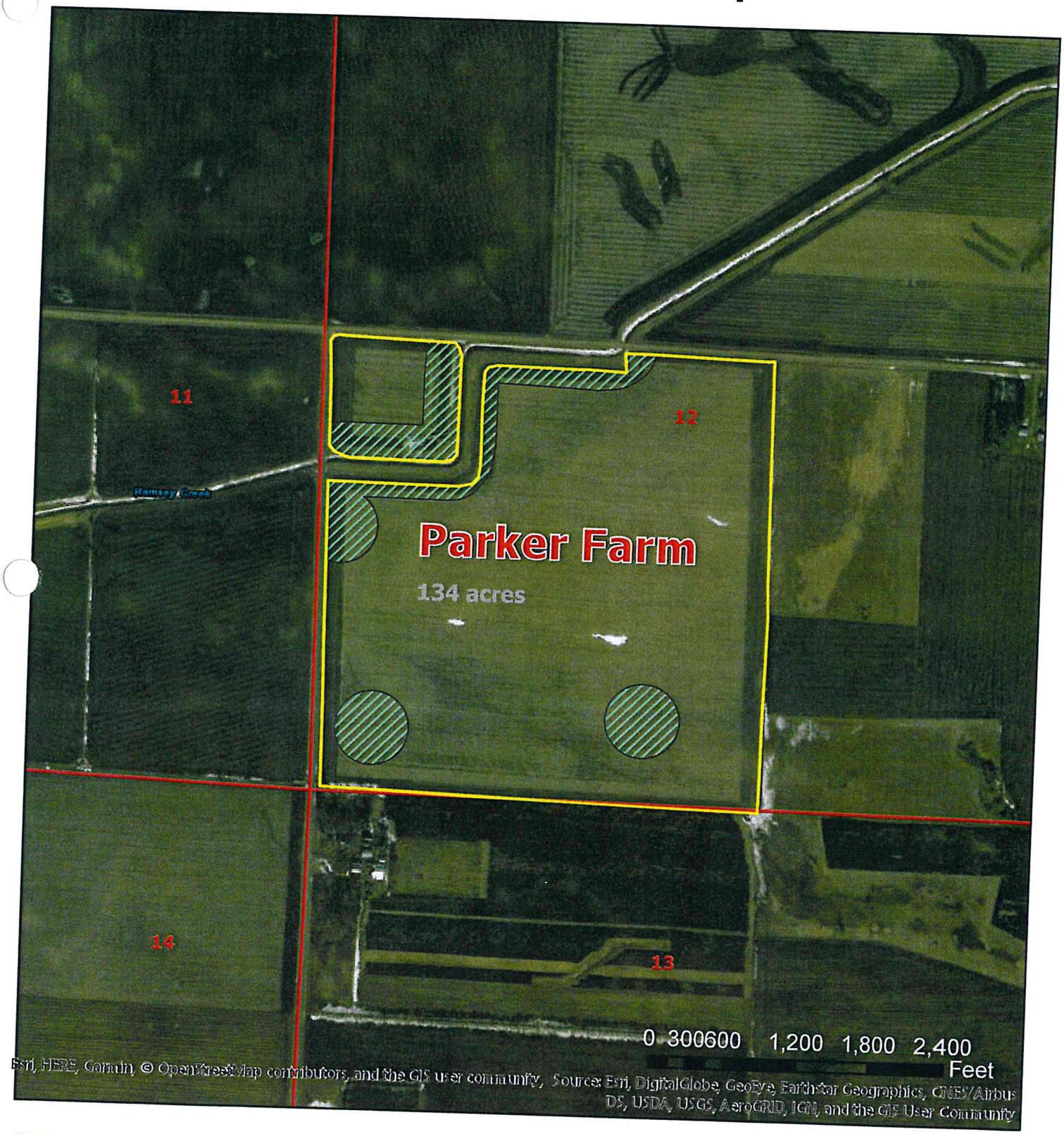
12-112N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



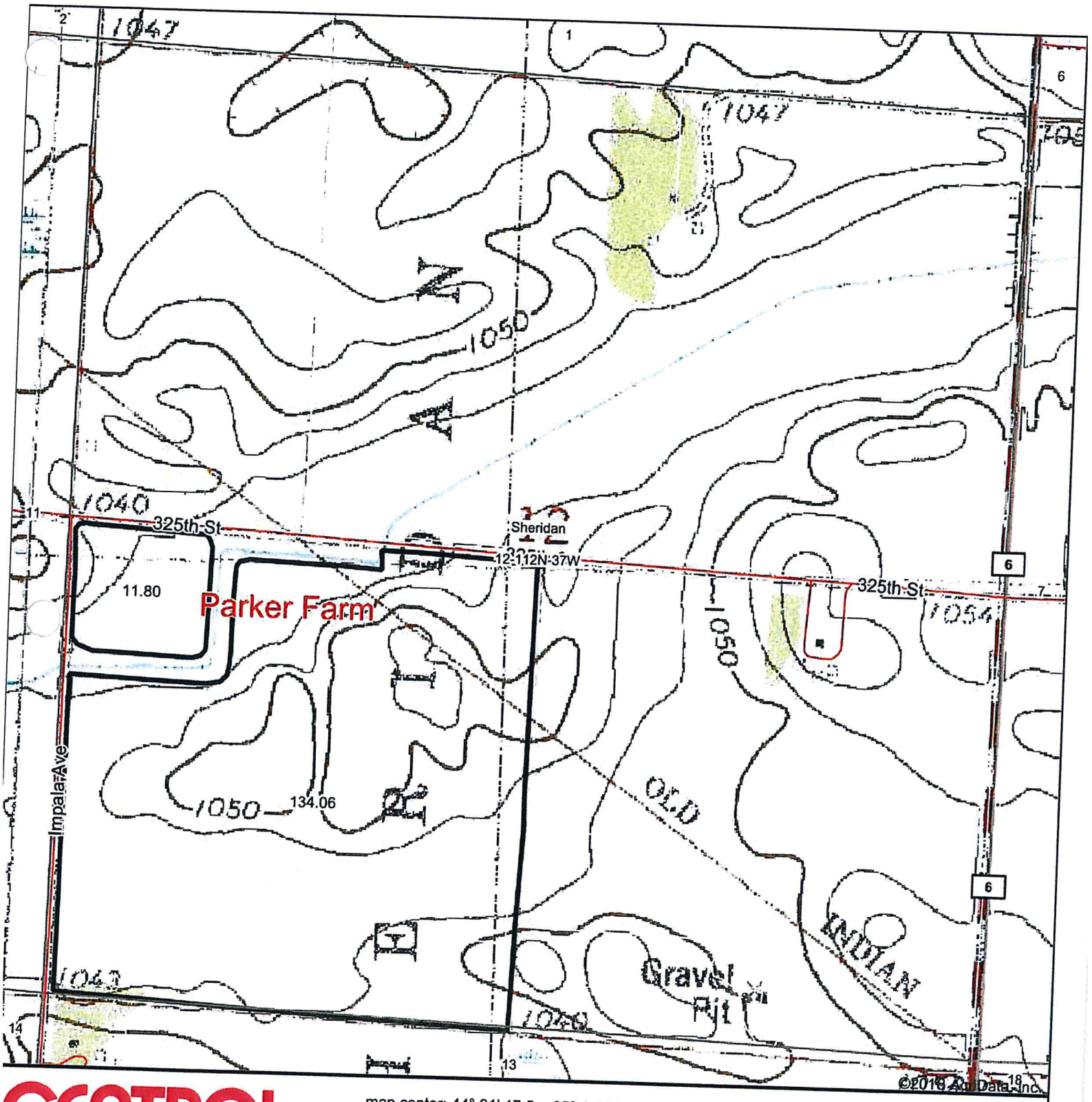
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
12-112N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map Created By:

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map center: 44° 31' 17.5, -95° 14' 21.78

0ft 840ft 1680ft

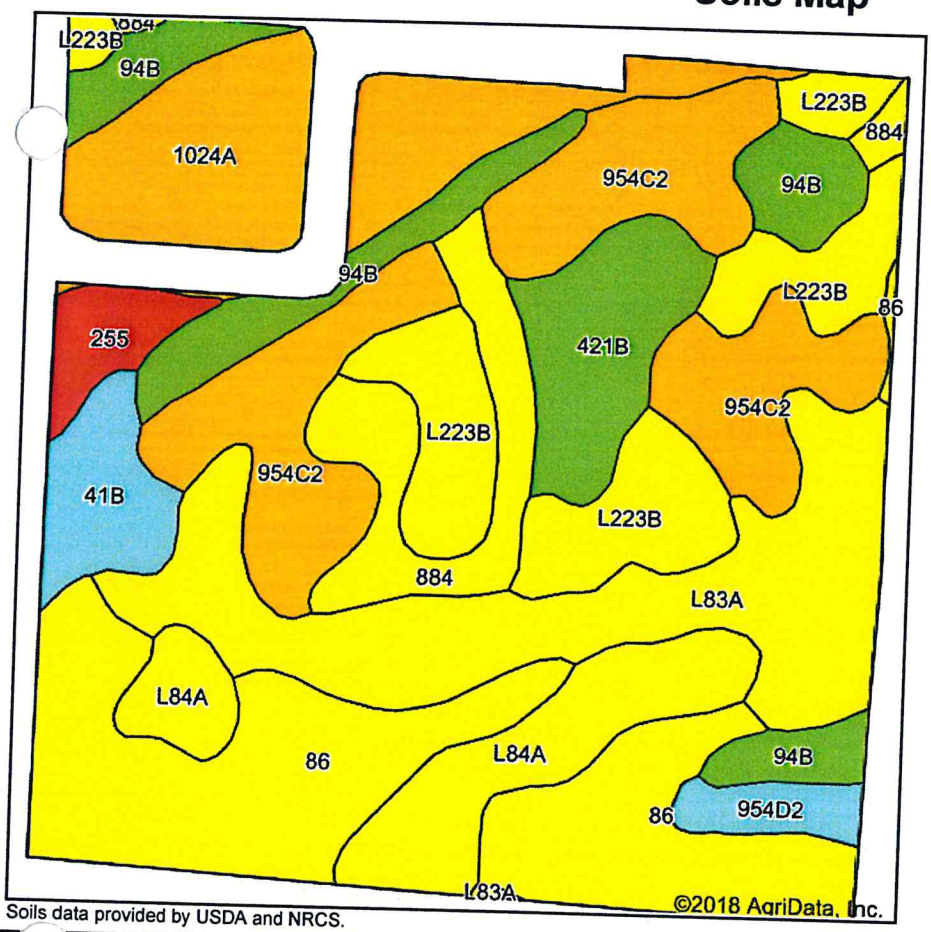
12-112N-37W
Redwood County
Minnesota

N W E S

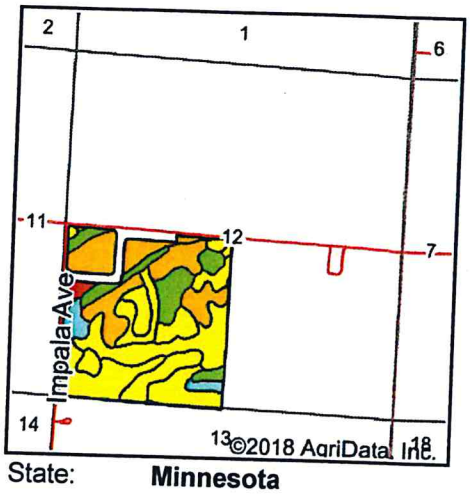
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **12-112N-37W**
Township: **Sheridan**
Acres: **145.86**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

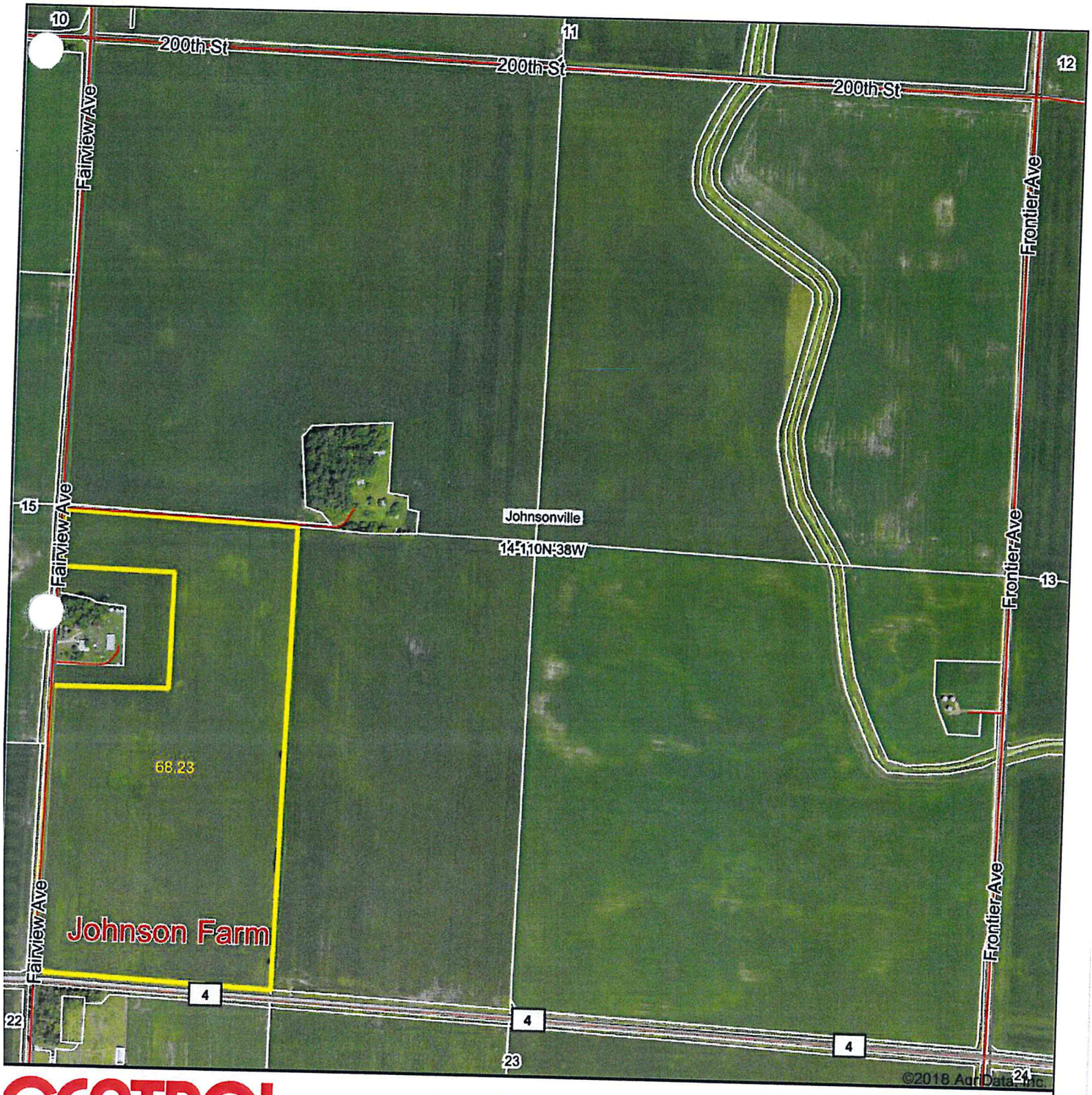
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	26.48	18.2%		IIw	93
954C2	Storden-Ves complex, 6 to 10 percent slopes, moderately eroded	22.58	15.5%		IIIe	77
L83A	Webster clay loam, 0 to 2 percent slopes	20.52	14.1%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	15.38	10.5%		IIe	92
1024A	Havelock clay loam, 0 to 2 percent slopes. occasionally flooded	14.77	10.1%		IIw	75
94B	Terril loam, 2 to 6 percent slopes	10.88	7.5%		IIe	99
L84A	Glencoe clay loam, 0 to 1 percent slopes	10.52	7.2%		IIIw	86
884	Webster-Delft complex, 0 to 2 percent slopes	8.29	5.7%		IIw	94
421B	Amiret loam, 2 to 6 percent slopes	7.30	5.0%		IIe	98
41B	Estherville sandy loam, 2 to 6 percent slopes	4.42	3.0%		IIIs	44
255	Mayer loam, 0 to 2 percent slopes	2.64	1.8%		IIw	72
954D2	Storden-Ves complex, 10 to 16 percent slopes, moderately eroded	2.08	1.4%		IVe	55
					Weighted Average	**86.4**

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map



CENTROL® CROP CONSULTING

Map provided By:
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map center: 44° 20' 2.53, -95° 22' 48.85

0ft 843ft 1686ft

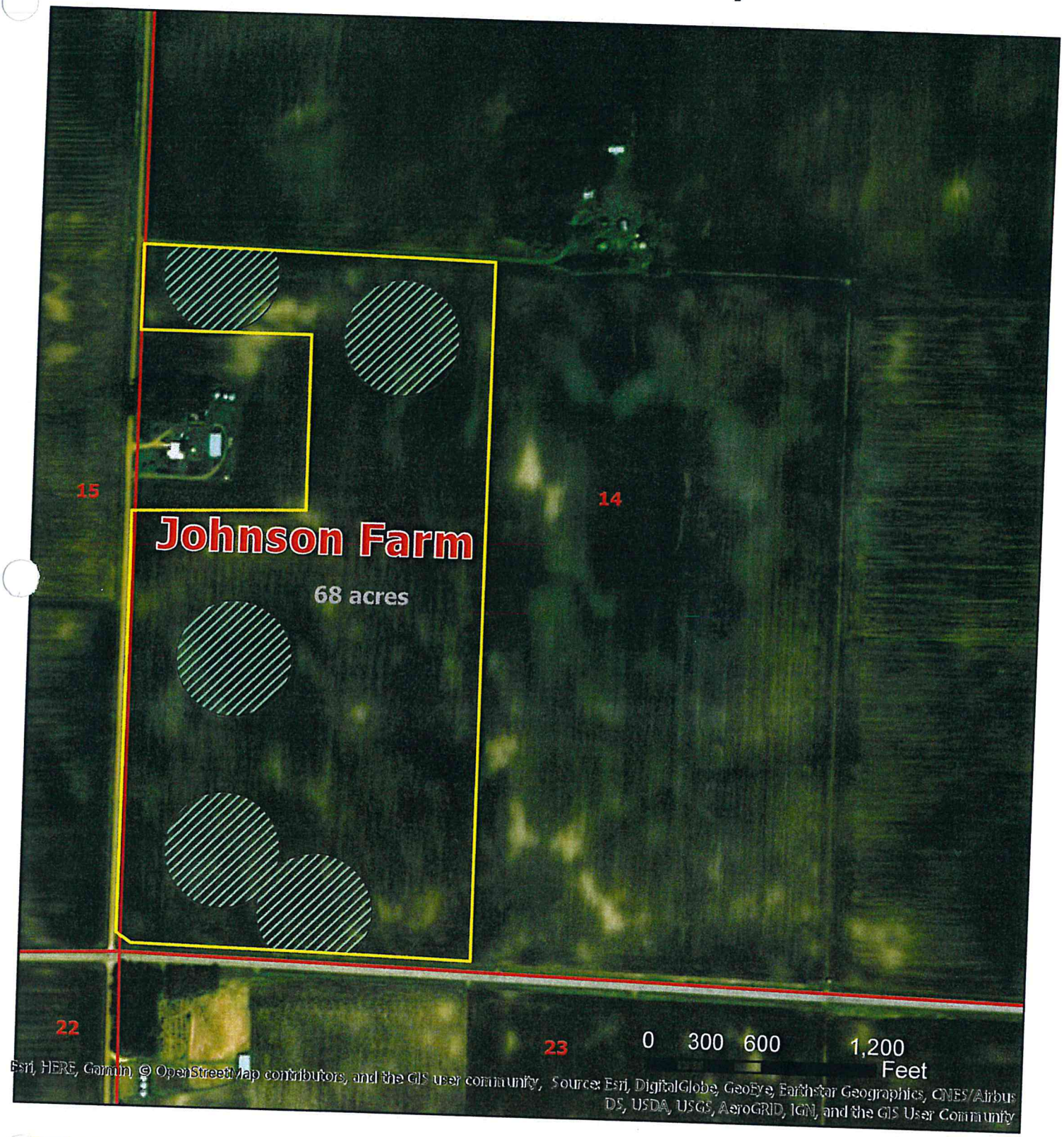
14-110N-38W
Redwood County
Minnesota

N W E S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



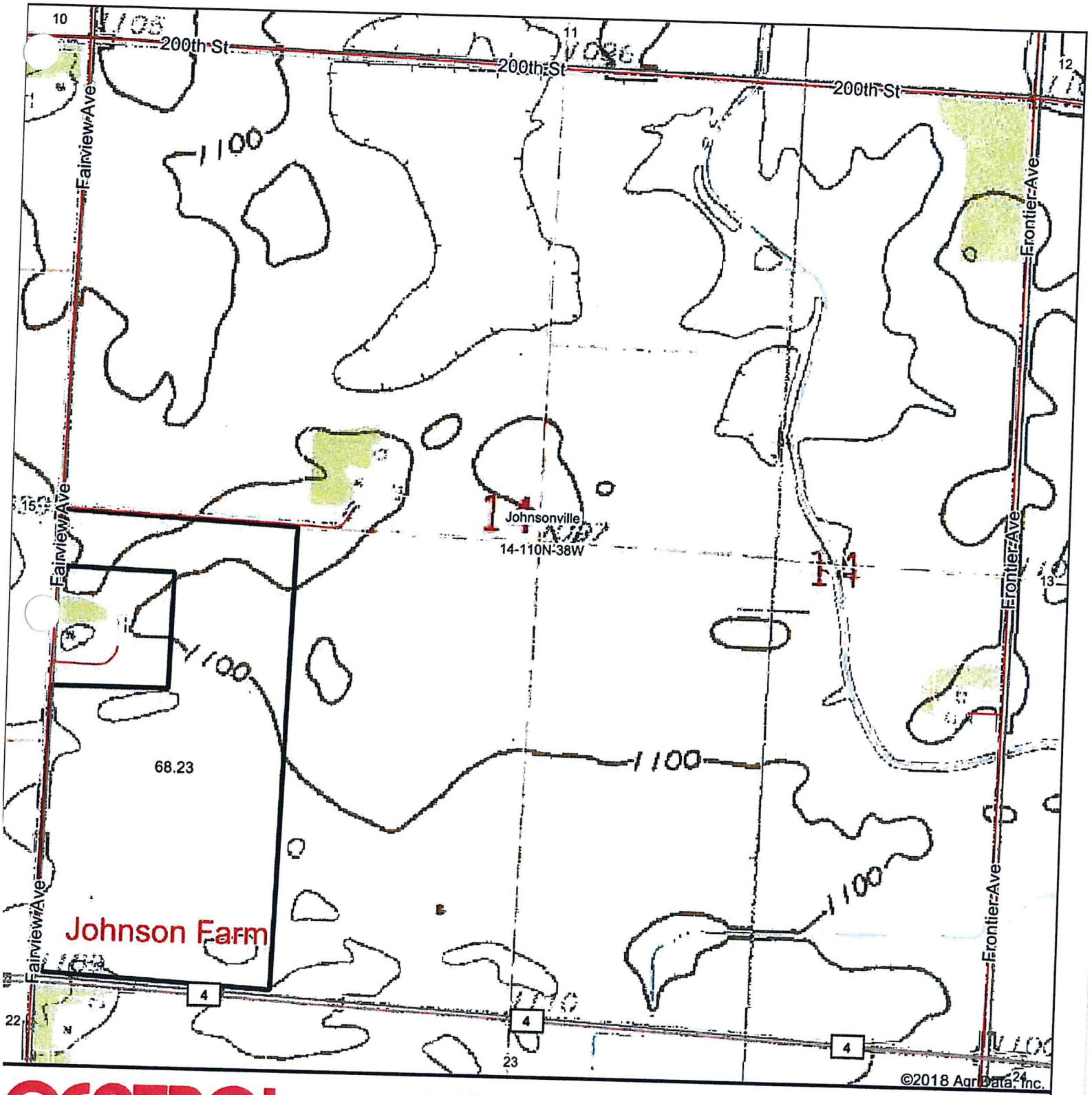
FSA Boundaries
Township
Section
Setback Areas

CENTROL® CROP CONSULTING

N

Altermatt Farms
14-110N-38W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map provided By:
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map center: 44° 20' 2.53, -95° 22' 48.85

0ft 843ft 1686ft

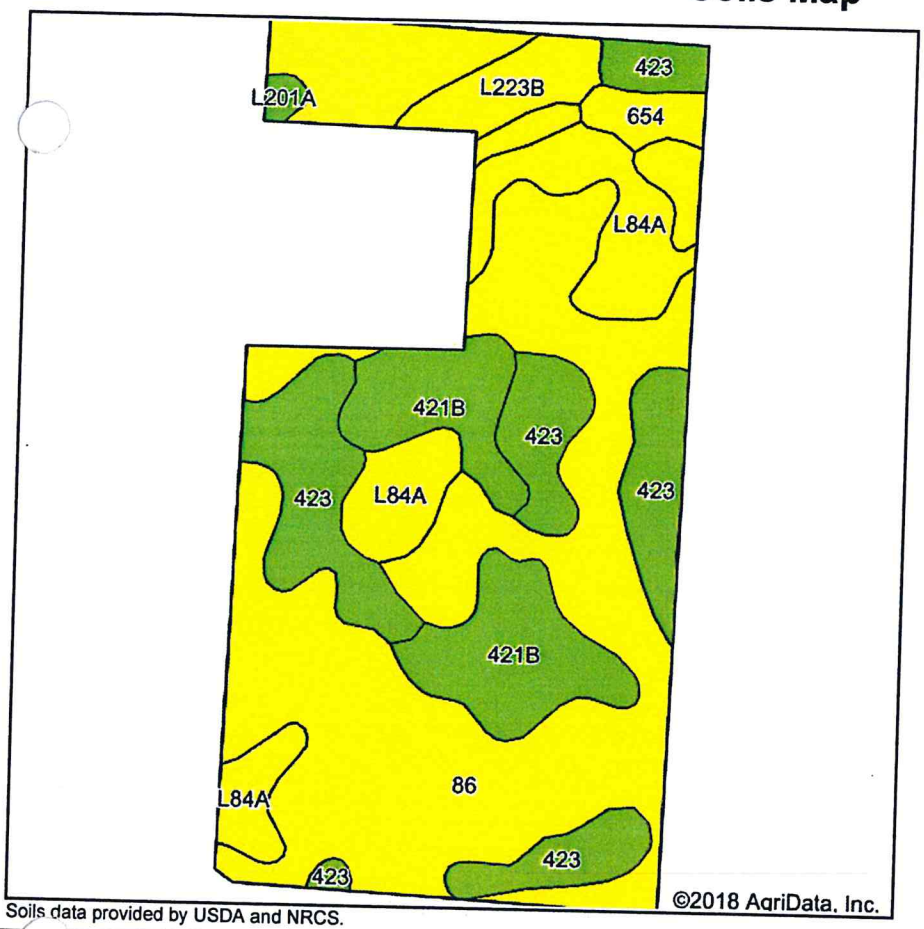
14-110N-38W
Redwood County
Minnesota

N W E S

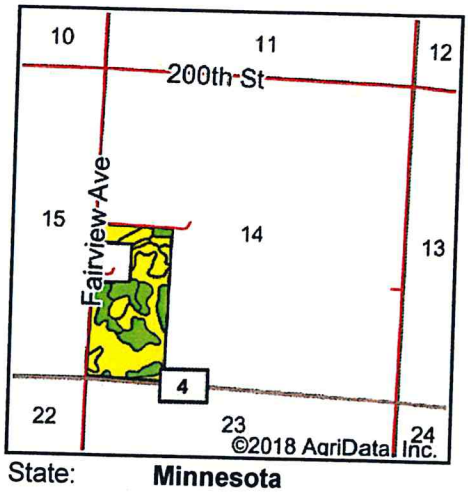
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **14-110N-38W**
Township: **Johnsonville**
Acres: **68.23**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	35.67	52.3%		IIw	93
423	Seaforth loam, 1 to 3 percent slopes	12.61	18.5%		IIs	95
421B	Amiret loam, 2 to 6 percent slopes	8.43	12.4%		IIe	98
L84A	Glencoe clay loam, 0 to 1 percent slopes	7.69	11.3%		IIIw	86
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	2.28	3.3%		IIe	92
654	Revere clay loam	1.22	1.8%		IIw	91
L201A	Normania loam, 1 to 3 percent slopes	0.33	0.5%		Ie	99
					Weighted Average	**93.2**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Mapping Provided By:
surety® CUSTOMIZED ONLINE MAPPING
© Agridata, Inc. 2018 www.AgriDataInc.com

map center: 44° 23' 29.82, -95° 17' 59.58

0ft 860ft 1719ft

28-111N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

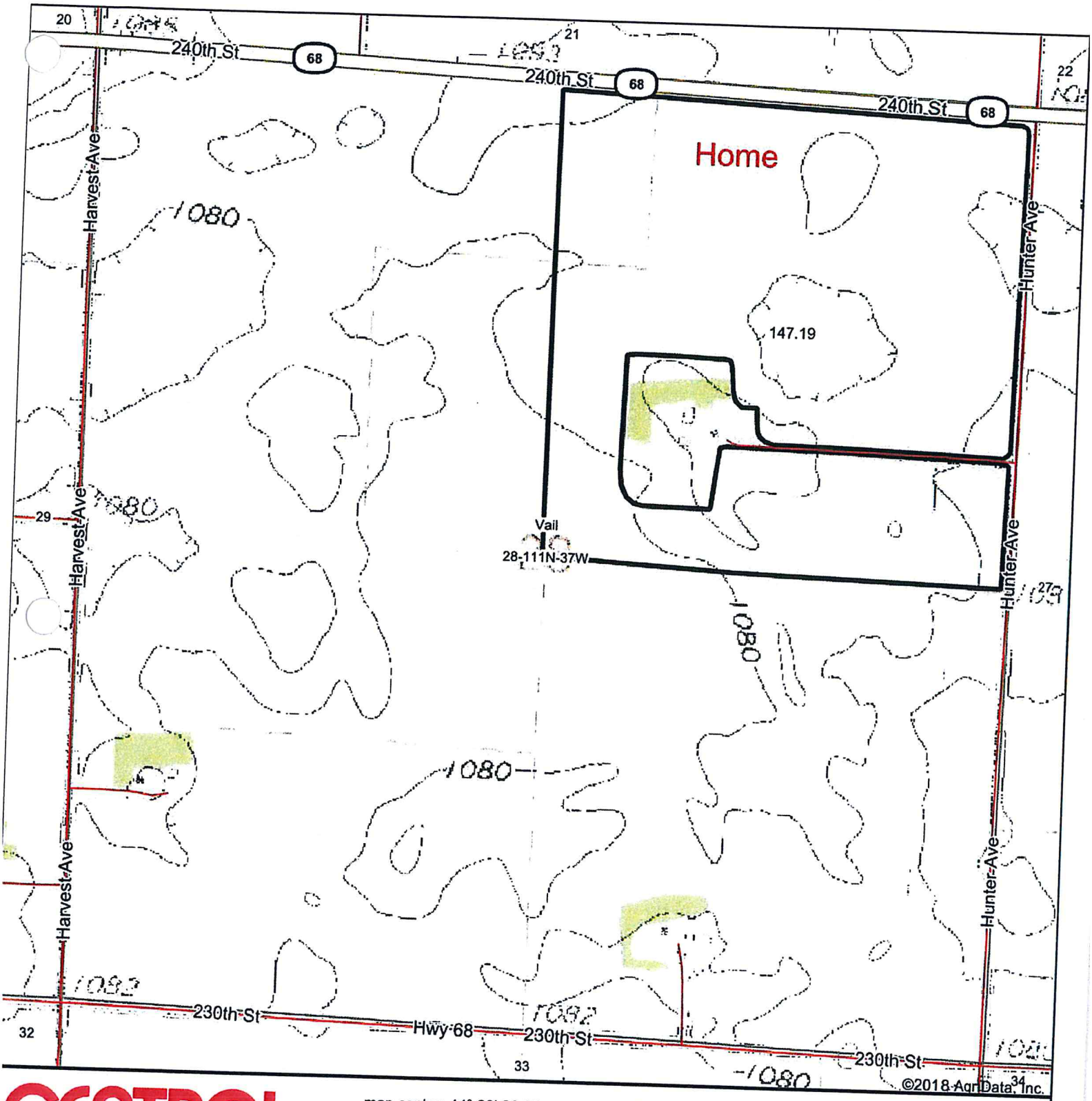
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
28-111N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Mapping Provided By:
surety® CUSTOMIZED ONLINE MAPPING
© Agridata, Inc. 2018 www.AgriDataInc.com

map center: 44° 23' 29.82, -95° 17' 59.58

0ft 860ft 1719ft

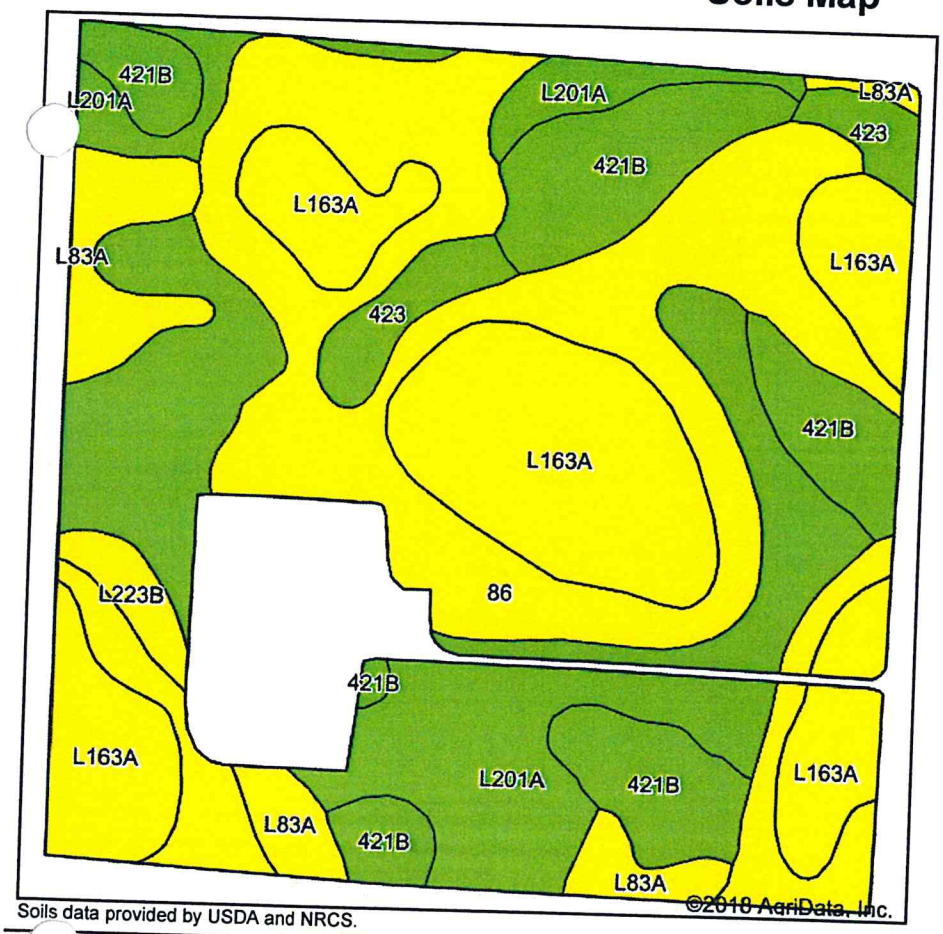
28-111N-37W
Redwood County
Minnesota

N W E S

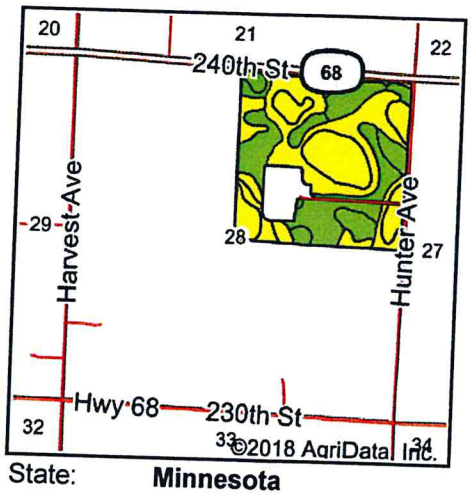
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **28-111N-37W**
Township: **Vail**
Acres: **147.19**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	44.34	30.1%		IIw	93
L201A	Normania loam, 1 to 3 percent slopes	35.16	23.9%		Ie	99
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	32.80	22.3%		IIIw	86
421B	Amiret loam, 2 to 6 percent slopes	20.04	13.6%		IIe	98
L83A	Webster clay loam, 0 to 2 percent slopes	8.42	5.7%		IIw	93
423	Seaforth loam, 1 to 3 percent slopes	4.59	3.1%		IIs	95
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	1.84	1.3%		IIe	92
					Weighted Average	**93.6**

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Mapping Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 28' 41.07, -95° 14' 22.75

0ft 840ft 1680ft

25-112N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

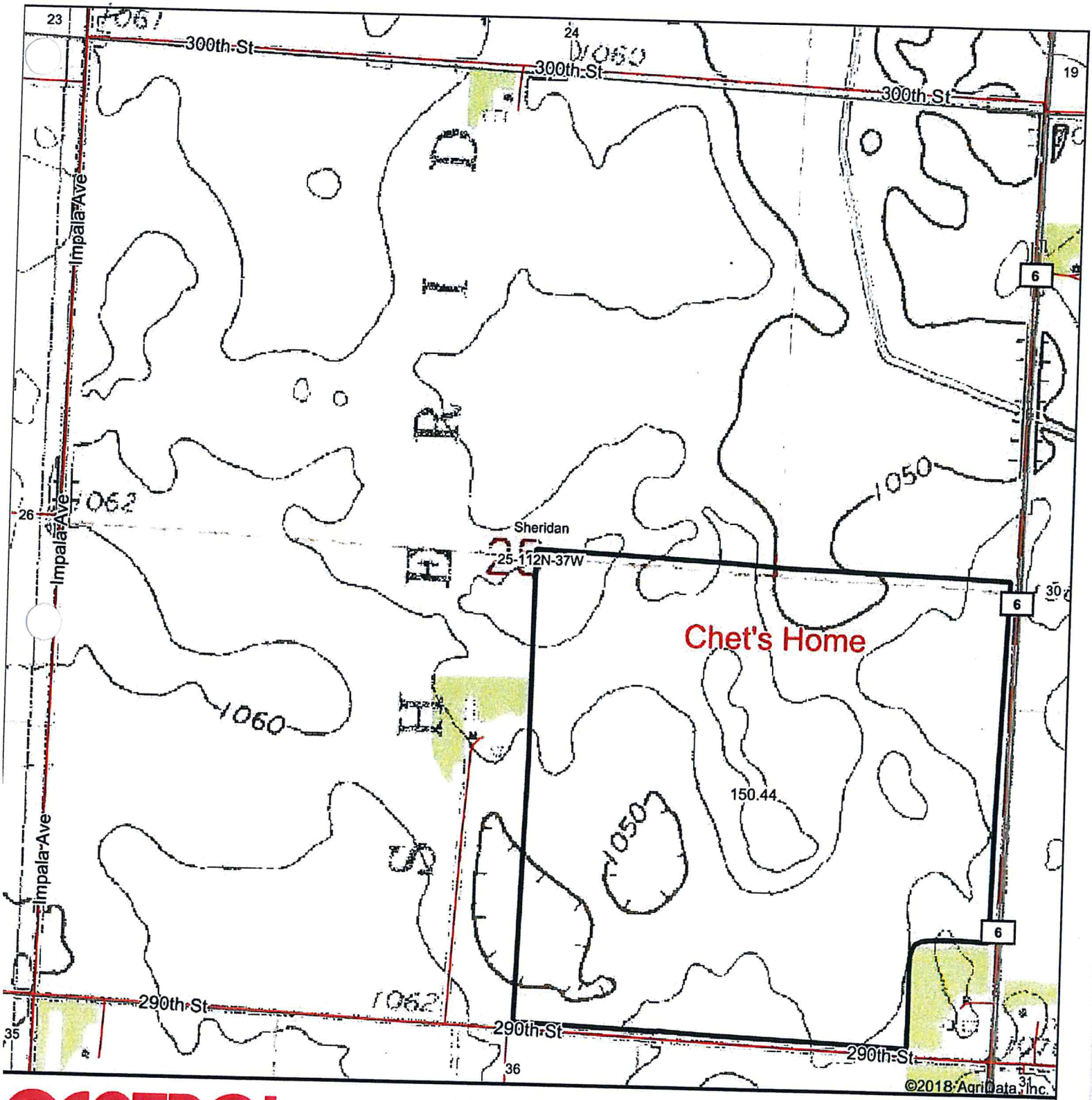
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

N

Altermatt Farms
25-112N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map Provided By:

surety® CUSTOMIZED ONLINE MAPPING

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www.AgriDataInc.com

map center: 44° 28' 41.07, -95° 14' 22.75

0ft 840ft 1680ft

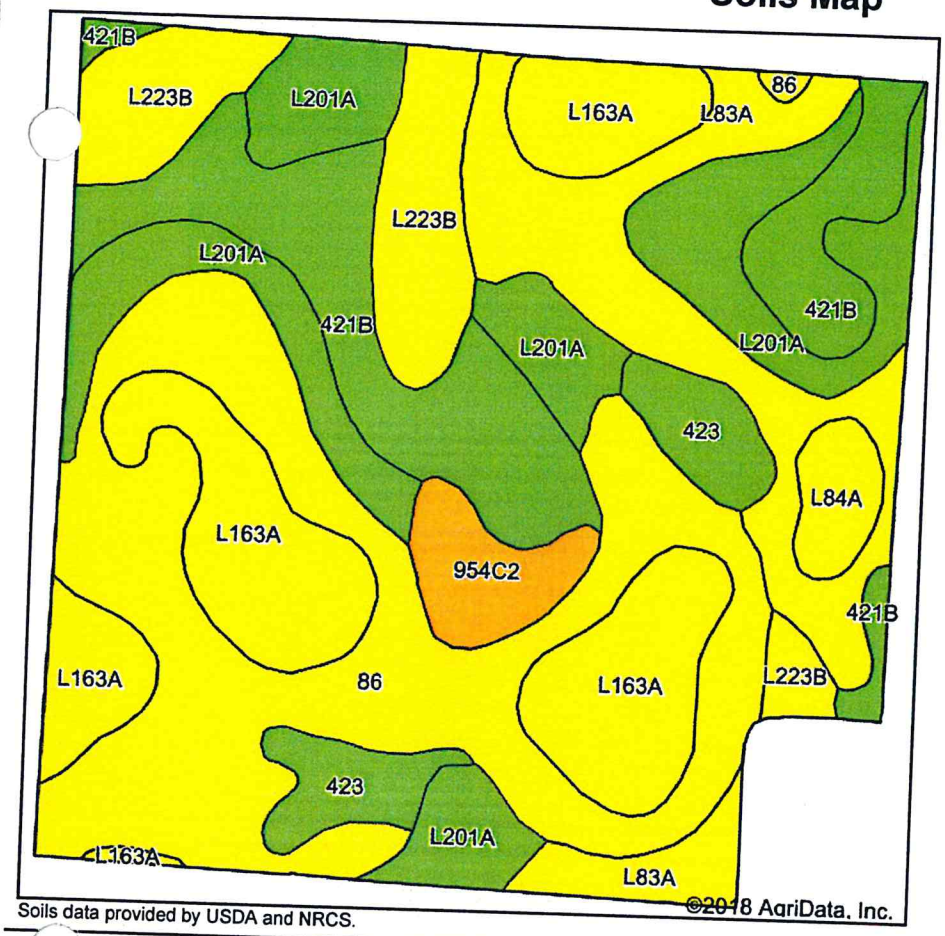
25-112N-37W
Redwood County
Minnesota

N W E S

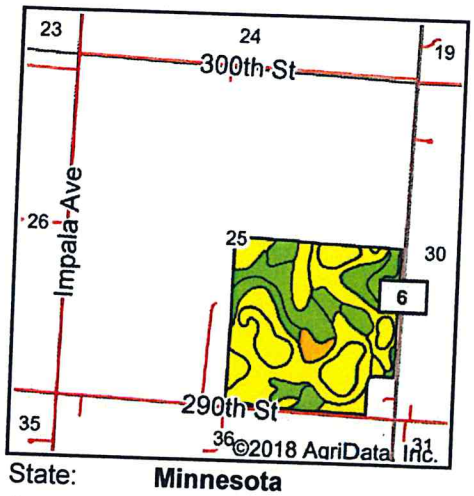
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **25-112N-37W**
Township: **Sheridan**
Acres: **150.44**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	38.75	25.8%		IIw	93
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	23.86	15.9%		IIIw	86
L201A	Normania loam, 1 to 3 percent slopes	23.53	15.6%		Ie	99
421B	Amiret loam, 2 to 6 percent slopes	20.84	13.9%		IIe	98
L83A	Webster clay loam, 0 to 2 percent slopes	18.48	12.3%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	12.12	8.1%		IIe	92
423	Seaforth loam, 1 to 3 percent slopes	6.20	4.1%		IIs	95
954C2	Storden-Ves complex, 6 to 10 percent slopes, moderately eroded	4.15	2.8%		IIIe	77
L84A	Glencoe clay loam, 0 to 1 percent slopes	2.51	1.7%		IIIw	86
					Weighted Average	**93**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 26' 59.13, -95° 18' 1.1

0ft 817ft 1634ft

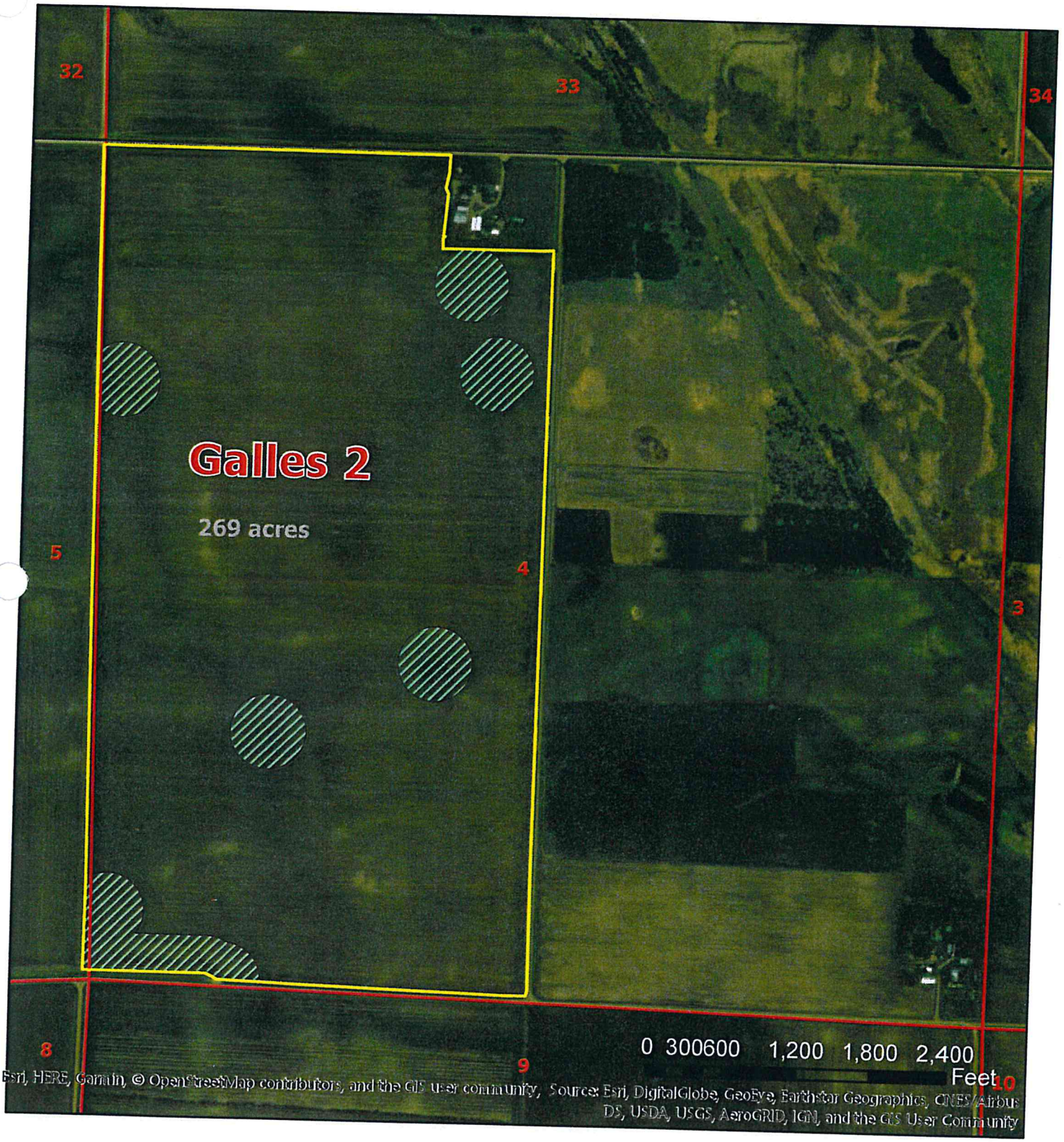
4-111N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



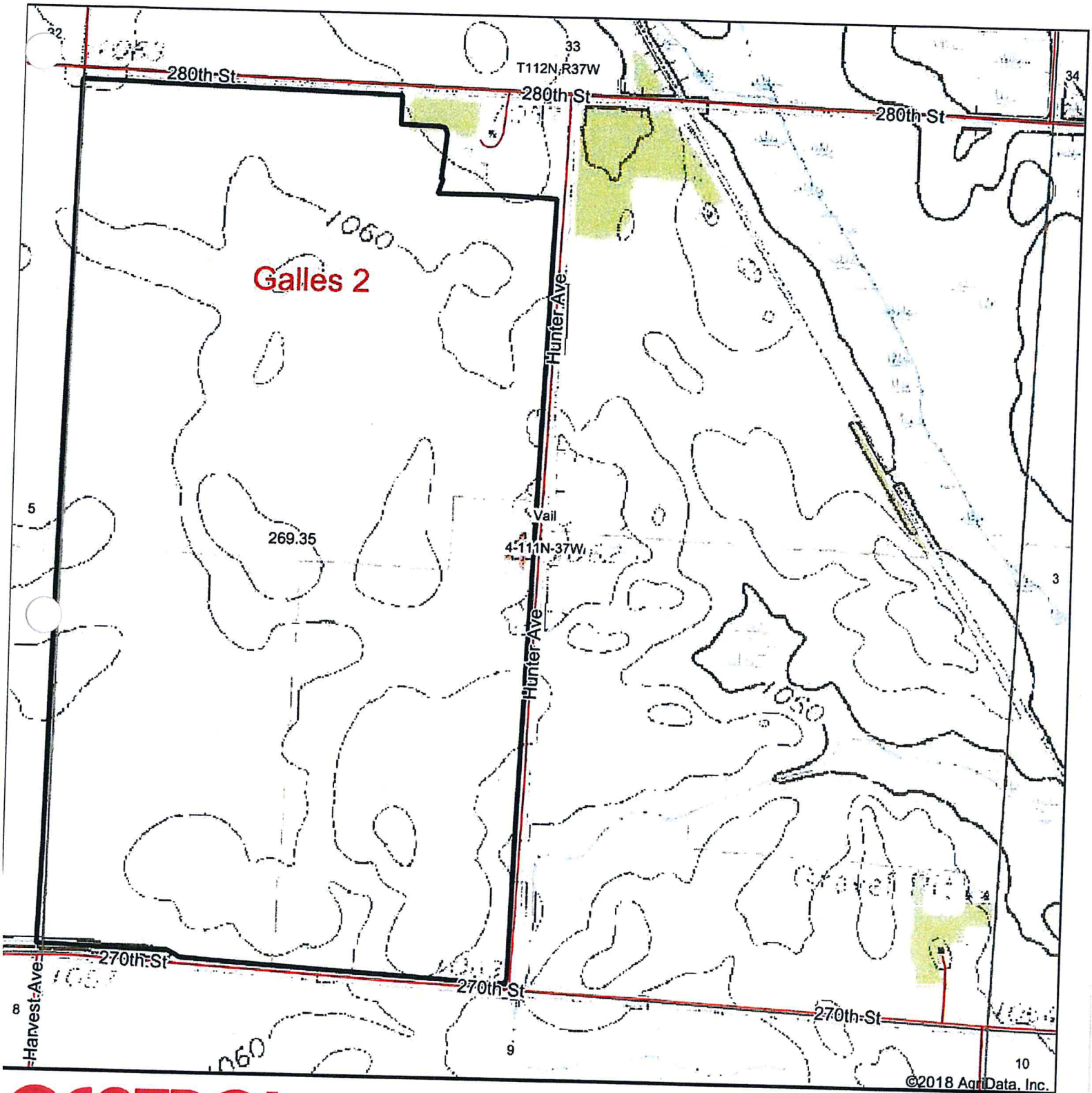
FSA Boundaries
Township
Section
Setback Areas

CENTROL® CROP CONSULTING

N

Altermatt Farms
4-111N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Map provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 26' 59.13, -95° 18' 1.1

0ft 817ft 1634ft

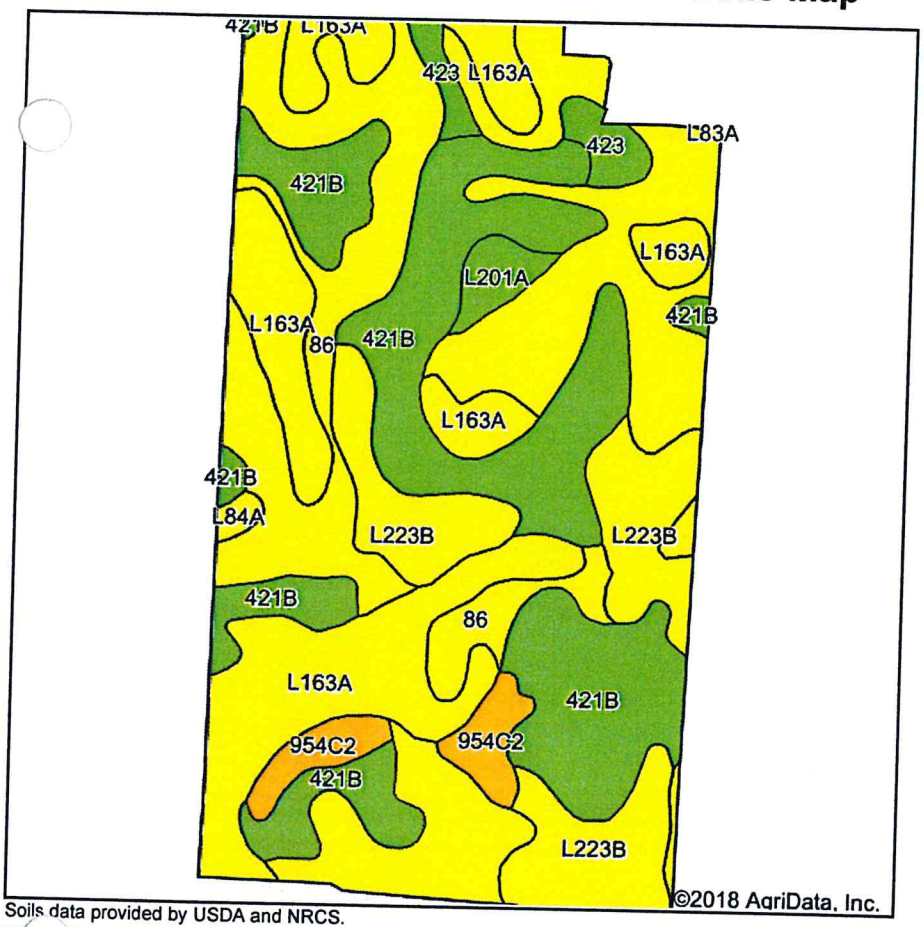
4-111N-37W
Redwood County
Minnesota

N W E S

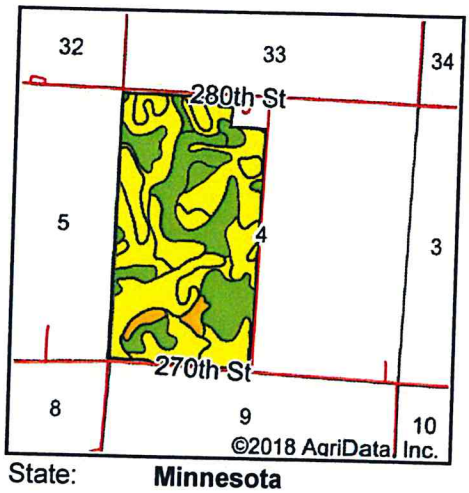
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **4-111N-37W**
Township: **Vail**
Acres: **269.35**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	88.89	33.0%		IIw	93
421B	Amiret loam, 2 to 6 percent slopes	75.52	28.0%		IIe	98
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	52.65	19.5%		IIIw	86
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	34.08	12.7%		IIe	92
954C2	Storden-Ves complex, 6 to 10 percent slopes, moderately eroded	8.13	3.0%		IIIe	77
423	Seaforth loam, 1 to 3 percent slopes	5.47	2.0%		IIs	95
L201A	Normania loam, 1 to 3 percent slopes	3.48	1.3%		Ie	99
L84A	Glencoe clay loam, 0 to 1 percent slopes	1.03	0.4%		IIIw	86
L83A	Webster clay loam, 0 to 2 percent slopes	0.10	0.0%		IIw	93
					Weighted Average	**92.5**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Mapped By:

surety® CUSTOMIZED ONLINE MAPPING

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map center: 44° 26' 56.47, -95° 14' 22.54

0ft 837ft 1673ft

1-111N-37W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map

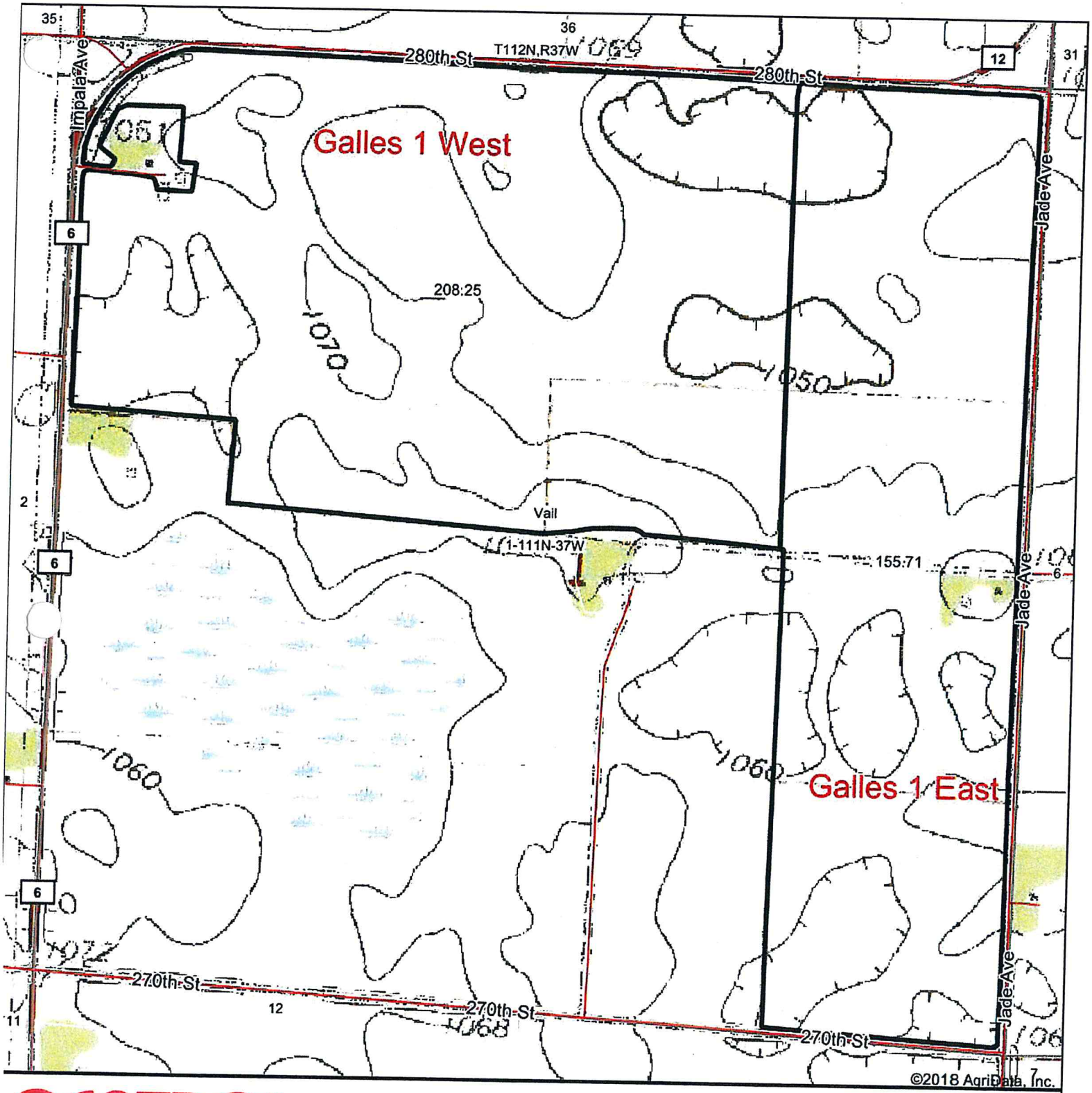
FSA Boundaries
Township
Section
Setback Areas

CENTROL® CROP CONSULTING

N

Altermatt Farms
7-111N-37W
Redwood County, MN

Topography Map



CENTROL® CROP CONSULTING

Mapped By: surety® CUSTOMIZED ONLINE MAPPING

© Agridata, Inc. 2018 www.AgriDataInc.com

map center: 44° 26' 56.47, -95° 14' 22.54

0ft 837ft 1673ft

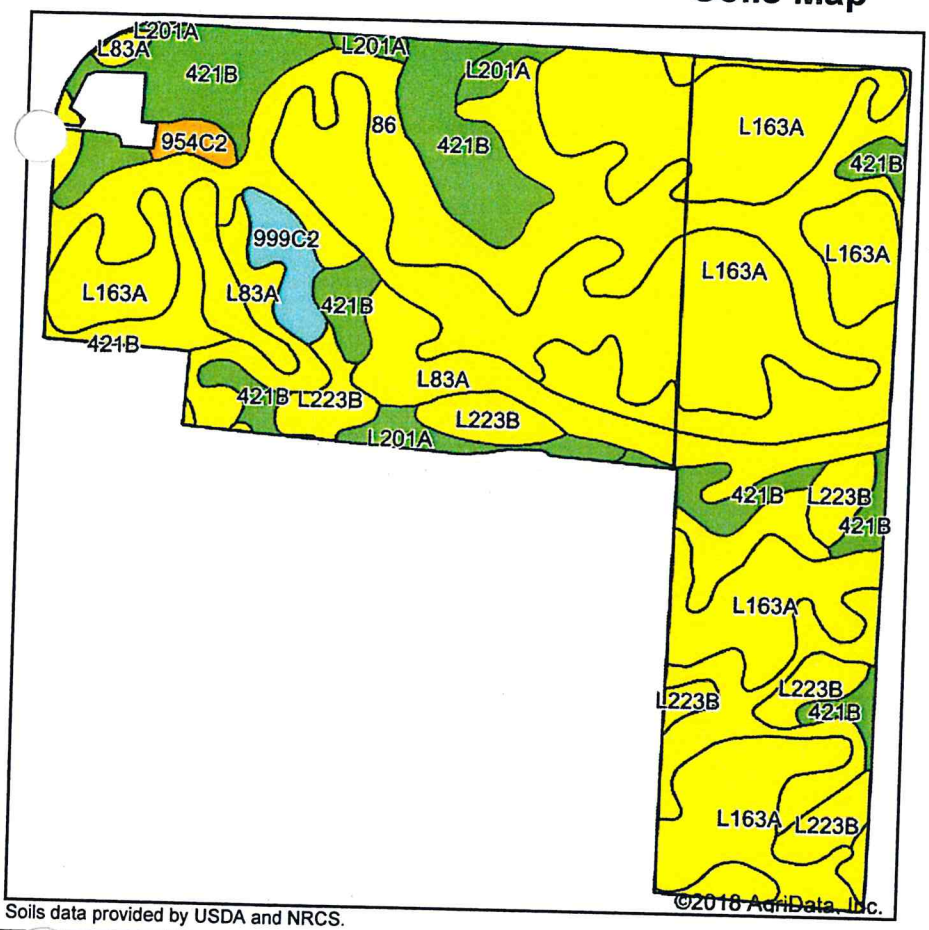
1-111N-37W
Redwood County
Minnesota

N W E S

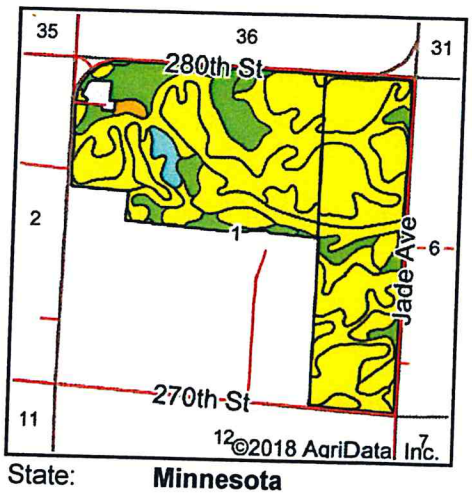
4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **1-111N-37W**
Township: **Vail**
Acres: **363.96**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	138.97	38.2%		IIIw	86
86	Canisteo clay loam, 0 to 2 percent slopes	107.89	29.6%		IIw	93
421B	Amiret loam, 2 to 6 percent slopes	47.43	13.0%		IIe	98
L83A	Webster clay loam, 0 to 2 percent slopes	29.62	8.1%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	22.93	6.3%		IIe	92
L201A	Normania loam, 1 to 3 percent slopes	8.55	2.3%		Ie	99
999C2	Storden-Estherville-Ves loams, 6 to 12 percent slopes, eroded	5.99	1.6%		IIIe	63
954C2	Storden-Ves complex, 6 to 10 percent slopes, moderately eroded	2.58	0.7%		IIIe	77
					Weighted Average	**90.4**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Aerial Map

CENTROL® CROP CONSULTING

Map Created By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 20' 50.9, -95° 13' 4.42

0ft 833ft 1667ft

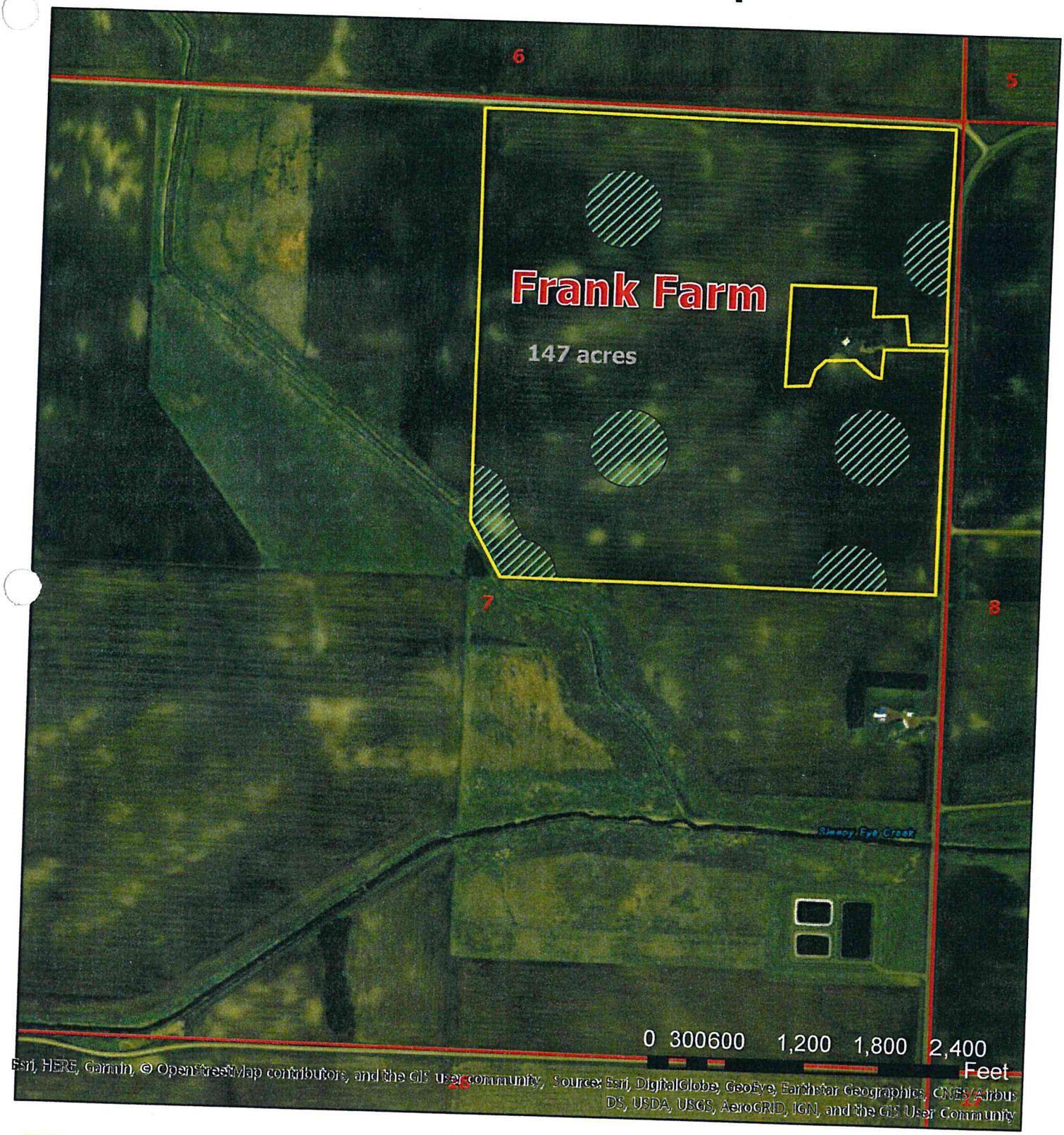
7-110N-36W
Redwood County
Minnesota

N
W E
S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Sensitive Features Map



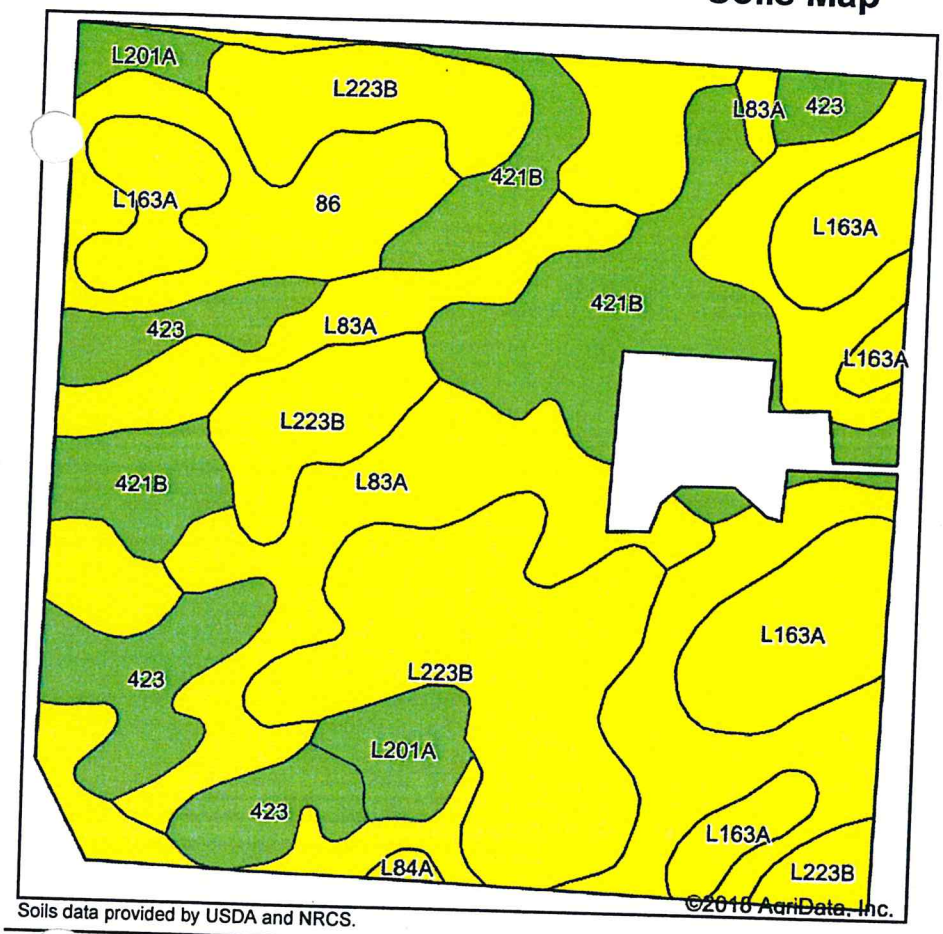
FSA Boundaries
Township
Section
Setback Areas

CENTROL®
CROP CONSULTING

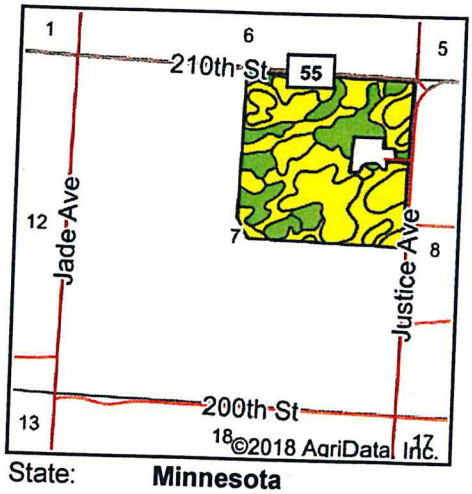
N

Altermatt Farms
7-110N-36W
Redwood County, MN

Soils Map



Soils data provided by USDA and NRCS.



State: **Minnesota**
County: **Redwood**
Location: **7-110N-36W**
Township: **Willow Lake**
Acres: **146.69**
Date: **4/2/2018**

CENTROL® CROP CONSULTING

Maps Provided By:
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N W E S

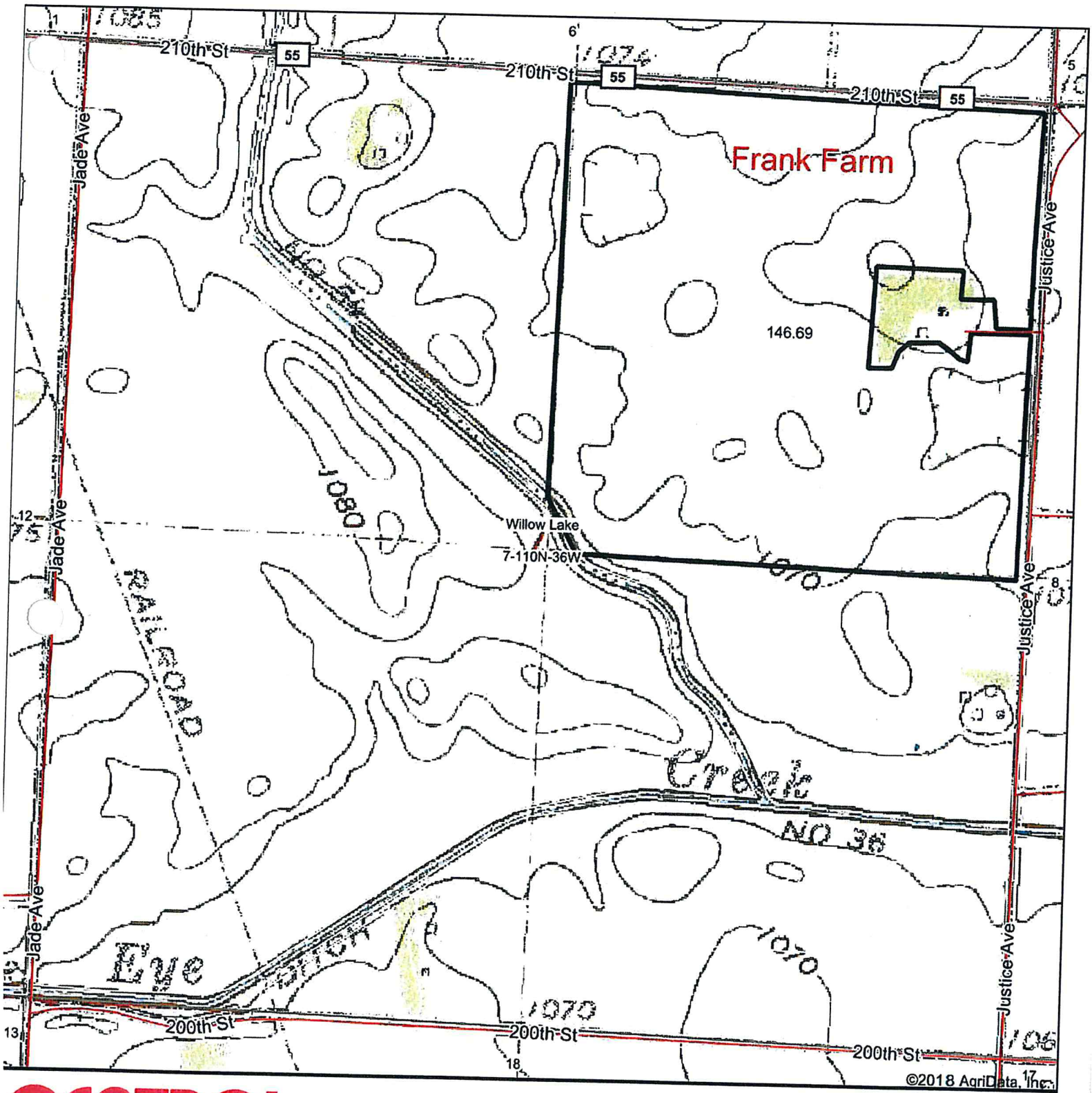
Area Symbol: MN127, Soil Area Version: 16

Code	Soil Description	Acres	Percent of field	PI Legend	Non-Irr Class *c	Productivity Index
86	Canisteo clay loam, 0 to 2 percent slopes	38.16	26.0%		IIw	93
L223B	Amiret-Swanlake loams, 2 to 6 percent slopes	32.05	21.8%		IIe	92
L83A	Webster clay loam, 0 to 2 percent slopes	21.48	14.6%		IIw	93
421B	Amiret loam, 2 to 6 percent slopes	19.76	13.5%		IIe	98
L163A	Okoboji silty clay loam, 0 to 1 percent slopes	16.91	11.5%		IIIw	86
423	Seaforth loam, 1 to 3 percent slopes	13.29	9.1%		IIs	95
L201A	Normania loam, 1 to 3 percent slopes	4.67	3.2%		Ie	99
L84A	Glencoe clay loam, 0 to 1 percent slopes	0.37	0.3%		IIIw	86
					Weighted Average	**93**

c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Topography Map



CENTROL® CROP CONSULTING

Mapping Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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map center: 44° 20' 50.9, -95° 13' 4.42

0ft 833ft 1667ft

7-110N-36W
Redwood County
Minnesota

N W E S

4/2/2018

Field borders provided by Farm Service Agency as of 5/21/2008.

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota

Farm Name	Altermatt to Mathiowetz
Address or County	
Evaluator	Nick
Date	5/9/2018

Clear All

OFFSET
Annoyance-free
99%

Source Edge to Nearest Neighbor (ft)	3600
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Beef - loose housing	100	90	1	9000	None	
Beef - loose housing	200	50	1	10000	None	
Beef - loose housing	150	148	1	22200	None	
Beef - loose housing	242	65	1	15730	None	
Beef - loose housing	85	75	1	6375	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
02/2017

Farm Name	Altermatt to Sobocinski
Address or County	
Evaluator	Nick
Date	5/9/2018

Clear All

OFFSET
Annoyance-free
98%

Source Edge to Nearest Neighbor (ft)	2700
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Beef - loose housing	100	90	1	9000	None	
Beef - loose housing	200	50	1	10000	None	
Beef - loose housing	150	148	1	22200	None	
Beef - loose housing	242	65	1	15730	None	
Beef - loose housing	85	75	1	6375	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
4/1/2017

Farm Name	Altermatt to Hoffman
Address or County	
Evaluator	Nick
Date	5/9/2018

Clear All

OFFSET
Annoyance-free
98%

Source Edge to Nearest Neighbor (ft)	3000
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Beef - loose housing	100	90	1	9000	None	
Beef - loose housing	200	50	1	10000	None	
Beef - loose housing	150	148	1	22200	None	
Beef - loose housing	242	65	1	15730	None	
Beef - loose housing	85	75	1	6375	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota

Farm Name	Altermatt to Guetter
Address or County	
Evaluator	Nick
Date	5/9/2018

Clear All

OFFSET
Annoyance-free
99%

Source Edge to Nearest Neighbor (ft)	3900
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Beef - loose housing	100	90	1	9000	None	
Beef - loose housing	200	50	1	10000	None	
Beef - loose housing	150	148	1	22200	None	
Beef - loose housing	242	65	1	15730	None	
Beef - loose housing	85	75	1	6375	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota

Farm Name	Altermatt to self
Address or County	
Evaluator	Nick
Date	5/9/2018

Clear All

OFFSET
Annoyance-free
91%

Source Edge to Nearest Neighbor (ft)	500
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Beef - loose housing	100	90	1	9000	None	
Beef - loose housing	200	50	1	10000	None	
Beef - loose housing	150	148	1	22200	None	
Beef - loose housing	242	65	1	15730	None	
Beef - loose housing	85	75	1	6375	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Conditions for Permit No. 3-18 (Todd, Terry, and Cole Altermatt)

1. The permit holder shall comply with all applicable laws, rules, and regulations, including but not limited to Redwood County Ordinance, as hereafter amended from time to time. A copy of all required local, state, and federal permits and/or licenses shall be provided to the Redwood County Environmental Office upon request.

2. The permit holder shall allow the Redwood County Environmental Office to inspect the site for all purposes permitted by law whenever deemed necessary by the Redwood County Environmental Office.

3. The permit holder shall take appropriate and reasonable measures to assure that all surface water runoff satisfies all applicable local, state, and federal discharge standards.

4. The permit holder shall not allow the conditional use to be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted. The permit holder shall not allow the conditional use to impede the normal and orderly development and improvement of surrounding vacant property for uses predominant to the area. Adequate measures shall be taken to prevent or control offensive odor, fumes, dust, and vibration, so that none of the foregoing will constitute a nuisance now or in the future.

5. Adequate utilities, access roads, drainage, and other necessary facilities will be provided and continue to be provided by the permit holder now and in the future.

6. The manner in which manure is stored and disposed of shall comply with all applicable local, state, and federal laws, rules, and regulations. If manure is applied to land, it shall be applied to land at agronomic rates. When applied to land, manure will be injected or incorporated within 24 hours. The permit holder shall retain a record of all locations where manure is applied to land. Such records shall be maintained for a period of no less than five (5) years, measured from the date the manure is applied to land. Such records shall be submitted to the Redwood County Environmental Office upon request.

7. The permit holder shall report any changes in spread agreements or spread areas to the Redwood County Environmental Office within thirty (30) days subsequent to any such change.

8. The County Board of Commissioners may at any time impose additional conditions as necessary and appropriate including but not limited to: the planting of trees and shrubs for use as a windbreak for the feedlot operation; the furnishing and placing in a dedicated account, to be administered by the County, an annual payment for reclamation purposes based upon the number of Animal Units involved; and restrictions on the days on which a manure storage structure may be disturbed or manure may be transferred, applied, incorporated, or injected.

9. Dead livestock shall be stored and rendered in such a manner as to not create a nuisance. Disposal of dead livestock by burial is strictly prohibited.

10. The permit holder shall construct the manure storage structure/concrete pit(s) to meet or exceed the minimum requirements set forth in the plans and specifications prepared by Nicolaus J. Rowe and signed by him on April 27, 2018, attached to the permit holder's application.

11. A perimeter tile line shall be installed around the outside of the base of the pit(s) walls and an inspection manhole shall be provided where the perimeter tile branches out into the local drain tile system.

12. The permit holder shall install a warning sign at all entrances to the concrete pits. These signs shall warn the reader of the dangers of entering the pits.

13. The Redwood County Environmental Office shall be contacted for two on-site inspections during the construction of the pits: once when the floor is ready to be poured, and once when the walls are ready to be set.

14. No construction on the pit shall be done between October 15th and April 15th, except by approval of the Zoning Administrator.

15. The feedlot barn structure, and any accessory structure thereto, shall maintain at least a 10 foot setback from any property line, including boundaries between properties held by the same owner.

16. The Redwood County Planning Commission shall review the conditional use permit and shall be authorized to take any and all necessary action(s), including but not limited to revoking the conditional use permit and/or requiring the permit holder to reapply for a conditional use permit, if: 1) The Redwood County Environmental Office acquires information previously unavailable that indicates the terms and conditions of the permit do not accurately represent the actual circumstances of the permitted facility or the conditional use; 2) It is discovered subsequent to the issuance of the permit the permit holder failed to disclose all facts relevant to the issuance of the permit or submitted false or misleading information to the Redwood County Environmental Office, the Redwood County Planning Commission, or the Redwood County Board of Commissioners; 3) The Redwood County Environmental Office determines the permitted facility or conditional use endangers human health or the environment; and/or (4) The permit holder violates any of the herein described conditions, the Redwood County Ordinances, State statutes, or Federal laws.

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

REDWOOD COUNTY PLANNING COMMISSION
Todd, Terry, and Cole Altermatt
Conditional Use Permit Application #3-18
May 21st, 2018

FINDINGS OF FACT

ORDINANCE CRITERIA – The Planning Commission may recommend the granting of a Conditional Use Permit in any district provided the proposed use is listed as a conditional use for the district and upon a showing that the standards and criteria stated in this Ordinance will be satisfied and that the use is in harmony with the general purposes and intent of this Ordinance and the Comprehensive Plan.

In determining whether the proposed use is in harmony with the general purposes and intent of the Ordinance and the Comprehensive Plan, the Planning Commission shall consider and make findings on the following questions:

1) Will the conditional use be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, or substantially diminish and impair property values within the immediate vicinity?

Yes _____ No _____

Why?:_____
_____
_____
_____

2) Will the establishment of the conditional use impede on the normal and orderly development and improvement of surrounding vacant property for uses predominant to the area?

Yes _____ No _____

Why?:_____
_____
_____
_____

3) Are there, or will there be provided, adequate utilities, access roads, drainage, and other necessary facilities?

Yes _____ No _____

Why?:_____
_____
_____
_____

4) Have adequate measures been taken, or will adequate measures be taken, to provide sufficient off-street parking and loading space to serve the proposed use of the property?

Yes _____ No _____

Why?:_____
_____
_____
_____

5) Have adequate measures been taken, or will adequate measures be taken, to prevent or control offensive odor, fumes, dust, noise and vibration, so that none of these will constitute a nuisance, and to control lighted signs and other lights in such a manner that no disturbance to neighboring properties will result?

Yes _____ No _____

Why?:_____
_____
_____
_____

6) Will the proposed use have an impact (adverse) on the health, safety, and general welfare of the residents in the surrounding neighborhood?

Yes _____ No _____

Why?:_____
_____
_____
_____

NAME: _____ DATE: _____

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

TO: **Whom It May Concern**

FROM: **Nick Brozek** NB
Land Use and Zoning Supervisor
Redwood County Environmental Office

DATE: **May 4th, 2018**

RE: **Notice of Public Hearing on Animal Confinement Feedlot Conditional Use Permit Application**

Please find enclosed a *Notice of Public Hearing* regarding an *Animal Confinement Feedlot Conditional Use Permit Application* filed by Todd Altermatt, o/b/o landowner Wagner Altermatt Farms Inc, pursuant to Section 17, Subd. 3 and Section 25 of Redwood County Zoning Ordinance, for the expansion of an existing cattle feedlot. The proposed feedlot expansion will include the construction of one total confinement barn housing 600 feeder cattle (600 Animal Units), with under floor concrete liquid manure storage. The total number of head after the expansion will be 1420 feeder cattle (1420 Animal Units), on the following described property, situated in the County of Redwood, State of Minnesota, to wit:

> The Northeast Quarter (NE1/4), except 1.63 acre tract and except 10.34 acre tract, of Section 28, Township 111 North, Range 37 West, Vail Township.

A public hearing thereon will be held before the Redwood County Planning Commission at the regularly scheduled Planning Commission meeting starting at 1:00 o'clock p.m. on Monday, the 21st day of May, 2018, at the Board Room of the Redwood County Government Center located at 403 South Mill Street, Redwood Falls, MN 56283.

Pursuant to Redwood County Zoning Ordinance, all property owners of record within five hundred (500) feet in incorporated areas and/or one-quarter (1/4) of a mile of the affected property or the ten (10) properties nearest to the affected property, whichever would provide notice to the greatest number of landowners in the unincorporated areas, the township in which the affected property is located, and all municipalities within two (2) miles of the property are required to be notified in writing of the time and place of the public hearing.

If you have any comments or questions regarding this matter, please contact the Redwood County Environmental Office by telephone at (507) 637-4023 or in writing at *Redwood County Environmental Office, P.O. Box 130, Redwood Falls, MN 56283*, and/or attend the Public Hearing at the time and date set forth in the *Notice of Public Hearing* enclosed herein.

Enclosure

Cc: Cole Altermatt (w/ encl)
Todd Altermatt (w/ encl)
Terry Altermatt (w/ encl)
Ben Trochlil (w/ encl)

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

NOTICE OF PUBLIC HEARING

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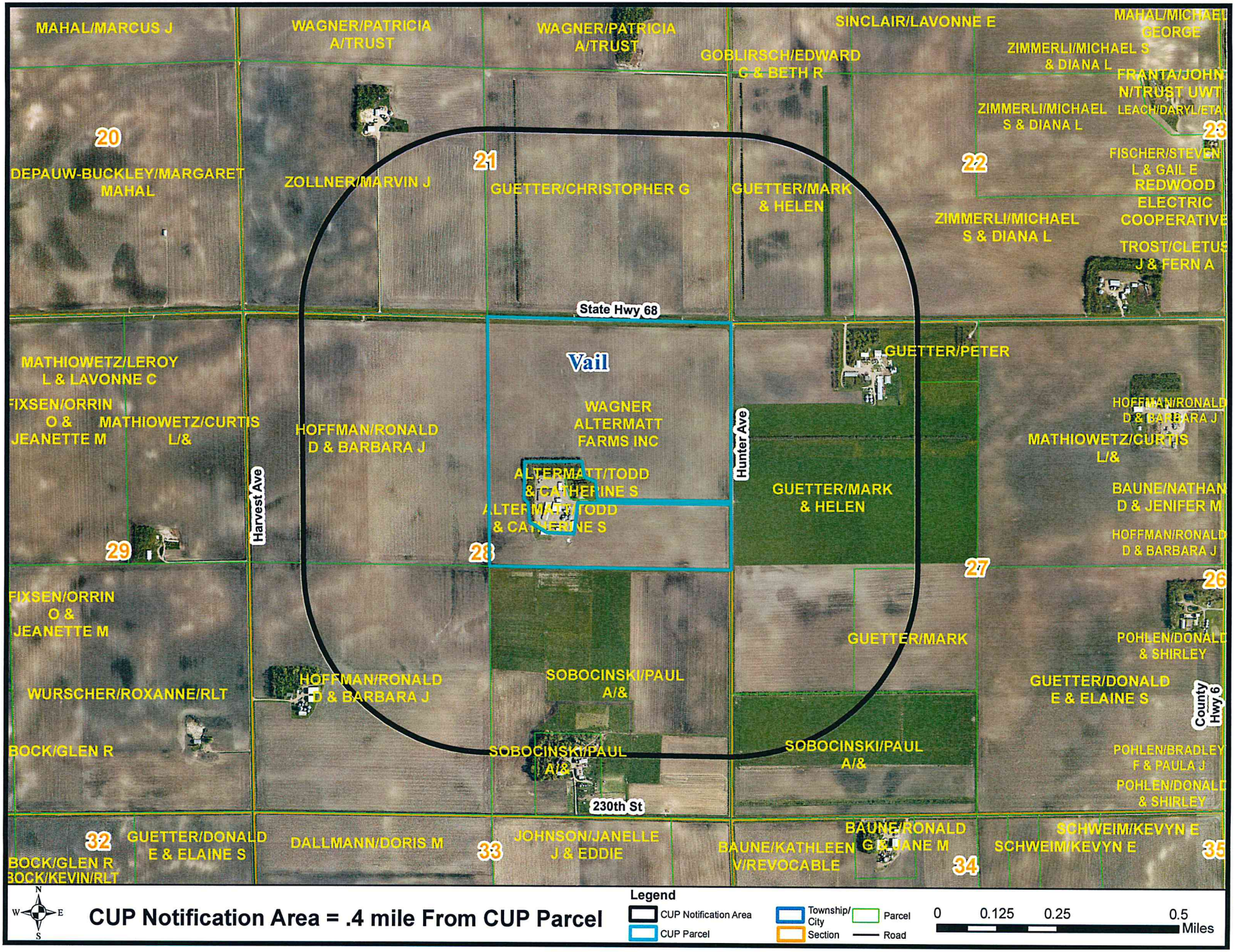
DATED: May 4th, 2018

Nicholas W. Brozek
Land Use & Zoning Supervisor
Redwood County Environmental Office


MAHAL/MARCUS J
WAGNER/PATRICIA A/TRUST
WAGNER/PATRICIA A/TRUST
SINCLAIR/LAVONNE E
GOBLIRSCH/EDWARD G & BETH R
MAHAL/MICHAEL GEORGE
ZIMMERLI/MICHAEL S & DIANA L
FRANTA/JOHN N/TRUST UWT
LEACH/DARYL/ETA
ZIMMERLI/MICHAEL S & DIANA L
20
21
22
23
DEPAUW-BUCKLEY/MARGARET MAHAL
ZOLLNER/MARVIN J
GUETTER/CHRISTOPHER G
GUETTER/MARK & HELEN
FISCHER/STEVEN L & GAIL E
REDWOOD ELECTRIC COOPERATIVE
ZIMMERLI/MICHAEL S & DIANA L
TROST/CLETUS J & FERN A
State Hwy 68
Vail
GUETTER/PETER
MATHIOWETZ/LEROY L & LAVONNE C
FIXSEN/ORRIN O & JEANETTE M
MATHIOWETZ/CURTIS L/&
HOFFMAN/RONALD D & BARBARA J
WAGNER ALTERMATT FARMS INC
Harvest Ave
Hunter Ave
HOFFMAN/RONALD D & BARBARA J
MATHIOWETZ/CURTIS L/&
ALTERMATT/TODD & CATHERINE S
ALTERMATT/TODD & CATHERINE S
GUETTER/MARK & HELEN
BAUNE/NATHAN D & JENIFER M
HOFFMAN/RONALD D & BARBARA J
29
28
27
26
FIXSEN/ORRIN O & JEANETTE M
GUETTER/MARK
POHLEN/DONALD & SHIRLEY
WURSCHER/ROXANNE/RLT
HOFFMAN/RONALD D & BARBARA J
SOBOCINSKI/PAUL A/&
GUETTER/DONALD E & ELAINE S
County Hwy 6
BOCK/GLEN R
SOBOCINSKI/PAUL A/&
SOBOCINSKI/PAUL A/&
POHLEN/BRADLEY F & PAULA J
POHLEN/DONALD & SHIRLEY
230th St
32
33
34
35
GUETTER/DONALD E & ELAINE S
DALLMANN/DORIS M
JOHNSON/JANELLE J & EDDIE
BAUNE/KATHLEEN V/REVOCABLE
BAUNE/RONALD G & JANE M
SCHWEIM/KEVYN E
SCHWEIM/KEVYN E
BOCK/GLEN R
BOCK/KEVIN/RLT
N
W
E
S
CUP Notification Area = .4 mile From CUP Parcel
Legend
CUP Notification Area
CUP Parcel
Township/City
Section
Parcel
Road
0
0.125
0.25
0.5
Miles

AFFIDAVIT OF SERVICE VIA U.S. MAIL

STATE OF MINNESOTA)
) ss
COUNTY OF REDWOOD)

RE: ***Animal Confinement Feedlot Conditional Use Permit Application*** **submitted by Todd Altermatt, o/b/o landowner Wagner Altermatt Farms Inc.**
Permit Application No. 3-18

I, Lali Ortega, a person not less than eighteen (18) years of age, being first duly sworn upon oath, hereby state a copy of the following:

1. **Notice of Public Hearing on *Animal Confinement Feedlot Conditional Use Permit Application*; and**
2. **Notice of Public Hearing**

were duly served upon:

WAGNER ALTERMATT FARMS, INC.
23630 HUNTER AVE
WABASSO, MN 56293

PAUL A & CANDICE M SOBOCINSKI
24649 230 ST
WABASSO, MN 56293

ALOIS GUETTER ET'AL
PO BOX 91
WABASSO, MN 56293

MICHAEL S & DIANA L ZIMMERLI
25488 250 ST
WABASSO, MN 56293

MARK & HELEN GUETTER
25162 ST HWY 68
WABASSO, MN 56293

JAMES A GUETTER
22228 ST HWY 68
WABASSO, MN 56293

MARVIN J ZOLLNER
24261 ST HWY 68
WABASSO, MN 56293

RONALD D & BARBARA J HOFFMAN
23221 HARVEST AVE
WABASSO, MN 56293

PETER GUETTER
PO BOX 23
WABASSO, MN 56293

CURTIS L & KAREN A MATHIOWETZ
23806 CO HWY 6
WABASSO, MN 56293

ANNETTE M GUETTER
VAIL TOWNSHIP CLERK
26818 JADE AVE
WABASSO, MN 56293

MARY SMITH
WABASSO CITY CLERK
PO BOX 60
WABASSO, MN 56293

COLE ALTERMATT
689 MAPLE ST
WABASSO, MN 56293

TERRY ALTERMATT
1255 OAK ST
WABASSO, MN 56293

BEN TROCHLIL
808 E OAK ST
REDWOOD FALLS, MN 56283

by enclosing a copy of the same in an envelope, with postage prepaid, and depositing said envelope in a United States Postal Service mailbox located at Redwood Falls, Minnesota on or about the 4th day of May, 2018.

Lali Ortega
Environmental Administrative Assistant

Subscribed and sworn to before me, a Notary Public, on this 4th day of May 2018, by Lali Ortega.

NICHOLAS W BROZEK
Notary Public
Minnesota
My Commission Expires 01/31/2019

Notary Public