Livestock Facility Siting Application

Submitted: 11/05/2018

For

Ledgeview Farm, LLC
3875 Dickinson Road
DePere, WI 54115
Jason's Cell (920) 655-3875
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Prepared by

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I, Charlotte Nagel, on behalf of the Town of Ledgeview, acknowledge that I have received the following Ledgeview Farm, LLC Livestock Facility Siting Application and processing fee:

- One (1) Livestock Facility Siting Application, with Original signatures
- Four (4) duplicate copies of the Livestock Facility Siting Application
- $1,000.00 check for processing the Livestock Facility Siting Application
- (5) Wetland Delineation Reports
- (5) Construction Specifications
- (5) Construction Plan Sets

Charlotte Nagel
Signature

11-5-18
Date

TOWN OF LEDGEVIEW
3700 DICKINSON ROAD
DE PERE, WI 54115

Date: 11-5-2018

Received from: Ledge View Farms

Amount paid: #1000 Cash ☐ Check ☒ Account No.

For: 2nd livestock siting permit

Balance due: Received by: [signature]

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Ledgeview Farm, LLC
Livestock Facility Siting Application Narrative

Environmental Compliance

Ledgeview Farms, LLC has dedicated significant efforts and capital towards constructing facilities that have reduced the environmental impacts of its two production sites. Ledgeview has been unfairly characterized as unresponsive and unwilling to make improvements to correct environmental conditions. The following is a partial list of improvements that have completed by Ledgeview Farms, LLC that highlights their resolve to reduce the environmental impacts of their operations:

- Construction of a freestall barn and milking center at the HQ site - Eliminate runoff from yards, lots and milkhouse.
- Construct new Waste Storage Facility at HQ site – Eliminate runoff from Pits 1 & 2. Pits 1 & 2 no longer are used to store manure and currently are used for machinery storage. Included is an abandonment plan for Pits 1 & 2.
- Install roof gutters on heifer barns at HQ and HS – Elimination of clean water contamination and reduce runoff from Y1 & Y2 Yards.
- Interim measures installed to collect and store Feed Storage Area leachate and runoff.
- Interim measures installed to collect and store runoff from heifer concrete yards.

Based upon discussions with DNR, Ledgeview Farms, LLC will be issued their WPDES permit in 2018. Ledgeview Farms, LLC is eager to enact its current plan to construct the facilities required to protect the environment and comply with the discharge requirements of its pending WPDES permit. At this time, the DNR and Brown County have issued the required approvals & permits that could allow construction to proceed. However, the remaining obstacle is approval of the Livestock Siting License by the Town of Ledgeview. After this approval is granted, Ledgeview can complete the remaining planned modifications that are required to provide for protection of the environment and good stewardship of their lands.

Background Information & Current Operations

Ledgeview Farm, LLC is an existing farm owned and managed by Roy, Glen and Jason Pansier. Currently the farm is operating under a Wisconsin Pollution Discharge Elimination System (WPDES) Permit; however, the WPDES Permit has not yet been issued.

The farm enterprise conducts livestock activities at two production sites. The Headquarters Site (HQ) located at 3875 Dickinson Road DePere. The Heifer Site (HS) is located at 3499 Lime Kiln Road, in Ledgeview Township, in Brown County Wisconsin. The Livestock Facility Siting Application is for new facilities that will be constructed at the Heifer Site.

Ledgeview Farm, LLC (LF) currently has approximately 1,084 milking and dry cows. In addition, the entity raises the replacement heifers (770) and steers (838) from birth to 24 months housed at the HQ and Heifer Sites. This application is to allow expanding livestock Animal Units to 3,483 (Worksheet 1).

Headquarters Site
Structures include:

- Milking Center
- Four (4) Freestall Barns
- Calf Barn (Straw Bedding)
- Heifer Barn (Bedded Pack).
- Shop/ Machinery Storage
- Residence (Owned by Applicant)
- Waste Storage Facility (W1)
- Feed Storage Area
- Pits 1 & 2 – Waste removed and not used for manure storage (to be abandoned)

Heifer Site
Structures include:

- Heifer - Freestall Barn (L2)
- Heifer – Bedded Pack (L1)
- Concrete Yard (Y2)
- Feed Storage Area
- Machinery Storage
- Commodity Building
- Residence (Owned by Applicant)

At present, LF has no Waste Storage Facility at the HS. Ledgeview Farm, LLC operates under a Nutrient Management Plan (NMP) and works with Kevin Beckard, of Ag Source to develop the Nutrient Management Plan.

Heifer Site Expansion Plans

The Wisconsin Department of Natural Resources (WDNR) and the Environmental Protection Agency (EPA) are requiring LF to install Y2 Yard Runoff Collection System and a Leachate Management System (LMS) to collect leachate and contaminated runoff. In addition, the agencies require LF to construct additional waste storage capacity, to allow for storage of manure and processed wastewater for a minimum of 180 days. Currently LF has waste storage capacity of approximately 100 days.

New Facilities

- Heifer Site - LMS to collect leachate and contaminated runoff from the FSA and transfer to the proposed waste storage
- Heifer Site - Y1 Yard Runoff Transfer System to the proposed waste storage
- Heifer Site - Waste Storage Facility

Modification to Existing Facilities

- Headquarters Site - Pits 1 & 2 will be abandoned according to NRCS, CPS 360 Waste Facility Closure (5/18) and NR 243 requirements.
- Headquarters Site – Runoff Control for Y1 Yard

Siting Application Supplemental Information

Exhibit 1 contains Area Maps of the Livestock Facility. *Exhibit 2* contains Site Maps of the Livestock Facility. The maps are required by the Livestock Facility Siting Application.

Setback Requirements

The proposed LMS, Y2 Yard transfer system and Waste Storage Facility meet the applicable setback requirements outlined in Wisconsin Administrative Code ATCP 51 as well as the requirements of Brown County. The Town of Ledgeview operates under Wisconsin Administrative Code ATCP 51.

Wells

There are two (2) well installations at the HS. The existing wells that serve the production site, meets the requirements contained in Wis. Adm. Code NR 811 and NR 812 Table A, as well as the requirements found in Wis. Adm. Code NR 243.15 (1) (2).

Pits 1 & 2 Closure Plan

As part of the Livestock Facility Siting Application, LF has developed a Waste Facility Closure plan for Pits 1 & 2. The Closure plan meets the criteria found in NRCS, CPS 360 Waste Facility Closure (5/18), and ATCP 51.18(4). The Closure plan can be found in Exhibit 14. Pits 1 & 2 have not been used for waste storage since 2015. All manure has been removed and Pits 1 & 2 currently are used for machinery storage.

Employee Training Plan

As part of the Livestock Facility Siting Application, LF has developed an employee-training plan used to train new and existing employees. *Exhibit 3* contains LF Employee Training Plan.

Environmental Incident Response Plan (EIRP)

Ledgeview Farm, LLC has an Environmental Incident Response Plan (EIRP) in place and a copy of the plan is contained in *Exhibit 4*. A Manure or Hazardous Material Spill Accident Worksheet is included as part of the EIRP.

Odor Management Plan

Ledgeview Farm, LLC has developed an Odor Management Plan to reduce the effect of odors produced by the production sites on local residences. *Exhibit 5* contains the LF Odor Management Plan.

Y1 & Y2 Yard Runoff Management Plan

The BARNY Model has been completed for the Y1 and Y2 Yards and the results show a Phosphorus output of zero lbs. of P per year after the buffer.

To achieve zero lbs. of phosphorus release annually, the paved area has been entered into BARNY as 0.1 ft^2. This reflects the condition that no runoff will flow onto a buffer as the Y1 and Y2 Yard management is to collect and store the runoff in a waste storage facility. Runoff will be mixed with manure and bedding and applied on to a crop field according to the current Nutrient Management Plan.

The management of the Y1 and Y2 Yards meets the requirements of the BARNY Model and achieves zero lbs. of P discharge per year at the edge of the buffer, were it present.

Y1 & Y2 Roof Water Controls
Gutters are installed on the Headquarters Site L5 Barn to prevent roof water from flowing onto the Y1 Yard. It is confirmed the roof gutters will divert the flow from a 25-yr. 24-hr. rain event.
Gutters are installed on the Heifer Site L1 Barn to prevent roof water from flowing onto the Y2 Yard. It is confirmed the roof gutters will divert the flow from a 25-yr. 24-hr. rain event.

Feed Storage Area – Heifer Site
The drainage from the Feed Storage Area is to the east to the apron. The apron drains to the south to the proposed DB: Detention Basin for collection and transfer to the proposed W2 Waste Storage Facility. Runoff will not leave the Feed Storage Area to the west. The Feed Storage Area at the Heifer site is used to store feed with a moisture content of less than 70%. The Feed Storage Area is managed to prevent any significant discharge of leachate or polluted runoff from stored feed to waters of the state. Until the proposed modifications are constructed, Ledgeview Farms has installed an interim detention basin to collect leachate and runoff. Leachate and runoff is pumped from the interim detention basin into tankers and applied onto cropland according to the NMP or transferred to the W1 waste storage facility. On October 30, 2018 the DNR inspected the interim detention basin and found it to be functioning as designed and meeting the NR 243 production site discharge requirements.

Feed Storage Area – Headquarters Site
The Feed Storage Area at the Headquarters Site is used to store feed with a moisture content of less than 70%. The Feed Storage Area is managed to prevent any significant discharge of leachate or polluted runoff from stored feed to waters of the state.

Unconfined Stacking Areas
There are no unconfined stacking areas at the Headquarters site or the Heifer site.

Animal Units:
The HQ site existing housing will allow milking cow numbers to be expanded internally without purchasing cattle or adding additional housing. There are no plans to expand the livestock housing. The intent is to hold heifer and steer numbers at levels that can be housed in the existing facilities. Heifer and steer above housing limitations will be sold or custom raised.

Worksheet 1 of the Livestock Facility Siting application contains the animal unit numbers that are supported by the current NMP and allow for the expansion of livestock from the current numbers. If additional animal units are proposed in the future, beyond the animal units requested in Worksheet 1, LF will file an amendment to the Livestock Siting Application as well as updated the NMP to show the land base will support the proposed additional livestock.

Odor Management:
As part of the Livestock Facility Siting Law, expanded livestock operations with more than 1,000 animal units are required to pass the odor standard.

For the purpose of calculating the Odor Score, Chapter ATCP 51 – Livestock Siting allows an applicant to group livestock structures separated by greater than 750 feet into Clusters. The distance between the livestock structures at the Headquarter Site and the Heifer Site is greater than 1,500 feet. Ledgeview Farm, LLC has elected to designate the livestock structures located at the Headquarters Site as Cluster A and the livestock structures located at the Heifer Site as Cluster B. The Odor scores and maps determined a closest neighbor for each Cluster.

Cluster A – Headquarters Site
For Cluster A there are four (4) residences owned by others for which, Odor Scores were calculated. The residence identified as N1 is the residence closest to the WSF at 334 feet. The residence identified as E1 is the residence closest to the L1 Barn (429'). The residence identified as W1 is the residence closest to the L2 Barn (376'), L3 Barn (594') & L4 Barn (465'). The residence identified as S1 is the residence closest to the L5 Barn (398'), L6 Barn (285') and the Y1 Yard (368'). All of the closest neighbors have odor scores above the Livestock Siting Application minimum score of 500. The Nearest Neighbor Site Plan, Odor Score Worksheets and Distance to Neighbor Table are found in *Exhibit 10*.

Cluster B – Heifer Site
For Cluster B there are three (3) residences owned by others for which, Odor Scores were calculated. The residence identified as N1 is the residence closest to the WSF at 414 feet. The residence identified as E1 is the residence closest to the Collection Basin (1,156'), L1 Barn (855') and Y2 Yard (930'). The residence identified as S1 is the residence closest to the L2 Barn (1,043'). All of the closest neighbors have odor scores above the Livestock Siting Application minimum score of 500. The Nearest Neighbor Site Plan, Odor Score Worksheets and Distance to Neighbor Table are found in *Exhibit 11*.

Waste Storage Facility W2 Odor Control Practice
The W2 will have straw Bio-cover as an odor control practice. The heifer barns with bedded pack manure will be the primary manure source delivered to W2. It is projected that a natural crust will form on the majority of the W2 waste storage facility surface because of the bedded pack manure source, making it easier to form and maintain the straw bio-cover. The farm owns a large PTO powered bedding chopper that it will utilize to distribute chopped straw onto the surface of the W2 waste storage facility. An Operation & Maintenance Plan to generate and maintain the bio-cover has been developed and appears in Exhibit 16.

DB: Detention Basin
The DB: Detention basin is a component of the waste transfer system that will collect and transfer feed storage area runoff via gravity to the W2 waste storage facility. The runoff will be aerobic. According to ATCP 51.01(20) the DB: Detention Basin is a *Livestock Structure* and is not a "*Waste storage facility*" as defined in ATCP 51.01(43) or a "*Waste storage structure"* as defined in ATCP 51.01(44). In addition, in the Odor Score Worksheet under Waste Storage Type, the following options are available; 1) Liquid storage – Long term (pit and tank) Open anaerobic, 2) Liquid storage – Short term (pit and tank) Open anaerobic, and 3) Solid storage (stack). As none of the

options are for an aerobic liquid waste stream, the Odor Score worksheet does not recognize an aerobic waste transfer system basin as waste storage. The DB: Detention Basin is not a Waste Storage Facility and therefore, is not entered in the Odor Score Worksheet.

Waste and Nutrient Management:
At expanded conditions, it is estimated that approximately 24.8 million gallons of manure and wastewater is generated annually at both production sites. According to the Nutrient Management Plan (NMP), there is adequate cropland to land apply manure and wastewater for the expanded livestock numbers.

Waste Storage and Transfer Facilities:
Roach & Associates, LLC designed the proposed facilities including the W2 Waste Storage Facility, Manure Transfer Systems, and LMS to meet the criteria found in the Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV, Standard 313 Waste Storage Facility, Standard 522 Pond Sealing or Lining – Concrete, Standard 634 Waste Transfer and Standard 629 Waste Treatment. In addition; all of the criteria found in Wis. Admin. Code ch. NR 243 are met.

Chapter ATCP 51

APPENDIX A

APPLICATION FORM AND WORKSHEETS

Application for Local Approval

New or Expanded Livestock Facility

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708–8911
(608) 224–4622
(608) 224–4500

Introduction

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

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

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

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

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

The Livestock Facility

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

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

Completing the Application

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

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

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

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

Worksheets

This application includes the following worksheets:

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

Complete the worksheets following all instructions (including those on each worksheet). You may use a convenient automated spreadsheet in place of Tables A and B of worksheet 2 if you prefer (results are identical). The spreadsheet is available at http://www.datcp.state.wi.us.

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

Fees

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

Local Approval Process

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

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

Appeal of Local Decision

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

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

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

Terms Used in this Application Form

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

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

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

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

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

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

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

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

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

"Complete application for local approval" – An application that contains everything required under ss. ATCP 51.30(1) to (4).

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

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

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

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

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

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

"Livestock" – Cattle, swine, poultry, sheep or goats.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"Waste storage facility" — A *waste storage structure* and any attached piping or equipment used to load or unload the structure.

"Winter grazing area" – Cropland or *pasture* where *livestock* feed on dormant vegetation or crop residue, with or without supplementary feed, during the period October 1 to April 30. "Winter grazing area" does *not* include any of the following:

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

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

arm–lwr– 11/04 January, 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Application for Local Approval Wis. Statutes s. 93.90
New or Expanded Livestock Facility Wis. Adm. Code ch. ATCP 51

1. Legal Name of Applicant (Business Entity):
Ledgeview Farm, LLC

2. Type of Business Entity: check one

☐ Individual	☐ Corporation	☐ Partnership	☐ Cooperative	☒ LLC
☐ Trust	☐ Other	Describe:		

3. Other names, if any, under which applicant does business (list all):

4. Contact Individual: Name: Jason Pansier

Phone: 920-655-3875 E–mail: jasonpansier@gmail.com

5. Business Address: Street Address: 3875 Dickinson Rd

City/Village/Town:	County:	State:	Zip:
DePere	Brown	Wi	54115

6. Principal Owners or Officers (list if applicant is an entity other than an individual):

Name: Jason Pansier	Title: Member	Phone: 920-655-3875	
Address: 3875 Dickinson Rd	City: DePere	State: Wi	Zip: 54115
Name: Roy Pansier	Title: Member	Phone: 920-655-1344	
Address: 3875 Dickinson Rd	City: DePere	State: Wi	Zip: 54115
Name: Glen Pansier	Title: Member	Phone: 920-655-0416	
Address: 3875 Dickinson Rd	City: DePere	State: Wi	Zip: 54115

7. Description of Proposed *Livestock Facility*
Leachate management system, Yard Runoff, Transfer system, waste storage facility, feed storage area

Check one: ☐ New *Livestock Facility* ☒ *Expanded Livestock Facility* Premises ID: ookkelb

Address of Proposed *Livestock Facility*: 3499 Lime Kiln Rd

City/Village/Town:	County:	State:	Zip:
Green Bay	Brown	Wi	54311

Town #	Range # (E or W)	Section #	¼ Section #
23	21E	28	SE

Application (continued)

8. Total *Animal Units*

Enter total *animal units* from **worksheet 1:**

Total *Animal Units*: 3,483. This is the maximum *livestock facility* size for which the applicant requests approval at this time.

9. Area Map of *Livestock Facility* Exhibit 1

Attach a scale map or aerial photo of the proposed *livestock facility* and surrounding area. The map or photo must be appropriately sized and marked, so that it clearly and legibly shows all of the following:

- All existing and proposed *livestock structures.* Label each *livestock structure* to show structure type, and whether existing or proposed.
- The area lying within 2 miles of any of the *livestock structures.* Show all existing buildings, property lines, roadways, and navigable waters lying within that area.
- All residences and *high use buildings* within 2500 ft. of any *livestock structure.* Show which (if any) of those buildings are owned by the applicant, or by persons who have agreed to exclude the buildings from the applicant's odor worksheet calculations.
- Topographic lines at 10 ft. elevation intervals.
- Map scale and north direction indicator.

10. Site Map of *Livestock Facility* Exhibit 2

Attach a scale map or aerial photo of the proposed *livestock facility* site. The map or photo shall be appropriately sized and marked, so that it clearly and legibly shows all of the following:

- All existing and proposed *livestock structures.* Label each *livestock structure* to show structure type, and whether existing or proposed.
- The area lying within 1,000 ft. of any of the *livestock structures.* Show all existing buildings, property lines, roadways, navigable waters, and known *karst features* within that area.
- Topographic lines, at 2 ft. elevation intervals, for the area within 300 feet of the *livestock structures.*
- Map scale and north direction indicator.

11. Location of *Livestock Structures* Exhibit 1

The applicant certifies that:

- All *livestock structures* comply with applicable local property line and road setbacks (see *ATCP 51.12).*
- All *waste storage structures* comply with setbacks in *ATCP 51.12(2).*
- All *livestock structures* comply with applicable local shoreland, wetland, and floodplain zoning ordinances (copies available from local government).
- Wells comply with the Wisconsin well code (*NR 811* and *812*). *New or substantially altered livestock structures* are separated from existing wells (including neighbors' wells) by setback distances required in *NR 811* and *812.*

Application (continued)

12. Employee Training Plan Exhibit 3

Attach an Employee Training Plan for employees who will work at the *livestock facility*. Applicant determines plan contents, as long as the plan identifies all of the following:

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

13. Environmental Incident Response Plan Exhibit 4

Attach an Environmental Incident Response Plan for the *livestock facility*. Applicant determines plans contents, as long as the plan identifies all of the following:

- Types of environmental incidents covered. These must include, at a minimum, overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints.
- The name and business telephone number of at least one individual who will handle public questions and concerns related to environmental incidents.
- The names and telephone numbers of first responders (e.g. DNR, fire departments, excavation contractors).
- Incident response procedures, including emergency response, recordkeeping and reporting procedures.

14. Odor Management Plan (*Optional*) Exhibit 5

An applicant required to complete the odor management worksheet may attach an *optional* odor management plan. The applicant determines plan contents, as long as the plan addresses all of the following: activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals.

Application (continued)

15. Other Laws

The following laws, among others, may apply to the operation of a *livestock facility*. Local approval of a *livestock facility* siting application is NOT based on these laws, except as specifically provided in *ATCP 51*. However, violations may have other legal consequences:

- Soil conservation and nonpoint pollution laws (contact your county land conservation department). Livestock facilities that have 1,000 or more animal units, or that discharge pollutants directly to waters of the state, must also obtain a *WPDES permit* from *DNR*.
- Pesticide and agricultural chemical laws administered by *DATCP*.
- Animal disease control laws administered by *DATCP*.
- Animal mortality laws administered by *DATCP*.
- Vehicle weight limits and state prohibitions against spilling waste on roads.
- Food safety and animal health licenses administered by *DATCP*. All livestock operations must register, and some (such as dairy farms) must hold a state license.
- Air pollution control regulations administered by *DNR*.
- Building, electrical, plumbing and sanitation codes administered by the Wisconsin Department of Safety and Professional Services. A local authority may disapprove a proposed *livestock facility* that violates a conforming local code.
- Construction site erosion control laws administered by *DNR*.
- Local erosion control and stormwater management ordinances.
- Petroleum storage laws administered by the Wisconsin Department of Safety and Professional Services.
- High capacity well regulations administered by *DNR*.

16. Worksheets

Complete worksheets as required (follow instructions on each worksheet) and attach to application.

Worksheet 1 – Animal Units.

Worksheet 2 – Odor Management.

Worksheet 3 – Waste and Nutrient Management. If you hold a *WPDES permit* from *DNR* for the same proposed *livestock facility* (for an equal or greater number of *animal units*), check the appropriate box on this worksheet, and submit a copy of the permit with this application.

Worksheet 4 – Waste Storage Facilities. If you hold a *WPDES permit* from *DNR* for the same proposed *livestock facility* (for an equal or greater number of *animal units*), check the appropriate box on this worksheet, and submit a copy of the permit with this application.

Worksheet 5 – Runoff Management. If you hold a *WPDES permit* from *DNR* for the same proposed *livestock facility* (for an equal or greater number of *animal units*), check the appropriate box on this worksheet, and submit a copy of the permit with this application.

Application (continued)

Authorized Signature:

I certify that the information contained in this application (including worksheets and all attachments) is complete and accurate to the best of my knowledge.

Jason Pansier 11-02-2018

Signature of Applicant or Authorized Representative Date

Jason Pansier Owner/Partner

Print Name Title

For Office Use Only:

Application #:	
Date Application Received:	
Date Completeness Determined:	**Date Notice Sent to Applicant:**
Date Notice Sent to Adjacent Landowners:	
Decision Date:	
Approved or Disapproved:	
Date Appeal Filed (if any):	

arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Worksheet 1 – *Animal Units*

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

To complete this worksheet:

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

	Livestock Type	Animal Unit Factor	*Animal Units* For Proposed Facility
Example – Milking & Dry Cows			*1.4 x 800 = 1120 AU*
Dairy Cattle	Milking and Dry Cows	1.4	1.4 x 1355 = 1897
	Heifers (800 lbs. to 1200 lbs.)	1.1	1.1 x 450 = 495
	Heifers (400 lbs. to 800 lbs.)	0.6	0.6 x 270 = 162
	Calves (up to 400 lbs.)	0.2	0.2 x 270 = 54
Beef	Steers or Cows (600 lbs. to market)	1.0	1.0 x 675 = 675
	Calves (under 600 lbs.)	0.5	0.5 x 400 = 200
	Bulls (each)	1.4	1.4 x =
Swine	Pigs (55 lbs. to market)	0.4	0.4 x =
	Pigs (up to 55 lbs.)	0.1	0.1 x =
	Sows (each)	0.4	0.4 x =
	Boars (each)	0.5	0.5 x =
Poultry	Layers (each)	0.01	0.01 x =
	Broilers (each)	0.005	0.005 x =
	Broilers – continuous overflow watering	0.01	0.01 x =
	Layers or Broilers – liquid manure system	0.033	0.033 x =
	Ducks – wet lot (each)	0.2	0.2 x =
	Ducks – dry lot (each)	0.01	0.01 x =
	Turkeys (each)	0.018	0.018 x =
Sheep (each)		0.1	0.1 x =
Goats (each)		0.1	0.1 x =
	Total *Animal Units* for Which Applicant Requests Approval		= 3,483

Jason Pansier
Signature of Applicant or Authorized Representative

11-02-2018
Date

Arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Worksheet 2 – Odor Management Cluster A - Exhibit 10

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

☐ I am requesting approval for a *new livestock facility* with fewer than 500 *animal units.*

☐ I am requesting approval for an *expanded livestock facility* with fewer than 1,000 *animal units.*

☐ All *livestock structures* will be at least 2500 ft. from the nearest affected neighbor.

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

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

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

TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

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

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

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

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

542	+	100	–	129	=	513
Box 1 **Separation Score** (from Step 2)		**Box 2** **Management Score** (from Step 3)		**Box 3** **Predicted Odor** (from Step 1)		**Box 4** **Odor Score**

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

Jason Parsons 11-02-2018

Signature of Applicant or Authorized Representative Date

Arm-lwr- 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
Phone: (608) 224-4622 or (608) 224-4500

Worksheet 2 – Odor Management Cluster B - Exhibit 11

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

☐ I am requesting approval for a *new livestock facility* with fewer than 500 *animal units.*

☐ I am requesting approval for an *expanded livestock facility* with fewer than 1,000 *animal units.*

☐ All *livestock structures* will be at least 2500 ft. from the nearest affected neighbor.

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

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

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

TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

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

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

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

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

569	+	100	−	139	=	530
Box 1 Separation Score (from Step 2)		**Box 2 Management Score** (from Step 3)		**Box 3 Predicted Odor** (from Step 1)		**Box 4 Odor Score**

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

Jason Porter

Signature of Applicant or Authorized Representative

11-02-2018

Date

See Exhibits 10 and 11

TABLE A: Predicted Odor from *Livestock Structures*

Worksheet 2 (continued)

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

1. *Animal Housing Areas* – List each

Column A **Manure Management Type** Enter your housing buildings and the related 4-letter code from Chart 2. You may exclude up to 1000 calf hutches and 4 structures less than the sq. footage listed in Chart 2.	Column B **Odor Generation Number** From Chart 2	Column C **Housing Area** (Ft²) Use occupied animal area only. Exclude feed alleys, holding areas and milking parlors. Express in 10,000s. (Ex: 15,523 ft² = 1.55)	Column D **Odor Control Practice Codes** List all that apply to each housing area, from Chart 3	Column E **Multiplier for Odor Control Practice** List all that apply to Each from Chart 3. Enter "1" if none.	Column F **Predicted Odor** Multiply columns B, C, and E	Column G **Distance to Nearest *Affected Neighbor*(ft)** Measure from corner of the bldg to corner of the neighbor's bldg. Measure all to the same neighbor.	Column H **Weighted Distance (ft.)** Multiply columns F & G
1A.							
1B.							
1C.							
1D.							
1E.							

2. *Waste Storage Facilities* – List each

Column A **Waste Storage Type** Enter 4-letter type code from Chart 2	Column B **Odor Generation Number** From Chart 2	Column C **Exposed Surface Area** Measure surface area (ft²) when pit is filled to capacity, excluding freeboard. Enter in 10,000's. (Ex: 75,575 = 7.56)	Column D **Odor Control Practice Codes** List all that apply to each facility from Chart 3	Column E **Multiplier for Odor Control Practice** List all that apply to each from Chart 3. Enter "1" if none.	Column F **Predicted Odor** Multiply columns B, C, and E	Column G **Distance to Nearest *Affected Neighbor* (ft)** Measure from top inside edge to neighbor's bldg corner. Measure to the same neighbor.	Column H **Weighted Distance (ft.)** Multiply columns F & G
2A.							
2B.							
2C.							
2D.							

3. *Animal Lots* – List each

Column A **Animal Lot Type** Enter 4-letter type code from Chart 2	Column B **Odor Generation Number** From Chart 2	Column C **Animal Lot Area** (ft²) Enter in 10,000's (Ex: 7438 = .74)	Column D **Odor Control Practice Codes** List all that apply to each facility from Chart 3	Column E **Multiplier for Odor Control Practice** List all that apply to each from Chart 3. Enter "1" if none.	Column F **Predicted Odor** Multiply columns B, C, and E	Column G **Distance to Nearest *Affected Neighbor*(ft)** Measure from corner to corner. Measure all structures to the same neighbor.	Column H **Weighted Distance (ft.)** Multiply columns F & G
3A.							
3B.							
3C.							
					F Total Enter on page A-6, Box 3	G = (H Total) ÷ (F Total) Enter on page A-8, Table B, Step 1	H Total

See Exhibits 10 and 11

Worksheet 2 (continued)

Table B: Separation Score

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

Chart 1: Separation Score

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

Worksheet 2 (continued)

Chart 2: Odor Generation Numbers

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

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

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

Worksheet 2 (continued)

Chart 3: Odor Control Practices

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

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

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

Worksheet 2 (continued)

Odor Control Practice Specifications

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

Animal Housing

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

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

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

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

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

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

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

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

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

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

Worksheet 2 (continued)

Waste Storage Facilities

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

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

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

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

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

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

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

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

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

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

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

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

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

Worksheet 2 (continued)

Animal Lots

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

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

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

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

Arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Worksheet 3 – Waste and Nutrient Management

Part A. Waste Generation and Storage Summary

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

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

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

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

Livestock Type: Dairy

Description of Storage	Column A Waste Storage Capacity (Gallons or Tons)	Column B Source of Waste (Animal Waste, Wastewater, Leachate, etc.)	Column C Average Annual Volume of Waste Produced from Each Source (Gallons or Tons)	Column D Total Average Annual Volume Waste Produced (Gallons or Tons)	Column E Storage Duration in Days (Column A divided by Column D times 365 days)
Example: Unit 1 – lagoon	*5,000,000 gallons*	*Animal waste*	*4,000,000 gallons*	*7,000,000 gallons*	*260 days*
		Wastewater	*1,000,000 gallons*		
		Leachate	*2,000,000 gallons*		
Unit 1				Exhibit 6 see summary	
Unit 2				of waste production	
Unit 3				and storage	

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

Jason Pansier 12-03-2018

Signature of Applicant or Authorized Representative Date

Worksheet 3 (continued)

Arm–lwr– 11/04 January 2006

Part B – Land Base for Applying Nutrients

1. Enter total *animal units* in proposed *livestock facility* (**from worksheet 1**): 3,483.

2. What percentage of the waste from the *livestock facility* will be:
   a. Applied to land: 100 %. Attach map showing where waste will be applied to land.
   b. Processed and sold as commercial fertilizer, under a fertilizer license: 0 %.
   c. Disposed of in other ways: 0 %. Describe ways: NA

3. Multiply the percent in line 2a by the number of *animal units* in line 1. Result (# of *animal units*): 3,483

4. Total acres of cropland currently available for land application (owned, rented, or landspreading agreement): 2,752

5. Divide # of acres in line 4 by # of *animal units* in line 3 to obtain ratio of acres to *animal units*: 0.79

6. Is the ratio in line 5 equal to or greater than the applicable ratio in Table 1? No

   If YES, and if the # of *animal units* in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.

Table 1: Acreage per *Animal Unit*

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

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

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

Jason Pansier 11-02-2018

Signature of Applicant or Authorized Representative Date

Worksheet 3 (continued)

arm–lwr– 11/04 January 2006

Part C – Nutrient Management Checklist

Instructions: All applicants must submit this checklist unless exempted under Part A or B. The checklist is based on the *NRCS* Technical Guide Nutrient Management Standard 590 (September, 2005).

County Name: Brown | Date Submitted: 11-2-18 | Township (T. 23 (N, S.) – (R. 21 (E, W.)

Cropland Acres: (owned, rented, or with manure spreading agreement) 2,759 | Name of livestock operator submitting checklist: Ledgeview Farms

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

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

Signature of *Qualified Nutrient Management Planner*, other than applicant: Kevin C. Barker

(qualified by 1. NAICC–CPCC, 2. ASA–CCA, 3. ASA–Professional Agronomist, 4. SSSA–Soil Scientist)

Signature of Applicant or Authorized Representative: Jason Pansier

Arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Worksheet 4 – *Waste Storage Facilities*

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

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

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

New **or** ***Substantially Altered*** **Facilities**: Design specifications for the following *new* or *substantially altered waste storage facilities* comply with *NRCS* Technical Guide Standards 313 (November, 2004) and 634 (November, 2004). [Identify each facility and attach design specifications for each facility.] Attachment 1

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

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

☒ The facility (list each facility W1 WSF, T1 Piston Pump Station & Transfer Station) was constructed within the last 3 years according to then–existing *NRCS* technical standards, and shows no apparent signs of structural failure or significant leakage.

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

☒ The facility (list each facility L1 collection auger channel & Y2 yard collection basin) is in good condition and repair, shows no apparent signs of structural failure or significant leakage, and is located on a site at which the soils and separation distances to groundwater comply with *NRCS* Technical Guide Manure Storage Facility Standard 313, Table 1 (November, 2004).

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

Facilities To Be Abandoned: The following *waste storage facilities* will be closed according to a closure plan that complies with *NRCS* Technical Guide Standard 360 (June, 2001). [Attach closure plan for each facility.] Pits 1&2 Ex 14

Ex 6 **Total Storage Capacity:** The *waste storage facilities* in the proposed *livestock facility* have a combined useable storage capacity of 19,755,680 gallons or tons (cannot include required "freeboard" in useable capacity). HQ 5,006,618
Proposed HS 14,749,062

WISCONSIN CLARK J FOX E-45021 LITTLE CHUTE WIS. PROFESSIONAL ENGINEER

Clark Fox E-45021
Print Name of Engineer (include WI License No.) or *Certified Agricultural Engineering Practitioner*

Clark Fox 11/2/18
Signature of Engineer or Practitioner Date

Roach & Associates, LLC 856 N. Main St Seymour Wi 54165
Name of Firm and Address

Arm–lwr– 11/04 January 2006

Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive, PO Box 8911, Madison WI 53708–8911
Phone: (608) 224–4622 or (608) 224–4500

Worksheet 5 – Runoff Management

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

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

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

Animal Lots[1]

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

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

3. **Other Existing *Animal Lots*:** The following *animal lots* are NOT located within 300 feet of a stream[2] or 1,000 feet of a lake. According to the *BARNY runoff model*, each *animal lot* has (or with minor alterations[3] will have), a treatment area that reduces phosphorus runoff to an average of less than 15 lbs. per year (measured at the end of the treatment area). Runoff does not discharge to any direct conduit to groundwater. [Identify *animal lots* and minor alterations if any.] Headquarters Y1 Yard, Heifer Site Y2 Yard, All runoff is collected and stored in waste storage Ex 13

Feed Storage All leachate and runoff will be collected and stored in the W1 or W2 waste storage facility

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

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

   a) Surface water runoff will be diverted from entering the paved area or bunker. [4]

   b) Surface discharge of leachate will be collected before it leaves any paved area or bunker, if the paved area covers more than one acre. Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state. [5]

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

[2] Indicated by a solid or dashed blue line on a 1:24,000 scale USGS topographic map.

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

[4] Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

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

Worksheet 5 (continued)

Attachment 1

3. ***New* or *Substantially Altered* Feed Storage Structures (High Moisture Feed):** *New* or *substantially altered* feed storage structures (buildings, silos, bunkers or paved areas) used to store or handle high moisture feed (70% or higher moisture content) will be designed, constructed and maintained to the following standards [attach design specifications]:
   - **a)** Surface water runoff will be diverted from entering the feed storage structure.[1]
   - **b)** Surface discharge of leachate will be collected before it leaves the feed storage structure.[2]
   - **c)** The top of the feed storage structure floor will be at least 3 vertical feet from groundwater and bedrock.[3]
   - **d)** Any feed storage structure with an area greater than 10,000 sq. ft. will have a subsurface drainage system to collect leachate that may leak through the structure floor. The subsurface drainage system must consist of drainfill material below the surface material, a tile drainage network designed to collect the leachate and deliver it to storage, and a subliner. The tile drainage network must, at a minimum, be installed at the perimeter of the structure only on the downgradient side(s). The sub–liner must, at a minimum, consist of one of the following:
     - Two feet of soil, either in place or installed, having a minimum of 50% fine soil particles (that pass a #200 soil sieve).
     - Two feet of soil, either in place or installed, having a minimum of 30% fine soil particles (that pass a #200 soil sieve) and a minimum PI (plasticity index) of 7.
     - A 40 mil liner of HDPE, EPDM or PVC.
     - A geosynthetic clay liner.
   - **e)** Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state. [2]

Nonpoint Pollution Standards

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

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

WISCONSIN CLARK J FOX E-45021 LITTLE CHUTE WIS. PROFESSIONAL ENGINEER
Professional Engineer's Embossed Seal
11/2/18

Jason Parsons 11-02-2018
Signature of Applicant or Authorized Representative — Date

Clark Fox E-45021
Print Name of Engineer (include WI License No.) or Certified Practitioner

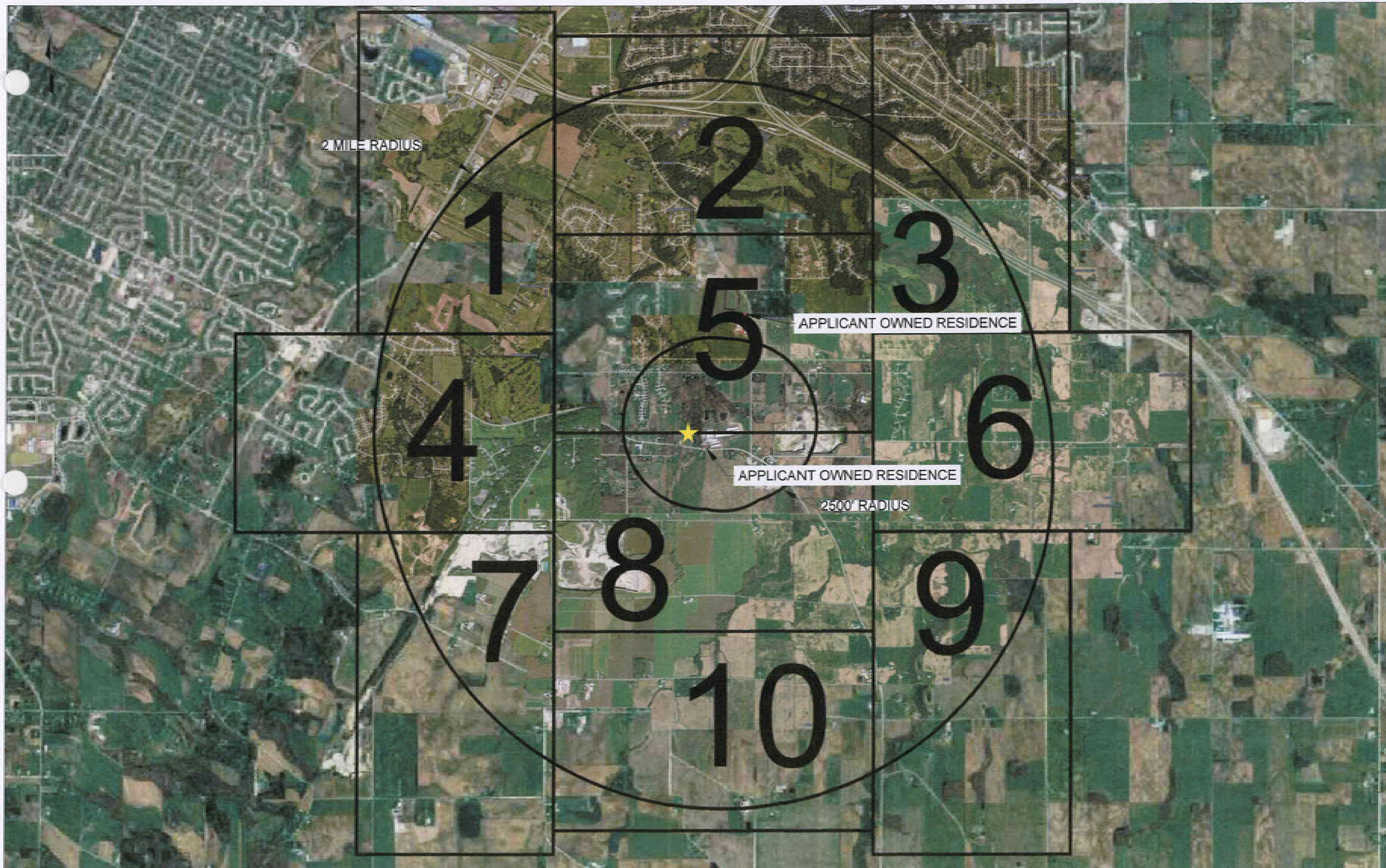
Clark Fox 11/2/18
Signature of Engineer or Practitioner — Date

Roach & Associates, LLC 856 N. Main St Seymour Wi 54165
Name of Firm and Address

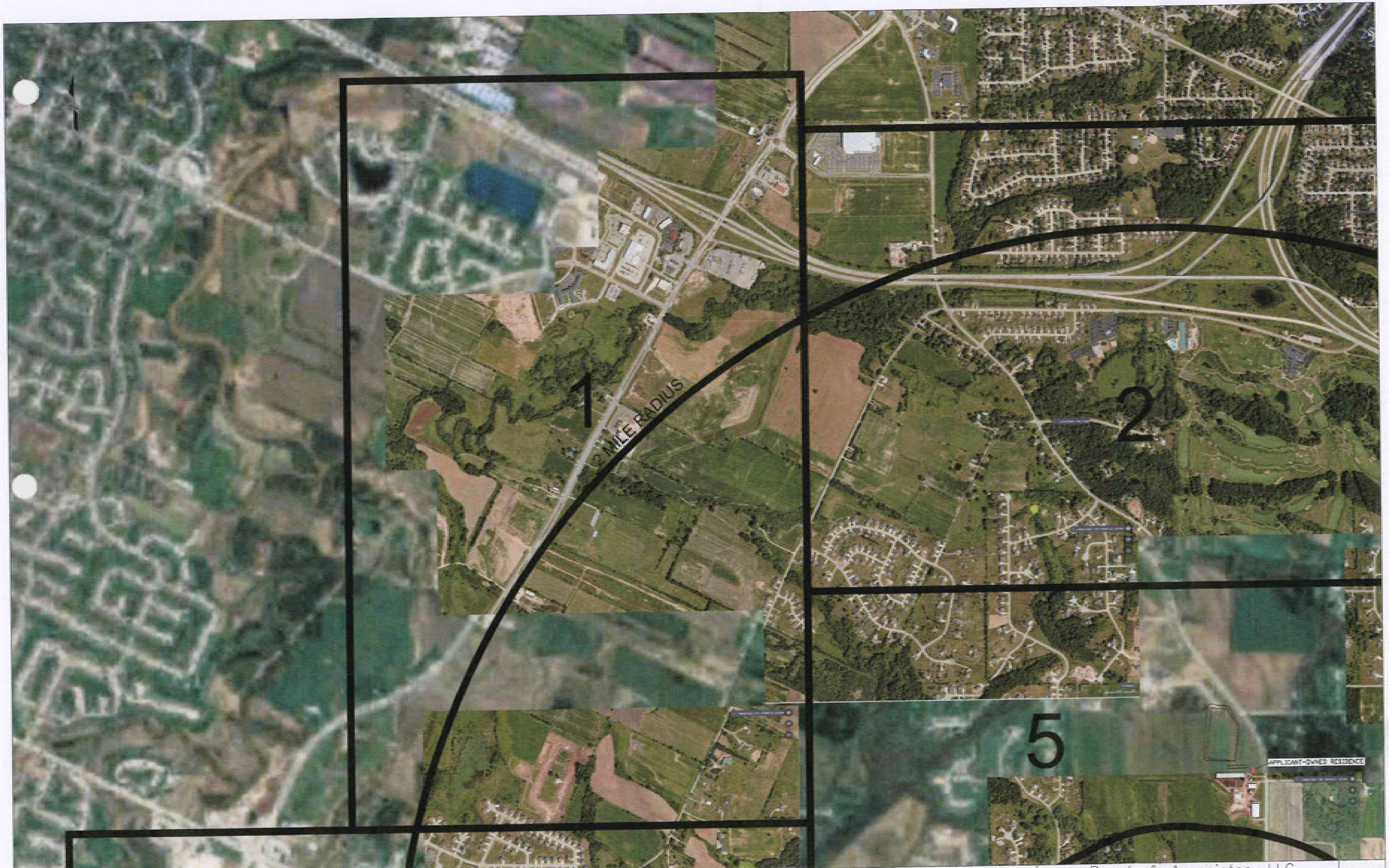
[1] Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

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

[3] A tile system or curtain drain may be used to intercept lateral groundwater seepage, as necessary, to achieve the required distance to groundwater.



	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1"=2,250'	2 MI. PANEL REFERENCE MAP	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 1
DRAWN BY:	WHP	*	*	*	*	*	*					
CHECKED BY:	JMR											



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	
DRAWN BY:	WHP	*	*	*	*	*	*	
CHECKED BY:	JMR							

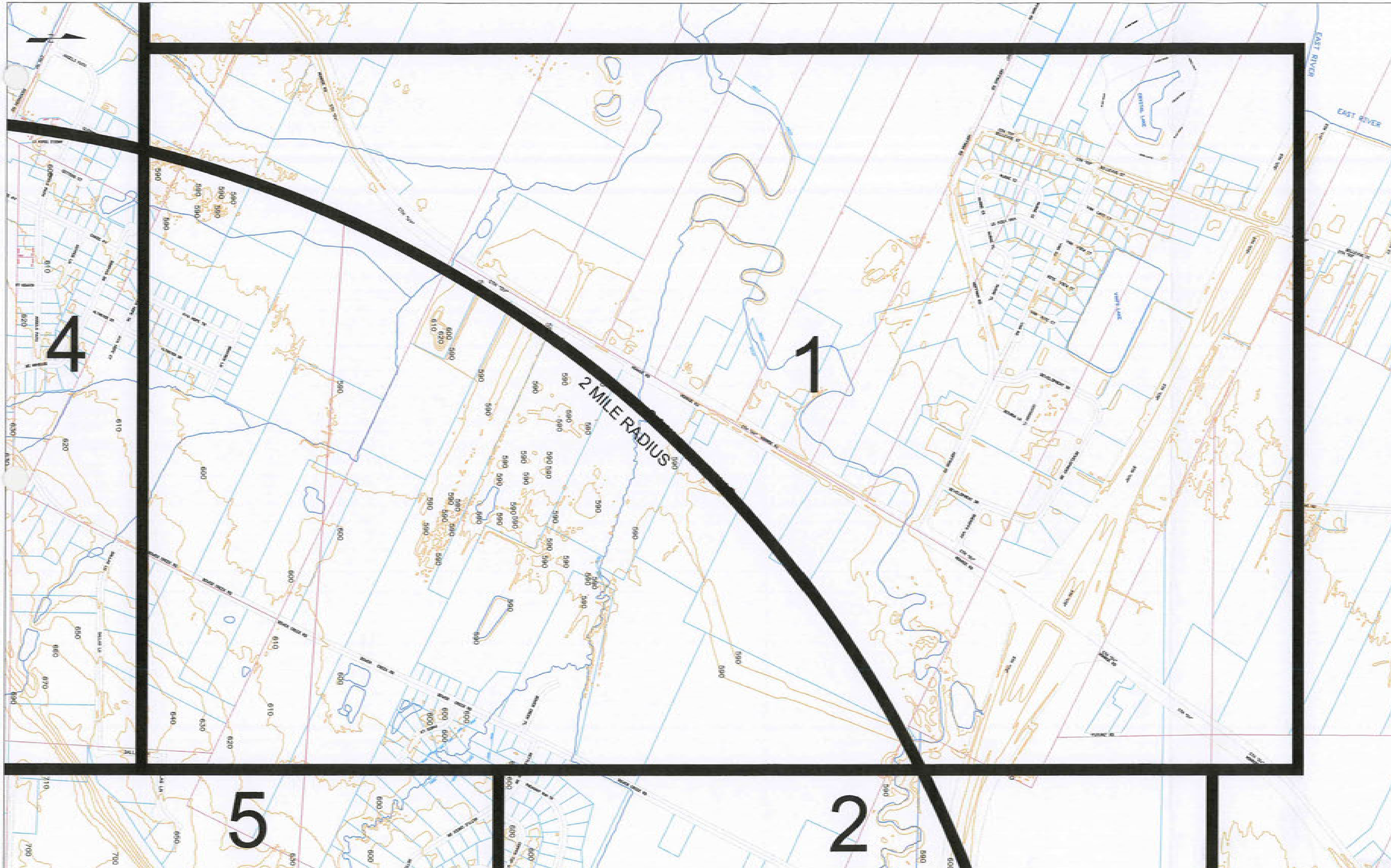
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 1225'

PANEL 1A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 2



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

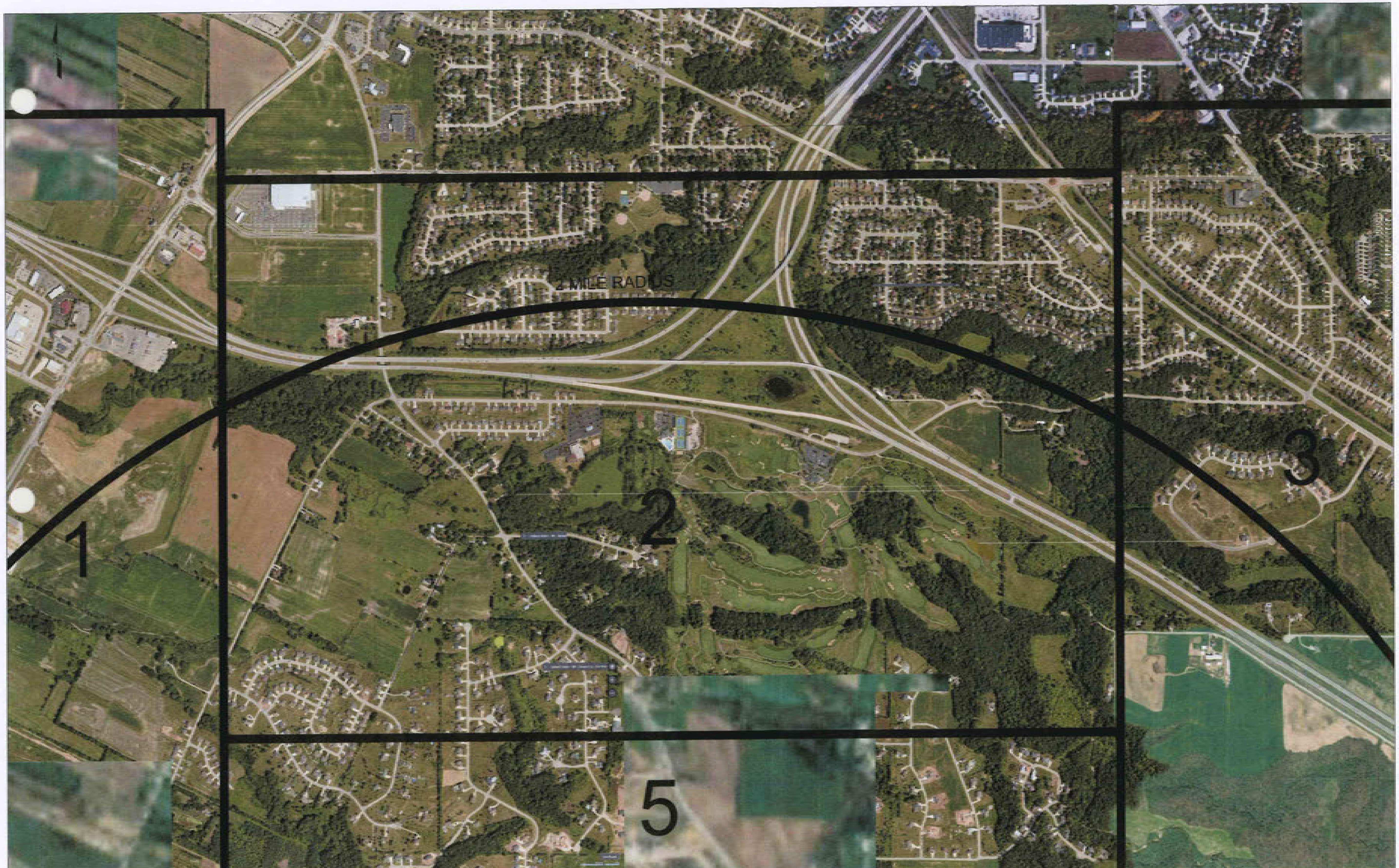
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 800'

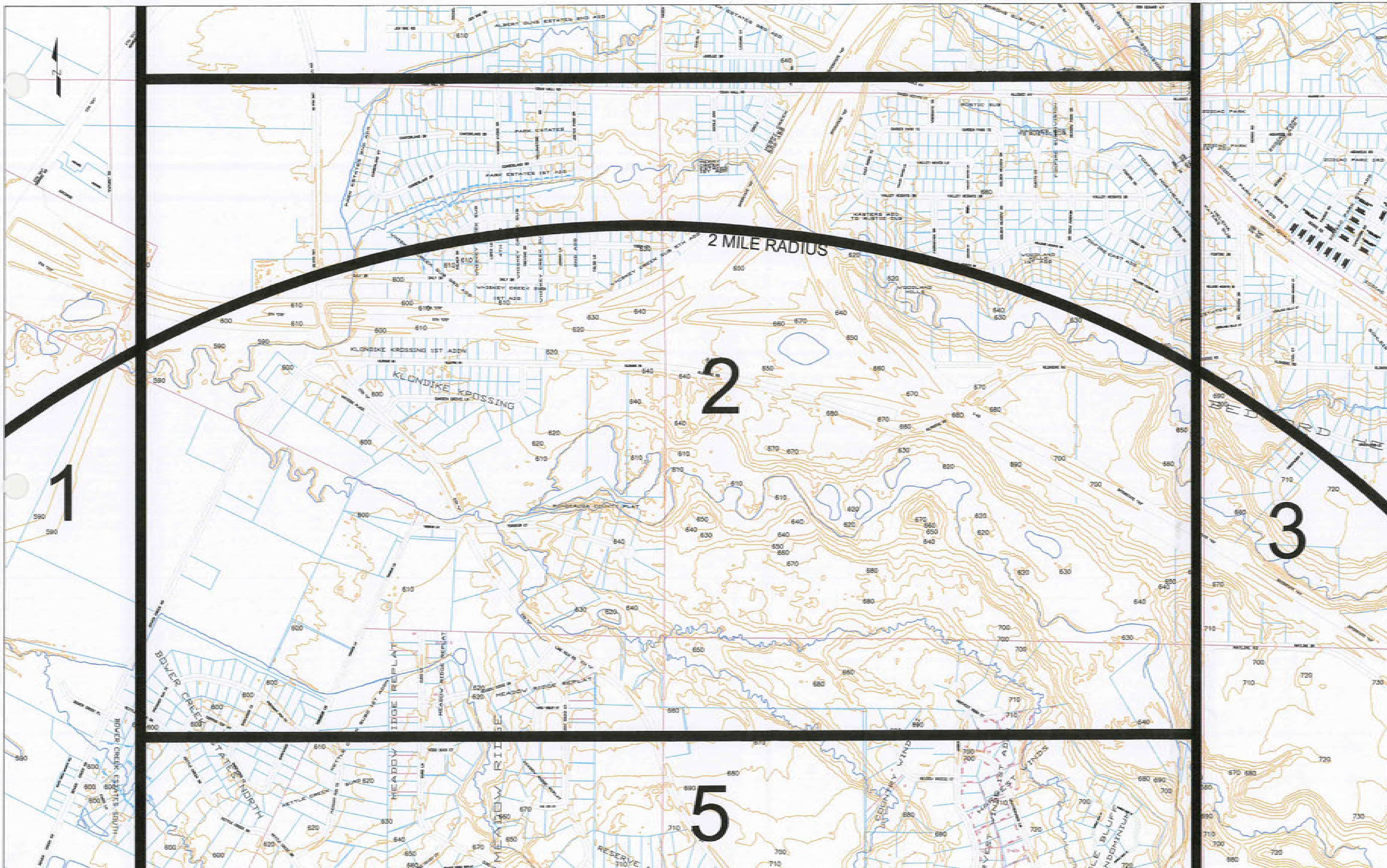
PANEL 1B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 3



BY:	10/30/17 MHP	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 1025'	PANEL 2A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 4
CHECKED BY:	JMR	*	*	*	*	*	*					



DRAWN BY:	10/30/17 MHP	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
CHECKED BY:	JMR	*	*	*	*	*	*

LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 875'

PANEL 29
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 5

	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

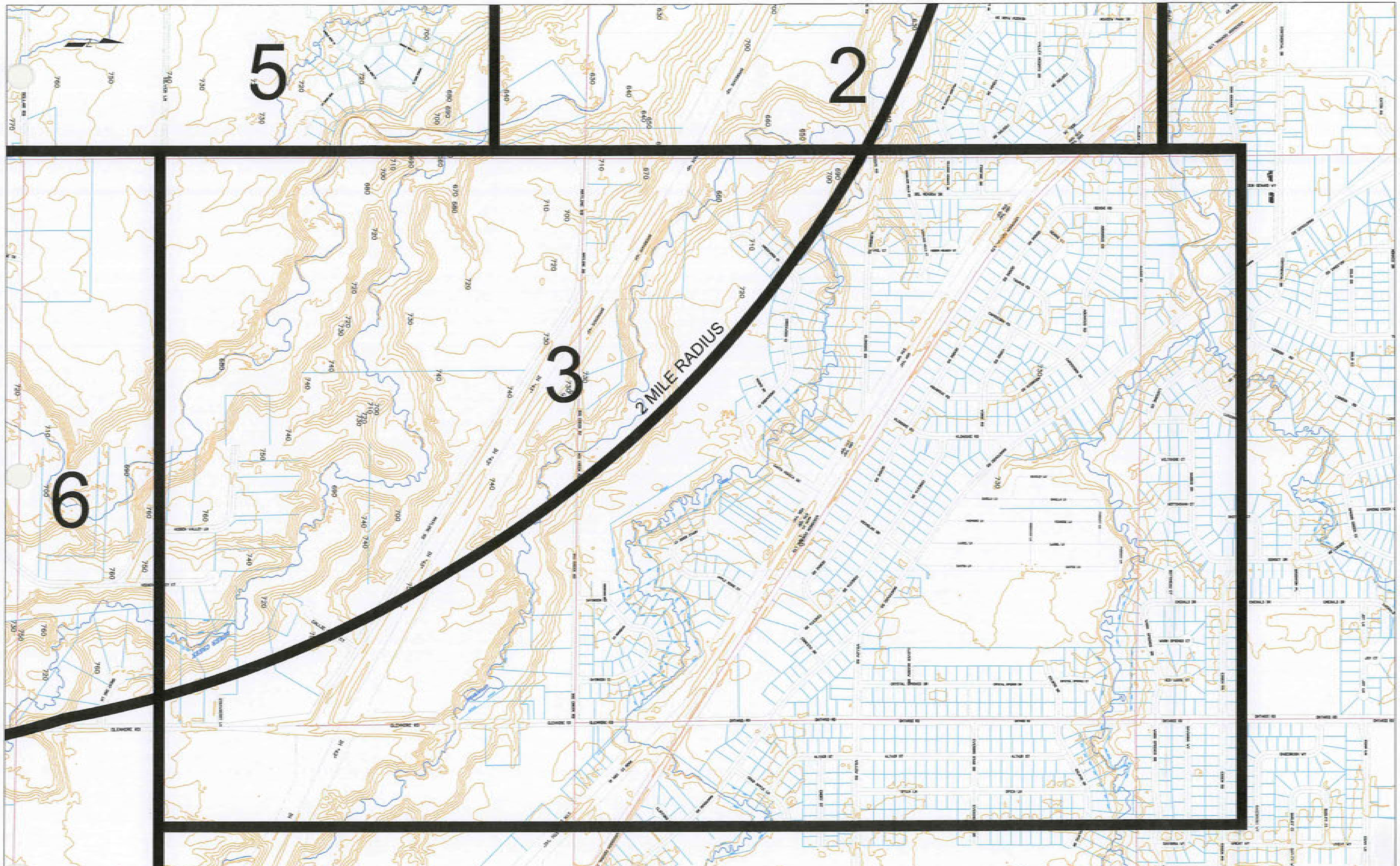
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 1250'

PANEL 3A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 6



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DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 850'

PANEL 3B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 7

BY:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A–HEADQUARTERS BROWN COUNTY, WISCONSIN
	MHP	*	*	*	*	*	*	
CHECKED BY:	JMR							

SCALE:		Roach & Associates, LLC	SHEET NO.
1" = 875'	PANEL 4A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	8

DATE: 10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 4B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 9
DRAWN BY: MHP	*	*	*	*	*	*					
CHECKED BY: JMR											

DRAWN BY:	10/30/17 WHP	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
CHECKED BY:	JMR	*	*	*	*	*	*

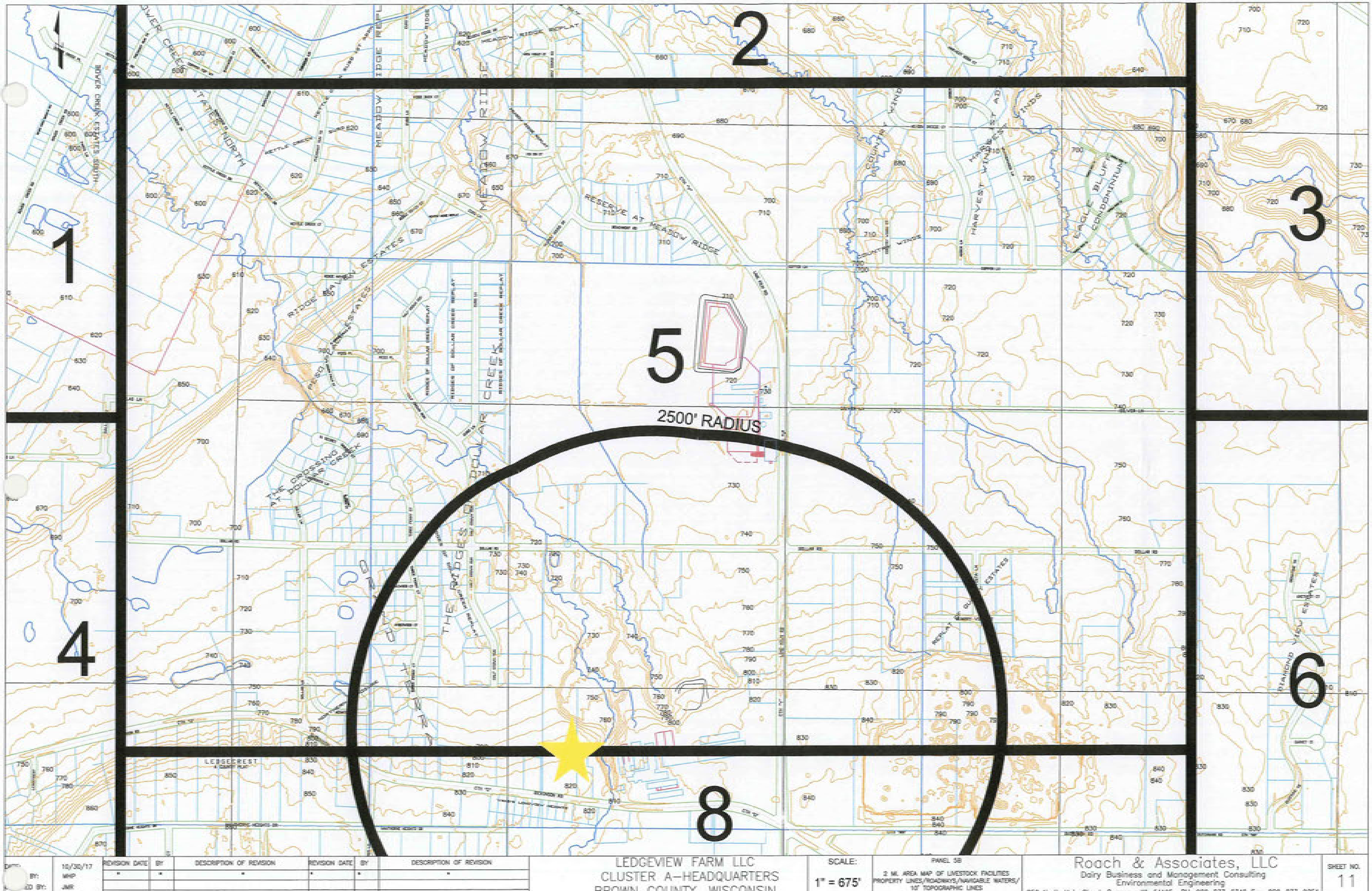
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 625'

PANEL 5A
2 MI. AREAL MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS/
MARKED RESIDENCE AND HIGH USE BUILDINGS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI. 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 10


2500' RADIUS
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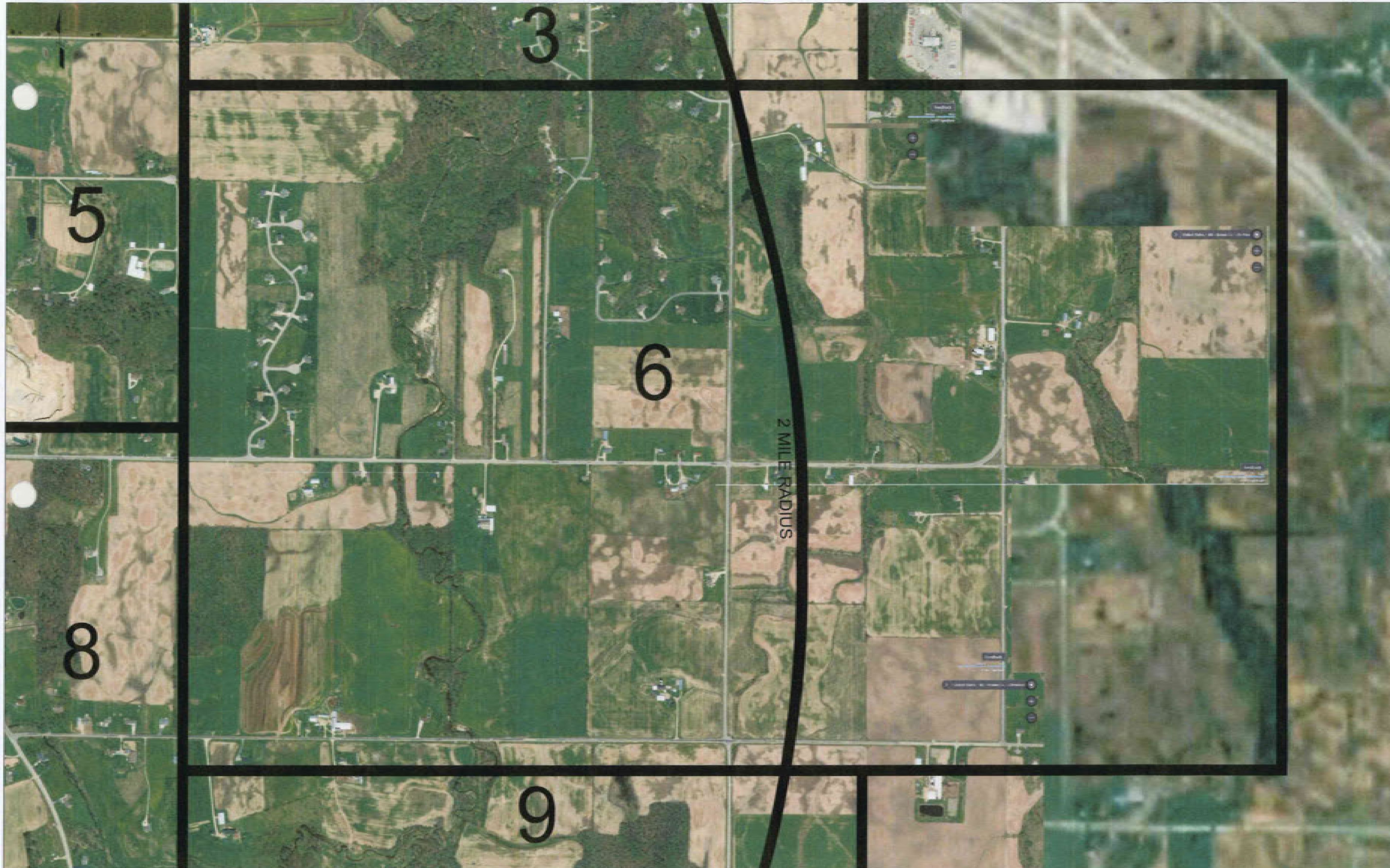
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN
SCALE:
1" = 675'
PANEL 5B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
10' TOPOGRAPHIC LINES
Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851
SHEET NO.
11
10/30/17
MHP
JMR
REVISION DATE
BY
DESCRIPTION OF REVISION



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	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

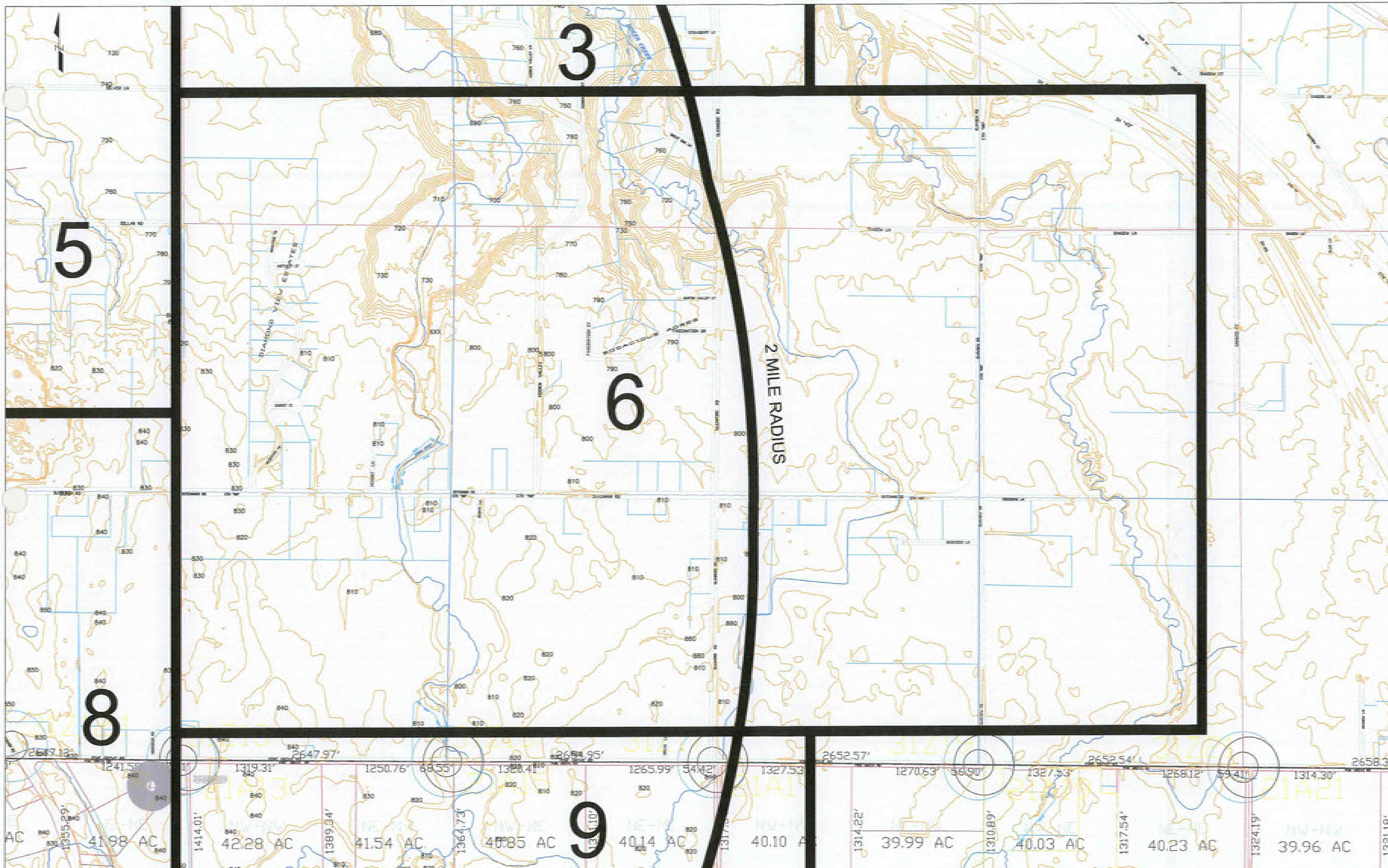
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

PANEL 6A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 12



BY:	10/30/17 MHP	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A–HEADQUARTERS BROWN COUNTY, WISCONSIN
...KED BY:	JMR							

SCALE: 1" = 900'

PANEL 6B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 13

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

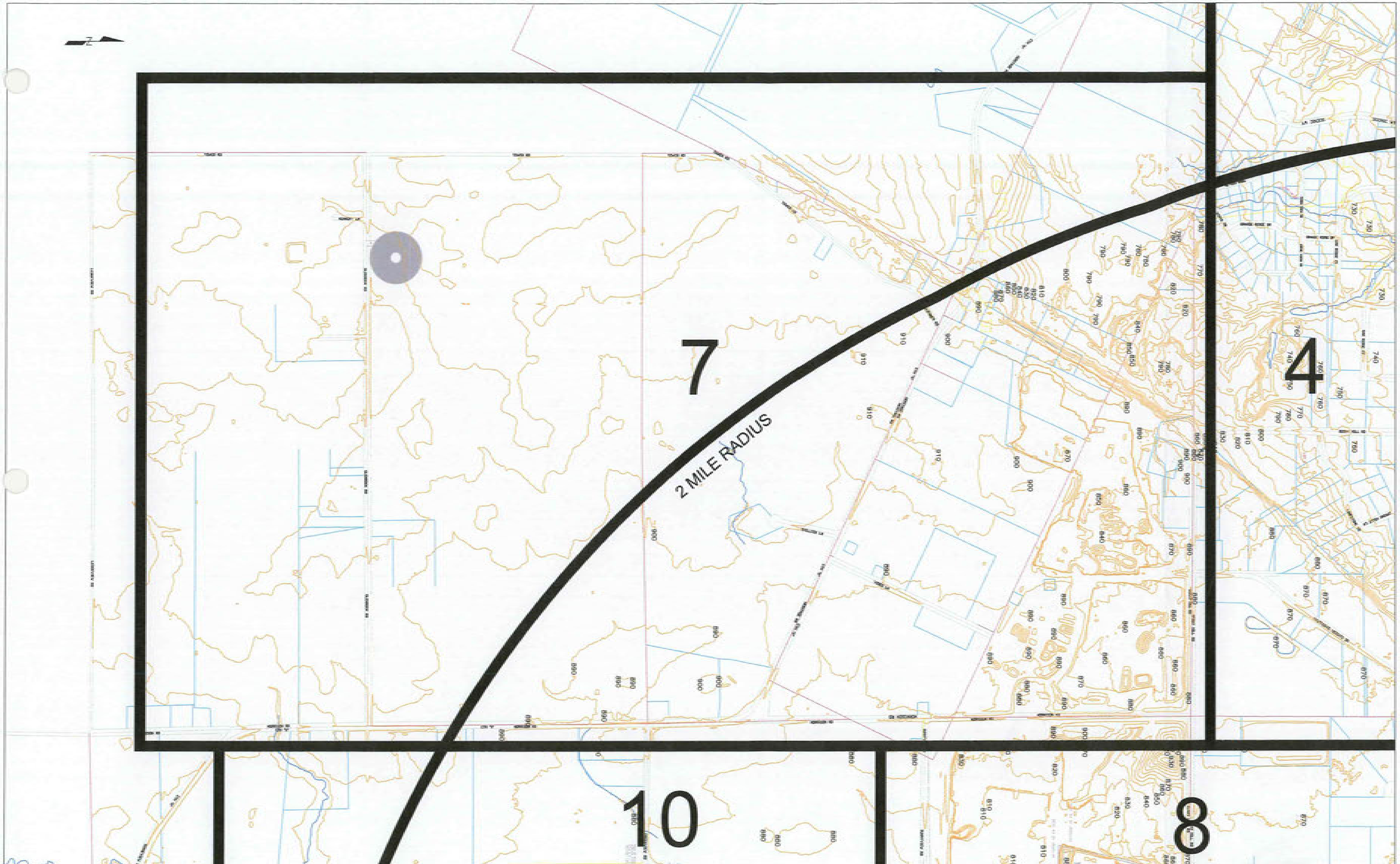
LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

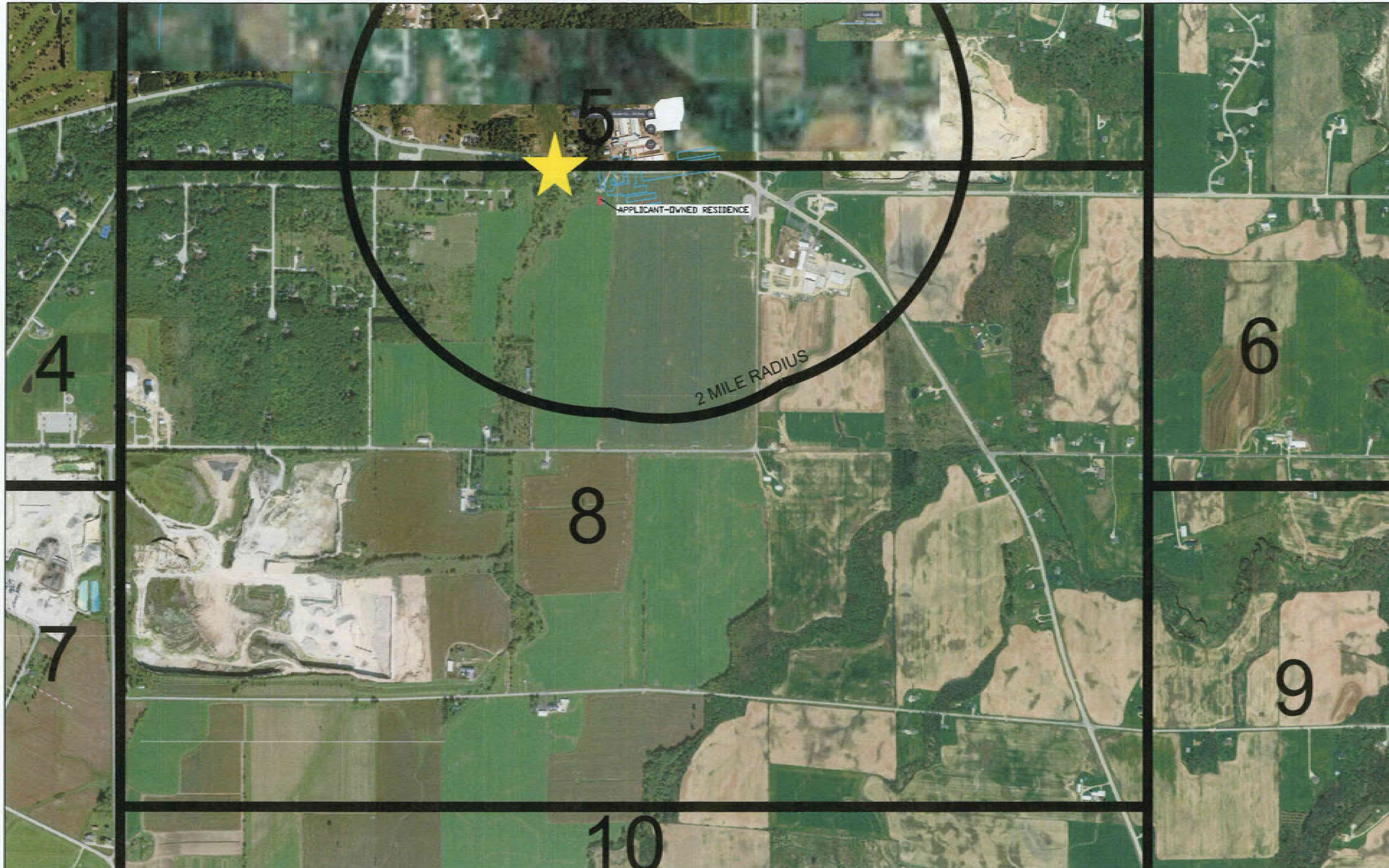
PANEL 7A
2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 15

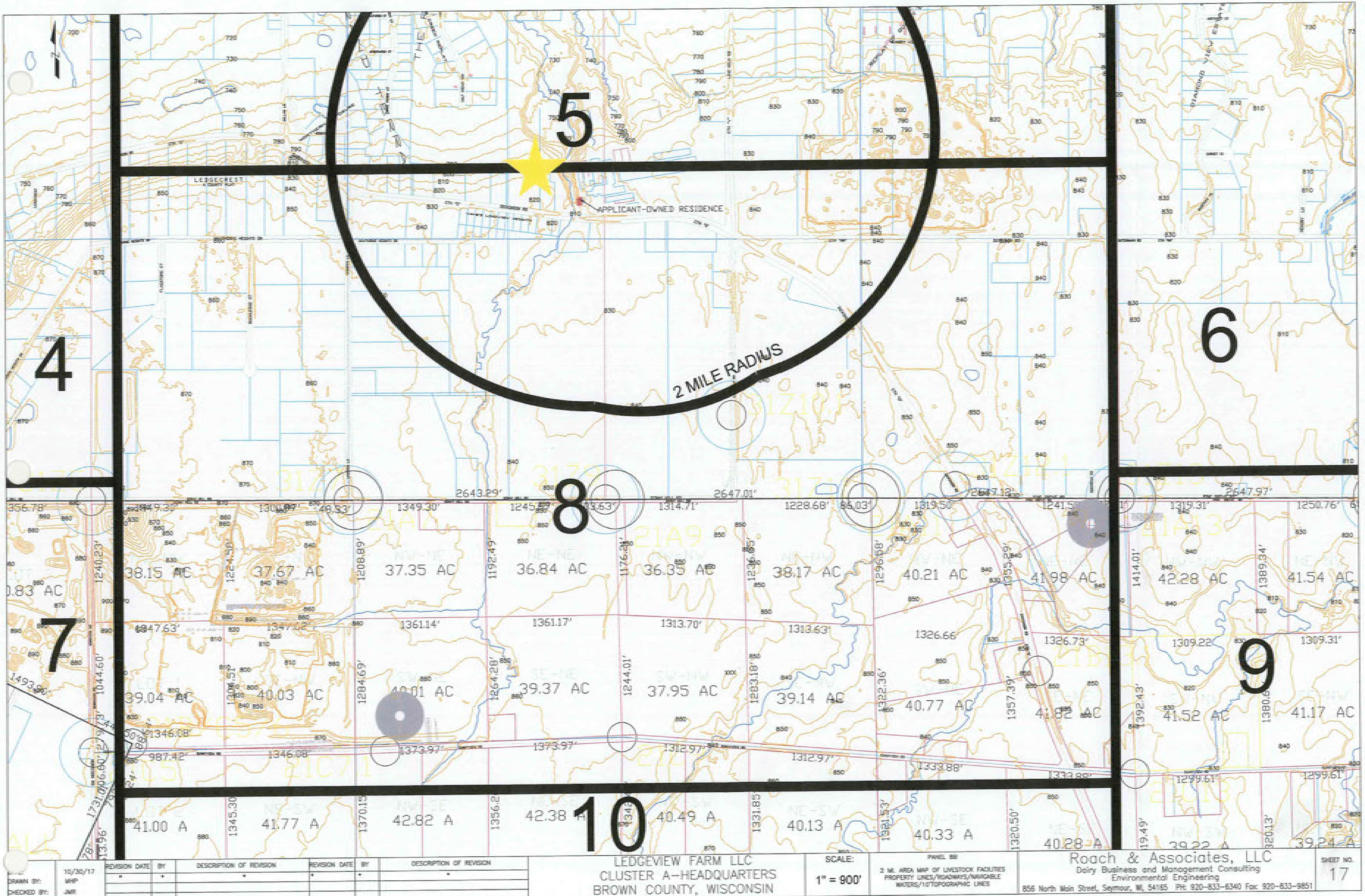


DRAWN BY:	10/30/17 MHP	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 7B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHI LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 15
CHECKED BY:	JMR	*	*	*	*	*	*					



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A–HEADQUARTERS BROWN COUNTY, WISCONSIN
DRAWN BY:	MHP	*	*	*	*	*	*	
CHECKED BY:	JMR							

SCALE:	PANEL 8A	Roach & Associates, LLC	SHEET NO.
1" = 900'	2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS/ MARKED RESIDENCE AND HIGH USE BUILDINGS	Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	17



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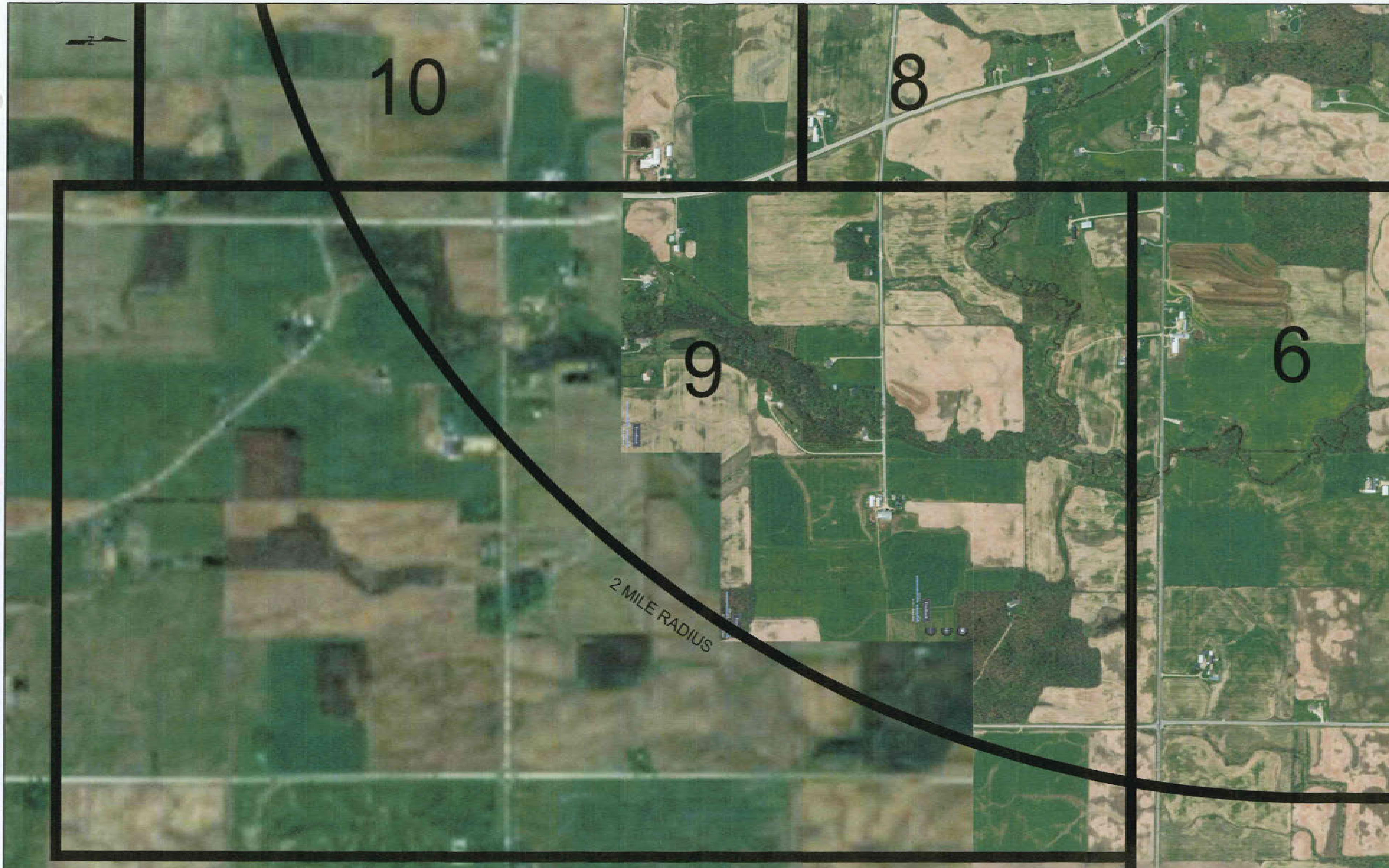
APPLICANT-OWNED RESIDENCE
2 MILE RADIUS
LEDGECREST
DRAWN BY: MHP
CHECKED BY: JMR
10/30/17
REVISION DATE
BY
DESCRIPTION OF REVISION
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN
SCALE:
1" = 900'
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES
Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI 54165 PH: 920-833-6340 Fax: 920-833-9851
SHEET NO.
17



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 9A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS/ MARKED RESIDENCE AND HIGH USE BUILDINGS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 19
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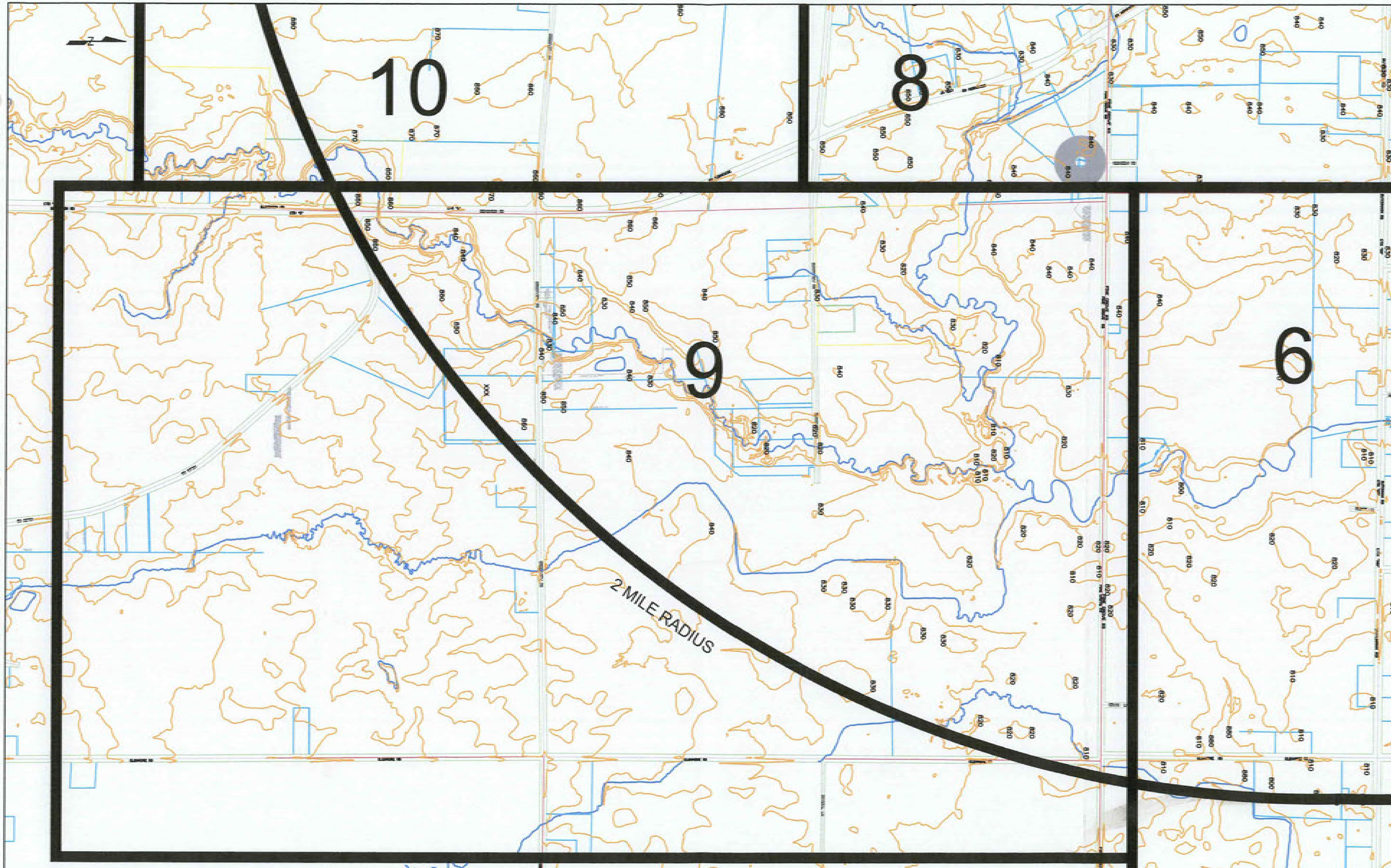
CHECKED BY:	JMR											



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

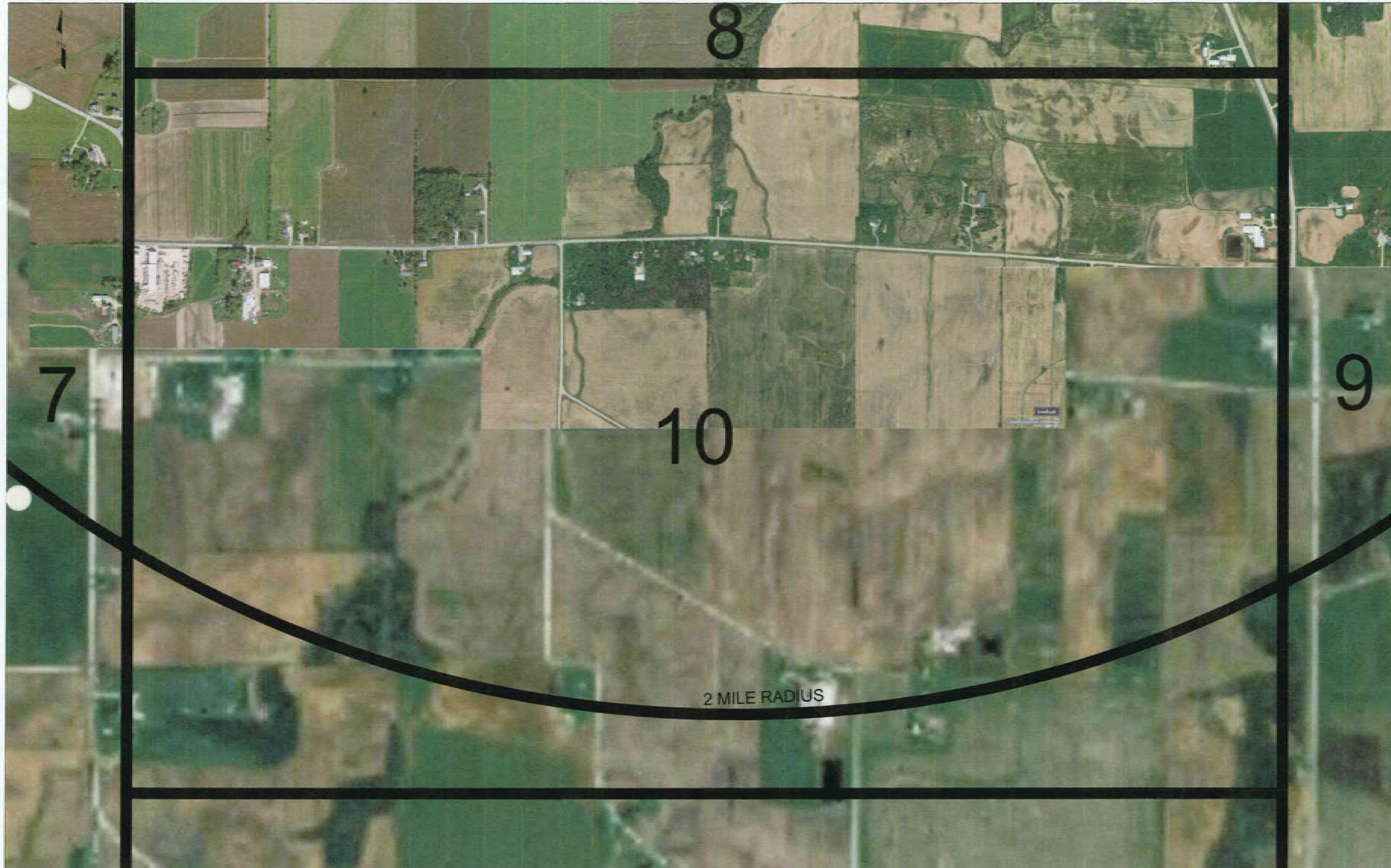
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

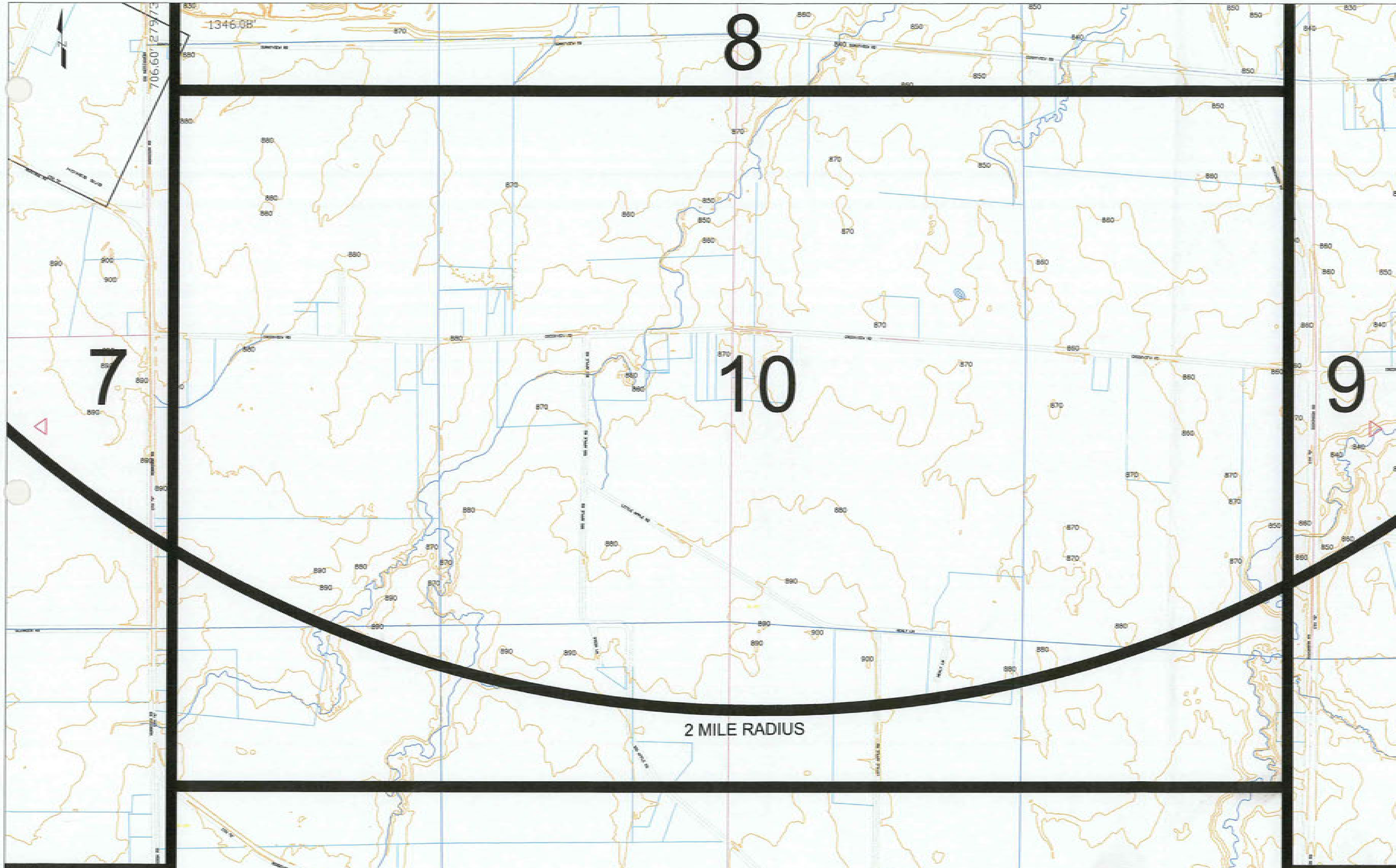
PANEL 9B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHI LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 19



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A–HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 800'	PANEL 10A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851
BY:	MHP	*	*	*	*	*	*				SHEET NO. 20
D BY:	JNR										



BY:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
	MHP	•	•	•	•	•	•
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A–HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

PANEL 10B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 21

CLUSTER B

HEIFER SITE

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION
DATE:	11/22/2017	*	*	*	*	*	*
DRAWN BY:	MTS						
CHECKED BY:	JMR						

LEDGEVIEW FARMS, LLC
2018 WASTE STORAGE FACILITY AND LEACHATE MANAGEMENT SYSTEM
BROWN COUNTY, WISCONSIN

SCALE: 1"=300'

EXISTING & PROPOSED FACILITIES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 1.1B

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1"=2,250'

2 MI. PANEL REFERENCE MAP

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985

SHEET NO. 1

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	10/30/17	*	*	*	*	*	*
DRAWN BY:	MHP						
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1225'

PANEL 1A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
2

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 800'	PANEL 1B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES
DRAWN BY:	MHP	*	*	*	*	*	*			
CHECKED BY:	JMR									

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-

SHEET NO.
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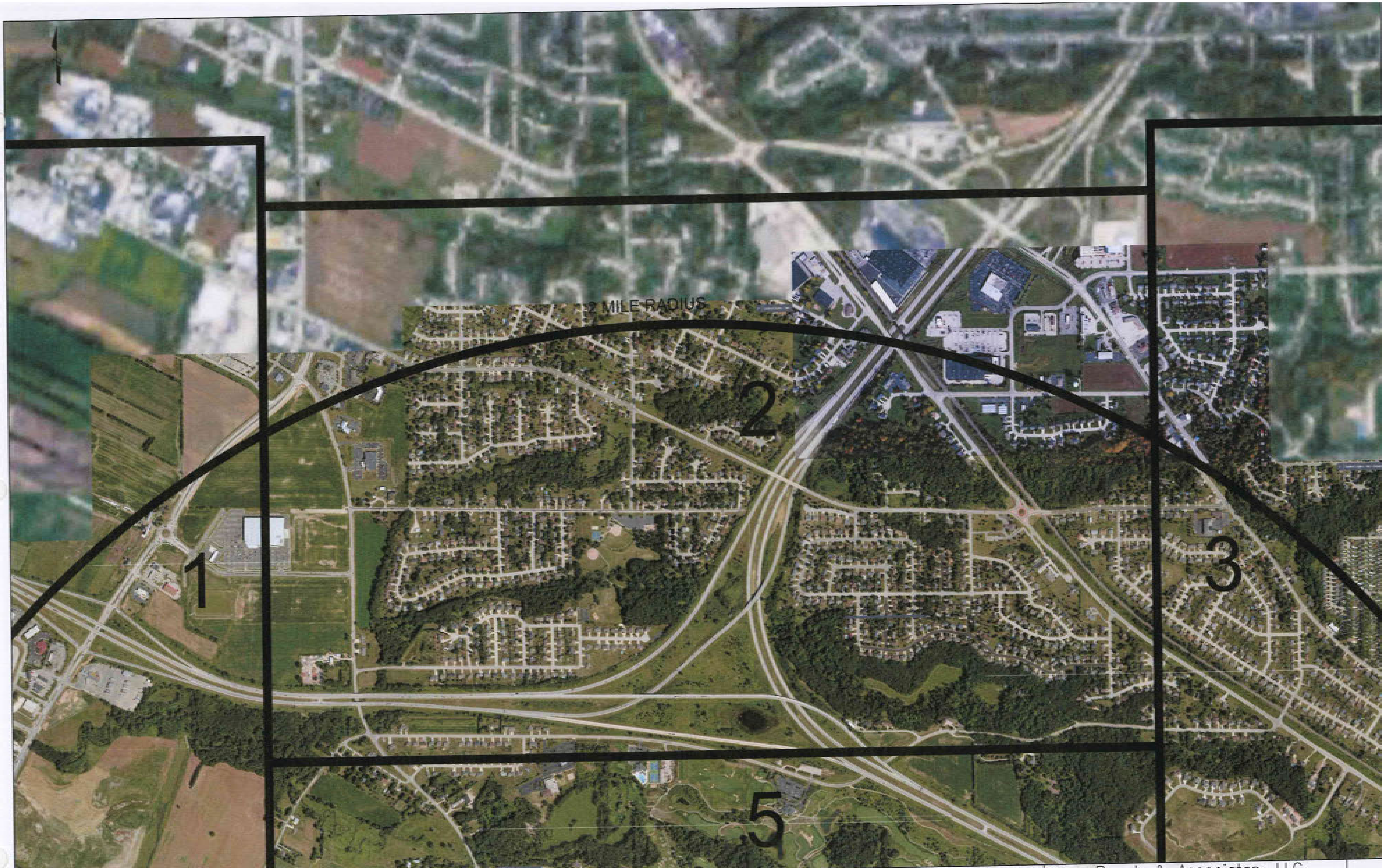

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DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

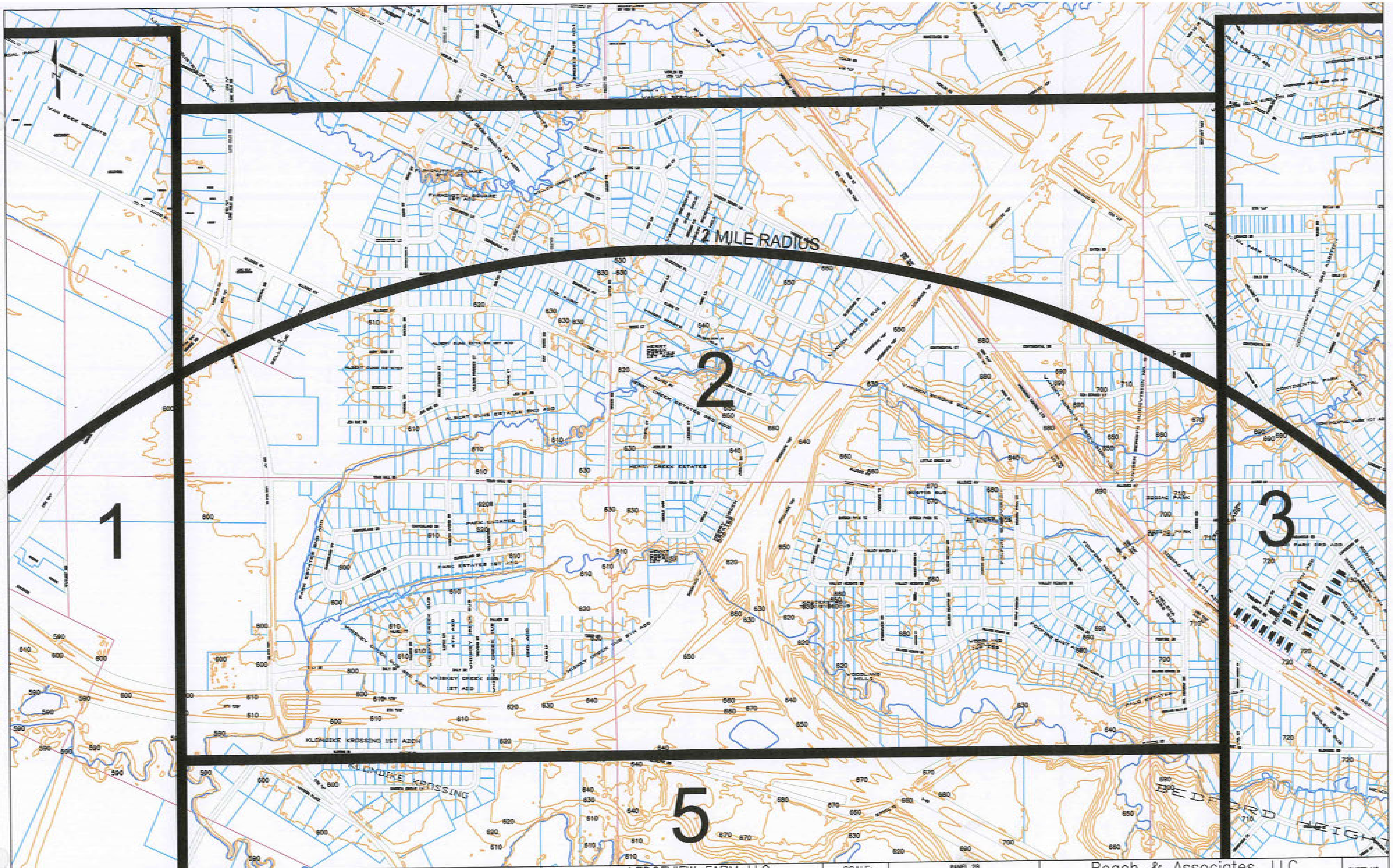
LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 1025'

PANEL 2A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 4



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DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 875'

PANEL 2B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
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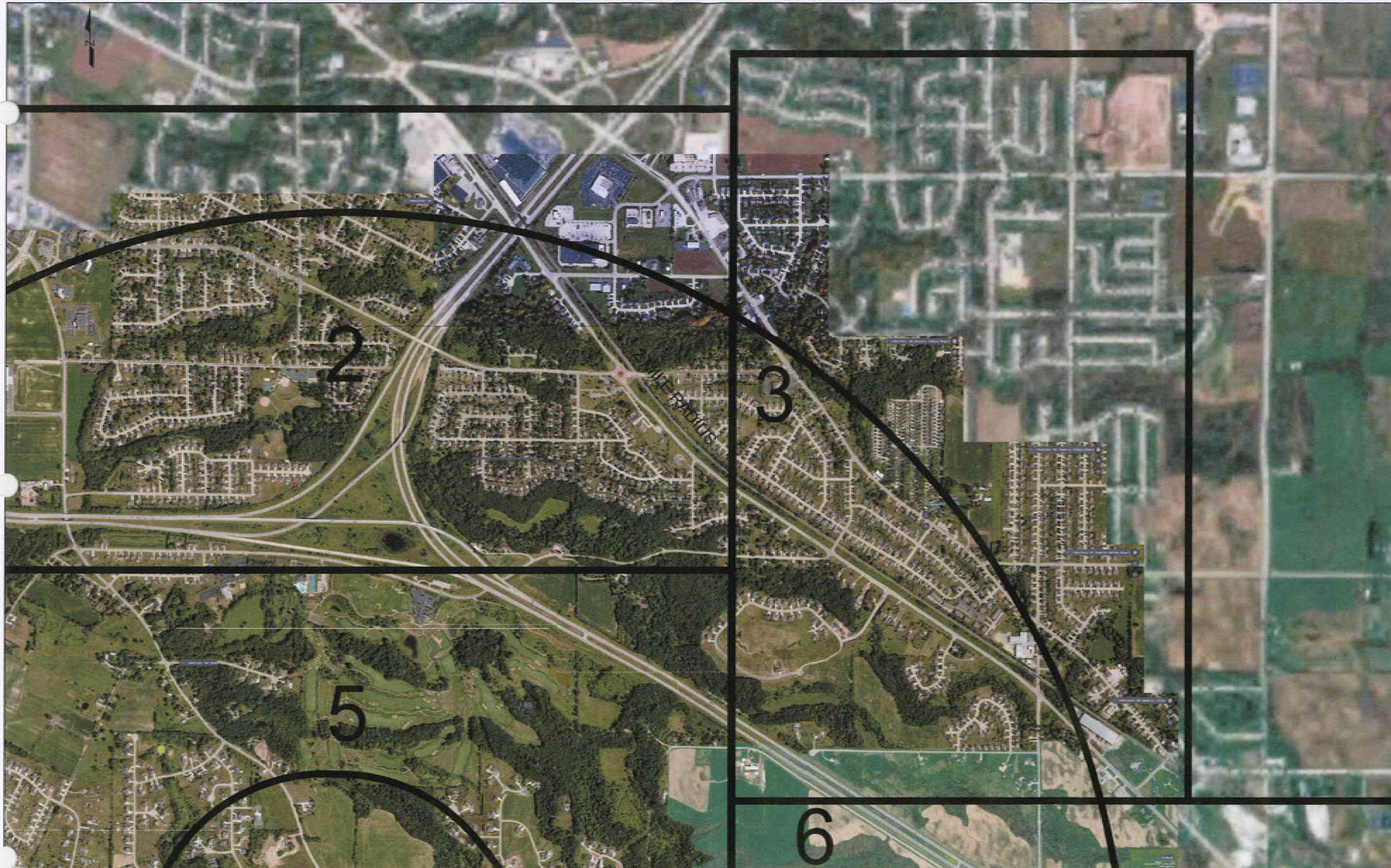

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 1250'	PANEL 3A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985	SHEET NO. 6
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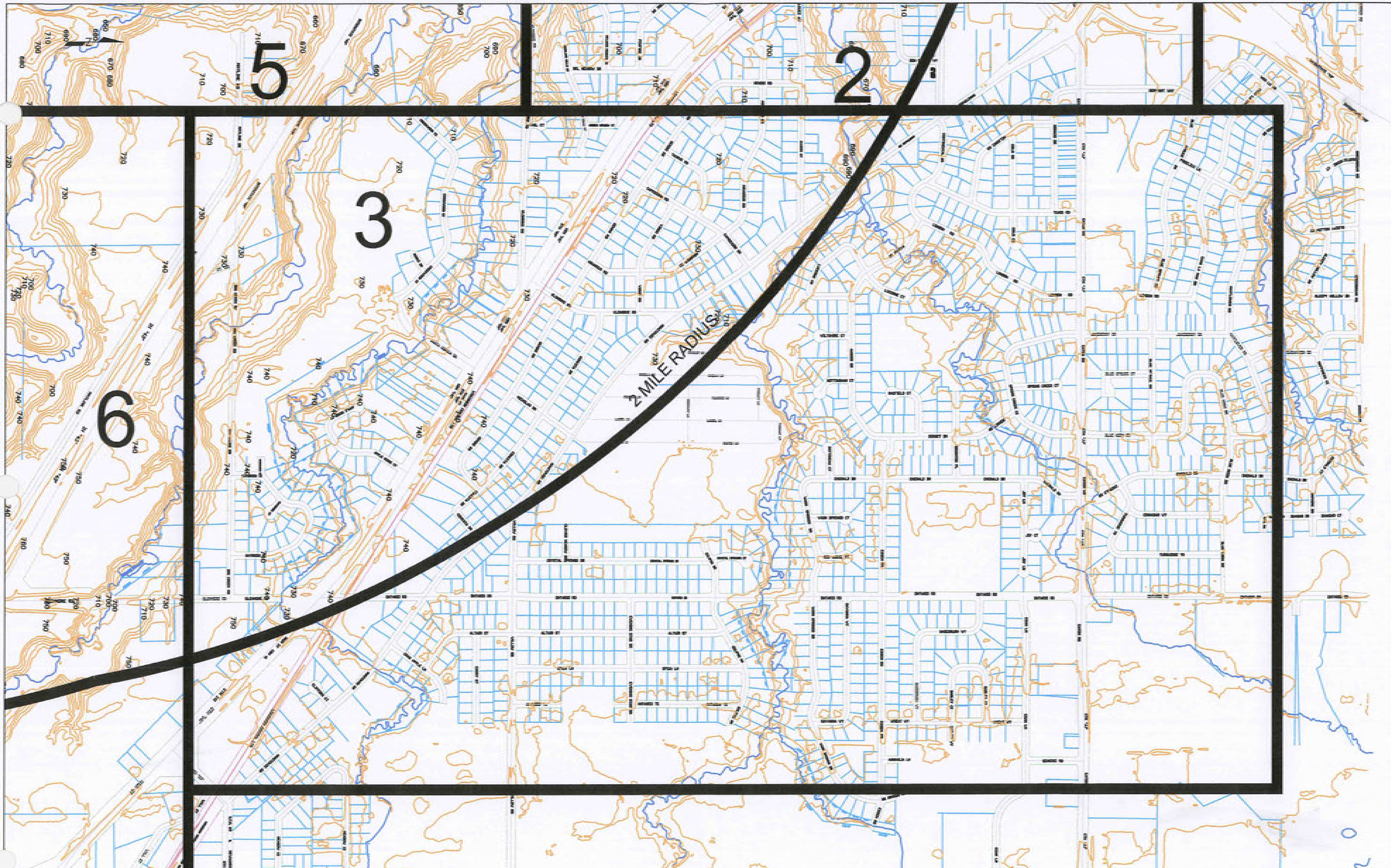


DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP						
CHECKED BY:	JMR						

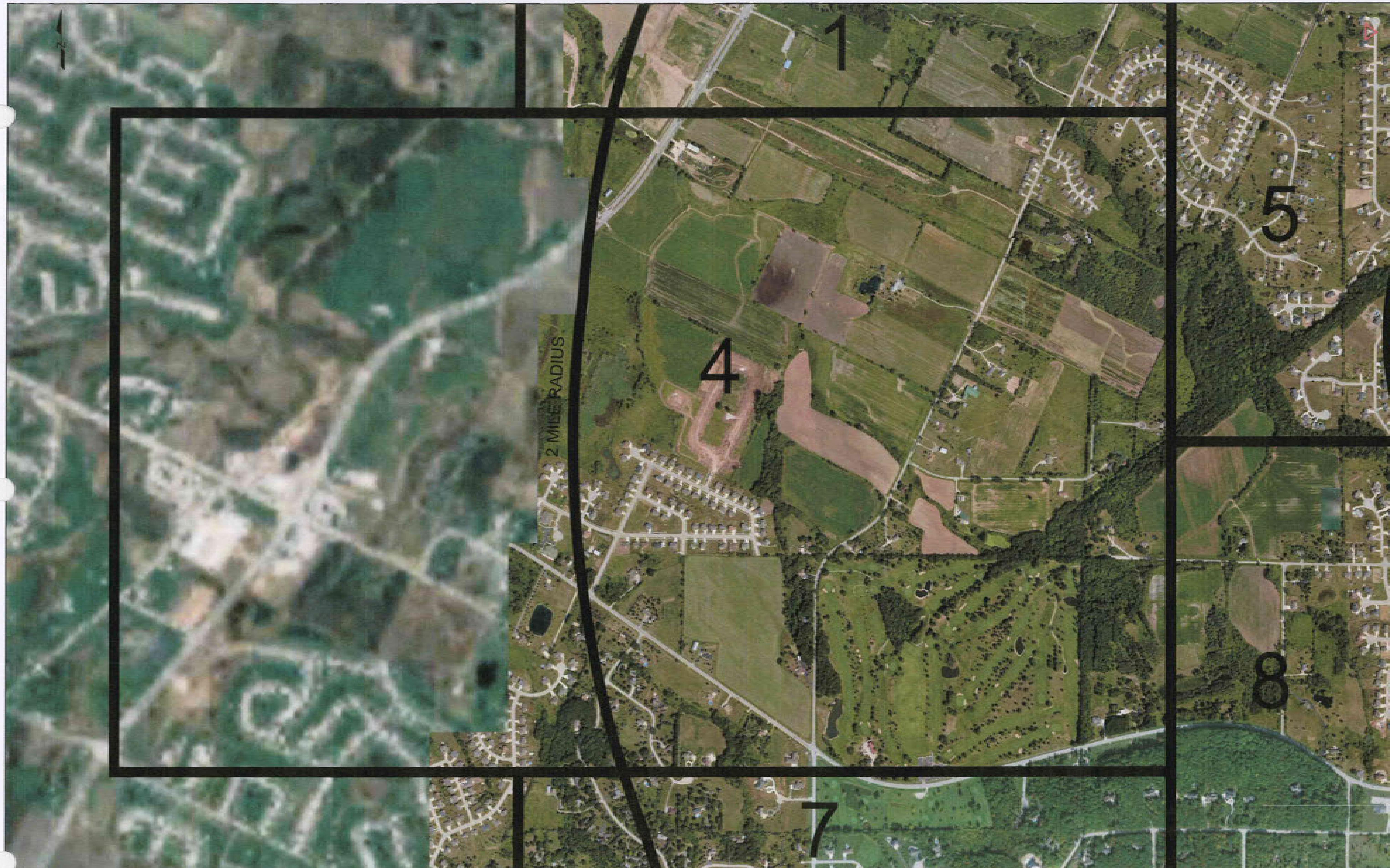
LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 850'

PANEL 3B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-98

SHEET NO. 7



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 875'	PANEL 4A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985	SHEET NO. 8
DRAWN BY:	MHP	*	*	*	*	*	*					
CHECKED BY:	JMR											

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

PANEL 4B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 9

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 625'	PANEL 5A 2 MI. AREAL MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS/ MARKED RESIDENCE AND HIGH USE BUILDINGS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985	SHEET NO. 10
DRAWN BY:	MHP	*	*	*	*	*	*					
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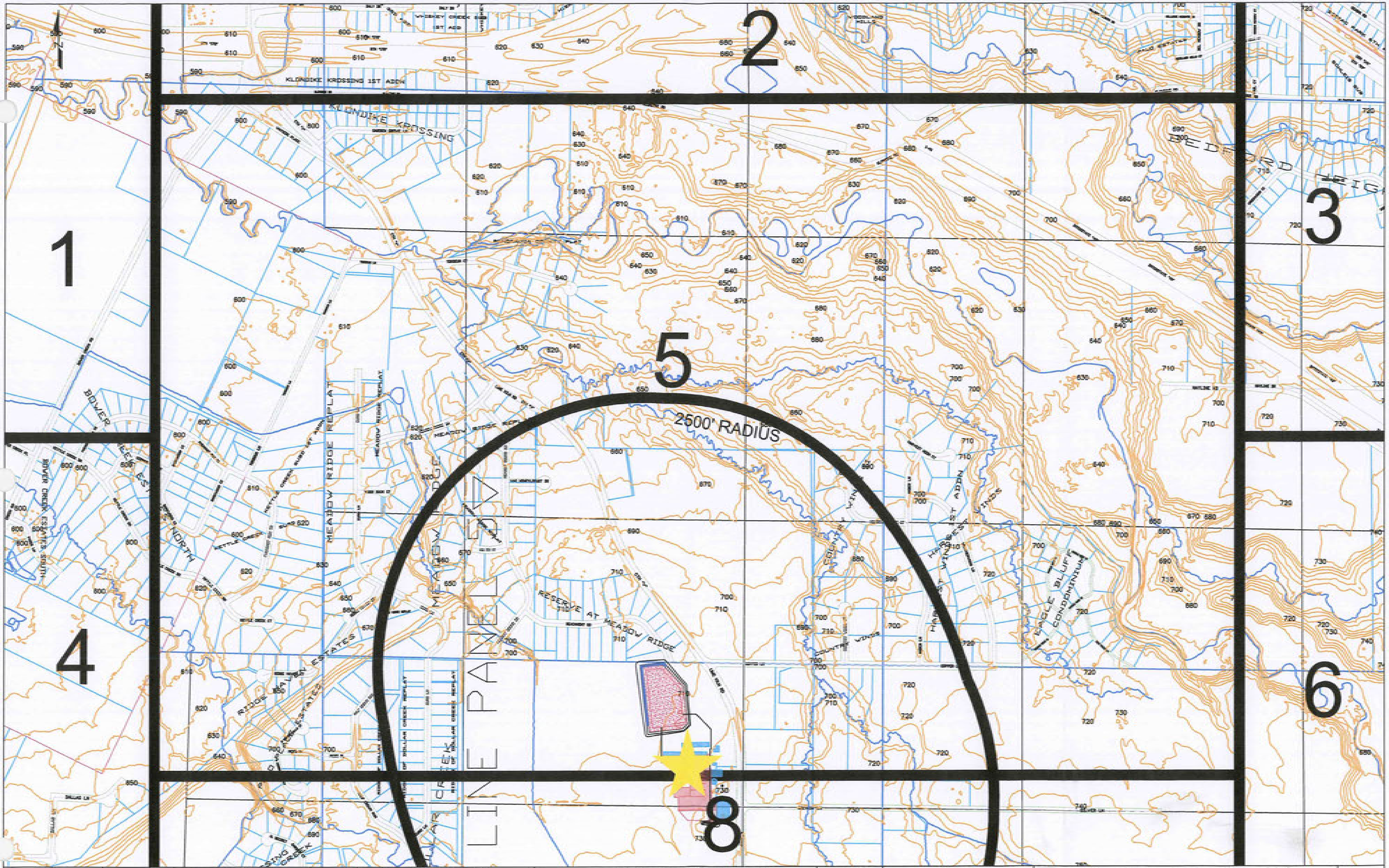

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 675'

PANEL 5B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9857

SHEET NO.
11

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION		SCALE:			SHEET NO.
DATE:	10/30/17	*	*	*	*	*	*	LEDGEVIEW FARM LLC CLUSTER B–HEIFER FACILITY BROWN COUNTY, WISCONSIN	1" = 675'	PANEL 6A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9854	12
DRAWN BY:	WHP											
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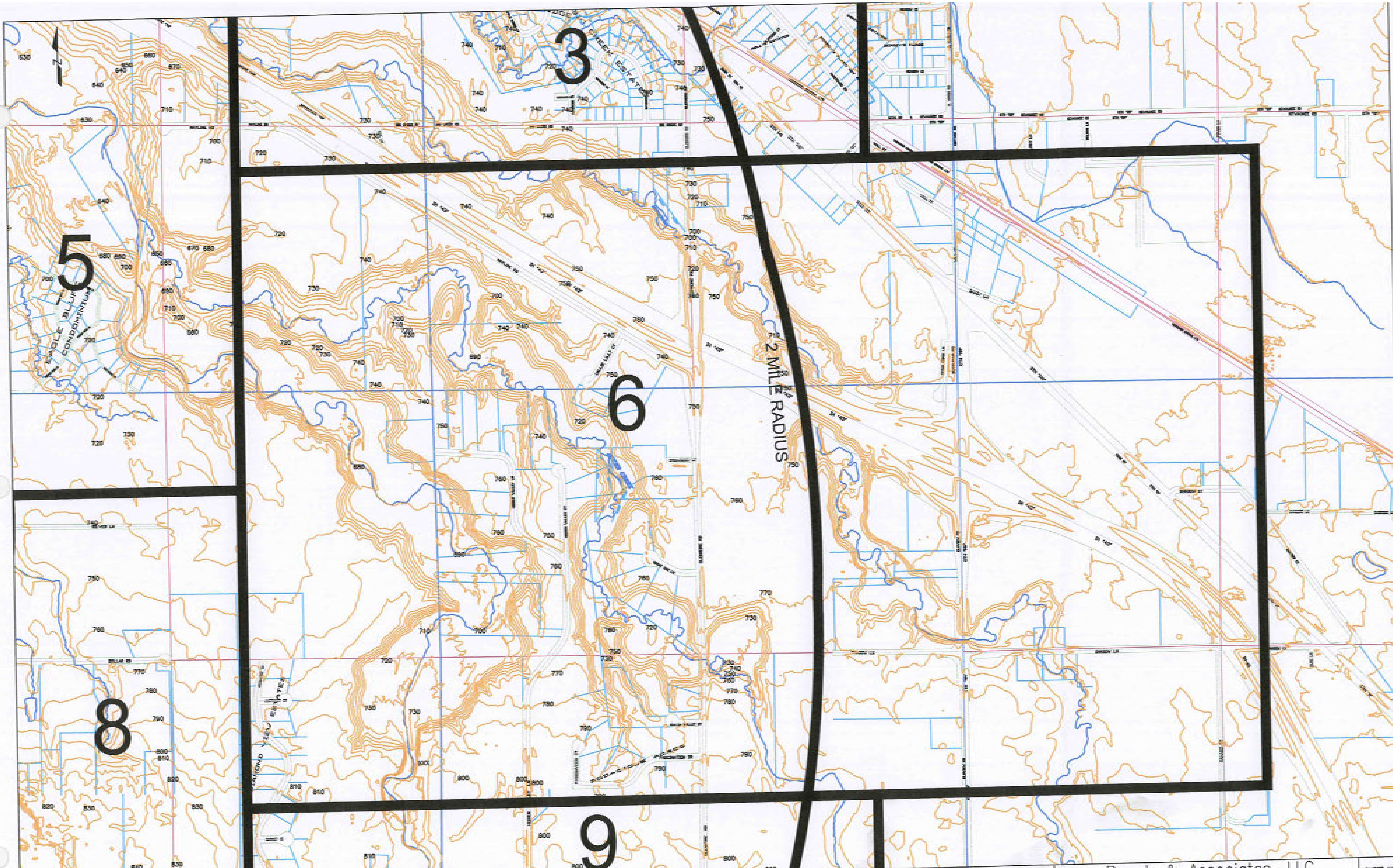


DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

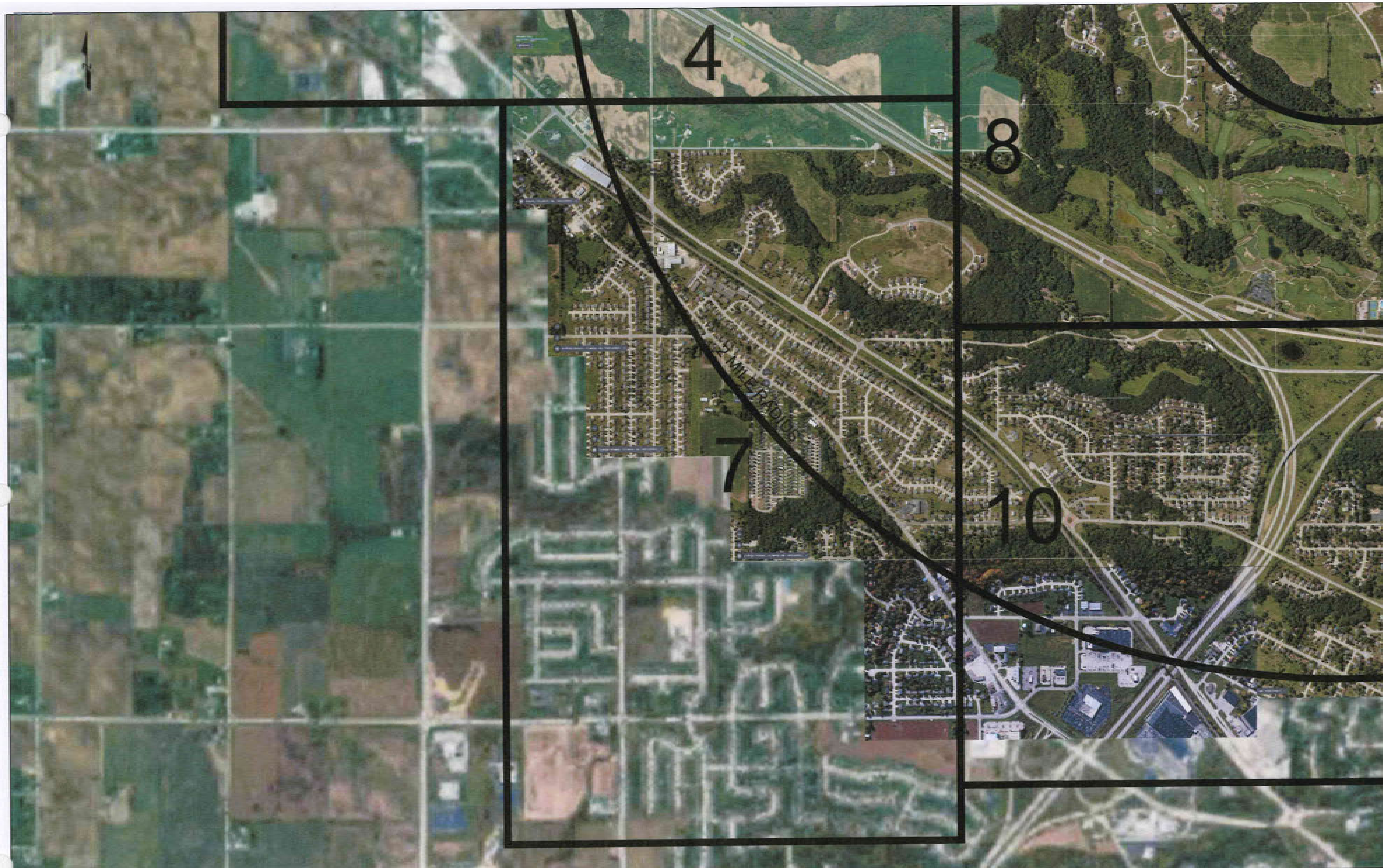
LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 900'

PANEL 6B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 13



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

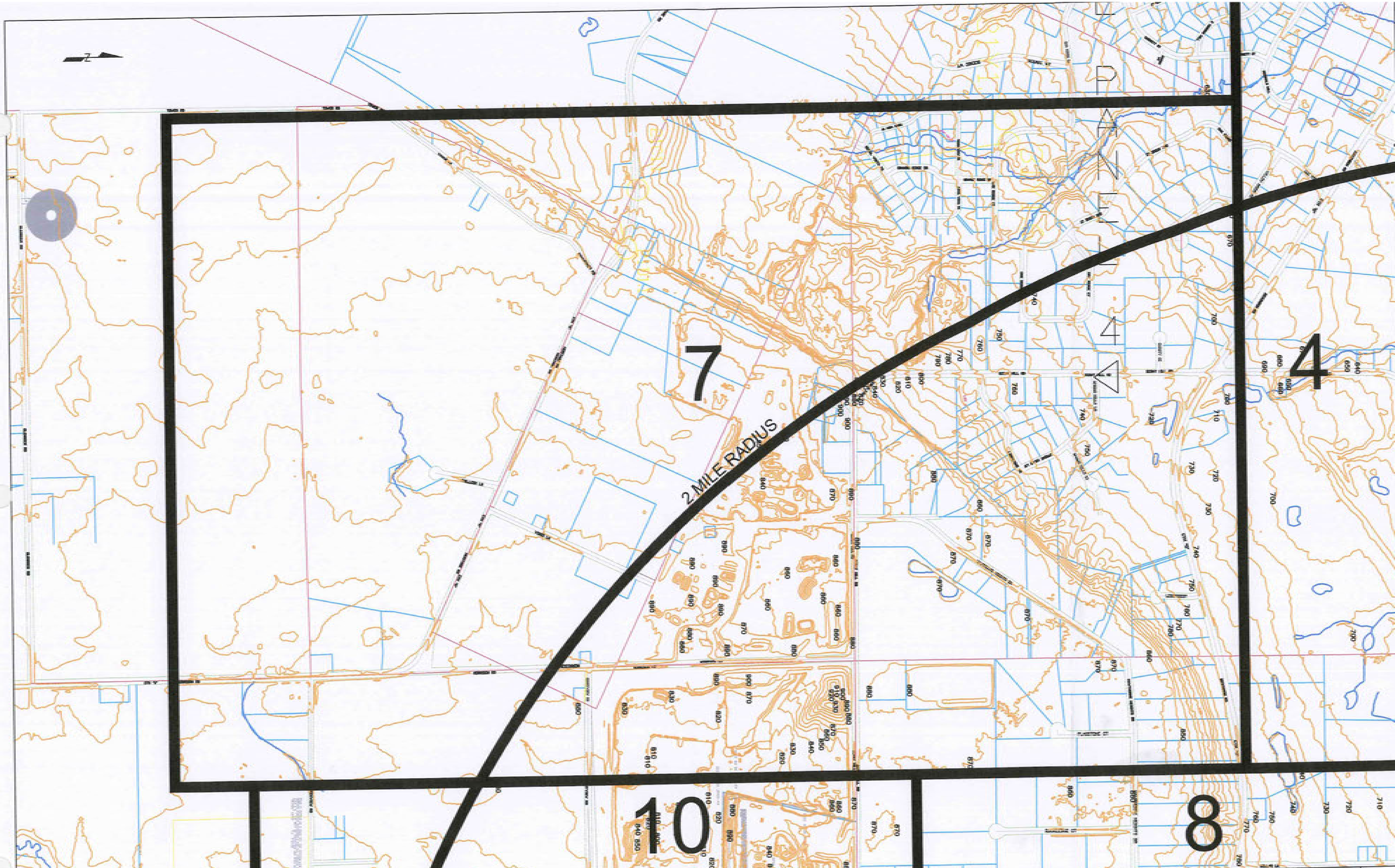
LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 1250'

PANEL 7A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9861

SHEET NO. 14



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DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

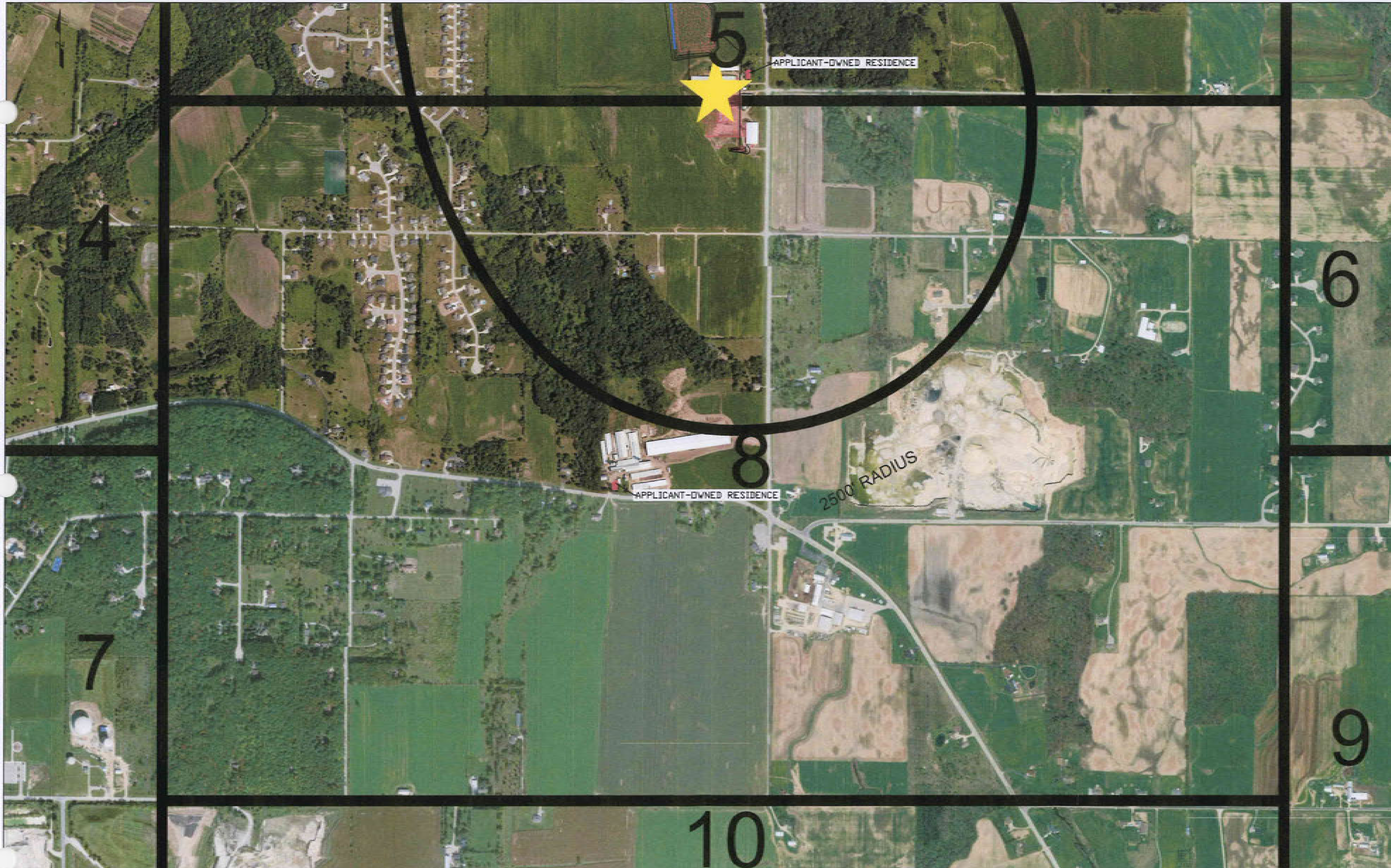
LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

PANEL 7B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHI LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 15



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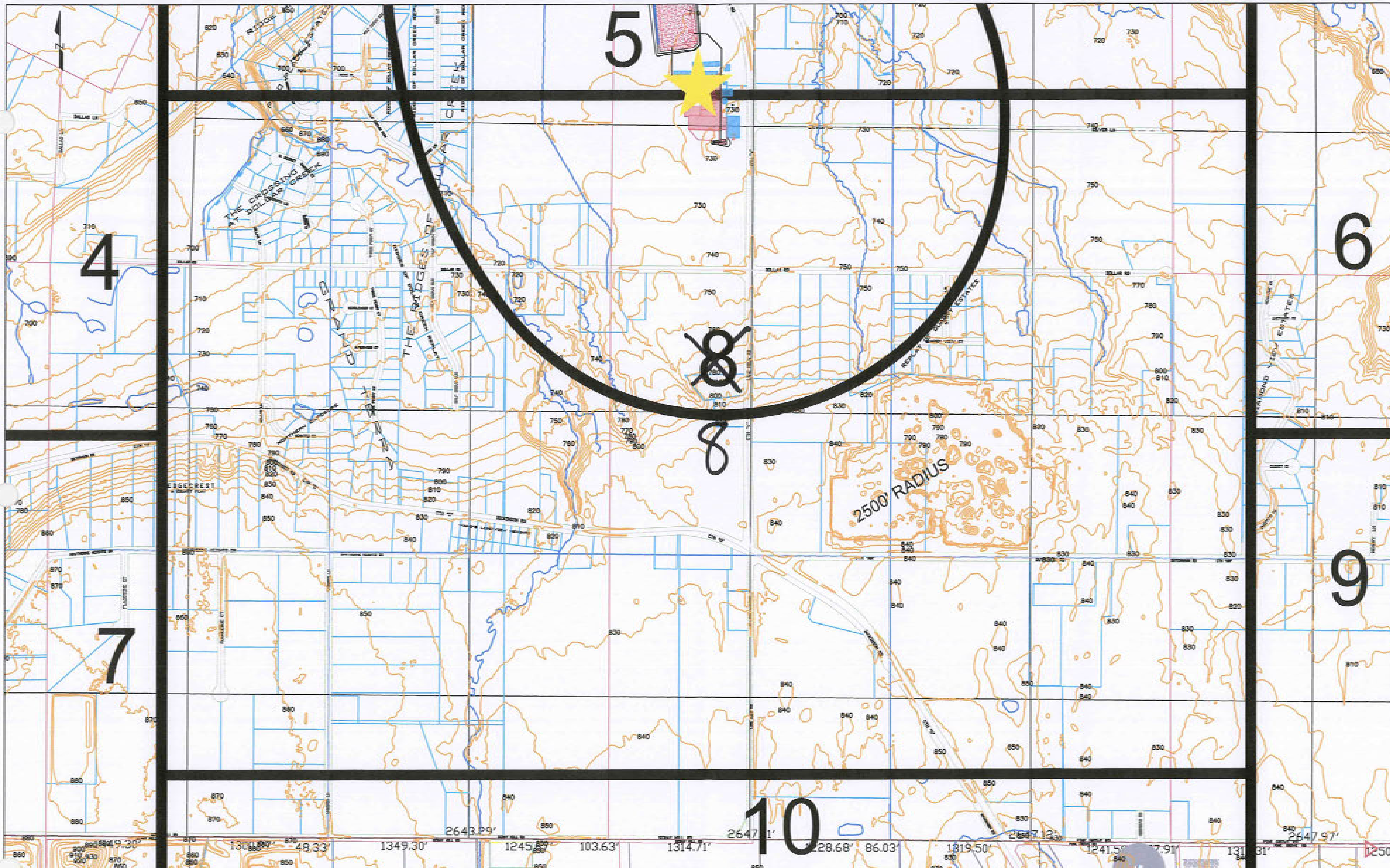
DRAWN BY:	MHP	*	*	*	*	*	*					
CHECKED BY:	JMR											



DATE: 10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY: WHP	-	-	-	-	-	-
CHECKED BY: JMR						

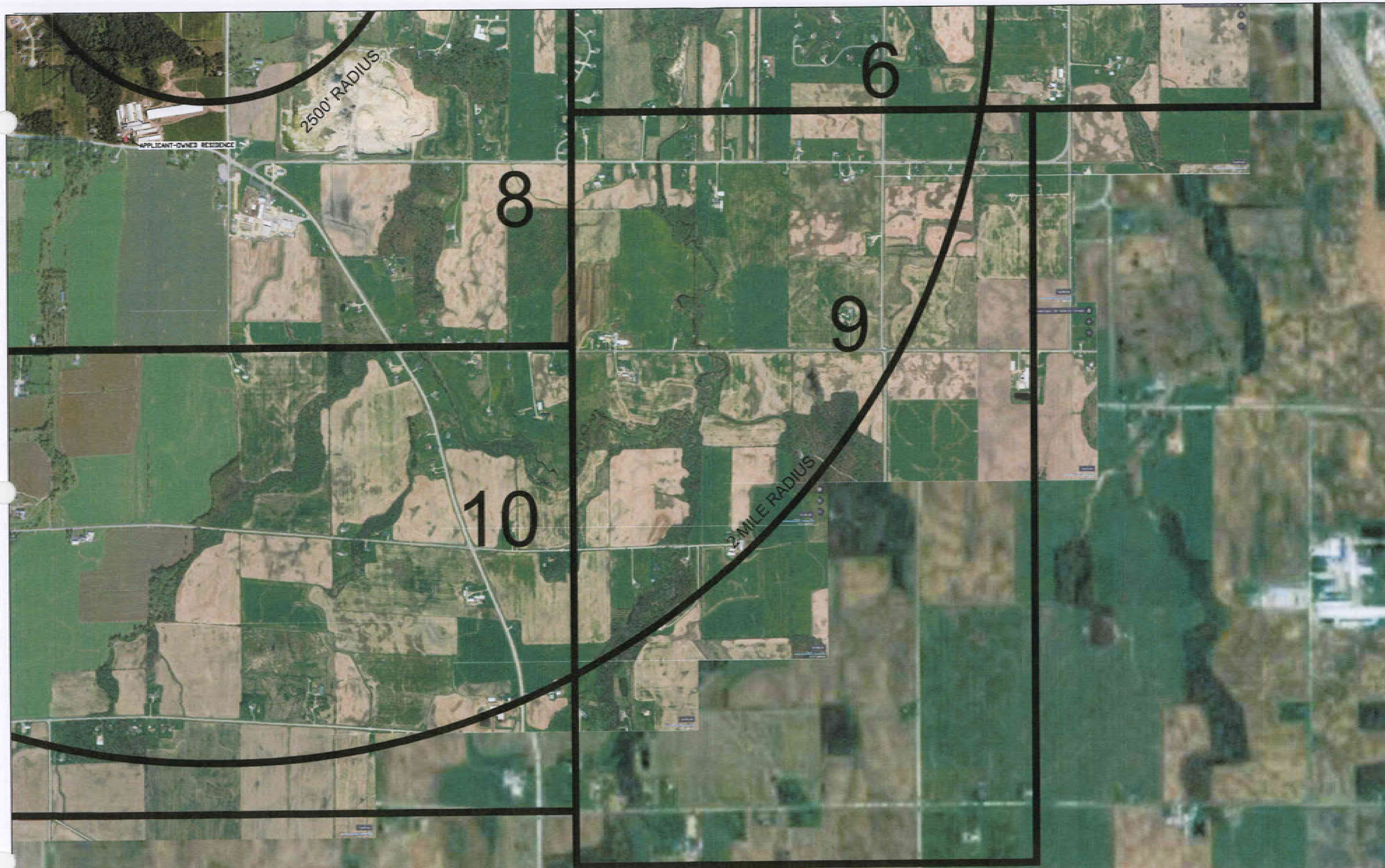
LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 850'

PANEL BB
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/ 10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9857

SHEET NO. 17



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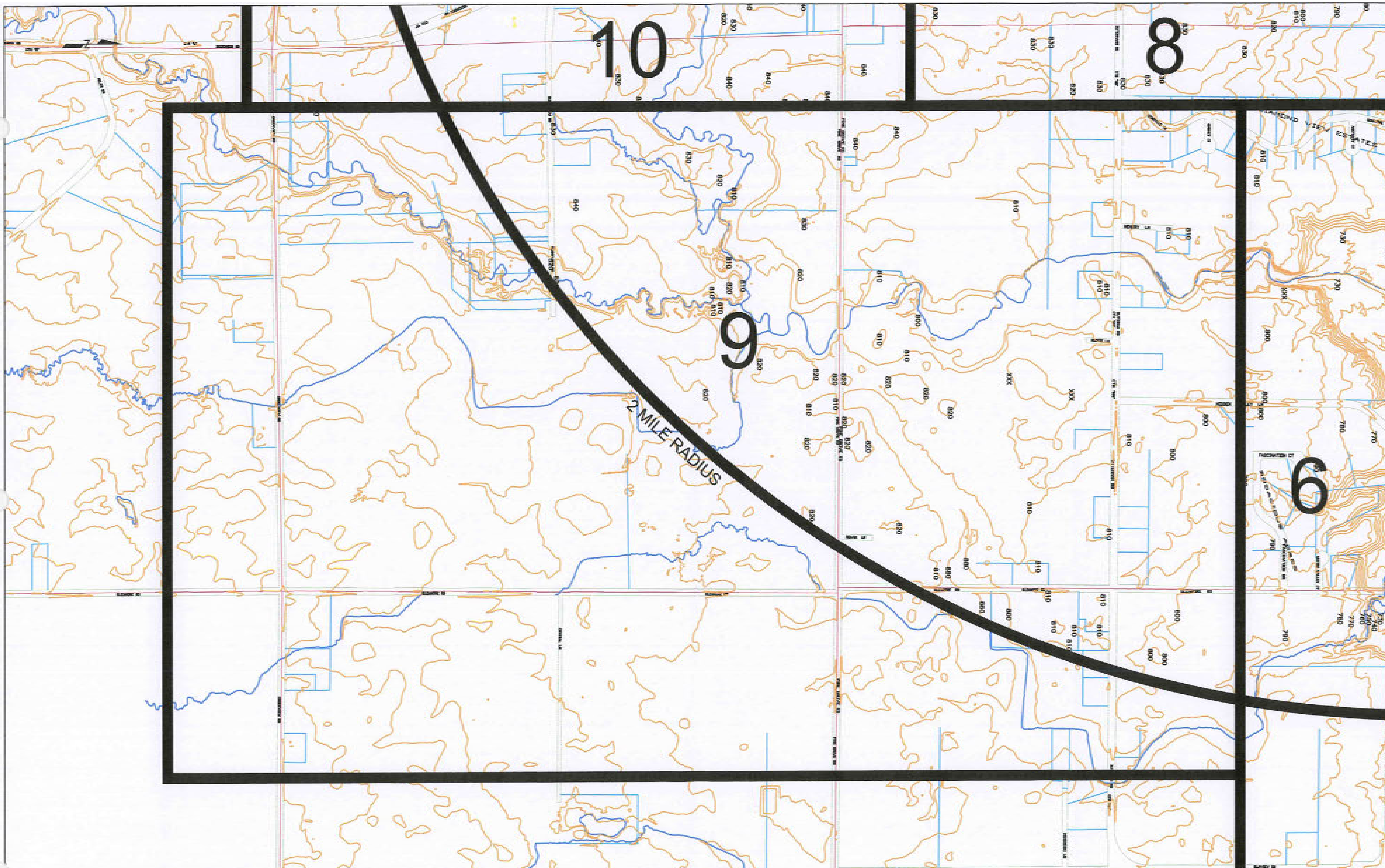
DATE:	10/30/17	*	*	*	*	*	*
DRAWN BY:	MHP						
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 9A 2 MI. AREA MAP OF LIVESTOCK FACILITIES: EXISTING BUILDINGS/ROADWAYS	SHEET NO. 18

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9817



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	WHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B–HEIFER FACILITY
BROWN COUNTY, WISCONSIN

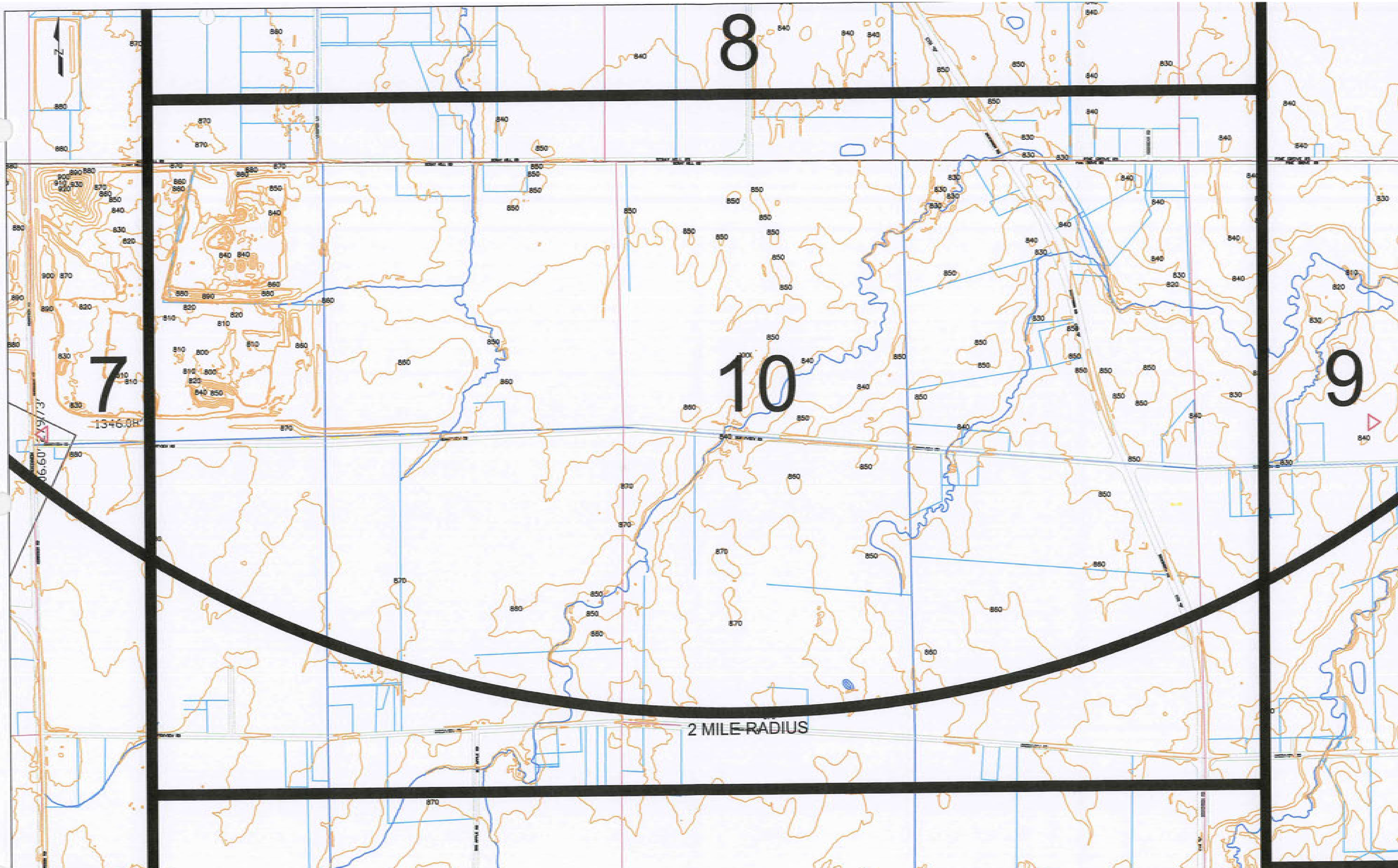
SCALE: 1" = 675'

PANEL 9B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 19

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B–HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 800'	PANEL 10A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 20
DRAWN BY:	MHP	*	*	*	*	*	*					
CHECKED BY:	JMR											



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE: 1" = 675'

PANEL 10B
2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 21

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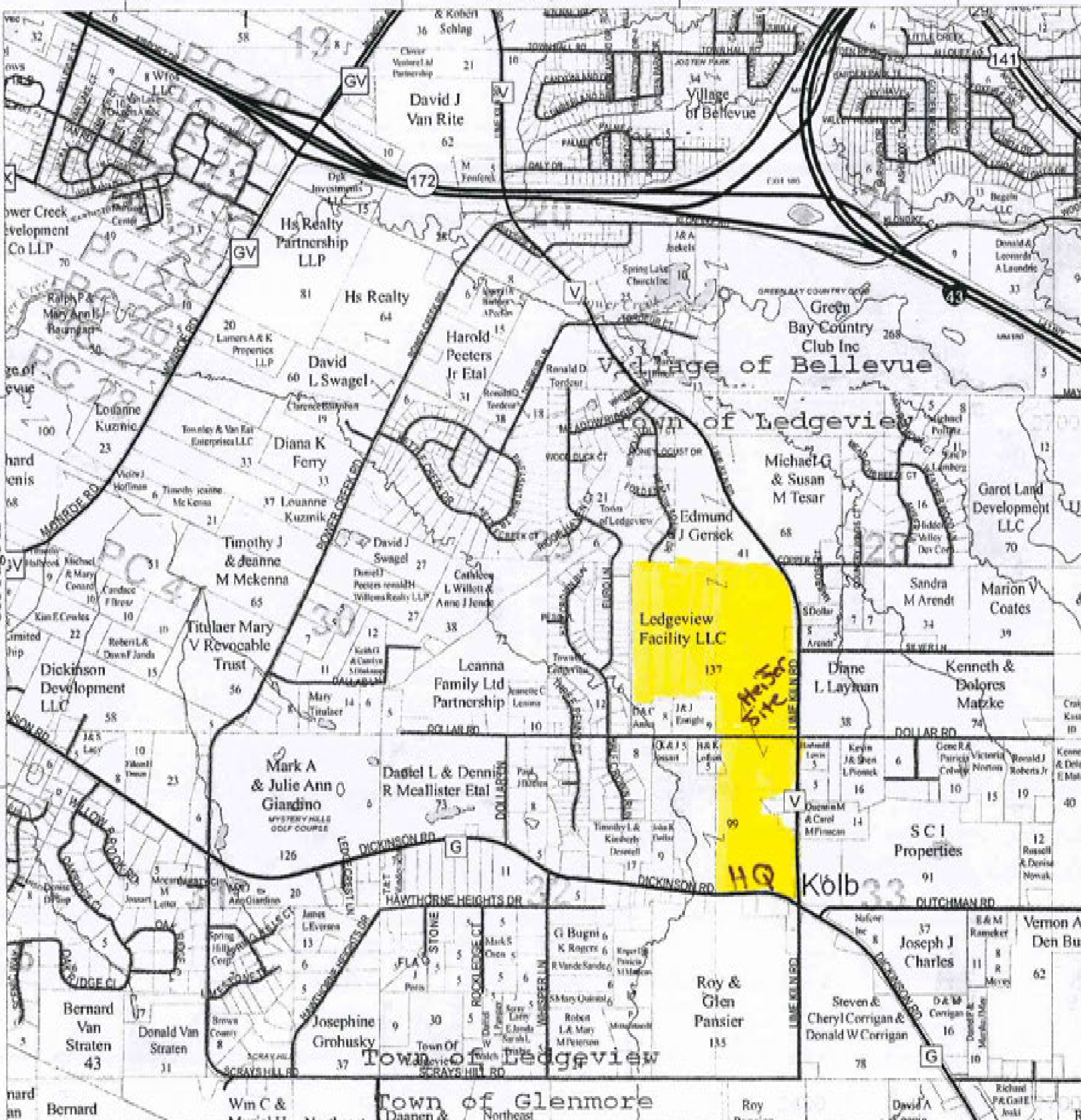
T23N R21E (SW)

Ledgeview & Bellevue(SW)

See Page 17



See Page 12

See Page 16

See Page 7

0 2,640 5,280
Feet

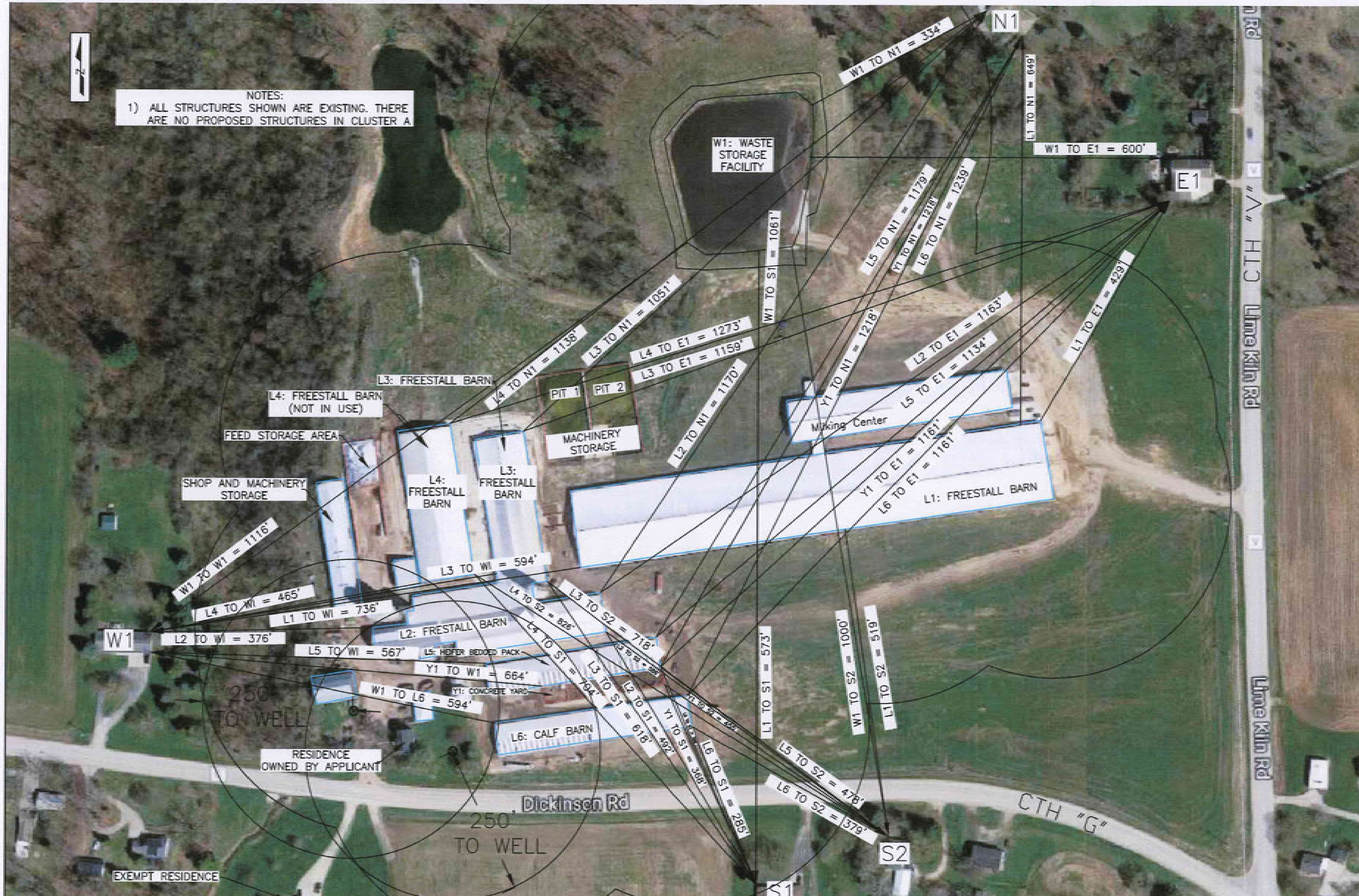
"The acreages shown on this map are based on the latest and most accurate parcel mapping which may differ slightly from the acreages shown on the tax roll.

Map Legend

- Property Boundaries (with acreages**)
- Municipal Boundaries
- Interstate, U.S or State Highway
- County Highway
- Other Road or Street
- Railroads
- Lakes, Ponds, & Rivers
- Trails
- Woodlands/Natural Areas
- Address Grid numbering
- Section or other PLSS line
- Section numbers

For more detailed or up-to-date maps please visit us online at:
www.gis.co.brown.wi.us

10



DATE:	11/22/2017	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION
DRAWN BY:	MTS	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
2017 WASTE STORAGE FACILITY AND LEACHATE MANAGEMENT SYSTEM
BROWN COUNTY, WISCONSIN

SCALE: 1"=150'

CLUSTER A NEAREST NEIGHBORS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 1

Ledgeview Farm, LLC

Cluster A

Livestock Siting Distance to Neighbors

	Nearest Neighbors			
	N1	E1	W1	S1
Livestock Structures	(feet)			
L1 Barn	649	429	736	573
L2 Barn	1,170	1,163	376	492
L3 Barn	1,051	1,159	594	618
L4 Barn	1,138	1,273	465	704
L5 Barn	1,179	1,134	567	398
L6 Barn	1,239	1,161	594	285
Waste Storage Facility - W1	334	600	1,116	1,061
Concrete Yard - Y1	1,218	1,161	664	368

Liv ck Facility: Ledgeview Farm, LLC - Cluster A

Location: N1 North Neighbor

Odor Score Spreadsheet - Ver. 2.0

10/25/18

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	649	Diet manipulation	0.8	None	1	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,170	Diet manipulation	0.8	None	1	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	1,051	Diet manipulation	0.8	None	1	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,138	Diet manipulation	0.8	None	1	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,179	Diet manipulation	0.8	None	1	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,239	Diet manipulation	0.8	None	1	None	1	3
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	334	None	1	None	1	None	1	73
					None		None		None		
2C											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	1,218	Clean frequently (within 3 days)	0.4	None	1	None	1	1
					None		None		None		

4. Separation Distance

Weighted Distance to Neighbor	576
Direction of Nearest Neighbor	North
Adjusted Weighted Distance	576
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	129
Separation Score	542
Basic Management Score	80
Advanced Management Score	20
Odor Score	513

Liv ck Facility: Ledgeview Farm, LLC - Cluster A

Location: E1 East Neighbor

Odor Score Spreadsheet - Ver. 2.0

10/25/18

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	429	Diet manipulation	0.8	None	1	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,163	Diet manipulation	0.8	None	1	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	1,159	Diet manipulation	0.8	None	1	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,273	Diet manipulation	0.8	None	1	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,134	Diet manipulation	0.8	None	1	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,161	Diet manipulation	0.8	None	1	None	1	3
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	600	None	1	None	1	None	1	73
					None		None		None		
2C											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	1,161	Clean frequently (within 3 days)	0.4	None	1	None	1	1
					None		None		None		

4. Separation Distance

Weighted Distance to Neighbor	684
Direction of Nearest Neighbor	East
Adjusted Weighted Distance	752
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	129
Separation Score	569
Basic Management Score	80
Advanced Management Score	20
Odor Score	540

Liv ck Facility: Ledgeview Farm, LLC - Cluster A

Location: W1 West Neighbor

Odor Score Spreadsheet - Ver. 2.0

10/25/18

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	736	Diet manipulation	0.8	None	1	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	376	Diet manipulation	0.8	None	1	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	594	Diet manipulation	0.8	None	1	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	465	Diet manipulation	0.8	None	1	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	567	Diet manipulation	0.8	None	1	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	594	Diet manipulation	0.8	None	1	None	1	3
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,116	None	1	None	1	None	1	73
					None		None		None		
2C											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	664	Clean frequently (within 3 days)	0.4	None	1	None	1	1
					None		None		None		

4. Separation Distance

Weighted Distance to Neighbor	899
Direction of Nearest Neighbor	West
Adjusted Weighted Distance	1,168
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	129
Separation Score	637
Basic Management Score	80
Advanced Management Score	20
Odor Score	608

Li[illegible]ck Facility: Ledgeview Farm, LLC - Cluster A — Odor Score Spreadsheet - Ver. 2.0 — 10/25/18

Loc[illegible]on: S1 South Neighbor

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	573	Diet manipulation	0.8	None	1	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	492	Diet manipulation	0.8	None	1	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	618	Diet manipulation	0.8	None	1	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	704	Diet manipulation	0.8	None	1	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	398	Diet manipulation	0.8	None	1	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	285	Diet manipulation	0.8	None	1	None	1	3
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,061	None	1	None	1	None	1	73
					None		None		None		
2C											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	368	Clean frequently (within 3 days)	0.4	None	1	None	1	1
					None		None		None		

4. Separation Distance

Weighted Distance to Neighbor	840
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	1,008
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	129
Separation Score	619
Basic Management Score	80
Advanced Management Score	20
Odor Score	590

Li[?]ck Facility: Ledgeview Farm, LLC - Cluster A

Odor Score Spreadsheet - Ver. 2.0

10/25/18

Location: S2 South Neighbor

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	519	Diet manipulation	0.8	None	1	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	586	Diet manipulation	0.8	None	1	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	718	Diet manipulation	0.8	None	1	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	826	Diet manipulation	0.8	None	1	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	478	Diet manipulation	0.8	None	1	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	379	Diet manipulation	0.8	None	1	None	1	3
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,000	None	1	None	1	None	1	73
					None		None		None		
2C											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area ($Ft.^2$)	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	455	Clean frequently (within 3 days)	0.4	None	1	None	1	1
					None		None		None		

4. Separation Distance

Weighted Distance to Neighbor	814
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	977
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	129
Separation Score	601
Basic Management Score	80
Advanced Management Score	20
Odor Score	572

11

NOTES:
1. THE PROPOSED STRUCTURES MEET SETBACKS FOR ANIMAL HOUSING AND WASTE STORAGE.
2. DB: DETENTION BASIN IS A LIVESTOCK STRUCTURE PER ATCP 51.01(20) THAT IS USED TO TRANSFER WASTE GENERATED AT A LIVESTOCK FACILITY. IT IS A COMPONENT OF THE WASTE TRANSFER SYSTEM. IT IS NOT A WASTE STORAGE STRUCTURE UNDER ATCP 51.01(44).
3. DB: DETENTION BASIN IS NOT INCLUDED IN THE ODOR SCORE AS IT IS NOT A WASTE STORAGE FACILITY.

DATE:	11/22/2017	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION	LEDGEVIEW FARMS, LLC 2018 WASTE STORAGE FACILITY AND LEACHATE MANAGEMENT SYSTEM BROWN COUNTY, WISCONSIN	SCALE: 1"=300'	NEAREST NEIGHBOR SITE PLAN	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 1
DRAWN BY:	MTS	*	*	*	*	*	*					
CHECKED BY:	JMR											

Ledgeview Farm, LLC
Cluster B
Livestock Siting Distance to Neighbors

Livestock Structures	Nearest Neighbor N1 (feet)	Nearest Neighbor E1 (feet)	Nearest Neighbor S1 (feet)
Collection Basin - CB	1,309	1,156	1,773
Waste Storage Facility - W2	414	624	1,988
Bedded Pack Barn - L1	1,226	855	1,631
Freestall Barn - L2	1,748	1,213	1,043
Concrete Yard - Y2	1,309	930	1,519

Update 10.26.18

Liv[illegible]ck Facility: Ledgeview Farm, LLC - Cluster B

Odor Score Spreadsheet - Ver. 2.0

10/25/18

Loc[illegible]on: N1 North Neighbor

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,226	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,748	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	414	Bio cover (8" straw)	0.4	None	1	None	1	101
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,309	None	1	None	1	None	1	2
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,309	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5

4. Separation Distance

Weighted Distance to Neighbor	738
Direction of Nearest Neighbor	North
Adjusted Weighted Distance	738
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	139
Separation Score	569
Basic Management Score	80
Advanced Management Score	20
Odor Score	530

Livestock Facility: Ledgeview Farm, LLC - Cluster B

Location: E1 East Neighbor

Odor Score Spreadsheet - Ver. 2.0

10/25/18

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	855	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,213	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	624	Bio cover (8" straw)	0.4	None	1	None	1	101
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,156	None	1	None	1	None	1	2
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	930	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5

4. Separation Distance

Weighted Distance to Neighbor	761
Direction of Nearest Neighbor	East
Adjusted Weighted Distance	837
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	139
Separation Score	585
Basic Management Score	80
Advanced Management Score	20
Odor Score	546

Livestock Facility: Ledgeview Farm, LLC - Cluster B

Location: S1 South Neighbor

Odor Score Spreadsheet - Ver. 2.0

10/25/18

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,631	Diet manipulation	0.8	None	1	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,043	Diet manipulation	0.8	None	1	None	1	26
1C											
1D											
1E											
1F											
1G											
1H											
1I											
1J											
1K											
1L											

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	1,988	Bio cover (8" straw)	0.4	None	1	None	1	101
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,773	None	1	None	1	None	1	2
DB											
2D											
2E											
2F											

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Ft.^{2})	Dist. to Nearest Neighbor (Ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,519	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	None	1	5

4. Separation Distance

Weighted Distance to Neighbor	1,778
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	2,134
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor	139
Separation Score	872
Basic Management Score	80
Advanced Management Score	20
Odor Score	833

12

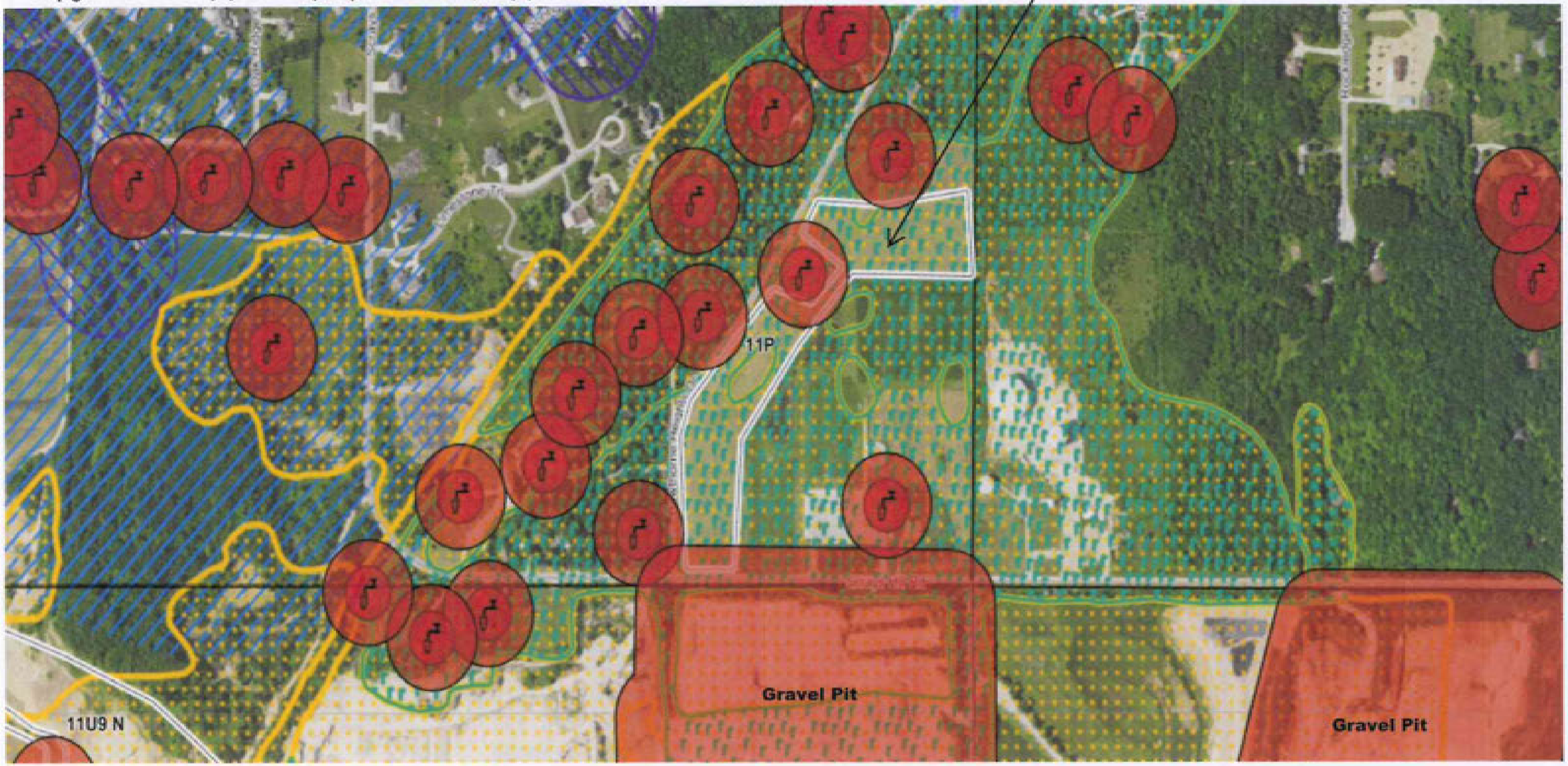
11P Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied to this field unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The information on this map is not guaranteed to be100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.

Well: No Apps Wiin 100' (200' setback if upslope)

Wetland: No Apps Wiin 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

Concentrated Flow-No Apps

22 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017 **Municipal water in this area**

N

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

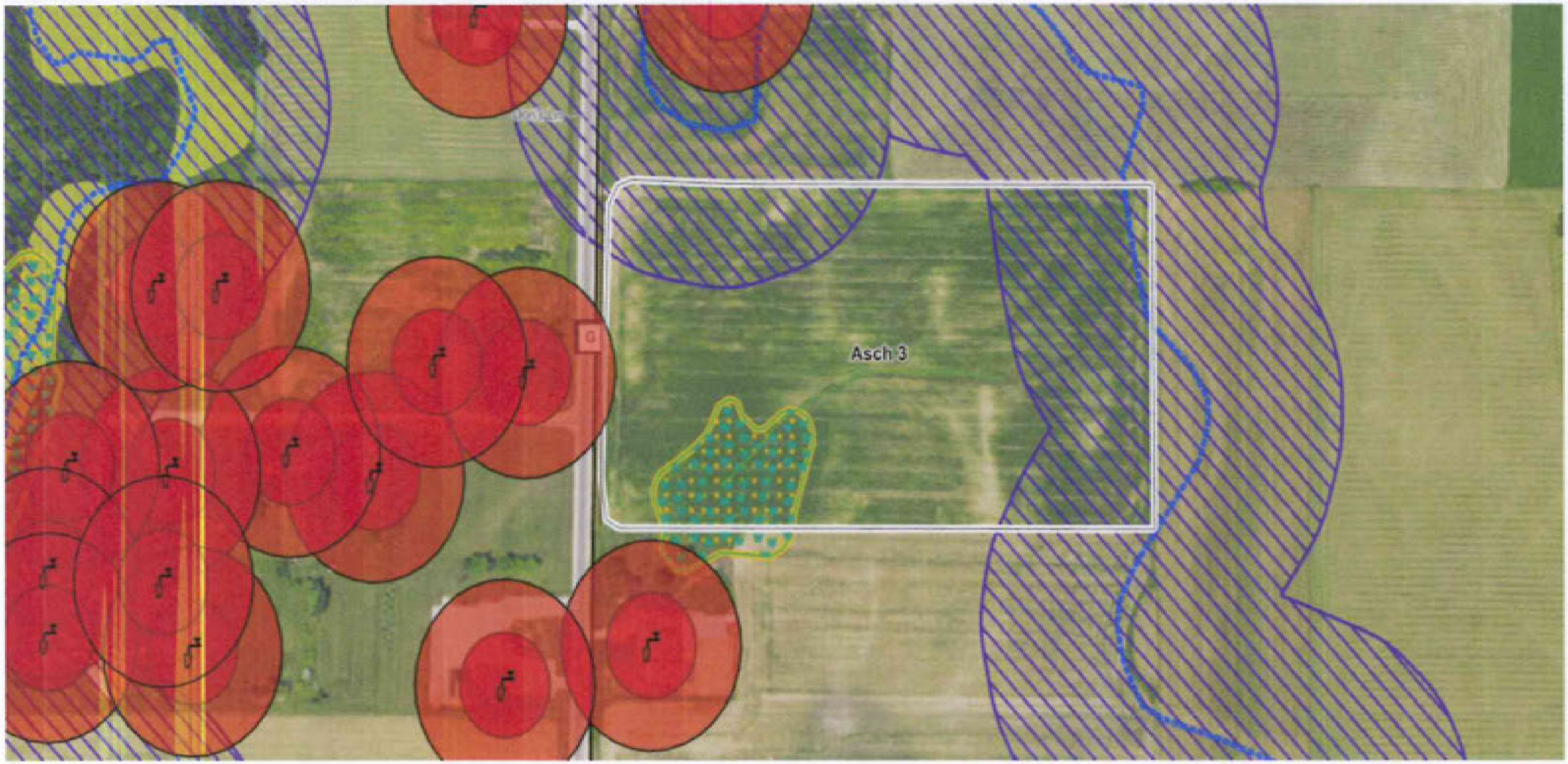
Concentrated Flow-No Apps

Asch 3 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (300' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

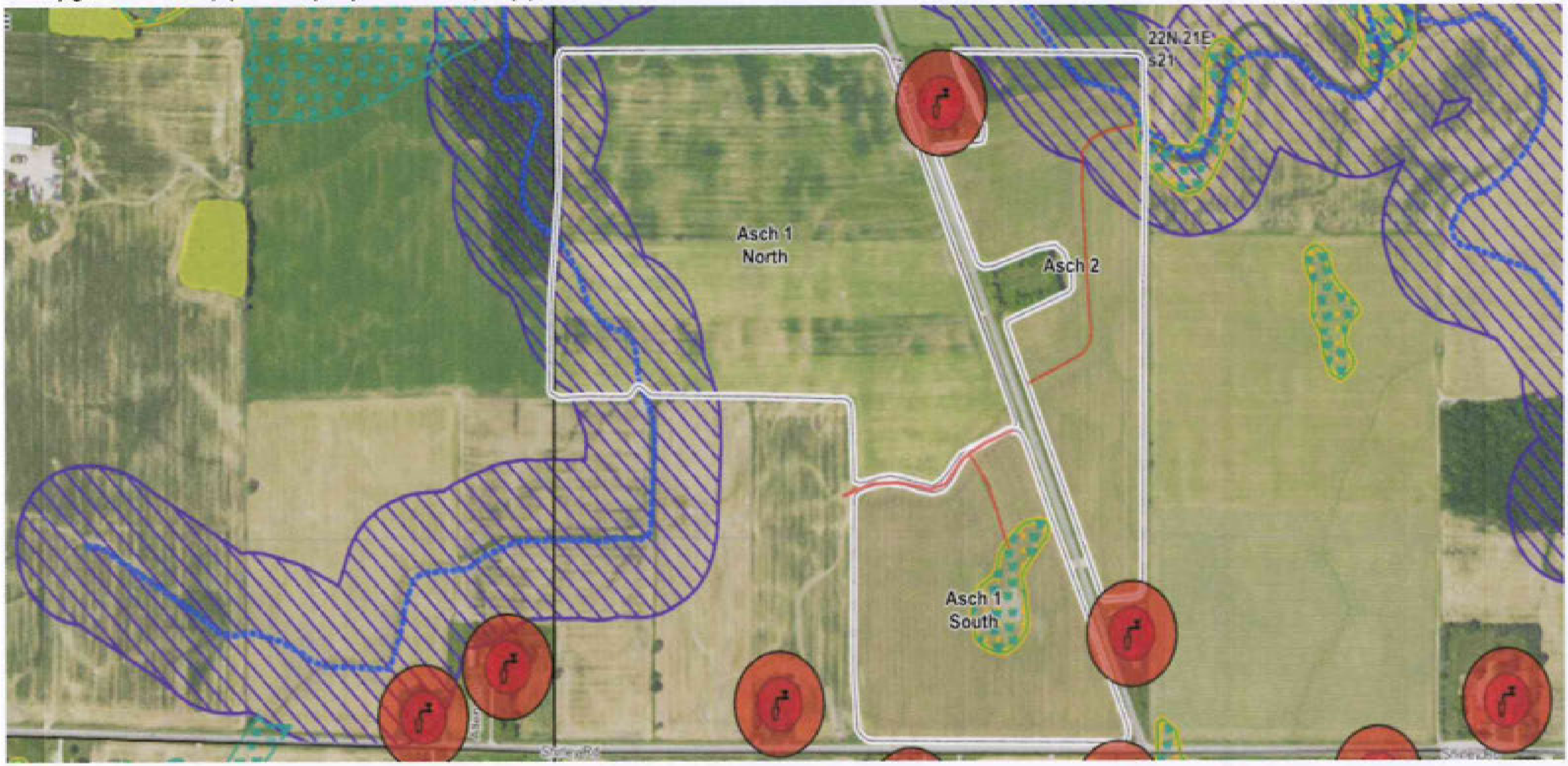
Concentrated Flow-No Apps

Aschenbrenner Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

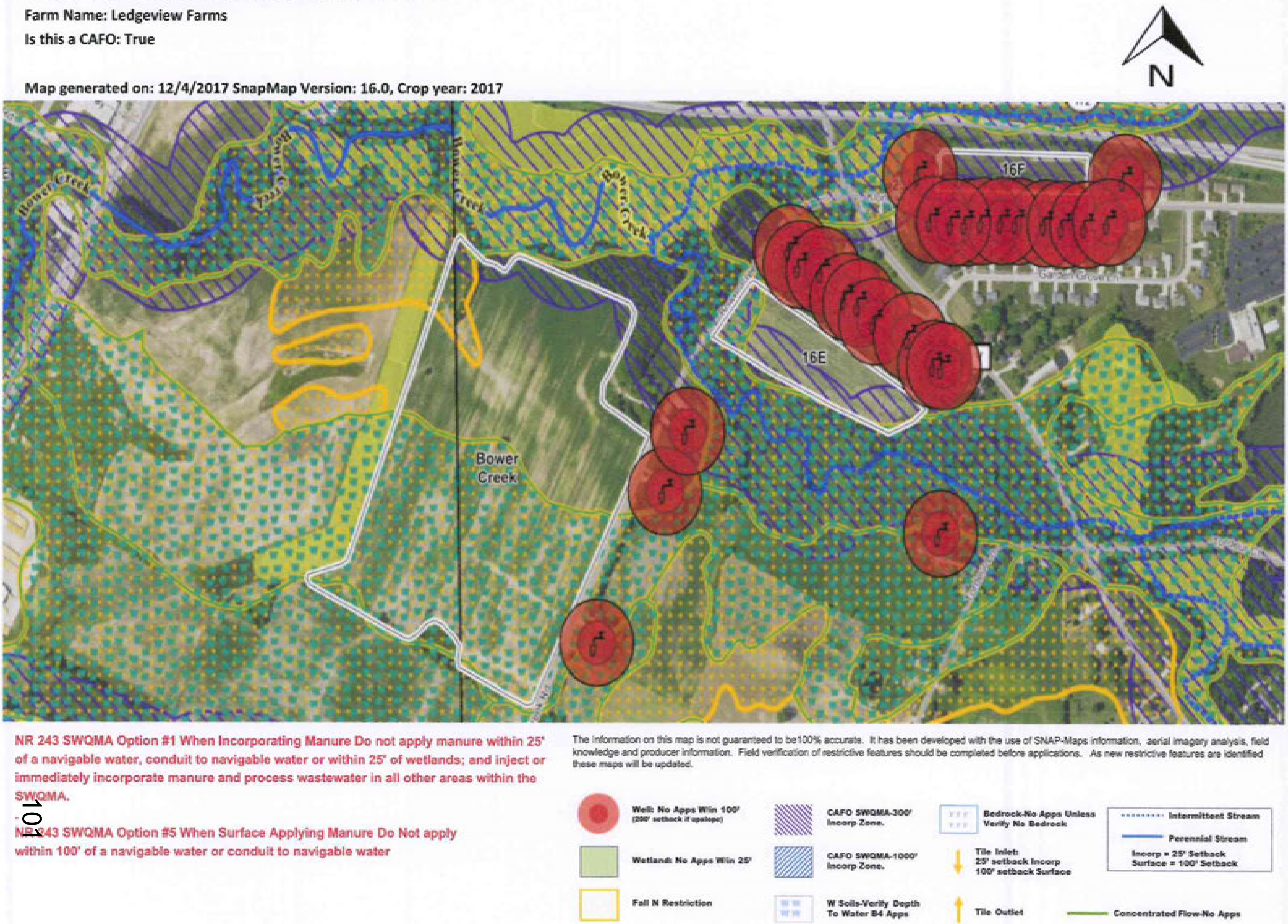
Concentrated Flow-No Apps

Bower Creek Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

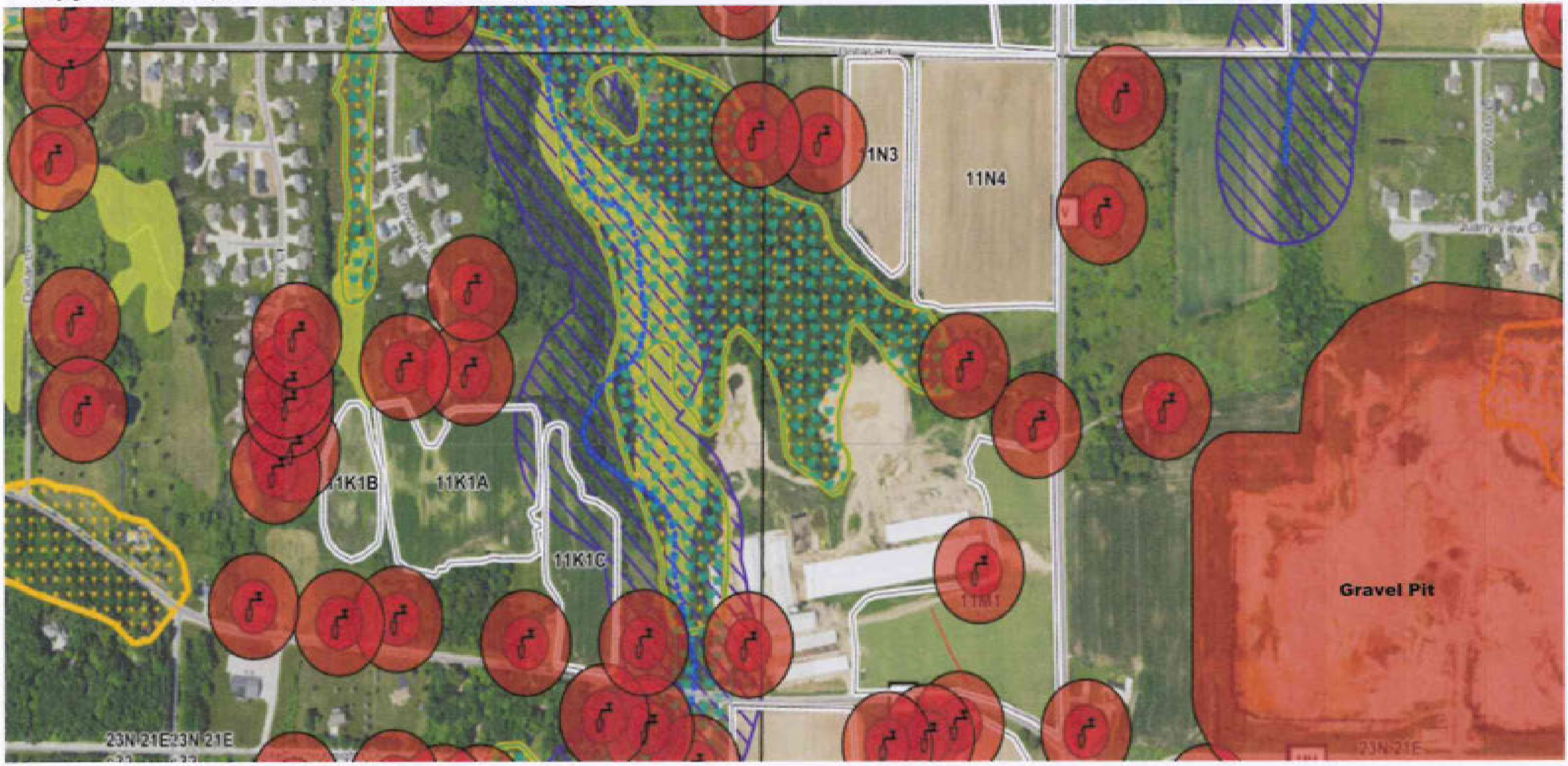
NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

Dairy Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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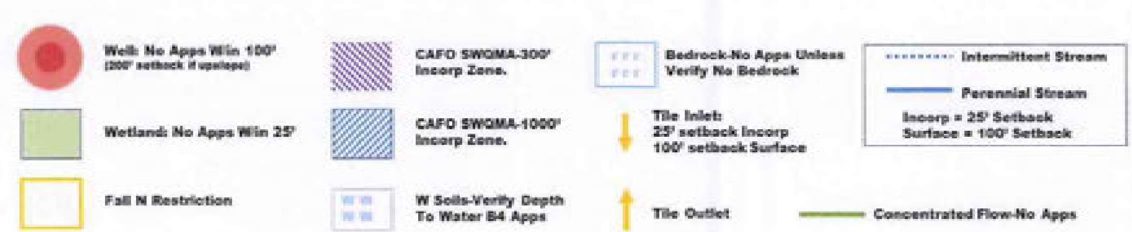

11S1, 11S2, 11Q1, 11R1 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

Concentrated Flow-No Apps

DL Fields Restrictions

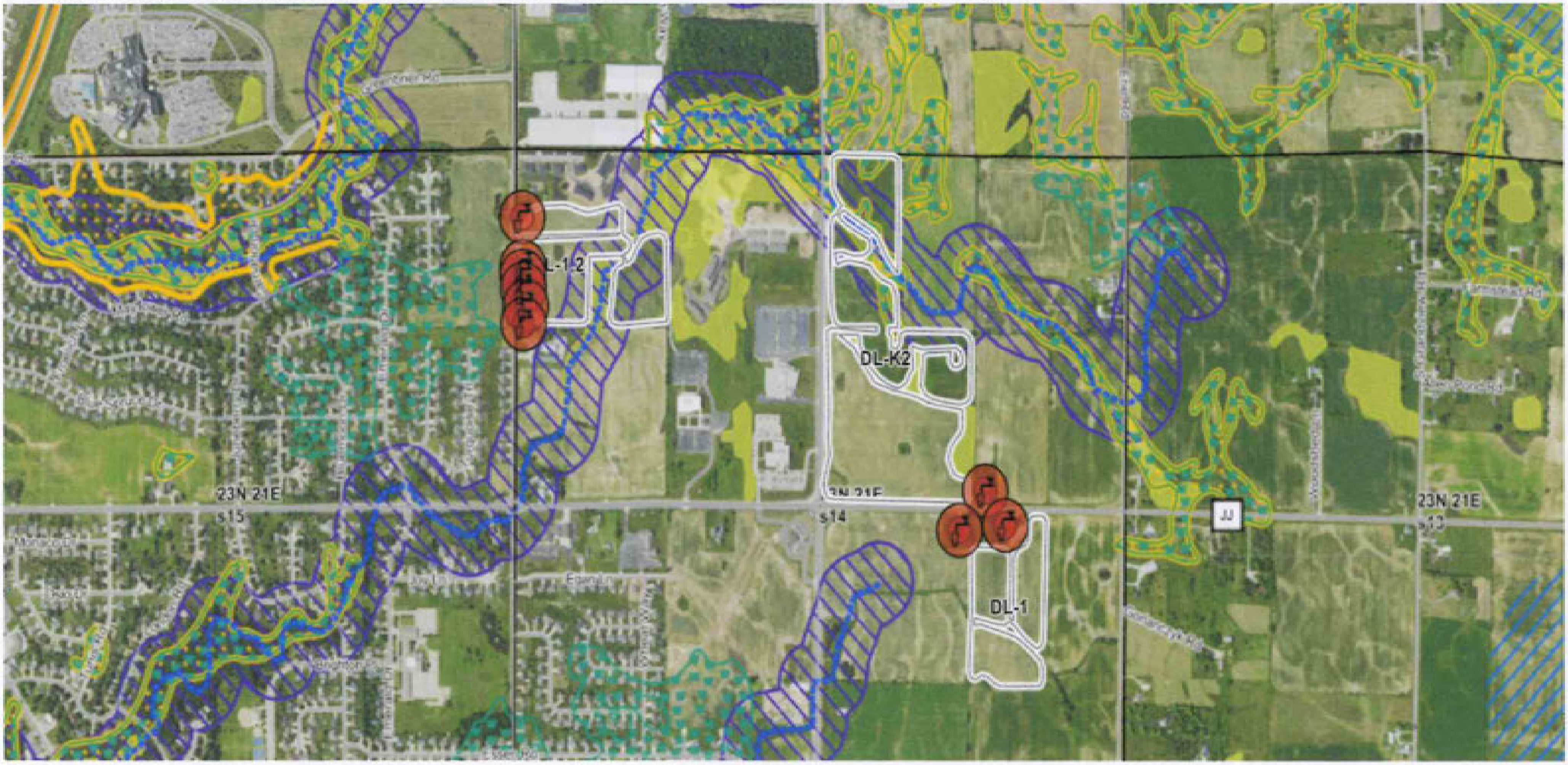
Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

Municipal water in this area

N



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

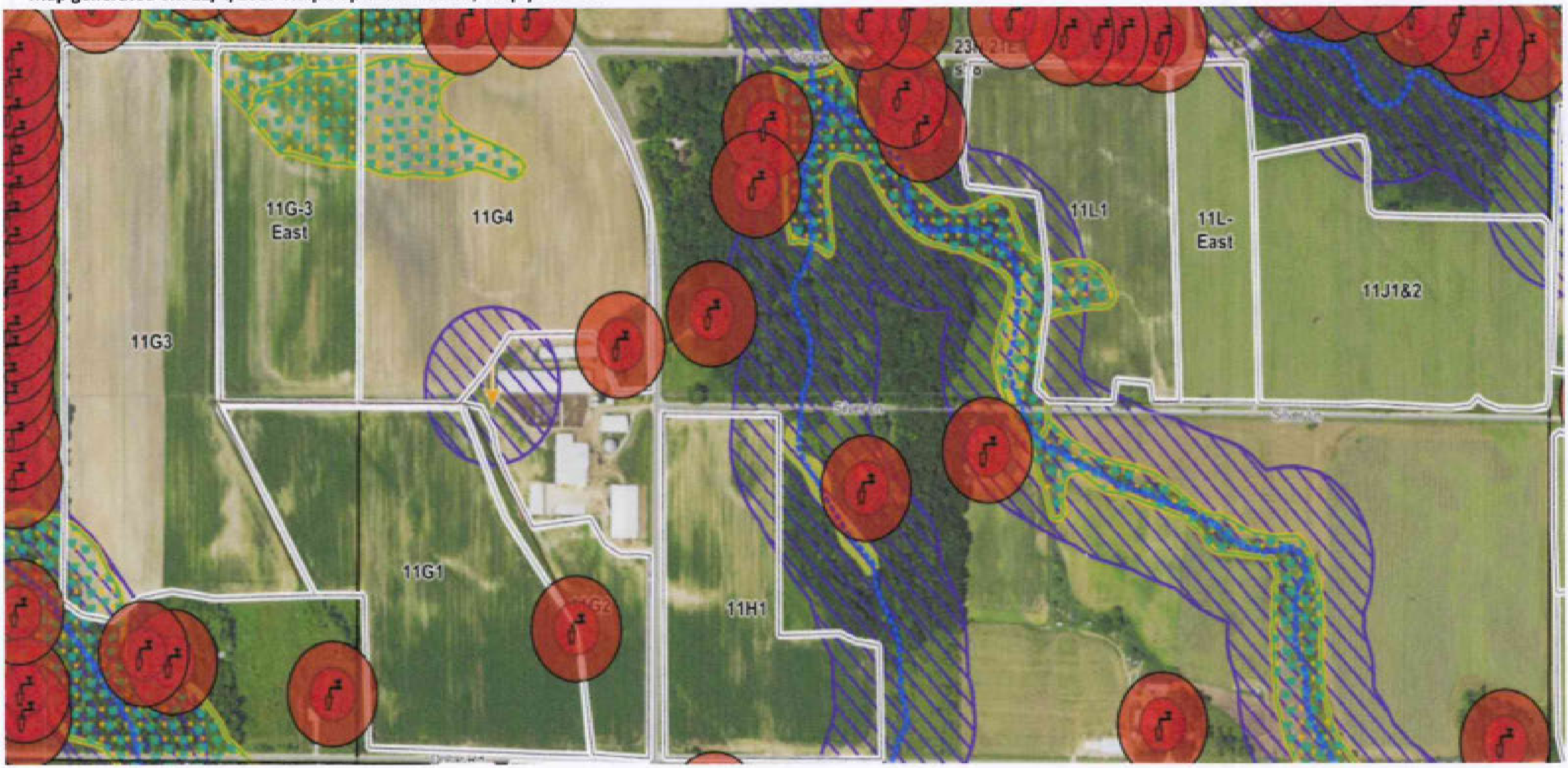
Concentrated Flow-No Apps

Heifer Site Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

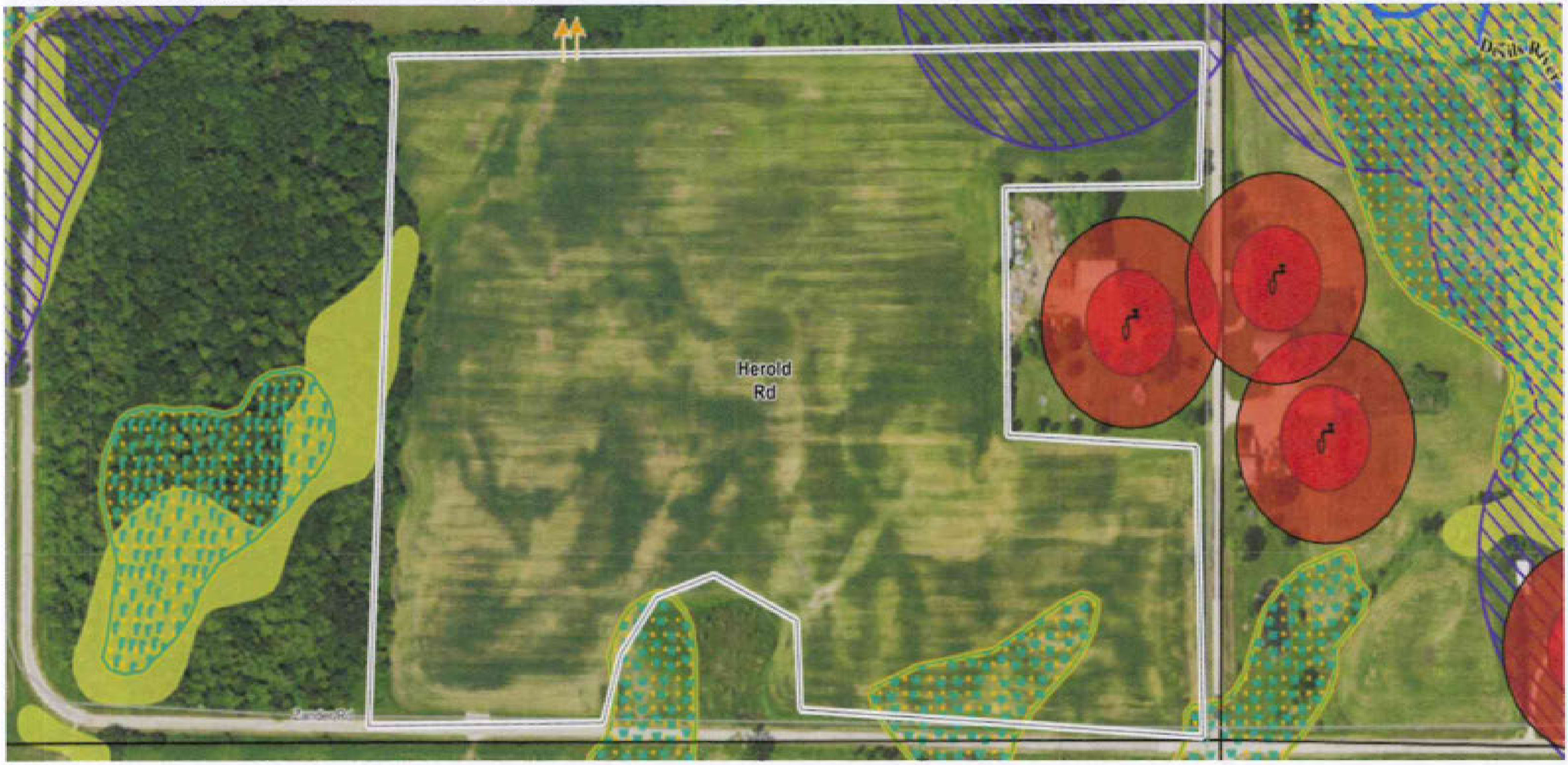
Concentrated Flow-No Apps

Herold Rd Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)
Wetland: No Apps W/in 25'
Fall N Restriction
CAFO SWQMA-300' Incorp Zone.
CAFO SWQMA-1000' Incorp Zone.
W Soils-Verify Depth To Water B4 Apps
Bedrock-No Apps Unless Verify No Bedrock
Tile Inlet: 25' setback Incorp 100' setback Surface
Tile Outlet
Intermittent Stream
Perennial Stream
Incorp = 25' Setback Surface = 100' Setback
Concentrated Flow-No Apps

J Kaster Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

Concentrated Flow-No Apps

J Kaster N-Collection Pt Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

Concentrated Flow-No Apps

KB1-4 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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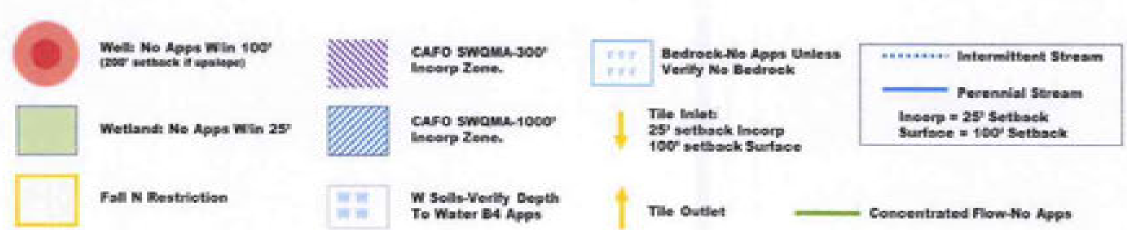
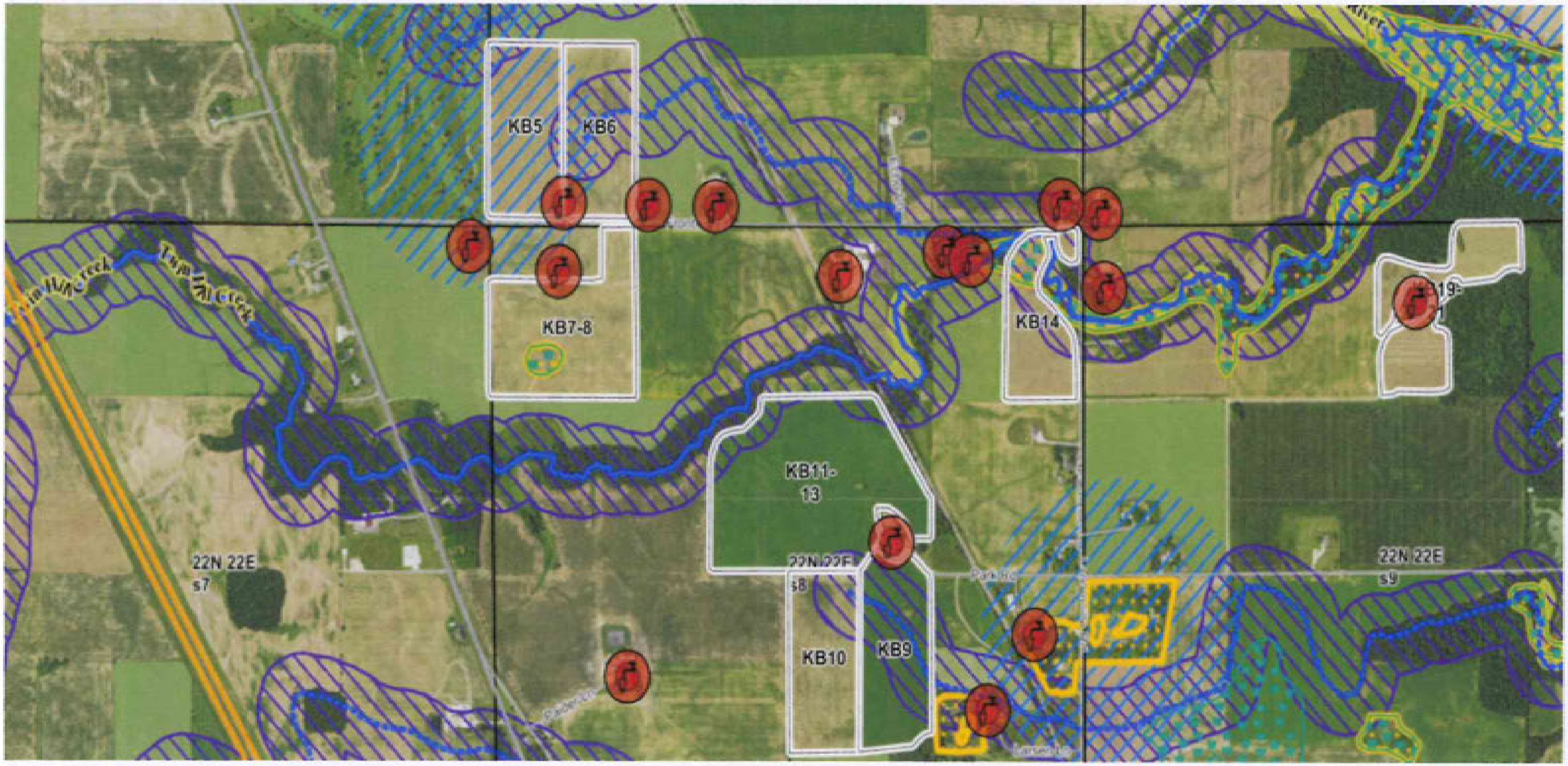


KB5-21 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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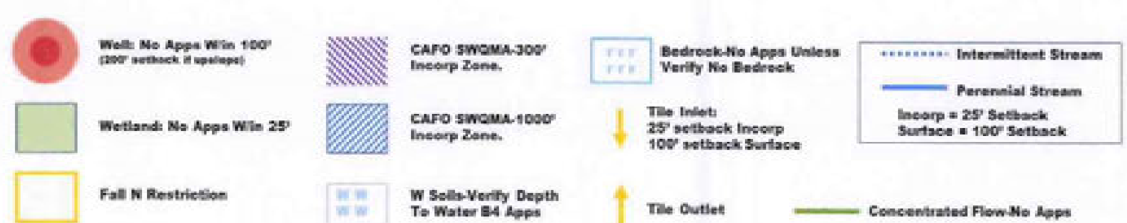
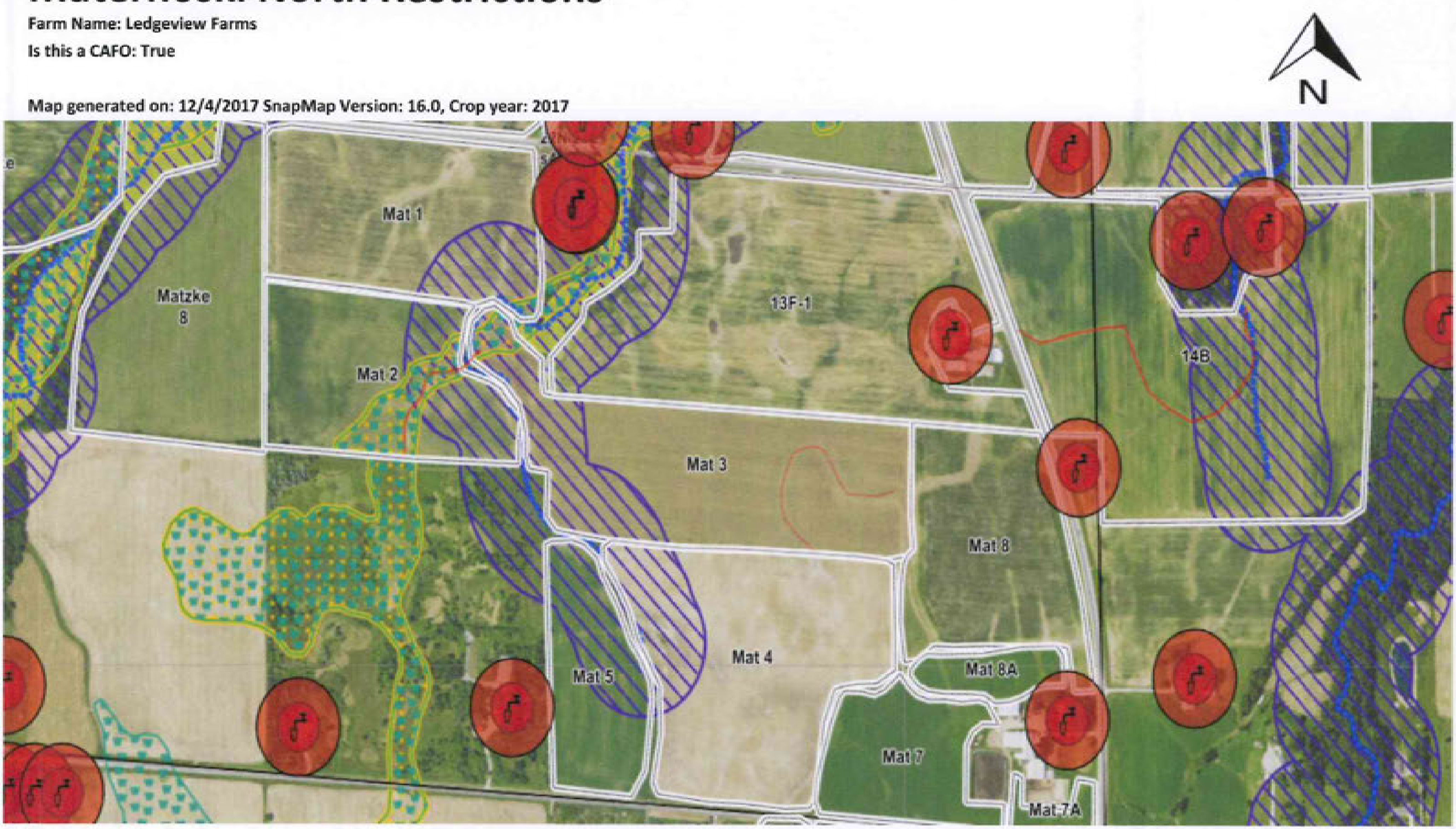


Maternoski North Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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The information on this map is not guaranteed to be100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.

Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

Concentrated Flow-No Apps

Maternoski South Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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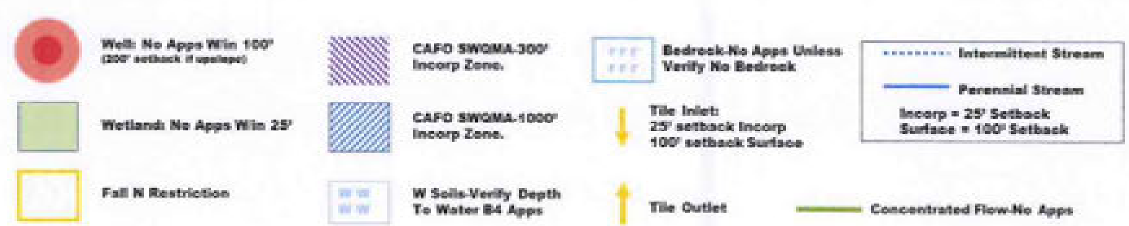

Matzke Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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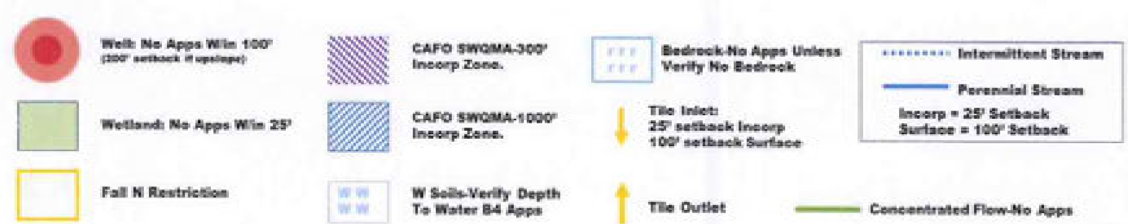
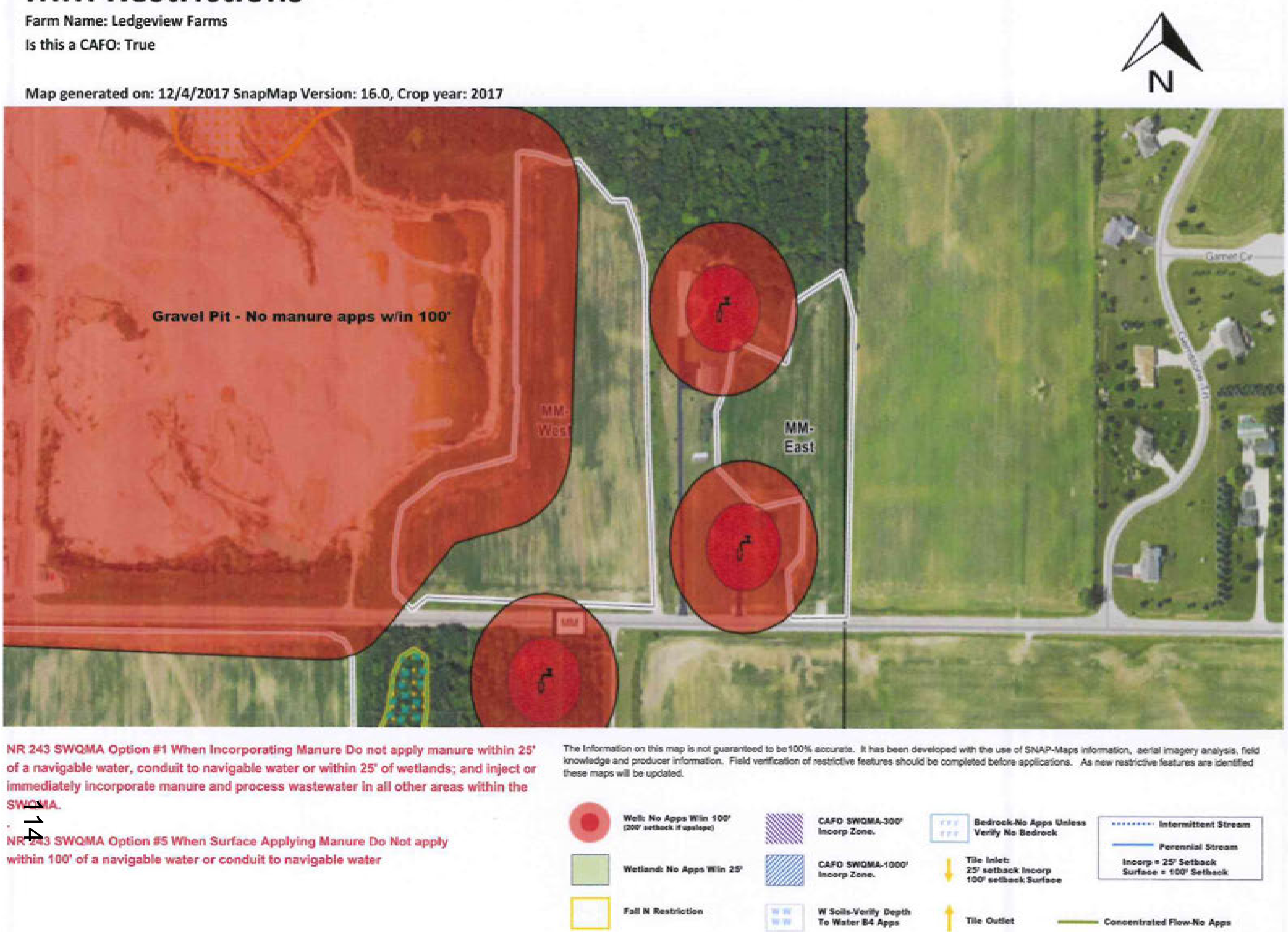


MM Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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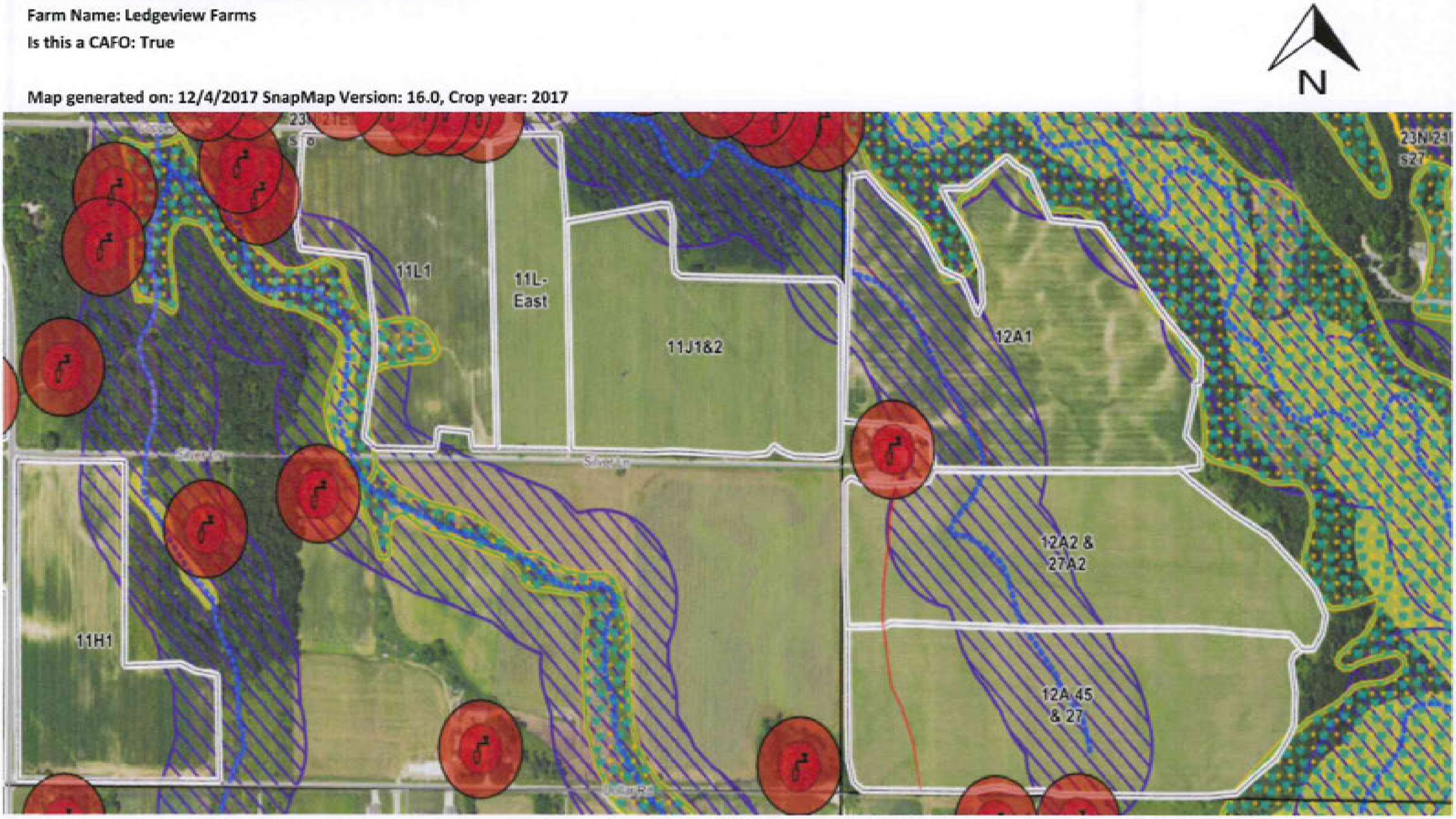
Silver Lane Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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Well: No Apps W/in 100' (200' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

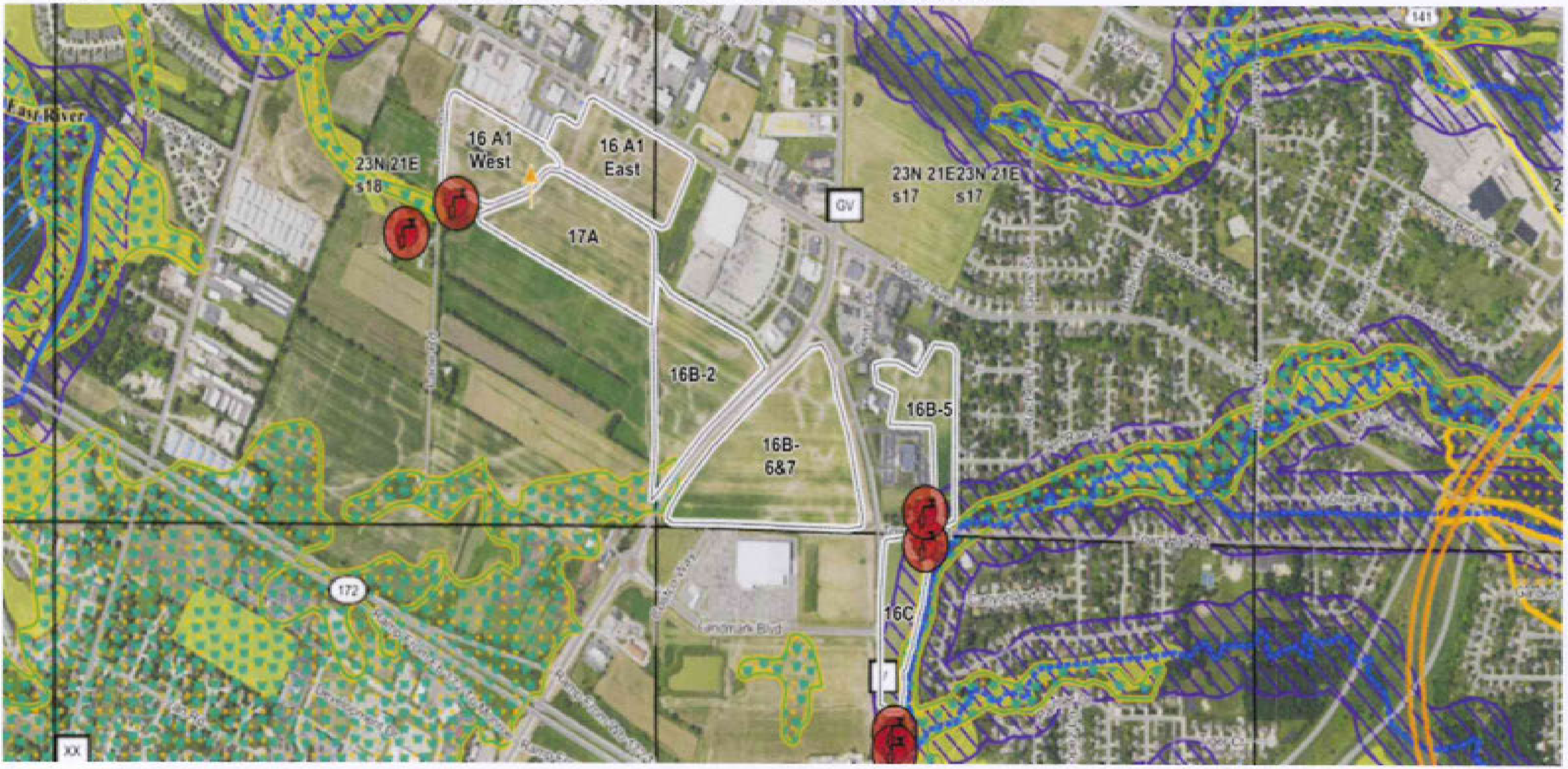
Concentrated Flow-No Apps

Slag Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017 **Most of this area on Municipal water**



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Well: No Apps W/in 100' (300' setback if upslope)

Wetland: No Apps W/in 25'

Fall N Restriction

CAFO SWQMA-300' Incorp Zone.

CAFO SWQMA-1000' Incorp Zone.

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback
Surface = 100' Setback

Concentrated Flow-No Apps

Stein Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

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- Wetland: No Apps W/in 25'
- Fall N Restriction
- CAFO SWQMA-300' Incorp Zone.
- CAFO SWQMA-1000' Incorp Zone.
- W Soils-Verify Depth To Water B4 Apps
- Bedrock-No Apps Unless Verify No Bedrock
- Tile Inlet: 25' setback Incorp 100' setback Surface
- Tile Outlet
- Intermittent Stream
- Perennial Stream
- Incorp = 25' Setback Surface = 100' Setback
- Concentrated Flow-No Apps

Titulaer Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

N

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CAFO SWQMA-1000' Incorp Zone.

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Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

Concentrated Flow-No Apps

Tower & W Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

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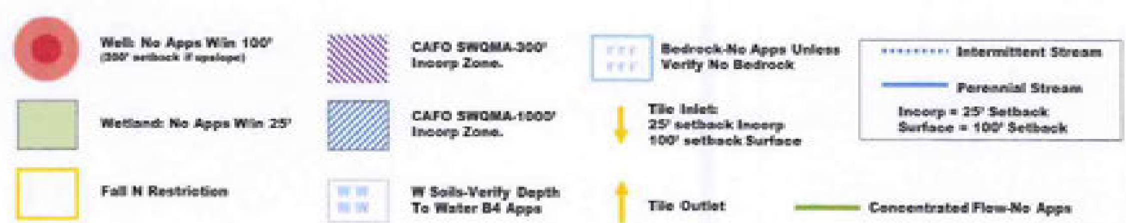

Van Straten Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

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Wetland: No Apps W/in 25'

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Tile Inlet: 25' setback Incorp 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

Concentrated Flow-No Apps

VO-10,11 Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied here unless verified >24" to bedrock.

NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Perennial Stream

Incorp = 25' Setback Surface = 100' Setback

Concentrated Flow-No Apps

13

Y1 and Y2 Yard Runoff Controls

The BARNY Model has been completed for the Y1 and Y2 Yards and the results show a Phosphorus output of zero lbs. of P per year after the buffer.

To achieve zero lbs. of phosphorus release annually, the paved area has been entered into BARNY as 0.1 ft^2. This reflects the condition that no runoff will flow onto a buffer as the Y1 and Y2 Yard management is to collect and store the runoff in a waste storage facility. Runoff will be mixed with manure and bedding and applied on to a crop field according to the current Nutrient Management Plan.

The management of the Y1 and Y2 Yards meets the requirements of the BARNY Model and achieves zero lbs. of P discharge per year at the edge of the buffer, were it present.

Courtney Roach

From: Woodrow, Matthew C - DATCP <Matthew.Woodrow@wisconsin.gov>
Sent: Friday, November 16, 2018 9:04 AM
To: John Roach
Subject: Fwd: Existing Animal Lot Questions

Hi John,

I got your voice message. I am still out of the office today, but am forwarding this as I wanted to make sure you received the email I sent this past Tuesday. This is the email I drafted in response to your request.

Regards,
Matt Woodrow

Sent from iPhone

Begin forwarded message:

From: "Woodrow, Matthew C - DATCP" <Matthew.Woodrow@wisconsin.gov>
Date: November 13, 2018 at 4:54:28 PM CST
To: "John Roach (john@jmroach.com)" <john@jmroach.com>
Cc: "Castelnuovo, Richard M - DATCP" <Richard.Castelnuovo@Wisconsin.gov>, "Chris Clayton (Christopher.Clayton@wisconsin.gov)" <Christopher.Clayton@wisconsin.gov>
Subject: Existing Animal Lot Questions

John,

You have asked me questions about two lots at two facility locations at Ledgeview Dairy – the Heifer Site (Lot Y2) and the Headquarter site (Lot Y1).

There are three lot conditions – existing, substantially altered, and new. Existing lots can satisfy the discharge criteria using BARNY, while new and substantially altered lots need to meet other criteria.

For the Lot Y2 at the Heifer Site, a pipe connection from the collection basin of the lot to the waste storage facility is not a substantial alteration as long as there are no other material changes in construction or use of the lot.

Pertaining to Lot Y1 at the Headquarter site, you have indicated that improvements were completed before the Livestock Siting Application was filed, and no modifications to the yard are proposed in the Livestock Siting Application. This would seem to meet criteria of existing.

Generally, if you have an existing lot with no substantial alterations, you demonstrate compliance by using BARNY to evaluate the level of phosphorous release from the lot.

Regards,

Matt Woodrow, P.E.
Conservation Engineering Supervisor

Bureau of Land and Water Resources/Division of Agricultural Resource Management
Dept. of Agriculture, Trade and Consumer Protection
Phone: 920-427-8505
matthew.woodrow@Wisconsin.gov

Please complete this brief survey to help us improve our customer service. Thank you for your feedback!

John Roach

From: Woodrow, Matthew C - DATCP <Matthew.Woodrow@wisconsin.gov>
Sent: Monday, November 05, 2018 9:53 AM
To: John Roach
Cc: Castelnuovo, Richard M - DATCP; Scott Mueller (scott.mueller@wi.usda.gov)
Subject: BARNY Livestock Siting Question Follow-up

John,

As discussed on Friday, since you will be collecting all the runoff from the feed lot, I believe it makes the most sense to enter zeros in the "paved" and "earth" lot areas of the BARNY spreadsheet since the collection system will essentially be removing these runoff-generating areas. The rest of the spreadsheet inputs such as the number of animals and kind, etc. could be entered as normal to represent the site/lot. However, when you enter zeros for these areas, BARNY generates an error "#DIV/0!" in the "lbs P per year" cell of the spreadsheet. I noticed that if you enter a very small area (i.e. 0.1 square feet) in the paved lot area cell, it still rounds to "0" and the resulting "lbs P per year" is calculated as "0.0". I propose this as a reasonable way to show a BARNY score that represents the 100% collection that you are proposing. It seems reasonable to indicate that the tributary area is zero since no runoff will be leaving the site when all the runoff is collected. I have discussed this with Richard Castelnuovo and Scott Mueller, and they agree that this is a reasonable approach.

Let me know if you have questions.

Regards,

Matt Woodrow, P.E.
Conservation Engineering Supervisor
Bureau of Land and Water Resources/Division of Agricultural Resource Management
Dept. of Agriculture, Trade and Consumer Protection
Phone: 920-427-8505
matthew.woodrow@Wisconsin.gov

Please complete this brief survey to help us improve our customer service. Thank you for your feedback!

BUFFER DESIGN USING BARNY (existing conditions)

Y1 Yard - Heifer Site

OWNER: Ledgeview Farm, LLC DESIGNER: JMR DATE: 11/2/2018

CHK BY: DATE:

	Input	Output	
			1 Madison
			2 Appleton
Closest City of similar climate:	2		3 Wausau
			4 Eau Claire
Paved lot area:	0	sq ft	
Earth lot area:	0	sq ft	
Animal Lot size:		0 sq ft	
Is there a DESIGNED settling basin	2	Yes= 1; No= 2	

Animals on lot:	200 number		number	
Type of animal:	1			(Dairy = 1; Beef=2)
Ave. Animal Weight:	350 lbs		lbs	
Lot Use:	1			1= Heavy; 2= Medium; 3= Light)

TRIBUTARY AREAS

Tributary area:	sq ft		sq ft
Runoff Curve Number:			
Roof area:	sq ft		

0.0 lbs P per year at D.S. Lot edge:

Maximum permissible P Output that can be released lbs Your choice based on impacted resources- Max is 15

BUFFERS - Size by trial and error

First Buffer	Length:		ft (See Note Below)
	Slope:		
	"c" :		→
Second Buffer	Length:		ft
	Slope:		
	"c" :		

"c" Value Table	
Permanent Meadow	0.59
Woods, Heavy Litter	0.59
Woods, Lt Ltr	0.29
Well managed grazing	0.44
Fair managed grazing	0.29
Good Pasture	0.22
Fair Pasture	0.15
Small Grain	0.29
Legume	0.29
Contoured Row Crop	0.29
Non-contoured row crop	0.05

P (lbs) after the buffers: 0.0 lbs P per year

NO GOOD - Too much P released

BUFFER SIZING

		0 sq ft	Min. Acceptable Buffer Area
Chosen Buffer Width		feet	
		0 feet	Min. Bfr. Len. Based on BARNY
		#DIV/0! feet	Min. Bfr. Len. Based on Area
Chosen Buffer Length		feet	#DIV/0!

BUFFER DESIGN USING BARNY (existing conditions)

Y2 Yard - Heifer Site

OWNER: Ledgeview Farm, LLC   DESIGNER: JMR   DATE: 11/2/2018
CHK BY: DATE:

	Input		Output		
					1 Madison
					2 Appleton
Closest City of similar climate:	2				3 Wausau
					4 Eau Claire
Paved lot area:	0			sq ft	
Earth lot area:	0			sq ft	
Animal Lot size:			0	sq ft	
Is there a DESIGNED settling basin	2			Yes= 1; No= 2	
Animals on lot:	700	number		number	
Type of animal:	1				(Dairy = 1; Beef=2)
Ave. Animal Weight:	800	lbs		lbs	
Lot Use:	1				1= Heavy; 2= Medium; 3= Light)

TRIBUTARY AREAS

Tributary area:		sq ft		sq ft
Runoff Curve Number:				
Roof area:		sq ft		

0.0 lbs P per year at D.S. Lot edge:

Maximum permissible P Output that can be released ___ lbs   Your choice based on impacted resources- Max is 15

BUFFERS - Size by trial and error

First Buffer	Length:		ft (See Note Below)
	Slope:		
	"c" :		→
Second Buffer	Length:		ft
	Slope:		
	"c" :		

"c" Value Table	
Permanent Meadow	0.59
Woods, Heavy Litter	0.59
Woods, Lt Ltr	0.29
Well managed grazing	0.44
Fair managed grazing	0.29
Good Pasture	0.22
Fair Pasture	0.15
Small Grain	0.29
Legume	0.29
Contoured Row Crop	0.29
Non-contoured row crop	0.05

P (lbs) after the buffers: 0.0 lbs P per year

NO GOOD - Too much P released

BUFFER SIZING

		0	sq ft	Min. Acceptable Buffer Area
Chosen Buffer Width		feet		
		0	feet	Min. Bfr. Len. Based on BARNY
		#DIV/0!	feet	Min. Bfr. Len. Based on Area
Chosen Buffer Length		feet	#DIV/0!	

14

Waste Storage Facility Closure Plan – Pits 1 & 2

for

Ledgeview Farm, LLC
3875 Dickinson Road
DePere, WI 54115

January 29, 2018

WISCONSIN
RICHARD G.
SEAS
E25248
Green Bay,
Wis.
PROFESSIONAL ENGINEER

Richard G. Seas
1/29/18

Prepared by

Roach & Associates, LLC
856 N. Main Street
Seymour, WI 54165

Ledgeview Farm, LLC
Table of Contents

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Waste Storage Facility Closure Plan Narrative 1-2

Attachments **Exhibit**

Aerial Photo 1

Heavy Use Area Protection 2

Closure of Waste Impoundments 3

Waste Storage Facility Closure Plan Narrative

Waste Storage Facility Closure Plan – Pits 1 and 2
Ledgeview Dairy

Introduction
Ledgeview Dairy is an existing dairy operation with the Headquarters Site located at 3875 Dickinson Road, De Pere, WI in the Town of Ledgeview, Brown County (Exhibit 1). Two vertical wall Waste Storage Facilities (Pits 1, 2) were constructed at the site in the 1990's. Both Waste Storage Facilities were constructed as water tight concrete structures in accordance with the contemporary standards. Neither facility is used for waste storage and the owner desires to convert both facilities to Machine Storage Areas.

Conversion of Pits 1 and 2 to Machine Storage Areas and/or dry goods will require that both facilities be abandoned and the facilities evaluated to verify that they meet the requirements of Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV, Standard 561 Heavy Use Area Protection (10/17) (Exhibit 2). Closure of the facilities will be conducted according to NRCS, FOTG, Section IV, Standard 360 Closure of Waste Impoundments (12/02) (Exhibit 3). Details of the closure process are presented below.

Waste Storage Facility Closure
Both the Waste Storage Facilities were designed or reviewed by the Brown County Land and Water Department (BCLWCD). A minimum separation from bedrock of two (2) feet for each facility was documented. No groundwater was reported within two (2) feet of either facility.

All waste from both facilities has been previously removed. The facilities are sloped to the north and currently contain accumulated rain water.

The closure criteria include:

<u>General Requirements</u>

1. The contents of each facility will be removed and applied onto cropland according to the current 590 Nutrient Management Plan (NMP).
2. The concrete surface of each facility will be inspected.
3. Soils adjacent to any area where the concrete has deteriorated or failed will be examined for evidence of manure contamination.
4. Soils showing evidence of contamination by manure, based on color, consistency or odor will be removed.
5. All soil impacted by manure shall be applied onto cropland according to the current NMP.

Waste Impoundment Closure Process
The closure process is outlined below.

All local permits and approvals that are needed to carry out the proposed closure procedure will be obtained prior to the start of the work. Roach & Associates, LLC (R&A) will provide a qualified inspector to conduct or direct all of the inspections associated with this plan.

A Pre-Construction meeting will be held with the contractor and appropriate regulatory agencies, including the Brown County Land and Water Conservation Department (BCWCD) and the Wisconsin Department of Natural Resources (WDNR) personnel to explain the plan and answer questions.

Closure Process

1. Remove the contents from each facility.
2. Identify and remove soils impacted by manure.
3. All waste shall be tested by an entity certified to perform manure analysis.
4. The waste and any waste-soil mixture shall be spread on cropland that has been approved. The application rate shall be in accordance with the NMP for each field.
5. The contractor and owner shall record the number and size of each load of waste that is hauled away and the field location to which each load was hauled for spreading.
6. Any waste that may fall off any truck onto a roadway shall be immediately contained and removed from the road.
7. An inspector from R&A shall be on site at the start and throughout the closure process to assure that the proper amount of soil is removed.
8. Pictures shall be taken throughout the closure process.
9. Each impoundment has a concrete liner.
10. Following completion of the closure process, install an outlet in each facility to drain any precipitation. The outlets shall allow each facility to be completely drained by gravity.
11. Install outlet protection (rip-rap) to allow rain water to flow from each facility in a non-erosive manner.
12. Runoff from the facilities will be directed toward the existing storm water conveyance system.

Erosion Protection

1. All areas disturbed during the closure process shall be seeded and mulched.
2. During the closure process, measures to control erosion shall be implemented. Measures to be used include silt fences and hay bale barriers.

Considerations

1. Neither WSF has been used for storage of manure for several years. Therefore, the current contents consist largely of collected precipitation and residual manure solids.
2. All material that is applied to cropland shall be applied according to the NMP.

Inspection Plan

R&A shall inspect this project in the following areas:

1. Removal of the contents, accumulated rain, from Pits 1 and 2.
2. Removal of the soil from the bottom and sides of the impoundment excavations.
3. Determine when enough soil has been excavated to remove manure contamination.
4. Installation of the interim Waste Transfer System.
5. Inspect the erosion control measures to insure that they are adequate.
6. The seeding and mulching.
7. The final project upon completion.

Conversion

Once the closures are completed, the owners will use each impoundment for storage of machinery. Each storage area will meet the requirements of NRCS, FOTG, Section IV, Standard 561 Heavy Use Area Protection (10/17), Table 1, Option H.

Exhibit 1

N

Ledgeview Farm, LLC

Main Farm

Exhibit 2

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

HEAVY USE AREA PROTECTION

CODE 561
(SQ. FT.)

DEFINITION

Heavy use area protection is used to stabilize a ground surface that is frequently and intensively used by people, animals, or vehicles.

PURPOSE

Heavy use area protection is used:

- To provide a stable, non-eroding surface for areas frequently used by animals, people or vehicles.
- To protect or improve water quality.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where a frequently or intensively used area requires treatment to address one or more resource concerns.

CRITERIA

General Criteria Applicable To All Purposes

Design Load. Base the design load on the type and frequency of traffic, (vehicular, animal, or human) anticipated on the heavy use area.

Foundation. Evaluate the site foundation to ensure that the presumptive bearing capacity of the soil meets the intended design load and frequency use.

When necessary, prepare the foundation by removal and disposal of materials that are not adequate to support the design loads.

Use a base course of gravel, crushed stone, other suitable material, geotextile, or a combination of materials on all sites that need increased load bearing strength, drainage, separation of material and soil reinforcement. Refer to Natural

Resources Conservation Service (NRCS), National Engineering Handbook (NEH), Part 642, Design Note 24, Guide for Use of Geotextiles; or NEH, Part 650, Engineering Field Handbook (EFH), Chapter 17, WI Supplement.

If there is the potential for ground water contamination from the heavy use area, select another site or provide an impervious barrier. Option G in Table 1, Surface Material Criteria and Separation Distances, shall be used if protection from groundwater contamination is the primary objective.

Separation From Subsurface Saturation or Bedrock. The separation is the closest distance from any point on the top surface of the heavy use area protection to the feature from which separation is required. Separation distances are listed in Table 1.

Subsurface saturation and bedrock are defined in WI NRCS Conservation Practice Standard (WI CPS), Waste Storage Facility (Code 313). The criteria for handling subsurface saturation and bedrock separation is also included in WI CPS 313.

Surface Treatment. Select a surface treatment that is stable and appropriate to the purpose of the heavy use area. Surfacing options are included in Table 1. Surface treatments must meet the following requirements according to the material used.

Concrete. Slabs-on-ground subject to cattle traffic or infrequent use by light agricultural equipment may utilize the surfacing options in Table 1.

Design slabs-on-ground subject to distributed stationary loads, light vehicular traffic, or infrequent use by heavy trucks or agricultural equipment in accordance with American Concrete Institute (ACI) Guide for the Design and Construction of Concrete Parking Lots (ACI 330R). Design slabs-on-ground subject to regular or frequent heavy truck or heavy agricultural equipment traffic in accordance with ACI Guide to Design of Slabs-on-Ground (ACI 360R). Design liquid-tight slabs in accordance with ACI Code Requirements for Environmental Concrete Structures, Slabs-on-Soil (ACI 350, Appendix H).

Design concrete structures in accordance with NRCS National Engineering Manual (NEM), Part 536, Structural Engineering.

Bituminous Concrete Pavement. Refer to AASHTO Guide for Design of Pavement Structures or the applicable State highway department's specification for design criteria for bituminous concrete paving.

In lieu of a site-specific design for areas that will be subject to light use, pave with a minimum of 4 inches of compacted bituminous concrete over a subgrade of at least 4 inches of well-compacted gravel. Use bituminous concrete mixtures commonly used for road paving in the area.

Aggregate. Design aggregate surfaces for expected wear and intended use. In lieu of a site-specific design for areas that will be subject to cattle traffic or infrequent use by light agricultural equipment, utilize the surfacing options in Table 1.

For other applications, use NRCS Agricultural Engineering Note 4, Earth and Aggregate Surfacing Design Guide, or other appropriate methodology to design aggregate thickness.

Mulches. Use a minimum layer thickness of 6 inches for materials such as limestone screenings, cinders, tanbark, bark mulch, brick chips, or shredded rubber. Mulches are not recommended for livestock or vehicular applications.

Vegetation. Select vegetation that can withstand the intended use. Establish the vegetation in accordance with the criteria in WI CPS, Critical Area Planting (Code 342).

Other. Other materials can be used if they will serve the intended purpose and design life.

Structures. When a roof is needed to address the resource concern, use WI CPS, Roofs and Covers (Code 367). For non-waste applications, design structures according to the accepted engineering practice.

Drainage and Erosion Control. Include provisions in the design for surface and subsurface drainage, as needed. Include provisions for disposal and runoff without causing erosion or water quality impairment. To the extent possible, prevent surface water from entering the heavy use area.

Stabilize all areas disturbed by construction as soon as possible after construction. Refer to the criteria in WI CPS, Critical Area Planting (Code 342), for establishment of vegetation. If vegetation is not appropriate for the site, use the criteria in WI CPS, Mulching (Code 484) to stabilize the disturbed area.

Additional Criteria for Livestock Heavy Use Areas

Other practices shall be utilized to collect, store, utilize, or treat manure and contaminated runoff where contaminated runoff will cause a resource concern.

Animal yards or lots shall be located a minimum of 50 feet from any well or sinkhole.

The animal yard area for various animal types and sizes; lot surfacing and feeding requirements shall be in accordance with the areas shown in the Wisconsin Supplement to Chapter 10 in the NRCS NEH Part 651, Agricultural Waste Management Field Handbook (AWMFH), or in livestock planning handbooks published by Midwest Plan Service.

Additional Criteria for Recreation Areas

The American Disabilities Act of 1990 (ADA) requires recreation areas that are used by the public to be accessible to people with disabilities. Address accessibility requirements for new construction and when existing facilities are being altered.

CONSIDERATIONS

Heavy use areas can have a significant impact on adjoining land uses. These impacts can be environmental, visual and cultural. Select a treatment that is compatible with adjoining areas.

Consider such things as proximity to neighbors and the land use where the stabilization will take place.

Vegetated heavy use areas may need additional materials such as geogrids or other reinforcing techniques, or planned periods of rest and recovery to ensure that vegetative stabilization will succeed.

Consider the safety of the users during the design. Avoid slippery surfaces, sharp corners, or surfaces and structures that might entrap users. For heavy use areas used by livestock, avoid the use of sharp aggregates that might injure livestock.

Paving or otherwise reducing the permeability of the heavily used area can reduce infiltration and increase surface runoff. Depending on the size of the heavy use area, this can have an impact on the water budget of the surrounding area. Consider the effects to ground and surface water.

Installation of heavy use area protection on muddy sites can improve animal health. Mud transmits bacterial and fungal diseases and provides a breeding ground for flies. Hoof suctions makes it difficult for cattle to move around in muddy areas. In addition, mud negates the insulation value of hair coat and the animals must use more energy to keep warm. As temperatures fall, animal bunching may occur, which can reduce or eliminate vegetative cover and lead to erosion and water quality concerns.

To reduce the negative water quality impact of heavy use areas, consider locating them as far as possible from waterbodies or water courses. In some cases, this may require relocating the heavily used area rather than just armoring an area that is already in use.

To reduce the potential for air quality problems from particulate matter associated with a heavy use area, consider the use of WI CPS, Windbreak/ Shelterbelt Establishment (Code 380), Herbaceous Wind Barriers (Code 603), Dust Control from Animal Activity on Open Lot Surfaces (Code 375), or Dust Control on Unpaved Roads and surfaces (Code 373) to control dust from heavy use areas.

Consider ways to reduce the size of the heavy use areas as much as possible. This may require changes in how the livestock are managed, but in the long run, may result in less maintenance and a more efficient operation.

For areas that will need to be cleaned frequently by scraping, loose aggregate or other non-cementitious materials may not be the best choice. Consider a more durable surface such as concrete.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for heavy use area protection that describe the requirements for installing the practice according to this standard. As a minimum, the plans and specifications should include:

- A plan view showing the location and extent of the practice. Include the location and distances to adjacent features and known utilities.
- Typical section(s) showing the type and required thickness of paving or stabilization materials.
- A graded plan, as needed.
- Where appropriate, plans for required structural details.
- Method and materials used to stabilize areas disturbed by construction.
- Construction specifications with site specific installation requirements.

OPERATION AND MAINTENANCE

Prepare an Operation and Maintenance (O&M) plan and review with the operator prior to practice installation. The minimum requirements to be addressed in the O&M plan are:

- Periodic inspections – annually and immediately following significant rain fall events.
- Prompt repair or replacement of damaged components especially surfaces that are subjected to wear or erosion.
- For livestock heavy use areas, include requirements for the regular removal and management of manure, as needed.
- For vegetated heavy use areas, restrict use as needed to protect the stand and to allow vegetative recovery.

REFERENCES

American Concrete Institute (2006). Guide to Design of Slabs-on-Ground (ACI Standard 360R- 06). Farmington Hills, MI: American Concrete Institute.

American Concrete Institute. Guide for the Design and Construction of Concrete Parking Lots. (ACI 330R-08). Farmington Hills, MI.: American Concrete Institute.

American Concrete Institute. Requirements for Environmental Concrete Structures, Slabs on Soil (ACI 350, Appendix H). Farmington Hills, MI: American Concrete Institute.

USDA, NRCS. National Engineering Handbook, Park 650, Engineering Field Handbook, Chapter 10.

USDA, NRCS (2014). Agricultural Engineering Note 4, Earth and Aggregate Surfacing Design Guide, Washington, DC.

TABLE 1: SURFACE MATERIAL CRITERIA AND SEPARATION DISTANCES

Option	Foundation Condition	Cross Section Option	Separation to Bedrock or Subsurface Saturation (ft.)
A	Firm	Raised Earth	3
B	Firm	Minimum 6" crushed stone	3
C	Firm	Minimum 6" crushed stone over NRCS Wisconsin Construction Specification (WCS)-13, Geotextile, Class IV	3
D	Firm	Minimum 4" crushed stone over 6" base course of graded rock	3
E	Firm	5" non-reinforced concrete with maximum control joint spacing of 16' in both length and width, over 6" sand/gravel	2
F	Firm	5" reinforced concrete with designed control joint spacing over 6" sand/gravel	2
G	Firm	5" reinforced concrete with waterstop, over 6" sand/gravel	2
H	Firm	5" concrete reinforced with temperature and shrinkage steel only	2
I	Firm	Minimum 4" asphalt over 6" sand/gravel	3
J	Soft1	Minimum 4" crushed stone over 8" base course of graded rock over 6" of sand and fine gravel	3
K	Soft	Minimum 4" crushed stone over 8" base course of graded rock over NRCS WCS-13, Geotextile, Class IV	3
L	Soft	Minimum 4" crushed stone over 18" base course of graded rock	3
M	Soft	Minimum 4" crushed stone over 18" base course of graded rock over 6" sand and gravel	3
N	Soft	Minimum 8" crushed stone over geogrid over NRCS WCS-13, Geotextile, Class III	3

[1]Guidance can be found in EFH Chapter 4 and Figure 4-14 for information regarding bearing capacity and foundation properties.

[2]Crushed Stone: 100% passing 3/4" sieve and 10% maximum passing the #200 sieve.

[3]Graded Rock: 100% passing the base course thickness dimension and a maximum of 10% passing the 3/4" sieve. All sizes between the limits shown on the drawings are to be represented.

[4]Reinforcing and control joint spacing according to Subgrade Drag Theory Design as found in ACI 360, Design of Slabs on Grade, or Engineering Field Handbook (EFH), Chapter 17.

[5]Option G is the only option that can be used where the potential for groundwater contamination is the resource concern.

- Option G requires deformed steel reinforcing bars and control joint spacing according to Subgrade Drag Theory Design.
- Option G requires the installation of embedded waterstops at all control, construction, and isolation joints.
- Waterstop to be in accordance with NRCS Wisconsin Construction Specification 4, Concrete.
- Maximum wheel load of 5000 pounds at spacing of 8 feet or to be designed using ACI 360, Design of Slabs on Grade.

Exhibit 3

CLOSURE OF WASTE IMPOUNDMENTS

(No.)
Code 360

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

The closure of waste impoundments, that are no longer used for their intended purpose, in an environmentally safe manner.

II. Purpose

This practice may be applied as part of a conservation management system to support one or more of the following purposes.

- To protect the quality of surface water and groundwater resources.
- To eliminate a safety hazard for humans and livestock.
- To safeguard the public health.

III. Conditions Where Practice Applies

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to NRCS standards, this practice will only apply where an investigation and evaluation shows structural integrity.

IV. Federal, State, and Local Laws

The closure of waste impoundments shall comply with all federal, state, and local laws, rules or regulations. The operator is responsible for securing required permits. This standard does not contain the text of the federal, state, or local laws governing closure of waste impoundments.

V. Criteria

A. Waste impoundment closure will require a site-specific design and inspection during closure. Additional procedures may be required for remediation. A local permit may be required for the closure operation. The minimum procedure for closure shall include:

1. Removal and proper disposal of accumulated wastes in the facility in accordance with NRCS, Field Office Technical Guide (FOTG), Section IV, Standard 590, Nutrient Management.

2. Soil that is mixed with waste shall be removed and uniformly spread on cropland.

3. An additional 6 inches to 24 inches of soil shall be removed from the sides and bottom of the facility. The amount of soil to be removed shall be determined by the color and consistency indicating permeation or saturation of waste in the soil. Removed soil shall be uniformly spread on cropland.

4. Concrete or synthetic liners may be buried in the existing facility if all listed requirements are met.

   a. Liner is broken up or holes are made to allow movement of water through the profile after the facility is closed.

   b. Soil borings are made below the liner to check for soil mixed with waste. If soil mixed with waste is present, the liner must be pulled back to allow for the removal of the soil as stated in 3 above.

   The liner material may then be buried in the closed facility. If the liner is removed from the closed site, it must be properly disposed of according to Wisconsin Department of Natural Resources (WDNR) regulations.

5. The transfer system shall be removed or permanently plugged.

6. The site shall be filled with clean mineral soil meeting the quality of materials contained in Wisconsin Construction Specification 3, Earthfill, and shaped to insure surface drainage away from the site after settlement. Brick, building stone, concrete, reinforced concrete, broken pavement, and unpainted or untreated wood may be used in the fill pursuant to Chapter NR 500.08 (Wisconsin Administrative Code); however, the upper 3 feet of the fill shall be clean mineral soil as defined previously. Backfill height shall exceed the planned finished grade by a minimum of 5 percent to allow for settlement.

7. Concrete floors for above-ground facilities may be left in place if water is not impounded on the floor surface and the conditions listed in paragraph V.A.4.b. are satisfied.

B. **Conversion.** The waste storage impoundment may be converted to other uses if applicable groundwater standards are met. The converted impoundment shall meet the requirements as set forth in the NRCS , FOTG, Section IV, practice standard for the intended purpose.

Safety. Precautions (fencing and warning signs) shall be used to ensure that the pond is not used for incompatible purposes such as swimming and livestock watering until water quality is adequate for these purposes.

C. **Protection.**

1. All disturbed areas not returned to crop production shall be seeded and mulched in accordance with NRCS, FOTG, Section IV, Standard 342, Critical Area Planting, or other suitable measures used to control erosion and restore the esthetic value of the site.

2. Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

VI. Considerations

Additional recommendations relating to design which may enhance the use of or avoid problems with this practice, but are not required to ensure its basic conservation function, are as follows.

1. Reduce pumping effort to empty waste impoundments where the surface is covered by a dense mat of floating vegetation by first breaking up this surface crust.

2. Minimize the impact of odors associated with emptying and land-applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

VII. Plans and Specifications

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use. A construction plan and inspection plan are required.

VIII. Operation and Maintenance

The proper closure of a waste impoundment should require little or no operation and maintenance; however, if it is converted to another use, such as a fresh water pond, operation and maintenance shall be in accordance with the needs as set forth in the NRCS conservation practice standard for the intended purpose.

IX. References

United States Department of Agriculture, Natural Resources Conservation Service, Agriculture Waste Management Field Handbook, Part 651, 1992.

United States Department of Agriculture, Natural Resources Conservation Service, Wisconsin Field Office Technical Guide, Section IV.

Wisconsin Administrative Code, Chapter NR 500, General Solid Waste Management Requirements.

15

Roach & Associates, LLC
856 N. Main Street Seymour, WI 54165
Phone 920-833-6340 www.jmroach.com

Client: Ledgeview Farms
Project: 41 Yard Volume
Page:
Prepared by: JMR
Date: 11-2-2018

41 YARD WORKSHEET

41 YARD VOLUME FROM CAD = 3,439 ft^3

3,439 ft^3 x 7.48 GALLONS / ft^3 - 25,750 GALLONS

25-YR, 24-HR RAIN EVENT = 15,843 GALLONS

ONE DAY MANURE GENERATION = 112 ft^3

75% DEPOSITED ON 41 YARD - 84 ft^3

84 ft^3 x 7.48 GALLONS / ft^3 - 628 GALLONS

MANURE ON 41 YARD = 628 GALLONS

25-YR 24-HR RAIN EVENT = 15,843 GALLONS

16,471 GALLONS

41 YARD CAPACITY 25,750 GALLONS

NET EXCESS CAPACITY - 9,279 GALLONS

SAFETY FACTOR = 1.56

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

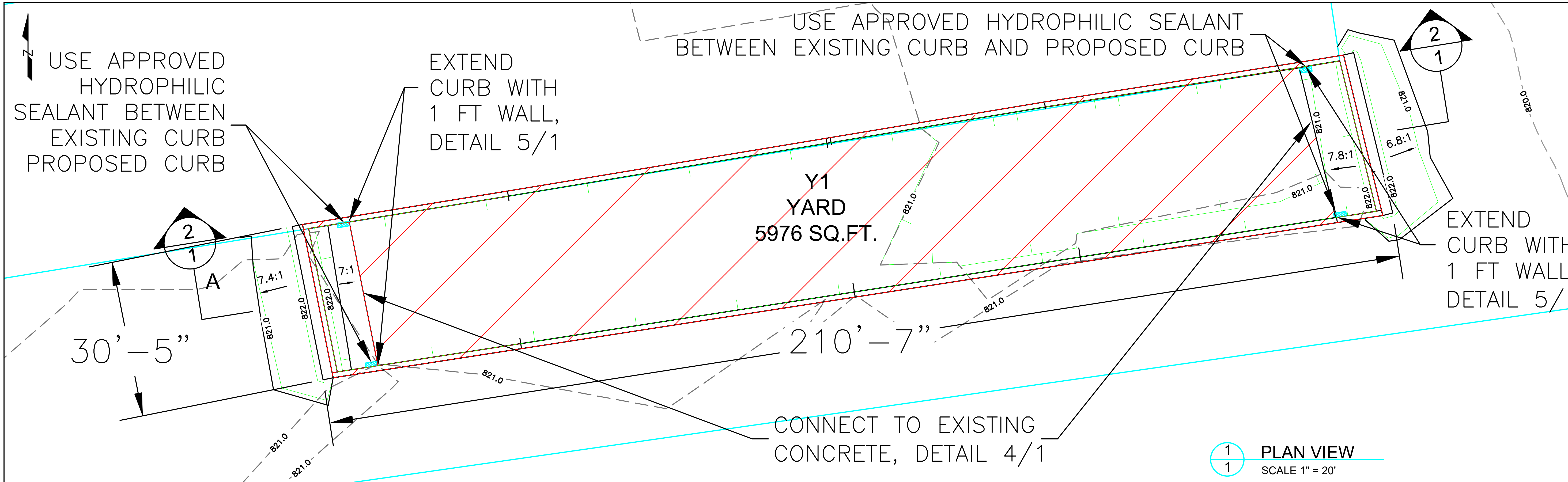
ver 5-2008

CLIENT: **Ledgeview Farm** COUNTY: **BROWN** DATE: 5/24/2011
DSN BY: **Roach** CHK BY: DATE:
COMMENTS: Y1 Yard

Drainage Area	0.14	Acres
Runoff Curve Number	98.00	
Time of Concentration	0.07	Hours

Frequency	yr		**2**	**5**	**10**	**25**	**50**	**100**
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.01	0.03	0.03	0.04	0.05	0.05	0.06
Peak Discharge, qp	cfs	**0.20**	**0.6**	**0.7**	**0.8**	**1.0**	**1.1**	**1.2**

Total Runoff One Inch Rain	=	0.01 ac-ft	419 cubic feet	3,132 gallons
Total Runoff 25 year Event	=	0.05 ac-ft	2,070 cubic feet	15,483 gallons
Peak Flow	=		1.0 cfs	440 gpm



1
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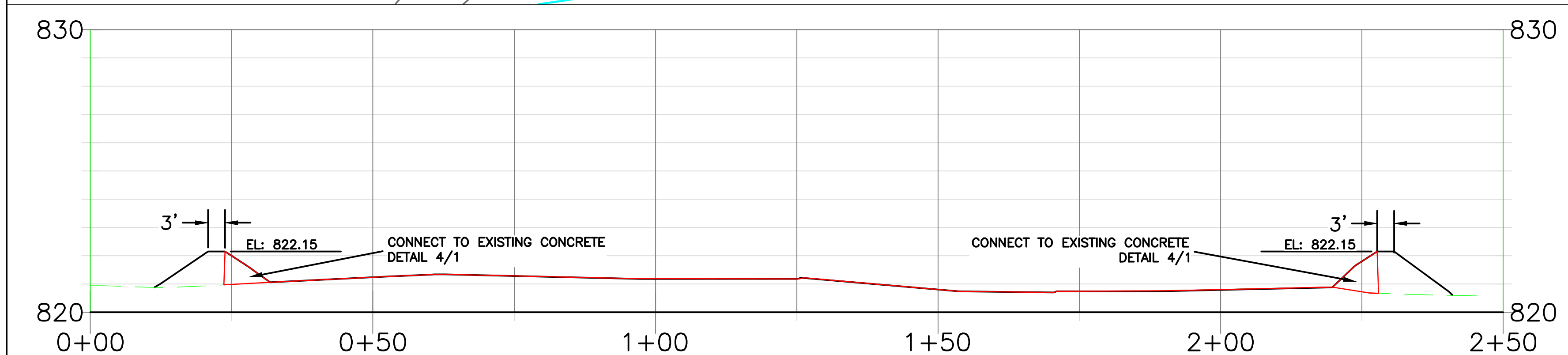
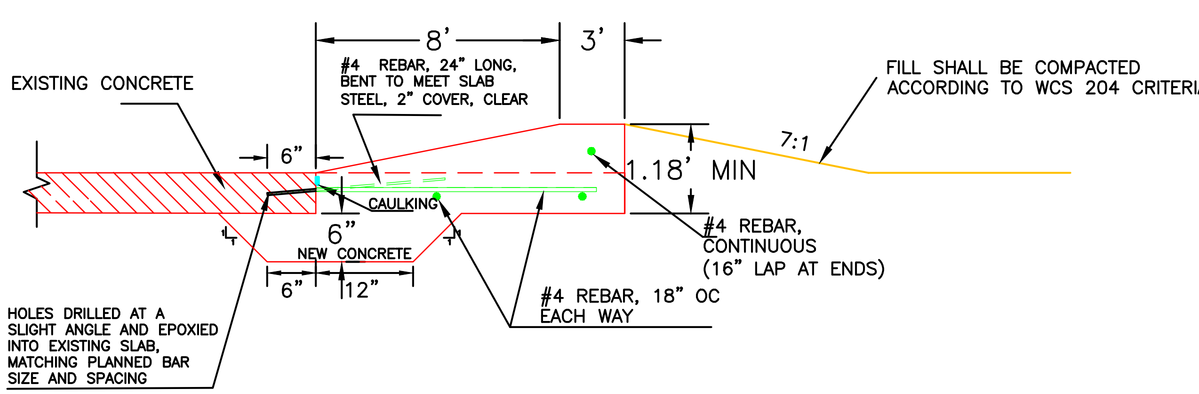
PLAN VIEW
SCALE 1" = 20'



2
1
SECTION A
SCALE: 1" = 30' ~ VERTICAL EXAGGERATION = 5'



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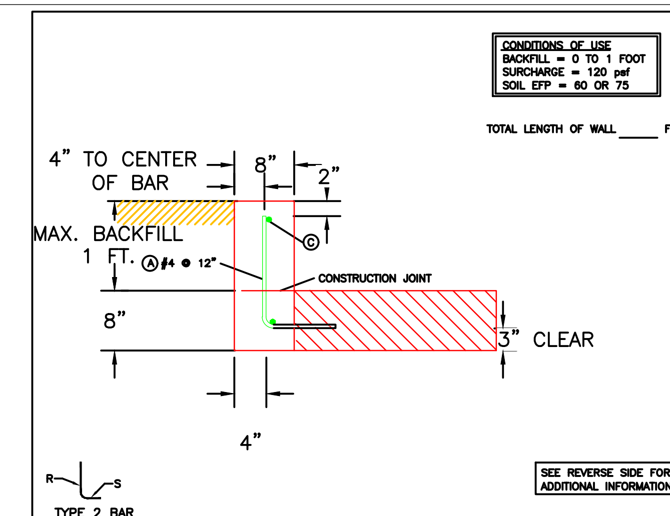
CONNECT TO EXISTING CONCRETE DETAIL
NTS



STEEL SCHEDULE

MARK	SIZE	QUAN	TYPE	R	S	LENGTH	TOTAL LENGTH
A	4		2	2'–4"	1'–3"	3'–7'	
B	4		STR	---	---		
C	4		STR	---	---		
L	4		2	2'–0"	2'–0"	4'–0"	
			#4 BARS, TOTAL LENGTH				

ESTIMATED QUANTITIES

CONCRETE (0.097 CU.YDS./LIN.FT.) ______	CU.YDS.
STEEL #4 (0.668 LBS./FT) ______	LBS.

- CONCRETE WILL MEET WISCONSIN SPEC 4 REQUIREMENTS.
- ALL STEEL TO BE GRADE 60.
- MINIMUM SPLICE LENGTH FOR MARK B AND C BARS IS 16"
- STEEL QUANTITY DOES INCLUDE SPLICE LENGTHS.

MARK L BARS NOT SHOWN – SEE WALL CORNER DETAILS ON REVERSE SIDE.

NOTES:
1. CONSTRUCTION JOINT OPTIONS – SEE REVERSE SIDE.
2. DIMENSIONS ARE TO THE REINFORCING BAR SURFACE UNLESS OTHERWISE NOTED.
3. FOR RESTRAINING SLAB REQUIREMENTS – SEE REVERSE SIDE.
4. BACKFILL TO THE TOP OF THE WALL IS RECOMMENDED FOR FROST PROTECTION.

NRCS Natural Resources Conservation Service United States Department of Agriculture

1–FOOT L WALL 8" WALL THICKNESS	Designed #### Date ####	Drawing No. WI–510
CLIENT: ####	Drawn	Date 6\07
COUNTY: ####	Checked	
	Approved	SheetXX of ####

5
1
1 FT WALL
NTS

DATE:	2/2/2018	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION
DRAWN BY:	MTS	06–01–18	MTS	INCREASED VOLUME OF Y1 YARD	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

HEADQUARTERS Y1 YARD

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920–833–6340 Fax: 920–833–9851

16

Ledgeview Farm, LLC
Operation and Maintenance Plan for Feed Storage Area Runoff Transfer System

Introduction:
The DB: Detention Basin is a component of the feed storage area runoff collection and transfer system. Runoff and leachate from the feed storage area will flow by gravity to the DB: Detention Basin. A gravity flow pipe will transfer runoff from the DB: Detention Basin to the W2 waste storage facility. The DB: Detention Basin will function as short-term equalization for the aerobic runoff from the feed storage area. Depending on the intensity of the rain event and the overall amount of rain fall, the DB: Detention Basin will drain dry within hours following a rain event and will remain empty until the next rain event. The DB: Detention Basin is designed to contain leachate and the 25-yr. 24-hr. rain event.

The following is the detailed Operation and Maintenance plan that will be used to ensure the Feed Storage Area Runoff Transfer System operates as designed.

- Each day the employee operating the feeding equipment at the Feed Storage Area will observe the level of runoff in the DB: Detention Basin.
- If there is runoff in the DB: Detention Basin the maintenance employee will be notified to determine the cause and make corrections.
- When solids accumulate in the bottom of the basin, a loader will be used to remove the solids.
- The solids will be stored in the W2 waste storage facility or applied onto cropland according to the current Nutrient Management Plan.

Ledgeview Farm, LLC

Operation and Maintenance Plan for Maintaining a Bio-Cover on the W2 Waste Storage Facility

Introduction:

In periods when the waste storage facility is not completely frozen, Ledgeview Farm, LLC (LF) will maintain an 8” straw Bio-cover over the surface of the W2 waste storage facility. The straw bio-cover will be established and maintained by use of the existing Valmetal, Model 6500 Agri-Chopper. The PTO powered chopper will travel around the W2 berm and chop/blow straw out into W2 to form the 8” straw Bio-cover. The following is the detailed Operation and Maintenance plan that will be used to ensure the Bio-cover is maintained.

- In the spring of the year before the temperatures begin to warm, the straw bio-cover will be established.
- The straw bio-cover will be established by traveling around the berm top and blowing straw onto the surface of the waste storage.
- In the event the straw does not cover the entire surface, several applications may be required as wind shifts the straw mat around the waste storage.
- Repeat the straw applications until the entire surface of the waste storage facility has the straw bio-cover installed.
- Each week a representative of LF will inspect the straw bio-cover and determine the % of surface area that is covered by the straw bio-cover.
- The representative of LF will determine if additional chopped straw is needed to maintain or supplement the straw bio-cover.
- If necessary additional chopped straw will be added to the waste storage facility surface until the straw bio-cover is restored.

Valmetal

Valmetal - Dairy Farm Feeding Equiment (https://valmetal.valmetal.com/)

- Valmetal
- (/#facebook) (/#google_plus)
- Specifications
- Available models
- Features
- In action
- Benefits
- Other Information
- Options
- Figures

Agri-Chopper – Big bale chopper

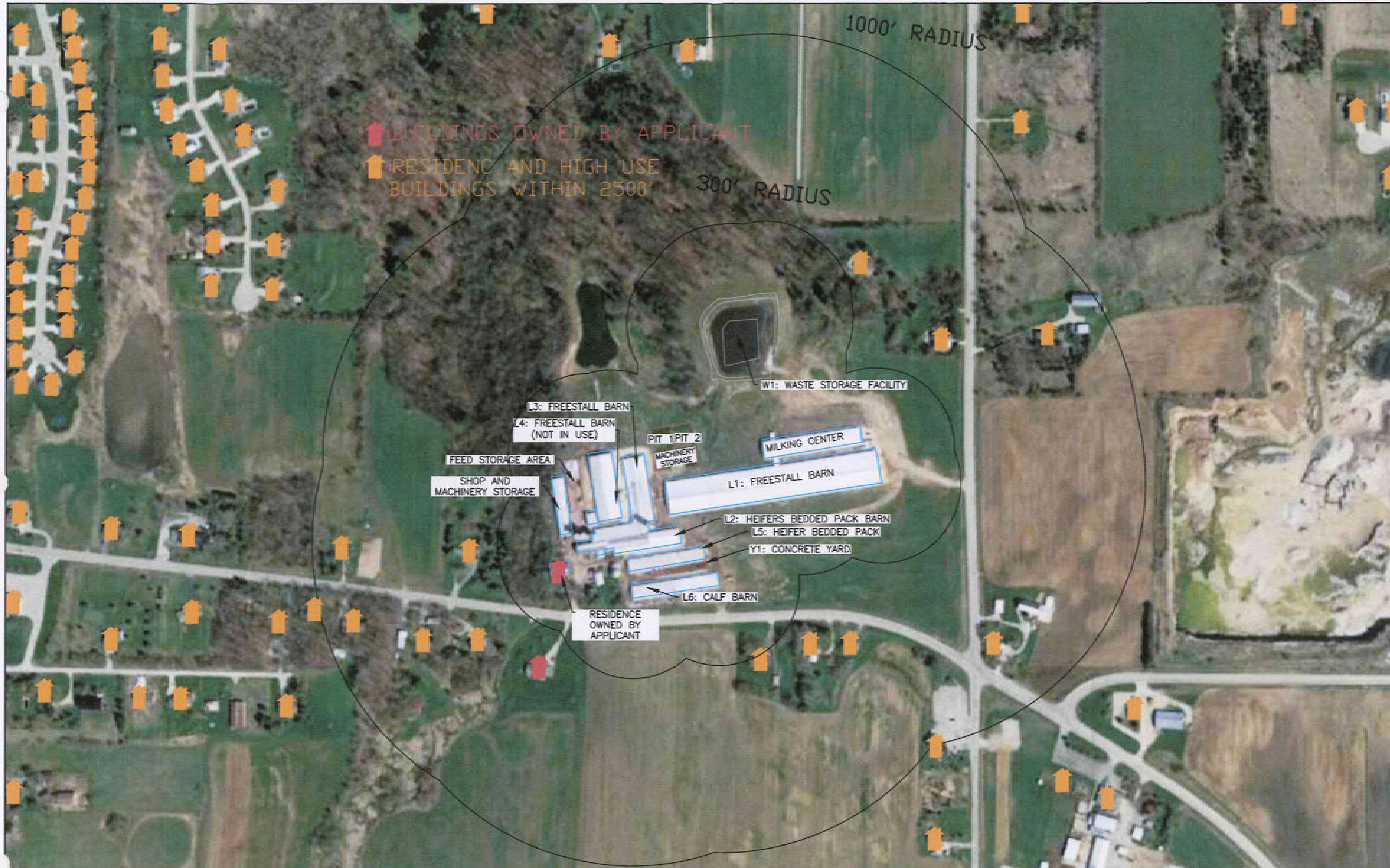
A powerful chopper / shredder for big bales

The Agri-Chopper chops big bales of straw, cardboard or paper to make fluffy and spongy bedding. Thanks to its powerful blower, it can be used to spread bedding evenly up to 40’ (12 m) in free stall barns, hog barns and poultry barns.

2

CLUSTER A

HEADQUARTERS



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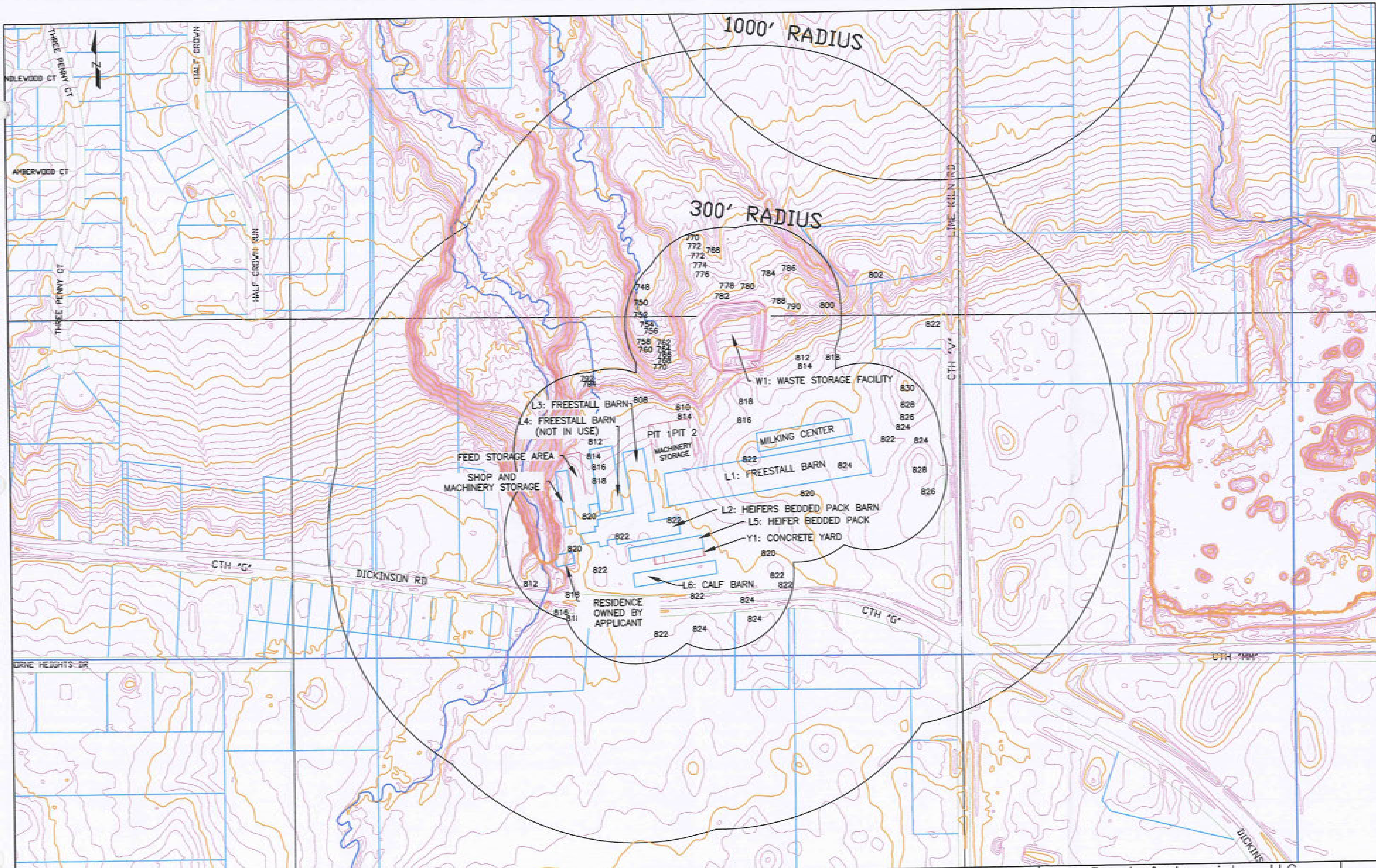
DRAWN BY:	MHP	*	*	*	*	*	*					
CHECKED BY:	JMR											



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	•	•	•	•	•	•
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 350'

SITE MAP 2 OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/ KARST FEATURES/ 2' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
23

CLUSTER B

HEIFER SITE

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 350'	SITE MAP 1 OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985	SHEET NO. 22
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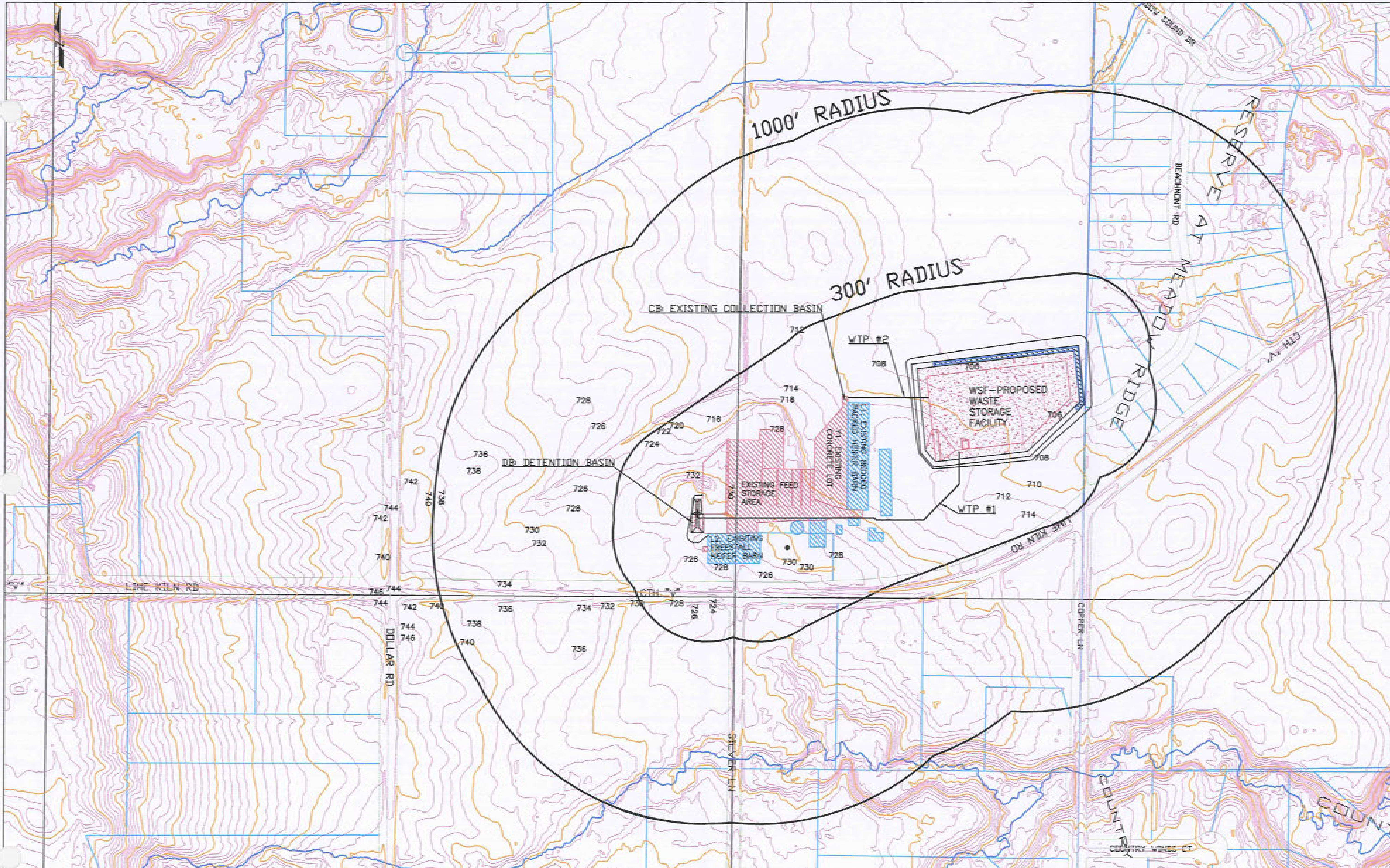

DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 350'	SITE MAP 2 OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/ KARST FEATURES/ 2' TOPOGRAPHIC LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-985
DRAWN BY:	MHP	*	*	*	*	*	*				SHEET NO. 23
CHECKED BY:	JMR										

3

Employee Training Plan
Ledgeview Farm, LLC

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Training Goals, Objectives, Activities	1
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Employees to be Trained	3
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Goals

This Training Plan will enable employees and others to follow standards, procedures and protocols to ensure that Ledgeview Farm, LLC (LF) meets all Livestock Facility Siting Permit requirements as well as other goals of the business.

An employee-training plan is required as part of the local permit issued in accordance with Wis. Admin. Code ATCP 51, Livestock Facility Siting. The Training Plan for Ledgeview Farm, LLC, includes the following:

- Training on: nutrient management, odor management, runoff management, manure and waste handling, employee safety, and emergency response
- Employees to be trained
- Frequency of training
- Training presenters (these may include *livestock facility managers*, consultants or professional educators)
- A system for taking and recording attendance

Objectives

Those in attendance will learn and understand to follow all standards, procedures and practices related to their assigned duties and tasks.

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

Training Activities

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

Requirements, Standards, Procedures and Practices

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

Training will cover the use of checklists and other tools used to inspect and monitor farm operations.

Ledgeview Farm, LLC will explain the Livestock Facility Siting Permit and reporting requirements.

Training Content

Employee Safety

Standards, procedures and practices are in place to ensure the health and safety of employees and visitors to LF.

Training will include:

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

Environmental Incident Response

Standards, procedures and practices are in place to ensure proper responses in the event of manure spill or other incident. A written document with response procedures and emergency contacts is readily available at the farm office.

Training will include:

- Review of emergency response plan
- Spill reporting and clean up procedures

Nutrient Management

Standards, procedures and practices are in place for all forms of manure application and must be followed by all employees, consultants and others contracted for manure application. LF Nutrient Management Plan is reviewed semi-annually by LF and their agronomist (Kevin Beckard). A copy of the plan is readily available at the farm office.

Training will include:

- Conservation plan crop rotation and tillage requirements
- Record keeping requirements – spreading logs and inspection sheets
- Recording and analyzing manure sample data
- Review soil fertility, crop rotations and yields
- Understanding manure spreading restriction maps and setback areas

Manure and Waste Handling

Standards, procedures and practices are in place to ensure proper storage, transfer and land application of manure and wastewater.

Training will include:

- Review operations and maintenance procedures for manure storage facilities, waste transfer systems and manure application equipment.
- Identification and use of proper agitation points
- Routine maintenance of equipment
- Review procedures for pump operation, hose placement and pickup, equipment cleanup
- Proper procedures for hauling and applying manure
- Record keeping requirements – inspection reports
- Safety procedures as they relate to manure and waste handling

<u>Runoff Management</u>
Procedures and practices are in place to control storm water runoff from the farm sites, and must be followed by all employees, contractors and visitors.

Training will include:

- Maintenance requirements of storm water system – clearing of gutters, diversions, drains and sediment basins.
- Proper feed bunker tire and plastic placement and removal
- Leachate collection system operation, including pump operation and maintenance as well as the transfer channel.
- Cleaning of traffic areas and pads
- Maintenance (e.g. regarding, seeding) and mowing of filter strips and other grassed areas.

<u>Odor Management</u>
Some basic procedures and practices are in place to minimize odor, and must be followed by all employees and contractors.

Training will include:

- Overview of issues associated with odors
- Review of LF odor management plan and complaint protocol
- Cleaning and maintenance procedures to control odor from the site
- Land application procedures to reduce odors
- Responding to odor complaints

<u>Employees to Be Trained</u>

- Managers
- Herdsman
- Assistant Herdsman
- Feeders
- Milkers
- Manure Handlers

<u>Form and Frequency of Training</u>
At a minimum, training will be provided annually to all employees of LF. Training may be provided through a variety of employee meetings at the farm as well as conferences

sponsored by professional organizations such as the Professional Dairy Producers of Wisconsin, The Dairy Business Association, Professional Nutrient Applicator Association of Wisconsin and other training opportunities sponsored by UW Extension. All of the procedures and protocols for each position will be located in the farm office.

Training Presenters

Presenters will include:

- Farm Managers
- Consultants
- Agronomy Professionals
- University of Wisconsin Extension
- Government Agency staff
- Professional Associations

Recording Attendance

Ledgeview Farm, LLC employees approximately 12 full and part time employees. For all training sessions, employee attendance will be recorded using a sign-up sheet that will include the date of the training and the employees who attended. Similar methods will be used to verify other training received at local meetings and conferences.

Ledgeview Farm, LLC.: Employee Training Log

Date Trained	Employee	Proper Operation & Maintenance of Equipment	Understanding & Interpretation of Field Maps	Explanation Of Wetlands & Waterways	Regulatory Requirements	Review of Wetlands & Waterways on Field Maps	Explanation & Review of Setbacks	Reasons for Setbacks	Applicable Setbacks	Review of Setbacks on Field Maps	How to Reduce Road Dirt	Explanation of Emergency Response Plan	Record Keeping	Importance & Purpose of Record Keeping	Calibration of Application Equipment	Manure Application	Employee Signature

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Emergency Response Contacts Summary

Farm Name: Ledgeview Farm, LLC

Owner/Operator: Jason Pansier Phone: (920) 655-3875 Cell: ______________

Owner/Operator: ________________ Phone: ___________ Cell: ______________

Farm Address: 3499 Lime Kiln Road Green Bay WI 54311

Farm Location: T23N R21E Section 28 County: Brown

Driving Directions or Emergency Coordinates: From the Town of Ledgeview Municipal Building drive East 0.7 miles along Dickinson Rd and make a left turn on Lime Kiln Rd, head North 0.8 miles to the farm.

In Case of Injury, Fire, or Rescue Emergency, Immediately Implement the Following:

1. Assess the condition of the victim, extent of the emergency (fire, rescue) and call for help.
2. Stabilize the victim, use on-site rescue equipment, evacuate buildings, or begin fire suppression as necessary.
3. Brief emergency responders upon arrival on current status of situation.

In Case of a Spill, Leak, or Failure at the Storage Facility, During Transport, or Land Application, Immediately Implement the Following:

1. Stop the source of the leak or spill.
2. Make appropriate calls for people, equipment, and materials. See contacts below.
    - Notify DNR spill hotline: 1-800-943-0003 (Spill reporting is mandatory by state law.)
    - Call sheriff's office if spilled on public roads or its right-of-ways for traffic control.
    - Clear the road and roadside of spilled material immediately.
3. Contain the spill
4. Prevent spillage from entering surface waters, tile intakes, or waterways.
5. Begin cleanup and land apply on approved cropland at appropriate rates.
6. Document your actions.

Emergency Contacts	Contact Person (or Company)	Phone Number
Fire/Rescue	Ledgeview Fire Department	911 or 920-336-3360
County Sheriff	Brown County Sheriff's Department	911 or 920-448-4200
Farm Emergency Coordinator	Jason Pansier	920-655-3875
DNR Hazardous Spill Line		1-800-943-0003
DNR Permit Contact/Warden	Heidi Schmitt-Marquez	
Veterinarian	Ken Foust	920-336-7233
Equipment/Supplies	**Contact Person (or Company)**	**Phone Number**
On-Farm Equipment Operator	Glenn Pansier	920-655-0416
Excavation Contractor	Olson Excavation	920-621-7882
Manure Hauler	Schneider Manure Hauling	920-374-1327
Septic Tank Pumping Truck	Kiekhaefer Septic Service	920-864-7025
Mortality Disposal Contractor	Circle R Mink Ranch	920-434-0218
Local Government Contacts	**Contact Person**	**Phone Number**
Town Chairman Town of Ledgeview	Phil Danen	920-336-3360
LCD County Conservationist	Dave Wettencamp	920-391-4639
NRCS District Conservationist	John Malvitz	920-884-3910

Be prepared to provide the following information:

- Your name and contact information
- Farm address, location and other pertinent identification information.
- Nature of emergency (employee injury, fire, discharge of manure or hazardous materials).
- Emergency equipment and personnel that are needed.
- Potential for manure or hazardous materials to reach surface waters or major field drains.
- Current status of containment efforts.
- Location of hazardous/flammable materials, and fire suppression equipment
- Location of emergency cutoff switches or valves.

Ledgeview Farm, LLC.
Environmental Incident and Emergency Response Plan

Reporting Emergencies

When there is a fire or other emergency that poses immediate danger to people, livestock, property or the environment call the appropriate telephone number listed for the emergency. Follow emergency evacuation procedures. Remain calm, notify others, and respond to the emergency as appropriate. Procedures for responding to specific types of emergencies are described below.

When you call 911 to report an emergency, provide the emergency dispatcher with the following information:

- Your Location
- Building or area name where the emergency response is required
- The location within building or area
- A brief description of emergency
- Your name

Unless there is a risk to your safety, remain on the line until told by the emergency dispatcher to hang up.

Manure Spills

Manure Storage Leak Overflow or Spill

- Stop flow from the manure storage facility.
- Assess the extent of the emergency and determine the help needed.
- Call for the needed help or equipment.
- Contain the spill immediately through the use of basins and berms.
- Divert manure from critical sites including: wells, channels, ditches, waterways, streams, rivers, lakes, ponds, tile inlets, broken tile lines, sinkholes, and bedrock near the surface.
- Repair storage facility immediately
- If field conditions allow, remove enough manure to stop the leak.
- Contact the County Land Conservation Department to make critical repairs.
- Following repairs, clean up the spill where possible.
- Take before and after (clean-up) pictures.
- Report the spill to the WDNR.
- Complete a spill worksheet

Manure spills during or after transport and application

- Stop manure pumps.
- If the manure is coming from a tanker move away from critical areas. If possible take to cropland.
- Close valves or separate pipes to stop the flow of manure.

- Assess the extent of the emergency and determine the help needed.
- Call for the needed help or equipment.
- If spill is on the road call the County Sheriff's office for traffic control
- Clean up the spill on roads immediately by spreading sawdust to absorb the manure and sweeping into piles. Remove piles and apply to cropland according to the 590 NMP.
- Contain the spill immediately through the use of basins and berms, straw bales or sawdust.
- If the flow is coming from a tile line plug or break the tile line to stop the flow.
- Stop the flow through incorporation where possible.
- Take before and after (clean-up) pictures.
- Report the spill to the WDNR.
- Complete a spill worksheet

Chemical Spills

The guidelines below should be followed in the event of a chemical incident in which there is potential for a significant release of hazardous materials.

Spill classifications: Spill response procedures vary depending on whether a spill is small, medium, or large. The following are descriptions of each type of spill:

- **Small spills.** This category includes spills where the major dimension of the spill is less than 18 inches in diameter.

- **Medium spills.** These are spills where the major dimension exceeds 18 inches, but is less than 6 feet.

- **Large spills.** This category includes:
    - o Any spill involving a flammable liquid where the major dimension exceeds 6 feet in diameter; and
    - o Any "running" spill, where the source of the spill has not been contained or the flow has not been stopped.

Evacuation: Persons in the immediate vicinity of a spill should immediately evacuate the premises. If the spill is "medium" or "large," or if the spill seems hazardous, immediately notify emergency response personnel.

General spill control techniques: Once a spill has occurred, the employees at the spill site must decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response should attempt to contain or clean up a spill.

Spill control equipment should be available wherever significant quantities of hazardous materials are received or stored. MSDS sheets, respiratory protection, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers and "caution-keep out" signs are common spill response items that should be stocked in such areas. Consult the Safety Department for more information on what to stock for your area.

Response and cleanup procedures for small spills: Small spills generally can be handled by internal personnel and usually do not require an emergency response by fire department HAZMAT personnel.

First, quickly contain the spill by stopping or securing the spill source. This could be as simple as uprighting a container and using absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary. Put spill material and absorbents in secure containers. Do not wash the spill area until consulting with the MSDS sheet for spill and waste disposal procedures. Sometimes the area of the spill should not be washed with water. The spilled material and the absorbent sometimes might be classified as hazardous waste and must be disposed of in compliance with state and federal environmental regulations.

Response and cleanup procedures for medium spills: Police and fire department HAZMAT teams' response normally is required for medium spills. However, common sense also should be used when determining if outside help is necessary. Medium spills require the following actions:

- First, try to contain the spill at its source. This might involve quickly uprighting a container or putting a lid on a container. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, leave the area. Call management or 911. Close, but do not lock, the doors as you leave.
- Second, evaluate the area outside of the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise police or emergency responders on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency responders by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency responders have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDS sheets and questions about the facility.
- Emergency responders or trained personnel with proper personal protective equipment should clean up the spill residue. Do not re-enter the area until the responder in charge gives the all clear. Be prepared to assist these persons from outside the spill area with MSDS sheets, absorbents, containers, etc.
- Reports must be filed with proper authorities.

Response and cleanup procedures for large spills: The response for large spills is much the same as for medium spills, except that the exposure danger is greater. The response for large spills is as follows:

- First, since spill control or containment by management or on farm staff notify police (911). Again, give the operator the spill location, chemical spilled and approximate amount.
- Second, from a safe area, attempt to get MSDS information for the spilled chemical for the emergency responders to use. Also, be prepared to advise responders as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise responders of any absorbents, containers, or spill control equipment that may be available.
- Only emergency response personnel, in accordance with their own established procedures, should handle spills greater than 6 feet in any dimension or that are continuous. Remember, once the emergency responders or HAZMAT team is on the job cleaning up spills or putting out fires, the area is under their control and no one may re-enter the area until the responder in charge gives the all clear.

Accidental Entry In To Manure Storage Enclosure Emergency

- If the person is still conscious attempt to get them out, but **DO NOT ENTER** the manure storage.
- Get additional help from farm staff to remove the person.
- If unable to remove the person, call for emergency help.
- Pump fresh air into the enclosure with fans or blowers until help arrives.
- Make repairs or install safety equipment to prevent further entry.
- Complete an emergency worksheet with events and corrective action to prevent the event from occurring in the future.

Disposal of Animal Carcasses in Emergency Circumstances

The disposal options for dead animals in emergency circumstances are as follows (in order of preference):

1. Rendering plant
2. Licensed landfill
3. Burial on farmland
4. Composting of carcasses (DNR approval required)

If the dead animals are buried on farmlands, every attempt should be made to bury the animals in an upland area away from surface water bodies and above the groundwater table to minimize the potential for contaminating the water. Disposal pits or trenches should be a minimum of 1,200 feet away from private or public water supply wells and 1,000 feet away from surface waters and other sensitive areas.

The carcasses should be buried in pits or trenches (usually easier for placement) that allow for at least 2 feet of soil cover over top of the carcasses. The carcasses should be placed in a single layer in the bottom of the pit/trench and then covered with barn lime and the 2 foot soil layer. This should help the decomposition of the carcasses and keep other animals from digging them back up. The cover soil should be sloped to divert surface water away from the burial area and top soiled, seeded, and fertilized as soon as possible to maintain a healthy vegetative cover.

This guidance generally conforms to DATCP rules and policies. If there are any questions regarding the DATCP regulations or policies, please contact DATCP staff directly at (608) 224-4872.

Odor Complaint Response

Public relations, especially with neighbors, are an essential component of managing a large dairy business today. Ledgeview Farm, LLC will implement the following protocols to address odor concerns and reduce community conflicts.

1) The goal of Ledgeview Farm, LLC is to establish a relationship with neighbors and community members and implement management practices that limit complaints due to odors. Ledgeview Dairy, LLC will make every effort to inform neighbors before activities are undertaken that may increase odors from the dairy.
2) Ledgeview Farm, LLC has designated Jason Pansier as the lead contact for all odor complaints. All odor complaints will be recorded on the “Record of Odor Complaints Form” at the end of this plan. This form records the date the complaint was received as well as who made the complaint and what concerns were expressed.
3) Ledgeview Farm, LLC will evaluate all odor complaints to determine if any practices can be implemented immediately to help reduce the odors that have generated the complaint. Potential odor control strategies to be implemented are identified in this plan.
4) Ledgeview Farm, LLC will follow up odor complaints to determine if the practices put in place helped to reduce odors after complaints have been received.

Ledgeview Farm, LLC
Manure or Hazardous Material Spill Accident Worksheet

Jason Pansier Manager/Owner
3499 Lime Kiln Road
Green Bay, WI 541311

Jason Pansier Cell – 920-655-3875

DNR Hazardous Spill Line 1-800-943-0003

Picture Information – Provide pictures of spill site: before cleanup ☐ after cleanup ☐

Spill Information

Date and time of the spill: ____

Spill Location:____

____

Where Spill Material was Ultimately Deposited:______________________________

____

Property Owners Name:____

Individuals Involved:____

Material Spilled:____

Quantity of Spill:____

Actions Taken to Stop the Release or Minimize the Impact: _____________________

____

____

____

____

Potential Impact to Human Health and the Environment: _______________________

____

____

"I hereby declare the information provided above is true, accurate and complete."

Signature____ Date_______________

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Ledgeview Farm, LLC
Odor Management Plan

Odor Complaint Protocol

Public relations, especially with neighbors, are an essential component of managing a large dairy business today. Ledgeview Farm, LLC (LF) will implement the following protocols to address odor concerns and reduce community conflicts.

1) The goal of LF is to establish a relationship with neighbors and community members and implement management practices that limit complaints due to odors. LF will make every effort to inform neighbors before activities are undertaken that may increase odors from the dairy.
2) Ledgeview Farm, LLC has designated Jason Pansier as the lead contact for all odor complaints. All odor complaints will be recorded on the “Record of Odor Complaints Form” at the end of this plan. This form records the date the complaint was received as well as who made the complaint and what concerns were expressed.
3) Ledgeview Farm, LLC will evaluate all odor complaints to determine if any practices can be implemented immediately to help reduce the odors that have generated the complaint. Potential odor control strategies to be implemented are identified in this plan.
4) Ledgeview Farm, LLC will follow up odor complaints to determine if the practices put in place helped to reduce odors after complaints have been received.

Identified Sources of Odors and Odor Control Strategies

Waste Storage Facilities – Currently, LF has one (1), liquid, long-term Waste Storage Facilities (WSF) at the Headquarters site. Ledgeview Farm, LLC proposes to construct a new long term WSF on the Heifer site that will provide a combined 291 days of storage. The current Waste Storage Facilities are constructed with a sloped floor and a ramp to provide access for periodic waste removal and applied to adjacent crop fields in the spring and fall. After construction of the proposed WSF on the Heifer Farm, the liquid Waste Storage Facilities will have a combined surface area of approximately 5.75 acres that can produce odors. The odors from the Waste Storage Facilities have the potential to bring about odor complaints. The following odor control strategies will be implemented.

- Feeding strategies will be used to avoid overfeeding of protein to help minimize compounds in excreted manure that contribute to excessive odors.
- During agitation, manure will not be sprayed into the air.

Animal Housing – Currently there is a Bedded Packed Heifer Barn, L1, and a Freestall Barn, L2 that are used to house the cattle at the Heifer Farm. Odors from the Animal Housing Facilities are fairly constant throughout the year and provide a low potential to bring about odor complaints. The following odor control strategies will be implemented:

- Animal Housing Facilities will be cleaned frequently to help reduce the amounts of odors generated from these facilities. All litter alleys and travel lanes will be cleaned at least 3 times per week. Frequent cleaning will also prevent the build up of manure in the corners of the litter alleys.
- Water conservation practices are used on the Heifer Farm. Practices include:
    - Checking waters daily to ensure the floats are properly set and the waters are not running over.

- All barn floor surfaces will be kept as dry as possible
- Feeding strategies will be used to avoid overfeeding of protein to help minimize compounds in excreted manure that contribute to excessive odors.

Feed Storage Area – Corn silage and haylage are stored in concrete bunkers in the Feed Storage Area to the south of the Heifer production site. The odors from the Feed Storage Area will be fairly constant throughout the year and provide a low potential to bring about odor complaints. The following odor control strategies will be implemented:

  - Feed will be harvested at optimal moisture (less than 70% moisture) to minimize the potential for excessive leachate coming from stored feeds.
  - Feed will be covered with plastic and tires to reduce the amount of spoiled feed and dust production.
  - Excess and waste feed will be removed frequently and properly land applied according to the Nutrient Management Plan.

Land application of manure – Currently LF has a long-term Waste Storage Facility on the Headquarters site. In addition, a new WSF will be constructed on the northeast part of the Heifer site. Long-term Manure Storage Facilities are generally emptied in the spring and fall of the year. The liquid manure is hosed and injected directly into nearby cropland. Tankers are used to apply manure onto distant cropland and manure is injected into cropland. The land application of manure has the potential to produce nuisance odors that can bring about odor complaints. The following odor and dust control strategies will be implemented:

  - Manure applications will be completed as quickly as possible to reduce the amount of time that odors can be generated.
  - Manure will be injected directly or incorporated as soon as possible after application, to reduce odors.
  - All gravel access roads will be sprayed down with water periodically during manure hauling to reduce the amount of dust produced from truck traffic.
  - Mud on roads or highways that results will be removed frequently.

Mortalities – Animals dying due to injury or other causes happens in the day-to-day operation of a dairy farm. The mortality rate is generally highest for newborn animals. Odors from mortalities have a low potential to produce odors complaints because LF contracts with Circle R Mink Ranch to remove all dead animals within 24 hours. Odors from mortality disposal practices have a low potential to bring about odor complaints. The following odor control strategies will be implemented:

  - Ledgeview Farm, LLC will continue to contract with Circle R Mink Ranch to remove all dead animals within 24 hours of a death event.
  - Dead animals will be stored out of public view to reduce other conflicts.

Ledgview Farm, LLC

Record of Odor & Dust Complaints

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle): Wind Speed	Wind Direction			Temp.	Conditions	Ledgeview Farm, LLC Follow Up Actions
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle): Wind Speed	Wind Direction			Temp.	Conditions	Ledgeview Farm, LLC Follow Up Actions
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle): Wind Speed	Wind Direction			Temp.	Conditions	Ledgeview Farm, LLC Follow Up Actions
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

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Exhibit 6-1
Waste Storage Facility Summary-Annual Storage Period Expanded Conditions
Leachate, Runoff Generation and Storage Capacity
Ledgeview Farm, LLC

Source	Volume (ft^3)	Volume (gallons)	Comments
Waste Generation			
Manure and Wastewater-Dairy	2,051,871	15,347,995	Exhibit 6-2
Manure and Wastewater-Steers	382,284	2,859,484	Exhibit 6-3
FSA Leachate-Heifer Farm	16,786	125,556	Exhibit 6-4
FSA Runoff-Heifer Farm	285,046	2,132,140	Exhibit 6-6
FSA Leachate-HQ*	1,683	12,589	Exhibit 6-9
FSA Runoff-HQ*	13,029	97,453	Exhibit 6-11
Y1 Heifer Farm Lot Runoff	84,856	634,723	Exhibit 6-8
Y1 HQ Farm Lot Runoff*	14,822	110,869	Exhibit 6-13
Sub-total	**2,850,376**	**21,320,809**	
Net Precipitation**			
WSF 1	111,303	832,546	
WSF 2	351,609	2,630,038	
Sub-total	**462,912**	**3,462,583**	
Total Waste Generated	**3,313,288**	**24,783,392**	
Waste Stored Above the MOL			
FSA-Heifer Farm 25 yr-24 hr	41,427	309,873	Exhibit 6-5
FSA-HQ 25 yr-24hr*	3,199	23,927	Exhibit 6-10
Y1 Hefier Farm Lot Runoff 25 yr-24 hr	13,263	99,204	Exhibit 6-7
Y1 HQ Farm Lot 25 yr-24 hr*	2,070	15,483	Exhibit 6-12
Total Waste Above MOL	59,958	448,487	
Waste Storage Facilities***			
WSF 1	669,334	5,006,618	
WSF 2	1,971,800	14,749,062	
Total Storage Volume	**2,641,134**	**19,755,680**	
Storage Capacity Evaluation			
Total Storage Volume	2,641,134	19,755,680	
Average Annual Storage Period	291	days	

*Allowance for future runoff collection system
**Net precipitation; 1.7 ft/year x WSF surface area
***MOL volume, determined by CADD

Ex 6-2 **WASTE STORAGE FACILITY DESIGN - 313 STANDARD** Ver. March 2015

CLIENT: Ledgeview Farm, LLC COUNTY: BROWN DATE: 12/4/17
DSN BY: JMR CHK BY: DATE:
'MMENTS Waste Generation - Dairy Expanded Conditions

ANIMAL TYPE> 1 (1=DAIRY, 2=BEEF, 3=VEAL, 4=SWINE(finishing), 5=SWINE(farrowing), 6=POULTRY, 0=OTHER)

For Dairy: Rolling Herd Average 25,000 lbs/cow/yr Is it a stanchion barn? n (Y or N)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT.	DAILY OUTPUT, CU FT			DAYS OF	VOLUME	ANIMAL
KIND	NUMBER	PER HEAD	MANURE	BEDDING	TOTAL	STORAGE	REQUIRED	UNITS
Cows Milk	1125	1,400	2.53	0.3	3183.8	365	1,162,069	1,575
Cows Dry	230	1,400	2.00	0.3	529.0	365	193,085	322
Heifers	450	1,000	1.60	0.3	855.0	365	312,075	450
Heifers	270	600	0.96	0.3	340.2	365	124,173	162
Calves	270	350	0.56	0.4	245.7	365	89,681	95

WASTEWATER: 3500 GAL/DAY 467.9 CU FT/DAY 2,604 TOT. A.U.

TOTAL DAILY VOLUME: 5621.6 CU FT / DAY

	15,347,995	GALLONS
Total Manure and Wastewater	**2,051,871**	**CU FT**
Expected % solids in waste (Includes runoff and precip.)	9.9	%

Ex 6-3 **WASTE STORAGE FACILITY DESIGN - 313 STANDARD** Ver. March 2015

CLIENT: Ledgeview Farm, LLC COUNTY: BROWN DATE: 12/4/17

DSN BY: JMR CHK BY: DATE:

MMENTS Waste Generation Steers - Expanded Conditions

ANIMAL TYPE> 2 (1=DAIRY, 2=BEEF, 3=VEAL, 4=SWINE(finishing), 5=SWINE(farrowing), 6=POULTRY, 0=OTHER)

n

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT.	DAILY OUTPUT, CU FT			DAYS OF	VOLUME	ANIMAL
KIND	NUMBER	PER HEAD	MANURE	BEDDING	TOTAL	STORAGE	REQUIRED	UNITS
Beef	550	350	0.35	0.3	357.5	365	130,488	193
Beef	525	850	1.00	0.3	682.5	365	249,113	446
Beef								

WASTEWATER: 55 GAL/DAY 7.4 CU FT/DAY 639 TOT. A.U.

TOTAL DAILY VOLUME: 1047.4 CU FT / DAY

2,859,483 GALLONS

Total Manure and Wastewater 382,284 CU FT

Expected % solids in waste (Includes runoff and precip.) 10.1 %

Exhibit 6-4

Leachate and First Flush Volume Calculation Worksheet
Ledgeview Farm, LLC - Heifer Farm

Prepared By: Roach
Date: 2017

Input Data	Dimensions* Length	Width	Area ft^2
Existing FSA	varies	varies	93,253
			-
			-
			-

Total Area With Apron	93,253	ft^2
Total Area With Apron	2.1	Acres
Total Feed Storage Area Less Apron	93,253	ft^2

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (defalt)	60	lbs/ft^3
Silage Volume	33,571	tons

Calculated Annual Leachate Volume

Silage Stored	33,571	tons
Leachate Volume Generated per Ton	0.5	ft^3/ton
Annual Leachate Generated	16,786	ft^3
Annual Leachate Generated	125,556	gal
Leachate Generated Per Day (30 day period)	4,185	gal/day
Leachate Generated Per Day (30 day period)	560	ft^3/day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	93,253	ft^2
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft^3/event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft^3
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume	125,556	gal
Total Daily Leachate & First Flush Volume	4,185	gal
Volume to Use For Calculation	7,500	gal

Leachate Collection Tank Volume		
Leachate Volume	560	ft^3/day
1st Flush Volume	-	ft^3/event
Total Design Volume	**560**	**ft^3**

20.72

Summary		
Annual Leachate Generated	16,786	ft^3
Annual First Flush Runoff Generated	-	ft^3
Total Annual Volume to Store	16,786	ft^3
Total Annual Volume to Store	125,556	gal

Cell to Enter Data Into
Cell has Formula and is Calculated

Exhibit 6-5

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: **Ledgeview Farm, LLC** COUNTY: **BROWN** DATE: 11/27/2017
DSN BY: **Roach** CHK BY: DATE:
COMMENTS: Feed Storage Area-Heifer Farm

Drainage Area 2.78 Acres
Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.19	0.54	0.70	0.81	0.95	1.07	1.14
Peak Discharge, qp	cfs	3.97	11.1	14.4	16.8	19.6	22.0	23.4

Total Runoff One Inch Rain = 0.19 ac-ft 8,381 cubic feet 62,690 gallons

Total Runoff 25 year Event = 0.95 ac-ft 41,427 cubic feet 309,873 gallons

Peak Flow = 19.63 cfs 8,810 gpm

Exhibit 6-6
Monthly Feed Storage Area Runoff-Heifer Farm
Ledgeview Farm, LLC

	FSA Runoff Volume*		Runoff Volume to WSF	
Month	(ft^3)	(gallons)	(ft^3)	(gallons)
Jan**	7,129	53,325	0	0
Feb**	6,463	48,343	0	0
March***	14,992	112,140	7,496	56,070
April	26,343	197,046	26,343	197,046
May	33,722	252,241	33,722	252,241
June	43,560	325,829	43,560	325,829
July	41,109	307,495	41,109	307,495
Aug	42,379	316,995	42,379	316,995
Sept	38,740	289,775	38,740	289,775
Oct	27,062	202,424	27,062	202,424
Nov	19,428	145,321	19,428	145,321
Dec***	10,413	77,889	5,207	38,945
	311,340	2,328,823	285,046	2,132,140
Winter Months (Nov-April)			58,474	437,382

*121,097 sq ft FSA, RCN 98

***Fifty percent snow removal

25 year, 24 hour rainfall runoff	41,427	cu ft	309,873	gallons

Exhibit 6-7

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgeview Farm, LLC COUNTY: BROWN DATE: 5/24/2011
DSN BY: Roach CHK BY: DATE:
COMMENTS: Y1 Animal Lot - Heifer Farm

Drainage Area 0.89 Acres
Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.06	0.17	0.22	0.26	0.30	0.34	0.36
Peak Discharge, qp	cfs	1.27	3.5	4.6	5.4	6.3	7.0	7.5

Total Runoff One Inch Rain = 0.06 ac-ft 2,683 cubic feet 20,070 gallons

Total Runoff 25 year Event = 0.30 ac-ft 13,263 cubic feet 99,204 gallons

Peak Flow = 6.28 cfs 2,821 gpm

Exhibit 6-8
Monthly Animal Lot Runoff-Heifer Farm
Ledgeview Farm, LLC

	Y1 Runoff Volume*		Runoff Volume to WSF	
Month	(ft^3)	(gallons)	(ft^3)	(gallons)
Jan**	2,291	17,137	0	0
Feb**	2,077	15,536	0	0
March***	4,819	36,046	2,410	18,023
April	8,468	63,341	8,468	63,341
May	10,840	81,083	10,840	81,083
June	14,002	104,735	14,002	104,735
July	13,214	98,841	13,214	98,841
Aug	13,622	101,893	13,622	101,893
Sept	8,699	65,069	8,699	65,069
Oct	6,245	46,713	6,245	46,713
Nov	3,347	25,036	3,347	25,036
Dec***	8,019	59,982	4,010	29,991
	95,643	715,410	84,856	634,723
Winter Months (Nov-April)			18,234	136,390

*38,925 sq ft FSA, RCN 98
**Snow removal
***Fifty percent snow removal

25 year, 24 hour rainfall runoff	13,263	cu ft	99,204	gallons

Exhibit 6-9

Leachate and First Flush Volume Calculation Worksheet
Ledgeview Farm, LLC - Headquarters Farm

Prepared By: Roach
Date: 2017

Input Data	Dimensions* Length	Width	Area ft²
FSA Home Farm	170	55	9,350
			-
			-
			-
			-

Total Area With Apron	9,350	ft²
Total Area With Apron	0.2	Acres
Total Feed Storage Area Less Apron	9,350	ft²

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (defalt)	60	lbs/ft³
Silage Volume	3,366	tons

Calculated Annual Leachate Volume

Silage Stored	3,366	tons
Leachate Volume Generated per Ton	0.5	ft³/ton
Annual Leachate Generated	1,683	ft³
Annual Leachate Generated	12,589	gal
Leachate Generated Per Day (30 day period)	420	gal/day
Leachate Generated Per Day (30 day period)	56	ft³/day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	9,350	ft²
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft³/event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft³
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume	12,589	gal
Total Daily Leachate & First Flush Volume	420	gal
Volume to Use For Calculation		gal

Leachate Collection Tank Volume		
Leachate Volume	56	ft³/day
1st Flush Volume	-	ft³/event
Total Design Volume	**56**	**ft³**
	2.08	

Summary		
Annual Leachate Generated	1,683	ft³
Annual First Flush Runoff Generated	-	ft³
Total Annual Volume to Store	1,683	ft³
Total Annual Volume to Store	12,589	gal

Cell to Enter Data Into	
Cell has Formula and is Calculated	

Exhibit 6-10

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT:	Ledgeview Farm, LLC	COUNTY:	BROWN	DATE:	5/24/2011
DSN BY:	Roach	CHK BY:		DATE:	

COMMENTS: Feed Storage Area Headquartrs Farm

Drainage Area		0.21	Acres
Runoff Curve Number		98.00	
Time of Concentration		0.07	Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.01	0.04	0.05	0.06	0.07	0.08	0.09
Peak Discharge, qp	cfs	0.31	0.9	1.1	1.3	1.5	1.7	1.8

Total Runoff One Inch Rain	=	0.01 ac-ft	647 cubic feet	4,841 gallons
Total Runoff 25 year Event	=	0.07 ac-ft	3,199 cubic feet	23,927 gallons

Exhibit 6-11

Monthly Feed Storage Area Runoff-Headquarters Farm

Ledgeview Farm, LLC

	FSA Runoff Volume*		Runoff Volume to WSF	
Month	(ft^3)	(gallons)	(ft^3)	(gallons)
Jan**	834	6,238	0	0
Feb**	779	5,827	0	0
March***	1,340	10,023	670	5,012
April	1,792	13,404	1,792	13,404
May	1,434	10,726	1,434	10,726
June	1,348	10,083	1,348	10,083
July	982	7,345	982	7,345
Aug	1,286	9,619	1,286	9,619
Sept	1,683	12,589	1,683	12,589
Oct	1,675	12,529	1,675	12,529
Nov	1,621	12,125	1,621	12,125
Dec***	1,075	8,041	538	4,021
	15,849	118,551	13,029	97,453
Winter Months (Nov-April)			4,621	34,561

*9,350 sq ft FSA, RCN 98

**Snow removal

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

Exhibit 6-12

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgeview Farm, LLC — COUNTY: BROWN — DATE: 5/24/2011
DSN BY: Roach — CHK BY: — DATE:
COMMENTS: Animal Lot Headquarters Farm

Drainage Area 0.14 Acres
Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.01	0.03	0.03	0.04	0.05	0.05	0.06
Peak Discharge, qp	cfs	0.20	0.6	0.7	0.8	1.0	1.1	1.2

Total Runoff One Inch Rain = 0.01 ac-ft — 419 cubic feet — 3,132 gallons

Total Runoff 25 year Event = 0.05 ac-ft — 2,070 cubic feet — 15,483 gallons

Exhibit 6-13
Monthly Animal Lot Runoff-Headquarters Farm
Ledgeview Farm, LLC

	FSA Runoff Volume*		Runoff Volume to WSF	
Month	(ft^3)	(gallons)	(ft^3)	(gallons)
Jan**	356	2,663	0	0
Feb**	323	2,416	0	0
March***	749	5,603	375	2,801
April	1,316	9,844	1,316	9,844
May	1,685	12,604	1,685	12,604
June	2,176	16,276	2,176	16,276
July	2,054	15,364	2,054	15,364
Aug	2,117	15,835	2,117	15,835
Sept	1,935	14,474	1,935	14,474
Oct	971	7,263	971	7,263
Nov	520	3,890	520	3,890
Dec***	3,347	25,036	1,674	12,518
	17,549	131,267	14,822	110,869
Winter Months (Nov-April)			3,884	29,052

*6,050 sq ft FSA, RCN 98
**Snow removal
***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

7

DEC 30 1975 BN-1051-U

WELL CONSTRUCTOR'S REPORT
FORM 3300-15

DEC 11 1975

NOTE
WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY Brown

CHECK ONE: [X] Town [ ] Village [ ] City — NAME: De Pere

2. LOCATION – ¼ Section: SE, SW, NE — Section: 32 — Township: 23 N. — Range: 21 E.
OR – Grid or street no: in 1992 = 3701 — Street name: Hwy G, Dickinson
AND – If available subdivision name, lot & block no

3. OWNER AT TIME OF DRILLING Dennis Panzier
ADDRESS: R.1 Ledgeview Rd.
POST OFFICE: De Pere, Wis.

4. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
12	–	–	–	–	–	11	–	–

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
–	–	40	–	–	75	–	–	–	–

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)
–

5. Well is intended to supply water for: Home

6. DRILLHOLE

Dia (in)	From (ft)	To (ft)	Dia (in)	From (ft)	To (ft)
10	Surface	61	6	61	130

7. CASING, LINER, CURBING, AND SCREEN

Dia (in)	Kind and Weight	From (ft)	To (ft)
6	New ~~Seamless~~ Pipe	Surface	61
	~~Reamed + Drifted~~		
	Welded joint		
	wt 18.97 per ft.		
API	5A Jones + Laughlin		

9. FORMATIONS

Kind	From (ft)	To (ft)
clay	Surface	50
boulders & clay	50	61
shalerock	61	130

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft)	To (ft)
Drilling mud	Surface	61

10. TYPE OF DRILLING MACHINE USED

[ ] Cable Tool [ ] Direct Rotary [ ] Reverse Rotary
[ ] Rotary – air w/drilling mud [X] Rotary – hammer with drilling mud & air [ ] Jetting with [ ] Air [ ] Water

Well construction completed on October 14 1975

Well is terminated 8 inches [X] above [ ] below final grade

Well disinfected upon completion [X] Yes [ ] No

Well sealed watertight upon completion [X] Yes [ ] No

11. MISCELLANEOUS DATA

Yield test: 4 Hrs. at 2 GPM

Depth from surface to normal water level 23 ft.

Depth to water level when pumping 23 ft.

Water sample sent to Madison laboratory on: December 2, 1975

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Leonard Willems — Registered Well Driller
COMPLETE MAIL ADDRESS: R.1 Greenleaf Wis.

Please do not write in space below

CC	GAS – 24 HRS	GAS – 48 HRS	CONFIRMED	REMARKS
RE				

BN 3934

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH
See Instructions on Reverse Side

1. County Brown — Town ☒ Village ☐ City ☐ De Pere (Check one and give name)

2. Location NE, ~~S.W.~~ ¼ of the N.W. ¼ of Sec. 33, T. T23N ~~24N~~, R.21E
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☐ or Agent ☐ Pleasant View School, District No. 3
Name of individual, partnership or firm

4. Mail Address Route 3, Green Bay, Wis.
Complete address required

RECEIVED JAN BUREAU SAN. ENG.

5. From well to nearest: Building 48 ft; ~~sewer~~ privy 50 ft; drain ___ ft; septic tank ___ ft; ___ dry well or filter bed ___ ft; abandoned well 95 ft. to be filled in by school board

6. Well is intended to supply water for: School

7. DRILLHOLE:

Dia. (in.)	From (ft)	To (ft)	Dia. (in.)	From (ft.)	To (ft)
8	0	78½			
6	78½	174			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in)	Kind	From (ft.)	To (ft.)
6	Standard Weight		
	Steel Pipe --	0	78½
	welded joints		

9. GROUT:

Kind	From (ft.)	To (ft.)
Puddled Clay	0	4
Neat Cement	4	78½

10. FORMATIONS:

Kind	From (ft)	To (ft)
Hard Pan	0	3
Shell Rock	3	25
Shale	25	76
Limestone	76	87
Shale & Limestone	87	140
Limestone	140	174

Construction of the well was completed on: December 15, 1949

The well is terminated 6 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No ___

Was the well sealed watertight upon completion? Yes X No ___

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 5 GPM.

Depth from surface to water-level: 67 ft.

Water-level when pumping: 68 ft.

Water sample was sent to the state laboratory at: Green Bay, Wis. (City) on Dec. 15 1949

Signature Gleason Well Drilling Co. [signature] Registered Well Driller — 1169 Pine Street, Green Bay, Wis. Complete Mail Address

Please do not write in space below

Rec'd ___ No. ___

Ans'd ___

Interpretation ___

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ___

B_N_3 9 4 5

8

Ledgeview Farm, LLC

Date	Activity
Waste Storage Facility, Feed Storage and Leachate Management System	
May 2019	Install erosion control measures
May 2019	Strip and stockpile topsoil from Waste Storage Facility
May 2019	Seed topsoil piles
June 2019	Inspect erosion control measures and take corrective action
June 2019	Excavation for Waste Storage Facility and DB: Detention Basin
July 2019	Install concrete liner in Waste Storage Facility and construct DB: Detention Basin
July 2019	Install concrete liner in Waste Storage Facility and construct DB: Detention Basin
July 2019	Inspect erosion control measures and take corrective action
July 2019	Install Waste Transfer Pipe from DB: Detention Basin to W2 Waste Storage
July 2019	Install waste Transfer Pipe from Y2 yard Collection Tank to W2 Waste Storage
July 2019	Install Feed Storage Area Apron to DB: Detention Basin
July 2019	Install topsoil, final grade and seed as needed

9

Exhibit 9

Other Laws & Permits

The following laws may apply to the operations of Ledgeview Farm, LLC:

- Town of Ledgeview Chapter ATCP 51 – Livestock Facility Siting
- Town of Ledgeview Conditional Use Permit
- Town of Ledgeview Building Permit
- Town of Ledgeview Construction Site Erosion Control Permit
- Brown County Animal Waste Management Ordinance
    - Animal Waste Storage Facility Permit
    - Animal Feedlot Permit
- Brown County – Nutrient Management Plan approval
- DNR Chapter NR 243 - Animal Feeding Operations - WPDES permit
- DNR - Plan & Specifications approval for all reviewable facilities
- DNR – Construction Site Erosion Control Permit

Attachment 1

2017 Waste Storage Facility & Runoff Management Systems

for

Ledgeview Farm, LLC
3875 Dickinson Road
DePere, WI 54115

November 2, 2018

WISCONSIN
CLARK J
FOX
E-45021
LITTLE CHUTE
WIS.
PROFESSIONAL ENGINEER

Clark Fox
11/2/18

Prepared by

Roach & Associates, LLC
856 N. Main Street
Seymour, WI 54165

Corrections Throughout This Submittal

Y1 Yard Reference

Throughout this submittal there are references to the Y1 Yard at the Headquarters Site and the Y1 Yard at the Heifer Site. In the Livestock Siting Application the Y1 Yard at the Headquarters site remains as Y1, but the Y1 Yard at the Heifer site has been changed and appears as the Y2 Yard. We request that the reader of this submittal make the adjustment when comparing the two documents.

Year References

Throughout this document we request that the reader make adjustments as to the year referenced. The design was completed in 2017 and the submittal was completed in 2018 with the intention that the governing agencies would approve the project in 2018 allowing construction to occur in 2018. Based on the circumstances with the approval by the Town of Ledgeview, events did not evolve as predicted. Based on fact that the Brown County Land and Water Conservation Department (LWCD) issued a Waste Storage Permit in 2018, and the Wisconsin Department of Natural Resources (WDNR) issued an approval in 2018, the Specifications document has not been amended to reflect the passage of time.

The construction plans have been adjusted with regard to the decision issued by the Livestock Facilities Siting Review Board (LFSEB) determining the setback from a Waste Storage Facility must be measured from the toe of the outside slope. The location of the W2 Waste Storage Facility was slightly adjusted to meet the required setback from the Right-of Way and property lines. The Odor Score Worksheets in the Livestock Facility Siting Application has been adjusted to reflect the location change. The minor location change of the W2 Waste Storage Facility does not affect the interiority of the specification and has not affected the approval from WDNR or the Wasted Storage Permits issued by the Brown County LWCD. We ask that the reader adjust the year referenced to reflect the passage of time, with construction of the improvements projected to be 2019.

Courtney Roach

From: Kreider, Jeff C - DNR <Jeff.Kreider@wisconsin.gov>
Sent: Monday, November 5, 2018 10:38 AM
To: John Roach
Cc: Courtney Roach; Matthew Schwalenberg; Pat Roach
Subject: RE: Ledgeview Farm, LLC

Hi John,
This emails serves as my approval for the rotating the waste storage pond at the satellite farm that has been approved. The change doesn't require a letter approval. This email should be included with the post-construction report as well as all changes from what was originally approved.

Jeff Kreider

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Jeff Kreider
Water Resources Engineer – Bureau of Watershed Management
Wisconsin Department of Natural Resources
Phone: (608) 266-0856; Cell Phone: (608) 212-6547
jeff.kreider@wisconsin.gov

-----Original Message-----
From: John Roach [john@jmroach.com]
Received: Thursday, 01 Nov 2018, 11:33AM
To: Kreider, Jeff C - DNR [Jeff.Kreider@wisconsin.gov]
CC: Pat Roach [Pat@jmroach.com]; Courtney Roach [Courtney@jmroach.com]; Matthew Schwalenberg [matt@jmroach.com]
Subject: Ledgeview Farm, LLC

Jeff,

As we discussed at the Ledgeview site we want to rotate the WSF to meet setback requirements. Attached is a planview that shows the location of the WSF that you approved and the location of the WSF that we are proposing. If you agree that we can document the change in the inspection logs and the asbuilt plans, please provide a statement that we can include with the construction plans that we will submit to the Town of Ledgeview for the Livestock Facility Siting application.

Thank you.

Regards,

John Roach
General Manager
Office: 920.833.6340
Cell: 920.858.5868
Email: john@jmroach.com

Courtney Roach

From: Wetenkamp, Dave L. <Wetenkamp_DL@co.brown.wi.us>
Sent: Tuesday, November 6, 2018 10:39 AM
To: John Roach
Cc: Mushinski, Michael L.; Bechle, Jon E.
Subject: RE: Ledgeview Farm, LLC

John,
Thanks for the update and related email documentation for Ledgeview Farms manure storage permit.
The information was shared with our department, corporation counsel and county conservationist.
After review it has been determined that plans do not need to be re-submitted for this change in orientation of the proposed
Storage to meet the new setback requirements.
Please inform us of any new changes and of any proposed construction activity related to this project.
Please submit approved as-built plans with any changes included to the proposed project after construction to Brown County LWCD.
Thanks,
Dave

From: John Roach <john@jmroach.com>
Sent: Monday, November 5, 2018 10:50 AM
To: Wetenkamp, Dave L. <Wetenkamp_DL@co.brown.wi.us>
Cc: Courtney Roach <Courtney@jmroach.com>; Pat Roach <Pat@jmroach.com>; Vicki Geiger <vicki@jmroach.com>; Barb Baranczyk <Barb@jmroach.com>
Subject: FW: Ledgeview Farm, LLC

Dave,

Here is the approval from DNR to rotate the Ledgeview WSF to meet the setback requirements.

Does the County also agree that the changes can be documented in the asbuilt plans?

Regards,

John Roach
General Manager
Office: 920.833.6340
Cell: 920.858.5868
Email: john@jmroach.com

From: Kreider, Jeff C - DNR [mailto:Jeff.Kreider@wisconsin.gov]
Sent: Monday, November 05, 2018 10:38 AM
To: John Roach
Cc: Courtney Roach; Matthew Schwalenberg; Pat Roach
Subject: RE: Ledgeview Farm, LLC

Hi John,
This emails serves as my approval for the rotating the waste storage pond at the satellite farm that has been approved.

The change doesn't require a letter approval. This email should be included with the post-construction report as well as all changes from what was originally approved.

Jeff Kreider

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Jeff Kreider
Water Resources Engineer – Bureau of Watershed Management
Wisconsin Department of Natural Resources
Phone: (608) 266-0856; Cell Phone: (608) 212-6547
jeff.kreider@wisconsin.gov

-----Original Message-----
From: John Roach [john@jmroach.com]
Received: Thursday, 01 Nov 2018, 11:33AM
To: Kreider, Jeff C - DNR [Jeff.Kreider@wisconsin.gov]
CC: Pat Roach [Pat@jmroach.com]; Courtney Roach [Courtney@jmroach.com]; Matthew Schwalenberg [matt@jmroach.com]
Subject: Ledgeview Farm, LLC

Jeff,

As we discussed at the Ledgeview site we want to rotate the WSF to meet setback requirements. Attached is a planview that shows the location of the WSF that you approved and the location of the WSF that we are proposing. If you agree that we can document the change in the inspection logs and the asbuilt plans, please provide a statement that we can include with the construction plans that we will submit to the Town of Ledgeview for the Livestock Facility Siting application.

Thank you.

Regards,

John Roach
General Manager
Office: 920.833.6340
Cell: 920.858.5868
Email: john@jmroach.com

Ledgeview Farm, LLC
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Introduction and Design Rationale

Introduction and Design Rationale

Introduction

Ledgeview Farm, LLC (LF) is an existing dairy that conducts operations at two sites in the Town of Ledgeview, Brown County. The Headquarters Farm is located at 3875 Dickinson Road, De Pere, WI 54115 and the Heifer Farm is located at 3688 Lime Kiln Road, Green Bay, WI 54311. The proposed modifications, located at the Heifer Farm, include a new Waste Storage Facility (WSF 2) and Runoff Management Systems that will transfer leachate and runoff from the Feed Storage Area and an existing Animal Lot.

Design Criteria

The proposed improvements are based on Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV Standards, Wisconsin Construction Specifications (WCS) and Wisconsin Administrative Codes. A list of Design Standards that may apply is found in Exhibit 12.

Operating Objectives

Waste Storage Facility 2 (WSF 2) will provide additional waste storage capacity that will eliminate the need for unconfined manure stacks at the production site and spreading manure on frozen ground during the winter months. The Runoff Management Systems will provide runoff controls for the Feed Storage Area (FSA) and the Y1 Yard at the Heifer Farm.

Project Description

The primary components of the proposed modifications are identified below. More detailed descriptions and operational procedures are presented in the appropriate sections of this submittal.

- LMS - Detention Basin, and Gravity Flow Waste Transfer Pipe
  - The Detention Basin liner will be reduced seepage concrete with waterstop.
  - Transfer pipe will be PVC
- Y1 Yard – Waste Transfer System
  - Transfer pipe will be PVC
- WSF 2 will have a reduced seepage concrete with waterstop liner.

The Waste Storage System (WSF 1 & WSF 2) will provide storage of manure and wastewater from dairy operations as well as collected runoff from the Heifer Farm FSA and Y1 Yard. Including an allowance for waste from future runoff controls, the average annual design storage period will be 291 days.

Site Investigations
Site investigations that were conducted by Brown County Land and Water Conservation Division (LWCD) and Roach & Associates, LLC (R&A) in 2017 were used for the design of the proposed improvements, including topographical survey, test pits and analysis of soil samples.

Waste Storage System
The storage volume of the proposed Waste Storage Facility W2 (WSF 2), when combined with the storage volume of the existing WSF 1, will provide an annual average storage period to 291 days at design conditions (expanded). The actual storage period will vary depending on the level of precipitation that occurs.

Project Schedule
Construction of the proposed improvements, including WSF 2, the Leachate Management System and the Y1 Yard Waste Transfer System, are planned for 2018.

Management Assessment

Management Assessment

Introduction

Ledgeview Farm, LLC (LF) is an existing dairy operation that has two production sites in the Town of Ledgeview, Brown County. The Headquarters Farm is located at 3875 Dickinson Road, De Pere, WI 54115 and the Heifer Farm is located at 3688 Lime Kiln Road, Green Bay, WI 54311(Exhibit 1).

Site Descriptions

An aerial photo of the Headquarters Farm production area is shown in Exhibit 2-1. The existing facilities are labeled and described as follows:

- L1 – Freestall Barn with Collection Channel
- L2 – Bedded Pack Heifer Barn
- L3 – Freestall Barn
- L4 – Freestall Barn
- L5 – Bedded Pack Heifer Barn
- L6 – Calf Barn
- Parlor – Milking Parlor and Holding Area
- T1 – Piston Pump Station
- Y1 – Heifer Feedlot – Concrete Yard
- WSF 1 – Existing Waste Storage Facility 1, Concrete and Earthen Liners
- Pit 1– Existing Waste Storage Facility, inactive
- Pit 2– Existing Waste Stacking Facility, inactive

An aerial photo of the Heifer Farm production area is shown in Exhibit 2-2. The existing facilities are labeled and described as follows:

- L1 – Heifer Barn 1
- L2 – Freestall Barn
- Y1 – Concrete Yard
- T1 – Concrete Yard Collection Basin
- Feed Storage Area

Intent and Purpose of the Proposed Project

Heifer Farm:

Ledgeview Farm, LLC proposes to construct a new Waste Storage Facility (WSF 2) and Runoff Management Systems for leachate and runoff. The Runoff Management Systems will include the Leachate Management System (LMS) for the Feed Storage Area (FSA) and the Waste Transfer System (WTS) for the Y1 Yard. The LMS is designed to collect and transfer leachate and runoff; the Y1 WTS will collect and transfer runoff and manure from the Y1 Yard. Waste from both systems will be transferred to the proposed WSF 2. The Management Assessment presents the design criteria and operating parameters for the 2018 Waste Storage Facility and Runoff Management Systems.

Components of the proposed improvements include:

- LMS - Detention Basin and gravity waste transfer pipe
    - The Detention Basin liner will be reduced seepage concrete with waterstop.
    - Transfer pipe will be PVC

- Y1 Waste Transfer System
    - Transfer pipe will be PVC
- Waste Storage Facility 2
    - The WSF 2 liner will be reduced seepage concrete with waterstop.

Waste Storage Facility 2 will be designed to receive waste from both sites, including waste from future Runoff Control Systems. Future Runoff Control Systems may be installed to collect waste and runoff from the FSA and Y1 Concrete Yard at the Headquarters Farm. While future Runoff Control Systems have not been designed, the design of the Waste Storage System includes an allowance for the projected design flows.

The design of the proposed 2018 WSF 2, Y1 Yard Manure Transfer System and LMS is based on Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV Standards, Wisconsin Construction Specifications (WCS) and Wisconsin Administrative Code (Exhibit 12). The standards include:

- NRCS Standard 313 Waste Storage Facility (10/17)
- NRCS Standard 522 Pond Sealing or Lining – Concrete (10/17)
- NRCS Standard 634 Waste Transfer (1/14)
- WCS 4 Concrete (10/17)
- WCS 004 Embedded Expansive Waterstop (10/17)
- WCS 204 Earthfill for Waste Storage Facility (10/12)
- WCS 300 Clay Liner (3/16)
- WCS 634 Waste Transfer Pipe (8/16)
- NR 213 Lining of Industrial Lagoons and Design of Storage Structures
- NR 243 Animal Feeding Operations

Waste Storage Facility 2 will provide storage of wastes generated at the farm. Including an allowance for waste from future Runoff Control Systems, the Waste Storage System (WSF 1-2) will provide an average annual storage period of 291 days at design conditions (Exhibit 8-1).

Runoff Management Systems

<u>Leachate Management System</u>

The LMS will provide for the collection of leachate and runoff from the Heifer Farm Feed Storage Area (FSA) and transfer of the collected waste to WSF 2. The LMS will include a Detention Basin (DB) that will receive the leachate and runoff. The wastewater will flow by gravity to WSF 2 via PVC Waste Transfer Pipe (WTP).

Detention Basin

Leachate and runoff from the FSA will flow by gravity to the Detention Basin (DB), located in the southern part of the Heifer Farm production area (Construction Drawings Sheet 2). The Detention Basin (DB) is designed according to NRCS, FOTG, Section IV, Standards 313 Waste Storage Facility (10/17) and 522 Pond Sealing or Lining – Concrete (10/17), Table 2, column 1 criteria. The on-site soils to be used for the sub liner meet the requirements of NRCS, FOTG, Section IV, Standard 522 Pond Sealing or Lining – Concrete (10/17), Table 2A, column 3 (Site Assessment). The DB will also meet the requirements of NR 213 Lining of Industrial Lagoons and Design of Storage Structures.

The FSA and the adjacent tributary drainage area will generate 41,427 ft^3 (309,873 gallons) of runoff from a 25 year, 24 hour rainfall event (Exhibit 8-5). The peak flow rate will be 19.63 cfs (8,810 gpm). The maximum daily leachate volume will be 560 ft^3 (4,189 gallons) with an average flow rate of approximately 3 gpm (Exhibit 8-4). Therefore, the design daily flow will be 41,987 ft^3 (314,062 gallons) with a peak design flow of 19.64 cfs (8,813 gpm). The peak flow rate can be moderated by using the DB for flow equalization.

The DB has a design storage capacity of 6,598 ft^3 (49,353 gallons) (Exhibit 10-1). Based on a hydraulic analysis performed using HEC-HMS software, the staged storage provided by the DB will reduce the peak discharge to the 18 inch ASTM F 679 PVC gravity WTP to approximately 9.9 cfs (4,443 gpm) (Exhibit 10-2).

Detention Basin-WSF 2 Waste Transfer Pipe

The DB-WSF 2 WTP will be designed and constructed in accordance with NRCS, FOTG, Section IV, Standard 634 (1/14), Table 1 and WCS 634 Waste Transfer Pipe (8/16), Table 1 criteria for a gravity pipe. The WTP will be an ASTM F679 PVC pipe and will include water tight precast concrete (ASTM C-478) manholes that will function as clean-outs. While the spacing of the manholes exceeds the criteria, the waste to be transferred will have low solids so clean-outs are not required. Therefore, the spacing of the manholes is considered acceptable.

The hydraulic capacity of the DB-WSF 2 WTP will depend on the minimum difference in the design water surface elevations of the DB and WSF 2. The maximum allowable DB water elevation is 728 and the WSF 2 MOL is 718.36, a difference of approximately 9.6 feet. At the peak design discharge from the DB of 9.9 cfs (4,443 gpm), the head loss through the WTP will be 9.6 feet, equal to the difference in surface elevations verifying that the discharge will flow by gravity (Exhibit 9-1).

Y1 Waste Transfer System

Runoff from the Y1 Concrete Yard will flow across the surface of the yard to the Collection Basin (CB) and then flow by gravity to WSF 2 through the 15 inch Waste Transfer Pipe (WTP). The WTP will be designed and constructed in accordance with NRCS, FOTG, Section IV, Standard 634 (1/14), Table 1 and WCS 634 Waste Transfer Pipe (8/16), Table 1 criteria for a gravity pipe. The WTP will be an ASTM D3034 (SDR 35).

The hydraulic capacity of the WTP will depend on the minimum difference in the design water surface elevations of the CB and WSF 2. The CB Maximum Operating Level (MOL) is 725.9 and the WSF 2 MOL is 718.36, a difference of approximately 7.5 feet. At the peak design discharge from the CB of 6.28 cfs or 2,821 gpm (Exhibit 8-7), the head loss through the WTP will be 2.6 feet, less than the maximum difference in surface elevations verifying that the discharge will flow by gravity (Exhibit 9-2).

The peak flow of runoff from the Heifer Farm Y1 from a 25 year, 24 hour rainfall will be 6.28 cfs (2,821 gpm) (Exhibit 8-7). The hydraulic capacity of the WTP will be greater than 7.8 cfs (3,500 gpm) (Exhibit 9-2). Therefore, the WTP has the capacity to transfer the design peak flow from Y1 to WSF 2.

Waste Storage System

Waste Storage Facility 1 (WSF 1), located at the Headquarters Farm, is an existing facility with a concrete liner in the lower part of the facility and an earthen liner on the remainder.

The facility was evaluated in the WPDES Permit application and found to meet the intent of NRCS, FOTG, Section IV, Standard 313 Waste Storage Facility (1/14), Table 1, column 2 and Table 5, column 4 criteria. WSF 1 has a MOL marker and a ramp to provide access for removal of settled solids.

WSF 1 has a design waste storage volume at the Maximum Operating Level (MOL) of 669,334 ft^3 (5,006,618 gallons) (Exhibit 8-1). The MOL volume includes 111,303 ft^3 (832,546 gallons) for net precipitation. The runoff from a 25 year, 24 hour rainfall event will be stored above the MOL. WSF 1 will be used to store waste from the Headquarters Farm. The facility is not designed to accept leachate or runoff from a FSA. Any collected Headquarters Farm FSA leachate or runoff will be transferred to WSF 2.

Waste Storage Facility 2
Waste Storage Facility 2 (WSF 2), designed according to NRCS, FOTG, Section IV, Standards 313 Waste Storage Facility (10/17) and 522 Pond Sealing or Lining – Concrete (10/17), Table 2, column 1 criteria, will be located in the northern part of the Heifer Farm production area (Construction Drawings Sheet 2). The on-site soils to be used for the sub liner meet the requirements of NRCS, FOTG, Section IV, Standard 522 Pond Sealing or Lining – Concrete (10/17), Table 2A, column 3 (Site Assessment).

A ramp will be installed to provide equipment access for removal of settled sand and heavy solids.

WSF 2 has a design waste storage capacity at the Maximum Operating Level (MOL), of 1,971,800 ft^3 (14,749,062 gallons) (Exhibit 8-1). The MOL volume includes 351,609 ft^3 (2,630,038 gallons) of storage for net precipitation. The runoff from a 25 year, 24 hour rainfall event from the FSA and Y1 Yard will be stored above the MOL. WSF 2 will be used to store waste from the Heifer Farm and wastes transferred from the Headquarters Farm.

WSF 2 will have a staff gauge to allow measurement of the volume of waste within the facility at different depths.

Waste Characterization and Planned Storage Period
Ledgeview Farm, LLC will generate 2,850,376 ft^3 (21,320,809 gallons) of manure, wastewater, leachate and runoff annually (Exhibit 8-1). The Waste Storage System will provide an average annual storage period of 291 days, including an allowance for future Runoff Control Systems.

Contingency Operation
WSF 2 is designed to have a minimum of one foot of freeboard. WSF 1 will normally be operated with an additional one foot of freeboard. The additional storage capacity can be utilized if unexpected circumstances prevent removal of waste from the facility.

Secondary Containment Evaluation
WSF 2 has been reviewed to evaluate the need for secondary containment. A Secondary Containment System would prevent a discharge in the event that WSF 2 fails. WSF 2 has been designed to meet NRCS, FOTG, Section IV, Standard 313, Waste Storage Facility (10/17) criteria. The NRCS standards include provisions providing for the structural stability of a structure that have proven to be acceptable. Therefore, it was determined that

additional secondary containment measures are not warranted. In addition, there are no environmentally sensitive areas in close proximity to WSF 2.

Stabilization of Organic By-Products

Manure and wastewater from the dairy will be collected and stored within WSF 1 and WSF 2. The wastes will be stored until removed for application onto cropland in accordance with the approved Nutrient Management Plan (NMP).

Nutrient Concentration

The proposed 2017 Waste Storage Facility and Runoff Management Systems will not concentrate nutrients.

Energy Production

The proposed 2017 Waste Storage Facility and Runoff Management Systems will not produce energy.

Volume Reduction

The proposed 2017 Waste Storage Facility and Runoff Management Systems will not reduce the volume of wastes. All reasonable efforts have been made to minimize the volume of runoff from tributary areas.

Waste Characterization

The waste produced at the dairy will be generated from dairy livestock, steers and from the runoff control systems (Exhibit 8-1). For storage purposes, net precipitation is included as waste. The overall waste characteristics will be typical of wastes generated from a dairy. The other waste streams will generate less than ten percent of the annual design waste load. The annual leachate volume represents less than 0.5 percent of the annual waste volume and the average annual collected runoff from the FSA and Y1 Yard will be approximately 8 percent of the total design waste volume.

Land-Base Available for Utilization of Waste

The current NMP identifies sufficient acres for utilization of wastes from LF. The cropland is either owned, rented or under manure agreements by Ledgeview Farm, LLC.

Planned Storage Period

WSF 1 has a design storage volume, including net precipitation, of 669,334 ft^3 (5,006,618 gallons). WSF 2 has a design storage volume, including net precipitation, of 1,971,800 ft^3 (14,749,062 gallons). The average design storage period, including an allowance for future Runoff Control Systems, will be 291 days (Exhibit 8-1).

Waste Handling and Transfer

Waste will be handled and transferred according to standard operating procedures that are employed by the farm.

Facility Waste Removal Methods

When it is time to remove manure from each Waste Storage Facility, liquids will be agitated and then waste will be pumped from the Waste Storage Facility. The liquids and solids will be surface applied via drag hose or tankers and the waste shall be incorporated into the soil within 24 hours.

Storage Liner Possibilities and Preferences
The Detention Basin and WSF 2 will both be constructed with reduced seepage concrete with waterstop liners, including sub-liner soils, constructed according to NRCS, FOTG, Section IV, Standard 522, Pond Sealing or Lining – Concrete (10/17), Tables 2, column 1 and 2A, column 1 criteria.

Access Needs and Limitations
The WSF 2 floor is designed to allow access for equipment to enter and remove settled solids. The FSA Detention Basin is designed to allow skidsteer access to remove settled solids.

Safety Needs
Each WSF will be fenced and have warning signs to discourage entry by livestock and people.

Labor and Equipment Needs
Ledgeview Farm, LLC owns the equipment necessary to empty each WSF. In the event their equipment is not operational, other equipment is available through custom manure applicators.

Odor Production Concerns and Control Strategies
No significant on-going odors are expected to be generated from the proposed WSF 2 and LMS. Odor will increase at times when agitation of the waste storage facilities occurs.

Aesthetics and Animal Health
Waste Storage Facility 2 will be located north of the nearby Bedded Pack Barn (L1) and, because of the berm elevation, not readily visible from the road. There will be no impact on animal health.

Provisions for Facility Expansion
No further expansion is planned at this time.

Site Assessment

Site Assessment

A Site Assessment of the proposed project area was conducted to evaluate the site conditions and characteristics and verify compliance with applicable design criteria.

Physical Site Characteristics
Ledgeview Farm, LLC is an existing dairy operation that has two production sites in the Town of Ledgeview, Brown County. The Headquarters Farm is located at 3875 Dickinson Road, De Pere, WI 54115 and the Heifer Farm is located at 3688 Lime Kiln Road, Green Bay, WI 54311(Exhibit 1 – Plat Map). All of the proposed improvements are located at the Heifer Farm.

Building Locations and Elevations
The locations of existing and proposed buildings are shown on an aerial photo of the Heifer Farm production area (Exhibit 2-2). The elevations at the site, along with the proposed modifications are shown on the Construction Drawings – Sheet 2.

Roads and Lanes
See plat map (Exhibit 1) for locations and details.

Property Lines, Setbacks and Elevations
See aerial photos (Exhibits 2-1, 2-2) and Construction Drawings – Sheet 2 for locations and details.

Soil Test Pits
See Construction Drawings – Sheet 2 for location of test pits. The test pit logs and analytical data of the soils are found in Exhibits 4 and 5.

Wells
The Heifer Farm has two on-site wells (Exhibit 7 – Well Construction Logs). Both of the wells are more than 250 feet from the proposed Detention Basin and WSF 2. A portion of the Waste Transfer Pipe from the Detention Basin to WSF 2 is greater than the 25' from the well as required in s. NR 812.08 Table A, but less than the 250' as is required in s. NR 243 from one of the wells.

<u>Well Separation Variance Request for 1949 Well</u>
Ledgeview Farm, LLC is requesting a variance from the requirements of s. NR 243.15(1)(a)(2) to allow construction of the proposed Detention Basin-WSF 2 Waste Transfer Pipe within 250 feet of an existing well. The well, constructed in 1949, does not have a Wisconsin Unique Well Number (Exhibit 7). The site details, including the location of the well and Waste Transfer Pipe are shown on the site plan (Construction Drawings – Sheet 2).

The minimum separation distance between the WTP and the 1949 well is approximately 60 feet. The WTP is a gravity ASTM D 3035 (SDR 35) PVC pipe that will transfer leachate and runoff from the Feed Storage Area. Therefore, the WTP will only have significant flow following a rainfall. The WTP will be dry most of the time. The separation distance exceeds the s. NR 812, Table A separation distance of 25 feet for a Manure/Gravity sewer pipe. The 1949 well is cased to a depth of 78 feet and the top of the well is 6 inches above grade (Exhibit 7, Well Construction Logs). Therefore, the well is protected from any runoff from the Waste Transfer Pipe.

Floodplain Locations
There are no floodplains in the proposed project area.

Surface Channels and Drain Tile
The Drainage System relies primarily on surface drainage. The overall drainage from the Heifer Farm site is to the north and west.

Utilities and Overhead Lines
There are no overhead power lines in the project area. There are no known underground utilities that will be impacted by the proposed modifications.

Easements and Permits
LANDOWNER IS RESPONSIBLE FOR PERMITS AND VARIANCES FROM SETBACK REQUIREMENTS.

Cultural Resources
There are no known cultural resources at this site.

Streams and Wetlands
There are no streams within 100 feet of the project area (Exhibit 6-1 – Wetlands Map). Given the presence of wetland indicator soils within the project area, a Wetland Determination was conducted and the WDNR concurred with the findings (Exhibit 6-2). The Wetland Determination found wetlands within the production area but not within the project area. No wetlands will be impacted by the project.

Description of Soils
Soil types – See soil survey map (Exhibit 3). The soil types found in the proposed project area include:

a. KhB – Kewaunee silt loam, 2 to 6 percent slopes
b. MaA – Manawa sandy loam, 1 to 3 percent slopes

Site Investigations – Test Pits
Test pits excavated by Brown County Land and Water Conservation Department (LWCD) and Roach & Associates (R&A) in 2017 were used to provide information for the proposed Waste Storage Facility and Leachate Management System. These investigations will be used to identify and evaluate groundwater and bedrock elevations and soil characteristics for the proposed improvements. Except for the Waste Transfer Pipe from the Detention Basin to WSF 2, the number of test pits meets or exceeds the criteria set forth in NRCS, FOTG, Section IV, Standards 313 Waste Storage Facility (10/17), 634 Waste Transfer (1/14) and NR 213 Lining of Industrial Lagoons and Design of Storage Structures (Exhibit 12). Test pits were excavated at each end of the Detention Basin-WSF 2 Waste Transfer Pipe. The remainder of the route has a concrete surface that prevented excavation of additional test pits. The test pits excavated, along with other site information, was sufficient to characterize site conditions.

Detention Basin
The Detention Basin (DB), will have a reduced seepage concrete with waterstop liner, designed according to NRCS, FOTG, Section IV, Standard 313 Waste Storage Facility (10/17) and NRCS, FOTG, Standard 522 Pond Sealing or Lining – Concrete (10/17), Table 2, column 1 criteria. The required criteria include a minimum separation from groundwater and bedrock of ≥2.5 feet. The characteristics for the Sub Liner Soils include a minimum 8 inches of soil with

≥40% P200 fines and a Plasticity Index (PI) of ≥12. The floor has a minimum elevation of 724.5.

While the DB is designed according to the criteria cited above, it must also comply with the requirements of s. NR 213 Lining of Industrial Lagoons and Design of Storage Structures. The applicable s. NR 213 criteria include a minimum separation distance from bedrock and groundwater of five (5) feet, measured from the base of the liner system. The site investigation criteria require evaluation of site conditions to a depth of ten (10) feet below the base of the liner system

NRCS Standards 313 and 522

Three (3) test pits (TP 59-61) were used to evaluate site conditions for the DB. Given the small footprint of the DB, only two of the test pits (TP 59 & 60) were within 100 feet of the DB with the third test pit (TP 61) located approximately 180 feet from the DB.

The DB has a base elevation of 724.5. The test pits were excavated to depths between 10.0 and 13.0 feet below grade and had base elevations between 715.8 and 713.4 (Exhibit 4). No bedrock or groundwater was found in any of the test pits, verifying a minimum separation distance of 8.7 feet, exceeding the criteria.

The test pits found clay formations extending to the base of each test pit. A sample from the clay formation had 82.6 percent P200 fines and a PI of 28.9, exceeding the criteria.

Number of test pits used in evaluation: 3 (TP 59-61)
Verified separation from bedrock: 8.7 feet
Verified separation from groundwater: 8.7 feet

Sub Liner Soils
Minimum P200 fines: 82.6 percent
Minimum PI: 28.9
Thickness of sub-liner soils: 9.8 feet

NR 213

Three (3) test pits (TP 59-61) were used to evaluate site conditions for the DB. Given the small footprint of the DB, only two of the test pits (TP 59 & 60) were within 100 feet of the DB with the third test pit (TP 61) located approximately 180 feet from the DB.

The DB has a base elevation of 724.5. The liner includes a five (5) inch reduced seepage concrete liner and eight (8) inches of sub-liner soils. Therefore, the base of the liner is at approximately 723.4. The test pits were excavated to depths between 10.0 and 13.0 feet below grade and had base elevations between 715.8 and 713.4 (Exhibit 4). No bedrock or groundwater was found in any of the test pits, verifying a minimum separation distance from the base of the liner of 7.6 feet, exceeding the criteria. One of the test pits was excavated to ten (10) feet below the base of the liner and the other test pit was excavated to a depth 7.6 feet below the base of the liner. Given the small footprint of the DB, the number and depth of the test pits meets the intent of NR 213.

Number of test pits used in evaluation: 3
Verified separation from bedrock: 7.6 feet
Verified separation from groundwater: 7.6 feet

Waste Transfer Pipes
Each Waste Transfer Pipe (WTP) is designed according to NRCS, FOTG, Section IV, Standard 634 (1/14), Table 1 criteria which requires six inches of separation from bedrock; no separation from groundwater is required. There are no soil characteristic requirements.

Detention Basin-WSF 2 Waste Transfer Pipe
The WTP will be installed along the east side of the Feed Storage Area and the L1 Barn. Much of the area has a concrete surface that limited the area accessible for test pits. Two (2) test pits (TP 2, 60) were excavated within 100 feet of the WTP, one near each end of the pipe (Exhibit 4). The elevation of the WTP will vary from 720.4 in the south to 711.0 at the WSF 2 discharge. The test pits were excavated to base elevations of 715.4 and 710.6 and verified a minimum separation from bedrock and groundwater of 1.3 feet, exceeding the criteria. Since no bedrock has been found at the within the project area at the site, no bedrock is expected to be found along the WTP route. If bedrock is encountered, it will be removed according to the criteria.

Number of test pits used in evaluation: 2 (TP 2, 60)
Verified separation from bedrock: 1.3 feet
Verified separation from groundwater: 1.3 feet

Collection Basin-WSF 2 Waste Transfer Pipe
The WTP will be designed according to NRCS, FOTG, Section IV, Standard 634 (1/14), Table 1 criteria which requires six inches of separation from bedrock; no separation from groundwater is required. The elevation of the WTP will vary from 719.0 at the CB to approximately 707.4 at the discharge point to WSF 2.

Three test pits (TP 10, 11, 20) were excavated within 100 feet of the proposed WTP and no portion of the WTP was more than 100 feet from a test pit (Exhibit 4). The test pits were excavated to a depth of 11.0 feet or more below existing grade. No groundwater or bedrock was found in any of the test pits, verifying a minimum separation distance from bedrock and groundwater of 5.6 feet, exceeding the criteria.

Number of test pits used in evaluation: 3 (TP 10, 11, 20)
Verified separation from bedrock: 5.6 feet
Verified separation from groundwater: 5.6 feet

Waste Storage Facility 2
Waste Storage Facility 2, will have a reduced seepage concrete with waterstop liner, designed according to NRCS, FOTG, Section IV, Standard 313 Waste Storage Facility (10/17) and NRCS, FOTG, Standard 522 Pond Sealing or Lining – Concrete (10/17), Table 2, column 1 criteria. The required criteria include a minimum separation from groundwater and bedrock of 2.5 feet. The characteristics for the Sub Liner Soils include a minimum 8 inches of soil with ≥40% P200 fines and a Plasticity Index (PI) of ≥12. The floor has a minimum elevation of 706.6.

While WSF 2 is designed according to the criteria cited above, it must also comply with the requirements of s. NR 213 Lining of Industrial Lagoons and Design of Storage Structures. The applicable s. NR 213 criteria include a minimum separation distance from bedrock and groundwater of five (5) feet, measured from the base of the liner system. The site investigation criteria require evaluation of site conditions to a depth of ten (10) feet below the base of the liner system.

Given the different criteria applicable to WSF 2, including the number of required test pits, the evaluation of the site conditions will be evaluated for each standard separately.

NRCS Standards 313 and 522

A total of fifteen (15) test pits were excavated within 100 feet of the proposed WSF 2. The test pits were excavated to depths between 8.5 and 14.5 feet, with base elevations between 701.9 and 695.3. No bedrock was found in any of the test pits, verifying a minimum separation distance of 4.7 feet, exceeding the criteria (Exhibit 4). Groundwater was found only in one test pit (TP 23) at an elevation of 698.4, 9.2 feet below the base of WSF 2. Therefore, the minimum verified separation distance from groundwater will be 4.7 feet, based on the depth of other test pits.

The reduced seepage concrete-waterstop liner does not include a soil component. The sub-liner soil criteria include a minimum of 8 inches of soil with ≥ 40 % P200 fines and a PI ≥ 12. The test pits found soil formations, characterized as clay, which will function as the sub-liner soils, present to the base of each test pit used in the evaluation. Therefore, the minimum thickness of the sub-liner soils is equal to the verified separation distance of 4.7 feet. The soil formations had a minimum of 78.9 P200 fines and a minimum PI of 17, exceeding the criteria (Exhibit 5).

Based on the site investigations and proposed construction, the soils and site conditions exceed the NRCS, FOTG, Section IV, Standard 522 Pond Sealing or Lining – Concrete (10/17), Table 2, column 1 and Table 2A, column 3 criteria.

WSF 2 Area: 202,623 ft^2
Number of test pits used in the evaluation: 15
Minimum verified separation from bedrock: 4.7 feet
Minimum verified separation from groundwater: 4.7 feet

Sub Liner Soils
Minimum P200 fines: 78.9 percent
Minimum PI: 17
Minimum Thickness of Sub Liner Soils: 4.7 feet

NR 213

A total of seven (7) test pits excavated within 100 feet of the proposed WSF 2 were used in the NR 213 evaluation of site conditions. The test pits were excavated to depths between 8.5 and 14.5 feet, with base elevations between 700.2 and 695.3. No bedrock was found in any of the test pits, verifying a minimum separation distance of 5.1 feet from the base of the liner, exceeding the criteria (Exhibit 4). Groundwater was found only in one test pit (TP 23) at an elevation of 698.4, 9.2 feet below the base of WSF 2. Other test pits were terminated when the soil characteristics, including Munsell colors, indicated the proximity of groundwater. The test pits were terminated to avoid multiple penetrations of the groundwater within and near the footprint of WSF 2. One test pit (TP 17) was excavated at least 10 feet below the base of the WSF 2 liner and the remaining test pits verified the required separation distance from groundwater. The minimum verified separation distance from groundwater will be 5.1 feet, based on the depth of other test pits.

The site investigations meet the intent of NR 213 Lining of Industrial Lagoons and Design of Storage Structures. The test pits verify the required separation distance from groundwater and the proposed liner will exceed the criteria.

WSF 2 Area: 202,623ft^2 (4.65 acres)
Number of test pits used in the evaluation: 7
Minimum verified separation from bedrock: 5.1 feet
Minimum verified separation from groundwater: 5.1 feet

Site Investigation Summary
The site investigations are summarized below:

Test Pits – See Exhibit 4 – Test Pit Log Sheets

1. Test Pits
   a. Unless otherwise specified, the number of test pits needs to be sufficient to evaluate site soil characteristics and establish separation distances from groundwater and bedrock.
   b. The number of test pits met or exceeded the specified design criteria for each system evaluated.
   c. Test pit logs are included in Exhibit 4.
   d. Unified Soil Classification System has been used to describe the soils.
2. Detention Basin
   a. Separation from groundwater (NRCS 522): 10.3 feet
   b. Separation from groundwater (NR 213): 9.2 feet
   c. Separation from bedrock (NR 213): 9.2 feet
   d. Sub Liner Soil-Minimum P200 fines: 82.6 percent
   e. Sub Liner Soil-Minimum PI: 28.9
   f. Thickness of Sub Liner Soils: 9.8 feet
3. Detention Basin Waste Transfer Pipe
   a. Separation from bedrock: 1.3 feet
4. Collection Basin Waste Transfer Pipe
   a. Separation from bedrock: 5.6 feet
5. Waste Storage Facility 2
   a. Separation from groundwater (NRCS 522): 4.7 feet
   b. Separation from groundwater (NR 213): 5.1 feet
   c. Separation from bedrock (NRCS 522): 4.7 feet
   d. Sub Liner Soil-Minimum P200 fines: 78.9 percent
   e. Sub Liner Soil-Minimum PI: 17
   f. Thickness of Sub Liner Soils: 4.7 feet
6. Laboratory analysis of soil samples (Exhibit 5).

Sink holes and other Karst features

1. There are no documented Karst features at this site or located within 1,000 ft. of the proposed improvements.

Locations, dimensions & elevations, soil volumes

1. See the Construction Plan Set for locations, dimensions and elevations.
2. Waste Storage Facility 2 will generate excess fill that will be used for back slopes.

Failure
Failure of either the Detention Basin or WSF 2 would result in the release of contaminated runoff or manure to the environment. The Detention Basin and WSF 2 will be constructed in accordance with current regulatory criteria to provide stable structures.

Operation and Maintenance Plan

Operation and Maintenance Plan

Introduction

Provided is an Operation and Maintenance Plan for the proposed Waste Storage Facility and Runoff Management Systems at Ledgeview Farm, LLC.

The Operation and Maintenance Plan outlines the activities required for proper operation of the Waste Transfer and Storage Systems. A general schedule of anticipated maintenance and record keeping is provided that identifies specific maintenance and record keeping activities. The manufacturer's manuals also contain information for repair of the mechanical components.

In the event of a spill or accidental discharge, call the WDNR Spill Emergency Hotline and refer to the Ledgeview Farm Emergency Response Contact Summary (ERCS) (Exhibit 11).

REPORT SPILLS IMMEDIATELY

1-800-943-0003

Wisconsin's 24-Hour Spill Emergency Hotline

Daily Maintenance

Detention and Collection Basins	
If: Solids/snow present	**Then**: Remove solids or snow as necessary to maintain flow equalization capacity and minimize the potential blockage of transfer lines

Weekly Maintenance

Waste Storage Facility	
What: Record liquid level in each WSF	
What: Inspect exterior slopes for deterioration	**Then**: Repair when possible
If: Rodent damage is present on the earthen slopes	**Then:** Repair when possible
If: Solids are accumulated	**Then:** Remove solids when possible
If: Transfer Lines or outlets are damaged or obstructed	**Then:** Repair when possible

Waste Transfer Systems

The plan for operation and maintenance of the Waste Transfer Systems is as follows:

Detention Basin

Leachate and runoff from the Feed Storage Area flow into the Detention Basin and are discharged by gravity WSF 2. The Detention Basin provides flow equalization; the basin provides short term storage during peak flows. This reduces the peak discharge rate. During periods of low flow, solids may settle in the basin, reducing the storage capacity and level of flow equalization provided. Solids and snow must be removed periodically to maintain the flow equalization capacity of the Detention Basin.

Detention Basin Waste Transfer Pipe
The contents of the Detention Basin, leachate and runoff from the Feed Storage Area, will flow to WSF 2 by gravity through the Waste Transfer Pipe. Manholes along the Waste Transfer Pipe can be used as clean-outs if needed to clear a blockage in the pipe.

Collection Basin
Runoff from the Y1 Yard will flow into the Collection Basin and be discharged by gravity through the Collection Basin Waste Transfer Pipe to WSF 2. Solids that settle in the basin could reduce the hydraulic capacity of the outlet or of the Waste Transfer Pipe. Solids and snow must be removed periodically to maintain the flow equalization capacity of the Collection Basin.

Collection Basin Waste Transfer Pipe
Waste and runoff from the Y1 Yard will flow to WSF 2 by gravity through the Waste Transfer Pipe. Solids should be removed from the yard and Collection Basin on a regular basis to minimize the potential blocking of the Waste Transfer Pipe.

Other
WSF 2 will be used for storage of waste generated at the HQ Farm. Waste from the HQ Farm will be transferred to WSF 2 by tanker on an as needed basis.

Waste Storage Facility 2
WSF 2 is an impoundment with a reduced seepage concrete-waterstop liner that is intended to receive waste generated at the farm, including leachate and runoff from the Feed Storage Area and waste generated at the HQ Farm. The reduced seepage concrete liner will allow agitation from any location.

WSF 2 is designed to provide access for equipment for removal of settled sand and other heavy solids.

WSF 2 will be emptied periodically according to need and cropping schedule. The manure will be applied to cropland according to the current Nutrient Management Plan (NMP).

Contingency
Clean rainfall will be diverted from the Waste Storage Facilities. The design level of freeboard for the Waste Storage System is one foot for safety plus allow for the water from a 25 year 24 hour rain event (approximately 4"). The system will be managed with a minimum of two feet of freeboard in WSF 2 to account for unexpected volumes of water or conditions that may prevent field application of the manure. In the event that levels exceed the maximum operating levels, manure will be pumped and applied onto cropland according to the current NMP allowing for additional capacity.

Emergency Response Plan
An Emergency Response Contact Summary has been developed for Ledgeview Farm, LLC and is included in Exhibit 11.

Inspection and Monitoring
The Detention and Collection Basins will be checked for the following
- Deterioration or damage to the concrete liner
- Deterioration or erosion of any of the exterior slopes
- Accumulation of solids or snow that would reduce the flow equalization or hydraulic capacity of the basin

The Waste Storage Facility structures will be checked for the following:
- Deterioration or erosion of any of the exterior slopes
- Deterioration or damage to the concrete liner
- Rodent damage to any of the exterior earthen slopes
- Leakage around the outside
- Staff gauge
- All safety signage, guards and fencing

The Waste Storage System will be monitored as follows:
- The level of manure in the Waste Storage Facilities shall be monitored and recorded weekly. The record shall show the distance from the manure level to the maximum operating level.
- A record of the before and after levels of manure, each time the waste storage structure is emptied, will be kept.
- A record of the date that 180 days of available storage level in the Waste Storage System is available will be recorded.

Safety
Normal Safety Requirements
Confined space warning signage, decking and railing where needed, will be installed and maintained to protect against accidental entry into the Pumping Stations. The signs will be in languages that are spoken and used at the dairy. The Waste Storage Structures shall be surrounded by a fence, which will prevent humans or animals from accidentally entering the Waste Storage Facilities. The fence shall have the required warning signs.

Entry into Enclosed Tanks
When working in a confined space the following safety actions should still be taken:
- Always assign a standby person to remain outside of the confined space. It is this person's responsibility to be in constant contact (visually, verbally or both) with the workers inside the confined space as long as anyone is in the space.
- Wear ear protection as needed. Noise within a confined space can be amplified because of the space's design and acoustic properties.
- Use only an air-supplying respirator, such as a self-contained breathing apparatus (SCBA) or a supplied-air respirator with an auxiliary escape-only SCBA in confined spaces where there is

insufficient oxygen.

- Never enter a pit without proper ventilation. Before entering the pit, evaluate its atmosphere by testing for sufficient oxygen and the presence of toxic gases.
- When going into any manure tank, wear an air-supplied respirator or a SCBA, as well as a safety harness attached to a rope attended by two people at the pit's entrance. Note: Respirator masks must be checked for proper fit, and persons using respirators should receive training in their use. Attaching the safety rope to a winch or hoist is also recommended.
- Keep people and animals out of any building where manure is being agitated or emptied. If animals cannot be removed before agitating the storage, provide strong mechanical ventilation during agitation and pumping and for a few hours after pumping has stopped.
- Never fill a manure pit completely; allow 1 to 2 feet of airspace to accommodate gas concentrations. To reduce the possibility of gas being forced above floor level, lower liquid manure levels in a storage facility before starting agitation.
- Keep the agitator below the liquid surface because greater volumes of gas are released with vigorous surface agitation.

Construction Plan

Construction Plan

1. **Contacts**
Contact Brown County Land and Water Conservation Department (LWCD), Ledgeview Township and the Wisconsin Department of Natural Resources (WDNR) for permits.

2. **New Construction and Modifications**
The new construction included in the proposed project includes the following components:
   - A Detention Basin with a reduced seepage concrete-waterstop liner with sub-linter soils
   - A 18 inch ASTM F 679 PVC Waste Transfer Pipe from the Detention Basin to WSF 2
   - A 15 inch ASTM D3034 (SDR 35) PVC Waste Transfer Pipe with a sealed connection from the to the Y1 Yard Collection Basin
   - Waste Storage Facility 2 (WSF 2) with a reduced seepage concrete-waterstop liner with sub-liner soils

3. **Wells**
No wells are located within 250 feet of the proposed Detention Basin or WSF. A portion of the Detention Basin Waste Transfer Pipe is greater than 25 feet, but less than 250 feet from a well. A variance has been requested.

4. **Contractor**
The contractor(s) is responsible for following all project specifications as well as other applicable laws and regulations regardless of whether they are specifically referenced in this document or cited on the plans. Details of the proposed improvements are presented in the following sections and include references to specific specification sections. The lack of a reference to a specification section does not alleviate the contractor(s) from compliance with any specification, law or applicable regulation.

5. **Erosion Control**
The contractor(s) shall install the prescribed erosion protection according to the Construction Drawings before any excavation or site disturbance occurs.

6. **Detention Basin**
   - The Detention Basin will have a reduced seepage concrete-waterstop liner with sub-liner soils.
   - The Waste Transfer Pipe (WTP) connection to the existing Collection Basin will use hydrophilic sealant to make a water-tight joint.

7. **Detention Basin Waste Transfer Pipe**
   - The Detention Basin WTP will be an 18 inch ASTM F 679 PVC pipe.
   - The connection to the Detention Basin will use hydrophilic sealant to make a water-tight joint.

8. **Collection Basin**
   - The Y1 Yard Collection Basin is an existing structure with a watertight concrete liner.

9. Collection Basin Waste Transfer Pipe

- The WTP will be a 15 inch ASTM D 3034 (SDR 35) PVC pipe.
- The connection to the Collection Basin will use hydrophilic sealant to make a water-tight joint.

10. Waste Storage Facility 2

Waste Storage Facility 2 will have a reduced seepage concrete-waterstop liner with sub-liner soils.

11. Concrete

- All concrete shall meet Wisconsin Construction Specification 4 concrete (10/17)
- Concrete mix shall be pre-approved by the project engineer
- Contractor shall provide documentation that the concrete meets the specifications

12. Waterstop

- All waterstop shall meet Wisconsin Construction Specification 004 Embedded or Expansive Waterstop (10/17)
- Waterstop intersections will be prefabricated by the manufacturer

11. Pipe Transfer Systems

<u>Transfer Pipes and Joints</u>

- Pipe and joints shall conform to Wisconsin Construction Specifications 634 (8/16), Table 1 criteria.

<u>Pipe Installation:</u>

- When excavating and installing pipe, follow safe trenching practices as specified by OSHA and Wisconsin Construction Specification 634 Waste Transfer Pipe (8/16).
- Use reducers for changing diameter of pipe.
- Backfill 6 inches over pipe with clean sand in accordance with Wisconsin Construction Specification 634 Waste Transfer Pipe (8/16).
- Provide concrete blocking or mechanical joint restrains at all changes in direction of pressure piping in accordance with the details in the construction drawings.

<u>Pipe Connections:</u>

- All piping connections shall be made in accordance with the manufacturer's recommendations and requirements to form a liquid tight joint.

Construction Verification and Documentation Plan

Construction Verification and Documentation Plan

Introduction

Ledgeview Farm, LLC proposes to construct a new Waste Storage Facility and Runoff Management Systems to provide additional and waste storage capacity and runoff controls. The following outline, along with the detailed construction plan sheets, will be used by the construction inspector and the design engineer to ensure that the facilities are constructed and installed according to the plans and specifications. In addition, the construction verification and documentation system will be used in the preparation of the "As-built" plans following the completion of the construction. Roach & Associates, LLC (R&A) will provide all engineering review and inspection services.

Pre-Construction Contractor's Meeting

A pre-construction meeting shall take place prior to construction of the planned work. Attendees shall include a representative of R&A, the contractor(s) involved in the work, the landowner and representatives of regulatory agencies, including The Town of Ledgeview, Brown County Land and Water Conservation Department (LWCD), Wisconsin Department of Natural Resources (WDNR) and Natural Resource Conservation Service (NRCS). The meeting agenda shall consist of a review of all plan details and all referenced and associated specifications and standards.

The representative from R&A shall address any questions regarding plan details and construction methods that may be necessary to complete the project according to the plans and specifications. The processes and components that will require inspection will be reviewed. The document Authority of the Inspector – Memorandum of Understanding (Exhibit 13) will be reviewed and signed.

Inspection Frequency

An R&A inspector will be on site as necessary to inspect the process and components, as they are being carried out or constructed. The construction schedule will dictate the inspector's presence at the site to observe, measure, document and record the installation of the below described components, systems and facilities.

Authority of the Inspector

The inspector has full and complete authority to stop construction anytime deviations from the design plans are identified and the inspector believes the deviations will compromise the integrity of the planned structure. The inspector has the authority to develop, with the contractor, an acceptable solution to correct the deviations. If an acceptable solution cannot be developed, the inspector shall notify the owner and the owner shall be brought into the discussion to arrive at a solution to correct the deviations. At the beginning of the project, all contractors shall sign a memorandum of understanding recognizing the Authority of the Inspector and agreeing to be bound by his decisions, (Exhibit 13 – Authority of the Inspector Memorandum of Understanding).

Inspector Qualifications

1. The inspector must be experienced in the following areas of construction:
   - Evaluation and identification of soils.
   - Excavation – cutting, filling, compaction and grading.
   - Staking and setting construction grades and elevations.
   - Inspection of reinforced concrete slabs, walls, tanks, tops and ramps.
   - Inspection of PVC waterstop installation
   - Bedding, PVC and HDPE pipes of all types and with all types of water tight joints.
   - Installation of underground tile lines and culverts.
   - Awareness and dangers of underground utility lines and wires.
   - Be aware of and be able to perform required on-site concrete testing.
   - Be aware of and be able to perform or call for soil compaction testing when necessary.
   - Be aware of and able to oversee pressure testing of pipelines as required.
2. The inspector must have good oral and written communication skills.
3. The inspector must be physically able to perform the required testing and observations.

Areas to be Inspected

1. Observe excavation for evidence of perched water, inappropriate soils, groundwater, bedrock or other conditions that would prevent construction within the design criteria. If said conditions are found, the design engineer shall be contacted and an onsite conference shall be held to determine the solution.
2. Verify subgrade shaping, dimensions and elevations.
3. Verify compliance with specifications for subgrade excavation, filling and compaction. Verify moisture levels of soil being filled and compacted.
4. Verify the type of soil being placed and test subgrade compaction according to plan specifications if required or necessary.
5. Verify pipe materials conform to the specifications.
6. Verify installation of thrust blocks or mechanical joint restraints in accordance with the detail.
7. Verify and document the following as it relates to concrete slabs and walls:
   - All reinforcement steel size, spacing and placement.
   - Elevation and dimensions of forms, prior to concrete placement.
   - Quality of the concrete used and proper method of placement.
   - Type of waterstop, including minimum web thickness
   - Placement of waterstop, including minimum clearance to reinforcement
8. Verify type, capacity and style of pumping equipment.
9. Verify and document the following during the placement of the concrete slabs and walls:
   - Verify the proper concrete mix is being delivered – collect batch tickets.
   - Perform slump and air entrainment tests for conformance with NRCS or plan specifications.
10. General: Prepare daily observation reports and submit to the design engineer.
11. Check for proper pipe connections at Pump Connection Stations, if required.
12. Advise design engineer promptly of all defects and deficiencies to ensure that they are addressed to the contractor in a timely manner.
13. Provide As-built plans and materials.

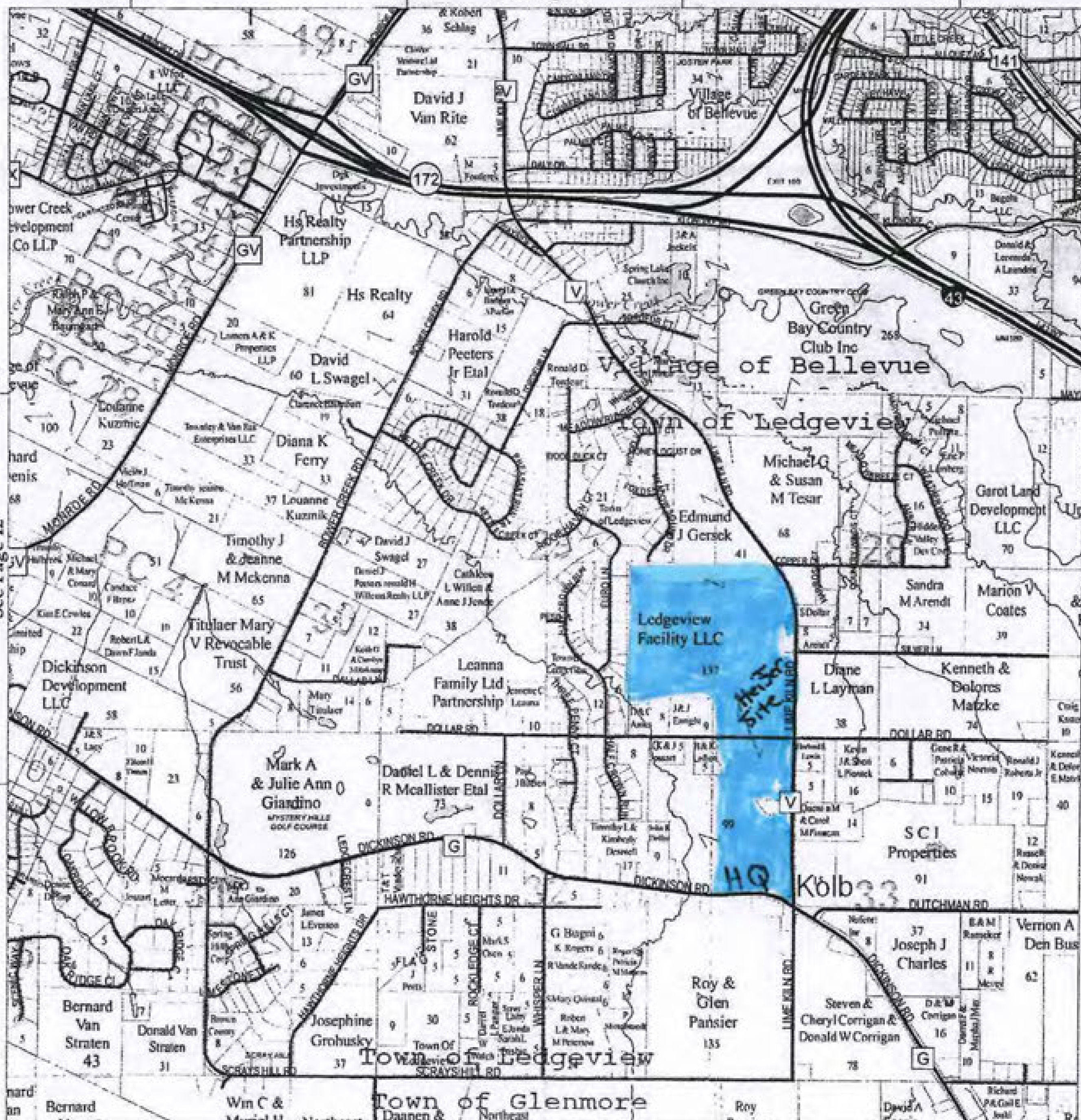
Exhibit 1

T23N R21E (SW)

Ledgeview & Bellevue(SW)

See Page 17

See Page 12



See Page 16

See Page 7

0 2,640 5,280
Feet

***The acreages shown on this map are based on the latest and most accurate parcel mapping which may differ slightly from the acreages shown on the tax roll.*

For more detailed or up-to-date maps please visit us online at:
www.gis.co.brown.wi.us

Map Legend

Property Boundaries (with acreages**)	Lakes, Ponds, & Rivers
Municipal Boundaries	Trails
Interstate, U.S or State Highway	Woodlands/Natural Areas
County Highway	Address Grid numbering
Other Road or Street	Section or other PLSS line
Railroads	Section numbers

Exhibit 2

Ledgeview Farm, LLC
Main Farm

Ledgeview Farm

Heifer Farm

Exhibit 3

Soil Map—Brown County, Wisconsin
(Ledgeview Heifer Soite-Soils Map)

87° 58' 16" W
87° 57' 38" W
44° 26' 19" N
44° 26' 19" N

44° 25' 42" N
44° 25' 42" N
87° 58' 16" W
87° 57' 38" W

Map Scale: 1:5,450 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

N

Map projection: Web Mercator Corner coordinates: WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 11, Oct 5, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 31, 2016

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AeA	Allendale fine sandy loam, 0 to 3 percent slopes	7.7	5.5%
Bd	Bellevue silty clay loam, mottled subsoil variant	0.1	0.0%
BnA	Bonduel loam, 0 to 3 percent slopes	0.8	0.6%
KhB	Kewaunee silt loam, 2 to 6 percent slopes	76.2	54.2%
KhB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	1.4	1.0%
KhC2	Kewaunee silt loam, 6 to 12 percent slopes, eroded	5.4	3.9%
MaA	Manawa sandy loam, 1 to 3 percent slopes	34.9	24.9%
McA	Manawa silty clay loam, 0 to 3 percent slopes	7.6	5.4%
Po	Poygan silty clay loam, 0 to 2 percent slopes, drained	0.2	0.1%
Wa	Wauseon fine sandy loam	6.2	4.4%
Totals for Area of Interest		**140.5**	**100.0%**

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AeA	Allendale fine sandy loam, 0 to 3 percent slopes	7.7	5.5%
Bd	Bellevue silty clay loam, mottled subsoil variant	0.1	0.0%
BnA	Bonduel loam, 0 to 3 percent slopes	0.8	0.6%
KhB	Kewaunee silt loam, 2 to 6 percent slopes	76.2	54.2%
KhB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	1.4	1.0%
KhC2	Kewaunee silt loam, 6 to 12 percent slopes, eroded	5.4	3.9%
MaA	Manawa sandy loam, 1 to 3 percent slopes	34.9	24.9%
McA	Manawa silty clay loam, 0 to 3 percent slopes	7.6	5.4%
Po	Poygan silty clay loam, 0 to 2 percent slopes, drained	0.2	0.1%
Wa	Wauseon fine sandy loam	6.2	4.4%
Totals for Area of Interest		**140.5**	**100.0%**

Exhibit 4

Test Pit Summary Worksheet

Owner: Ledgeview Farm

Project: 2017 Waste Storage Facility and Runoff Management Systems

Prepared By: Roach

Date Prepared: 2017

Test Pit (Number)	Surface Elev.	Depth	Base Elev.	Facility* Base	Measure Point	GW Depth	BR Depth	Sep Dist	G.W. Elev.	B.R. Elev.	Verifies				
											DB		WTP	WSF	
											NRCS 313	NR 213	NRCS 634	NRCS 313	NR 213
59	725.8	10.0	715.8	724.5	1			8.7			x				
60	726.4	13.0	713.4	724.5	1			11.1			x				
61	729.6	10.0	719.6	724.5	1			4.9			x				
59	725.8	10.0	715.8	723.4	2			7.6				x			
60	726.4	13.0	713.4	723.4	2			10.0				x			
61	729.6	10.0	719.6	723.4	2			3.8				x			
2	722.6	12.0	710.6	711.9	3			1.3					x		
10	712.7	11.6	701.1	707.4	4			6.3					x		
11	716.5	14.7	701.8	707.4	4			5.6					x		
20	713.1	13.5	699.6	707.4	4			7.8					x		
54	715.4	11.0	704.4	720.5	4			16.1					x		
60	726.4	13.0	713.4	720.5	3			7.1					x		
6	711.3	11.1	700.2	706.6	5			6.4						x	
7	708.9	8.5	700.4	706.6	5			6.2						x	
8	710.4	9.4	701.0	706.6	5			5.6						x	
9	712.5	12.0	700.5	706.6	5			6.1						x	
10	712.7	11.6	701.1	706.6	5			5.5						x	
12	715.5	14.5	701.0	706.6	5			5.6						x	
13	714.3	14.5	699.8	706.6	5			6.8						x	
14	713.9	12.9	701.0	706.6	5			5.6						x	
17	706.8	11.5	695.3	706.6	5			11.3						x	
18	708.8	12.0	696.8	706.6	5			9.8						x	
19	708.9	11.0	697.9	706.6	5			8.7						x	

Test Pit (Number)	Surface Elev.	Depth	Base Elev.	Facility* Base	Measure Point	GW Depth	BR Depth	Sep Dist	G.W. Elev.	B.R. Elev.	Verifies DB NRCS 313	Verifies DB NR 213	Verifies WTP NRCS 634	Verifies WSF NRCS 313	Verifies WSF NR 213
20	713.1	13.5	699.6	706.6	5			7.0						x	
21	713.3	12.0	701.3	706.6	5			5.3						x	
22	715.4	13.5	701.9	706.6	5			4.7						x	
23	711.4	13.0	698.4	706.6	5	13		8.2	698.4					x	
6	711.3	11.1	700.2	705.3	6			5.1							x
13	714.3	14.5	699.8	705.3	6			5.5							x
17	706.8	11.5	695.3	705.3	6			10.0							x
18	708.8	12.0	696.8	705.3	6			8.5							x
19	708.9	11.0	697.9	705.3	6			7.4							x
20	713.1	13.5	699.6	705.3	6			5.7							x
23	711.4	13.0	698.4	705.3	6	13		6.9	698.4						x

*Floor of structure or lowest pipe invert elevation

[1] Top of 5" concrete liner, Table 2

[2] Bottom of liner system, 5" concrete liner, Table 2, Column 1, Reduced Seepage Concrete with Waterstop and 8" of sub-liner, Table 2A, Column 3

[3] Detention Basin -WSF 2 WTP

[4] Collection Basin -WSF 2 WTP

[5] Top of 7" concrete liner, Table 2

[6] Bottom of liner system, 7" concrete liner, Table 2, Column 1, Reduced Seepage Concrete with Waterstop and 8" of sub-liner, Table 2A, Column 3

** Floor of facility or lowest elvation of waste transfer pipe system

(x) test pit not deep enough to verify facility

LOG OF SOIL TEST PIT

Project: Ledgeview Farms (Pansier)
Site Location: NW1/4 SW1/4 Sec 28 T23N R21E
Date: 5/14/17
Weather:
Land Use: Ag field
Coordinate System: Brown Co./USGS

Boring No: 3 & 2
Proposed Practice: 313
Logged By: Drew Zella
Surface Elevation: (3) 717.8 (2) 722.6
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.____
Type of Bedrock:
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR: MATRIX COLOR	MUNSELL COLOR: REDOXOMORPHIC FEATURES: COLOR	MUNSELL COLOR: REDOXOMORPHIC FEATURES: QUANITY (FEW <2%, COMMON 2-20%, MANY >20%)	MOISTURE (USDA - FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA - GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE OR CLODDY)	% SUBSURFACE COARSE FRAGMENTS (USCS - Gravel 4.8mm-76mm (3"), Cobbles 3"-11.8", Boulders 11.8"+)	COMMENTS
	TP3		717.8	CL7	16.7				
0 / 1	~~CL~~	CLAY ~~LEAM~~	TOPSOIL						
1 / 16.7	CL	CLAY LOAM	5YR 4.4	—	—	DRY	MASSIVE	—	—
TP2	SURFACE EL	722.6							
0 / 1	Topsoil								
1 / 12	CL	CLAY LOAM	5YR 4.4						

ADDITIONAL COMMENTS
TP#2 stopped due to storm approaching, rained 2"4" over next 2-7 days. When gone back to site to observe test holes some had caved in varying amounts and water was present on top of caved soil due to rains. TP#1 still needs to be excavated and logged DLW 5/19/17

LOG OF SOIL TEST PIT

Project: PANGEA Ledgeview Farms
Site Location: NW1/4SW1/4 Sec28 T23N R21E
Date: 5/19/17
Weather: Overcast
Land Use: Ag Field
Coordinate System: Brown Co./USGS

Boring No: 5 & 4
Proposed Practice: 313
Logged By: Drew Zeller
Surface Elevation: (5) 713.2 (4) 714.3
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.________
Type of Bedrock:____________
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR: MATRIX COLOR	REDOXOMORPHIC FEATURES: COLOR	REDOXOMORPHIC FEATURES: QUANITY (FEW <2%, COMMON 2-20%, MANY >20%)	MOISTURE (USDA - FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA - GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE OR CLOUDY)	% SUBSURFACE COARSE FRAGMENTS (USCS - Gravel 4.8mm-76mm (3"), Cobbles 3"-11.8", Boulders 11.8"+)	COMMENTS
TP 5		713.20							
0 / 1	Topsoil								
1 / 13.3	CL	Clay Loam	5YR 4.4	—	—	Dry	Massive	—	
TP 4	714.3								
1 / 13.8	CL	Clay Loam	5YR 4,4	—	—	Dry	Moist	—	—

ADDITIONAL COMMENTS:

LOG OF SOIL TEST PIT

Project: Pansien (Ledgeview Farms)
Site Location: NW¼ SW¼ Sec 28 T23N R21E
Date: 5/14/17
Weather: Overcast
Land Use: Ag field
Coordinate System: Brown Co. / USGS

Boring No: 7 & 6
Proposed Practice: 313
Logged By: Drew Zelle
Surface Elevation: (7) 708.9 (6) 711.3
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.________
Type of Bedrock:________
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR: MATRIX COLOR	REDOXOMORPHIC FEATURES: COLOR	REDOXOMORPHIC FEATURES: QUANITY (FEW <2% COMMON 2-20% MANY >20%)	MOISTURE (USDA - FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA - GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE OR CLODDY)	% SUBSURFACE COARSE FRAGMENTS (USCS - Gravel 4.8mm - 75mm (3") Cobbles 3" - 11.8" Boulders 11.8"+)	COMMENTS
TP #7	Surface El.	708.9							
0 / .7	Topsoil								
.7 / 8.5	CL	Clay Loam	5YR 4.4	—	—	Moist	Massive	—	
TP #6	Surface El	711.3	10.3 cm						
0 / 1	Top soil					Dry			
1 / 11.1	CL	Clay Loam	5YR 4.4	—	—	Dry	Massive	—	

ADDITIONAL COMMENTS:

LOG OF SOIL TEST PIT

Project: Parisien (Ledgeview Farms)
Site Location: NW1/4 SW1/4 Sec 28 T23N R21E
Date: 5/14/17
Weather: Overcast
Land Use: Ag field
Coordinate System: Brown Co. / USGS

Boring No: 9 & 8
Proposed Practice: 313
Logged By: Drew Zelle
Surface Elevation: (9) 712.5 (8) 710.4
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.________
Type of Bedrock:____________
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR MATRIX COLOR	REDOXOMORPHIC FEATURES COLOR	REDOXOMORPHIC FEATURES QUANITY (FEW <2%, COMMON 2-20%, MANY >20%)	MOISTURE (USDA – FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE OR CLODDY)	% SUBSURFACE COARSE FRAGMENTS (USCS – Gravel 4.8mm-76mm (3"), Cobbles 3"-11.8", Boulders 11.8"+)	COMMENTS
TP 9	Sur. EL	712.5	C = 11.5						
0 / .5'			~~5YR~~ 4/4	Top Soil					
.5 / 12.0	CL	Clay Loam	5YR 4.4						
TP 8	Surface EL.	710.4	Cut 9.4						
0 / .7	Topsoil								
.7 / 9.4	CL	Clay Loam	5YR 4.4	—	—	moist	massive	—	

ADDITIONAL COMMENTS:

LOG OF SOIL TEST PIT

Project: PANBOER (Ledgeview Farms)	Boring No: TP10 + 11	**LIMITING FACTORS**
Site Location: NW1/4SW1/4 Sec 28 T23N R21E	Proposed Practice: 313	Ground Water: N/A / Present - EL.____
Date: 5/14/17	Logged By: Drew Zelle	Perched Water: N/A / Present - EL.____ to EL.____
Weather: Overcast	Surface Elevation (10) 712.7 (11) 716.5	Bedrock: N/A / Present - EL.________
Land Use: Ag field	Bench Mark: GPS	Type of Bedrock:
Coordinate System: Brown Co./USGS		Sink Hole('s) Within 1000FT: Yes / No / Not Visible
	CG = 11.6'	

DEPTH FEET	USCS	USDA	MUNSELL COLOR			MOISTURE	STRUCTURE	% SUBSURFACE COARSE FRAGMENTS	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES		USDA - FROZEN DRY, MOIST, OR SATURATED	USDA GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLODDY	USCS - Gravel 4.8mm-75mm (3") Cobbles 3"-11.8" Boulders 11.8"+	
				COLOR	QUANITY FEW <2% COMMON 2-20% MANY >20%				
TP10									
0 / 1	Topsoil								
1 / 11.6	CL	Clay loam	5YR 4/4	—	—	Moist	Massive	—	Minimal Calcium CL Streaks; Small seep @ base
TP 11	716.5 GND EL.								
0 / .5	minimal topsoil								
.5 / 12.7	CL	Clay loam	5YR 4/4	—	—	Moist	Massive	—	—
12.7 / 14.7	ML	SILT	7YR 3/1	10YR 2.1	~~10YR 2.1~~ Common				Seep @ 12.4

ADDITIONAL COMMENTS:

14.7-16.0	CL	Clay loam	7.5YR 4/1	—	—	Moist	Massive

LOG OF SOIL TEST PIT

Project: Prinsier (Hedgerow Farm)
Site Location: NW1/4 SW1/4 Sec 28 T23N R21E
Date: 5/14/17
Weather: Overcast
Land Use: Ag field
Coordinate System: Brown Co. / USGS

Boring No: TP 12
Proposed Practice: 313
Logged By: Drew Zelle
Surface Elevation: 715.5
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.________
Type of Bedrock:________
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR: MATRIX COLOR	REDOXOMORPHIC FEATURES: COLOR	REDOXOMORPHIC FEATURES: QUANITY (FEW <2%, COMMON 2-20%, MANY >20%)	MOISTURE (USDA - FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA - GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLODDY)	% SUBSURFACE COARSE FRAGMENTS (USCS - Gravel 4.8mm-76mm (3"), Cobbles 3"-11.8", Boulders 11.8"+)	COMMENTS
TP 12									
0 / 1	Topsoil								
1 / 14.5	~~CL~~ ML	Clay loam	5YR 4/4	—	—	Moist	Blocky	—	Calcium chlorine streaks
14.5 /	~~ML~~ CL	Clay loam	5YR 6.1	—	—	Moist	Massive	—	—

ADDITIONAL COMMENTS:

LOG OF SOIL TEST PIT

Project: PARISIAN (Ledgeview Farms)
Site Location: NW1/4 SW1/4 Sec 28 T23N R21E
Date: 5/14/17
Weather: Overcast
Land Use: Ag field
Coordinate System: Brown Co./USGS
713.9

Boring No: 14 & 13
Proposed Practice: 313
Logged By: Drew Zelle
Surface Elevation: (14) 713.9 (13) 714.3
Bench Mark: GPS

LIMITING FACTORS
Ground Water: N/A / Present - EL.____
Perched Water: N/A / Present - EL.____ to EL.____
Bedrock: N/A / Present - EL.________
Type of Bedrock:________________
Sink Hole('s) Within 1000FT: Yes / No / Not Visible

DEPTH FEET	USCS	USDA	MUNSELL COLOR: MATRIX COLOR	REDOXOMORPHIC FEATURES: COLOR	REDOXOMORPHIC FEATURES: QUANITY (FEW <2%, COMMON 2-20%, MANY >20%)	MOISTURE (USDA - FROZEN, DRY, MOIST, OR SATURATED)	STRUCTURE (USDA - GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE, PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE OR CLODDY)	% SUBSURFACE COARSE FRAGMENTS (USCS - Gravel 4.8mm - 75mm (3"), Cobbles 3" - 11.8", Boulders 11.8"+)	COMMENTS
TP 14	SURFACE	EL.	713.9	CUT	12.8				
0 / 1'	TOPSOIL								
1 / 12.9	CL	CLAY LOAM	5YR 4.4	—	—	DRY	MASSIVE		
TP 13	714.3		13.3 cut						
0 / 1	TOPSOIL								
1 / 14.5	CL	CLAY LOAM	5YR 4.4						

ADDITIONAL COMMENTS:

SAMPLE Sent to LAB

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Date: 10/11/17

Logged by: JR + MP

Test Pit Number: 17

TP Elv. 706.8

Test Pit Location: North of TP 18 West of TP 23

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1		TOPSOIL				
	1	5.0	CL	MOISTE RED BROWN MASSIVE	2.5YR 4/4			
	5.0	9.0	CL	clay, DRY	5YR 4/4			1@7'
	9.0	11.5	CL	clay, DRY PLATY	2.5YR 3/3			
				No Groundwater				
				No Bedrock				
				Proctor test @ 7.5'				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% Or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LOGVIEW Date: 10/11/17

Logged by: JR & MP

Test Pit Number: 18 TP Elv. 708.8

Test Pit Location: North of TP 19

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1		TOPSOIL				
	1	4.5	CL	RED BROWN MASSIVE MOISTE	2.5YR 4/4			
	4.5	7.5	CL	clay DRY PLATY	5YR 4/4			
	7.5	12	CL	clay DRY PLATY	2.5YR 3/3			1@8.
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

SAMPLE Sent to LAB

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Logged by: MP ; JR

Test Pit Number: 19

Test Pit Location: WEST OF TP 21

Date: 10/11/17

TP Elv. 708.9

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1.5		TOPSOIL				
	1.5	4.5	CL	MOIST Red BROWN Mottles	2.5YR 4/4			
	4.5	11	CL	DRY BROWN Platy	7.5YR 3/3			1@9.5
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% Or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

SAMPLE Sent to LAB

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Leddenton

Logged by: JR & MP

Test Pit Number: 20

Test Pit Location: South of TP 19

Date: 10/11/17

TP Elv. 713.07

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1		TOPSOIL				
	1	3.5	CL	clay MOIST MASSIVE	2.5YR 4/4			
	3.5	12.5	CL	clay DRY PLATY	5YR 4/4			Sampl 1@7
	12.5	13.5	CL	clay DRY PLATY	2.5YR 3/3			
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% 0r more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

SAMPLE Sent to LAB

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Date: 10/11/17

Logged by: JR & MP

Test Pit Number: 21

TP Elv. 713.3

Test Pit Location: South of TP 22

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1.0		CLAY LOAM TOPSOIL				
	1.0	2.0	CL	Moist RED BROWN MASSIVE clay	2.5YR 4/4	—	—	
	2.0	12.0	CL	Dry Red Brown Platy. clay	2.5YR 4/4			1@7.
				NO BR or GW				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% Or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Logged by: JMR & MP

Test Pit Number: 22

Test Pit Location: South of TP23

Date: 10/10/17

TP Elv. 715.4

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
	0	1.0		CLAY LOAM TOPSOIL				
	1.0	2.0	CL	MOIST RED BROWN MASSIVE clay	2.5YR 4/4	–	–	1 @ 10.0'
	2.0	12.0	CL	DRY RED BROWN PLATY clay	2.5YR 4/4	–	–	
	12.0	13.5	CL	DRY RED BROWN PLATY clay	2.5YR 3/3	–	–	
				NO BR OR GW				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% Or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

SAMPLE SENT TO LAB

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview Dairy
Logged by: JMR + MD
Test Pit Number: 23
Test Pit Location: NE TP in Tilled Soil East of Barn

Date: 10.10.17
TP Elv. 711.4

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv
711.4	0	1.0		CL LOAM TOPSOIL				
	1.0	2.0	CL	MOIST SMALL MOTTLES MASSIVE	2.5YR 4/4			
	2.0	7.0	CL	Dry MASSIVE	5YR 4/4			1D 6.0'
	7.0	11.0	CL	Dry Platty	5YR 4/4			
	11.0	13.0	CL	Dry Platty	2.5YR 3/3			2D 12.5
				WATER @ 13'				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview
Logged by: MHP & TJS
Test Pit Number: #54
Test Pit Location:

Date: 6/9/17
TP Elv. 715.38

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp ID & E
	0	1		Topsoil				
	1	5	SC	moist	5YR 4/4	✓		
	5	11	CL	Platey Clay firm moist	5YR 4/4			#1 @ 8ft
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview
Logged by: TJS, MHP
Test Pit Number: # 55
Test Pit Location: West of Heifer Lot (Heifer Farm)

Date: 10/19/17
TP Elv. 725.32

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	5	SC	10% Gravel	2.5 YR 4/8			#1 @ 2.5 ft
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview
Logged by: MHP, TJS
Test Pit Number: #56
Test Pit Location: Heifer FARM: West of Bunker

Date: 10/19/2017

TP Elv. 728.53

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	5	CL	Dry, Massive, firm	5YR 4/4			#1 @ 3ft
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview
Date: 10/17/17
Logged by: MHP ITTS
Test Pit Number: #57
TP Elv. 725.20
Test Pit Location:

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp ID & E
	0	5	CL	Dry, massive, fill Fill	5YR 3/3			#1 C3(
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview

Date: 6/19/2017

Logged by: MHP, TJS

Test Pit Number: 58

TP Elv. 723.42

Test Pit Location: Heifer Farm: South of FSA

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	1.5		Topsoil				
	1.5	20	~~CL~~ ML/CL	massive Dry	5YR 4/6			
	20	50	CL	Platey 20% mottles → 2.5YR 4/6	2.5YR 4/4			
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview

Date: 10/19/2017

Logged by: MHP, TJS

Test Pit Number: #59

TP Elv. 725.79

Test Pit Location: West of TP #60

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sam[ple] ID & [Depth]
	0	1	ML	Top Soil				
	1	3	CL	Platey, Dry 50% 2.5YR4/6	2.5YR 4/4			#1 @ 2ft
	3	~~8~~ 9	CL	Massive, Dry	2.5YR 4/4			
	9	10	SC	Dry Massive	5YR 4/4			#2 @ 10ft
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained [i]s 50% Or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview

Date: 10/17/2017

Logged by: JJS, MHP

Test Pit Number: 60

TP Elv. 726.42

Test Pit Location: South of bunker

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure,stones,moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	1.5	ML	Topsoil Dry				
	1.5	10	CL	Dry, massive, firm 9ft Seam of CL Platey 2.5YR4/6	2.5YR 4/6			#1 @ 8ft Bw
	10	13.0	CH	clay, dry 7.5YR 5/2 massive	~~[illegible]~~			#2 Bt @ 11.5
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledge View

Date: 10/18/2017

Logged by: TJS, MHP

Test Pit Number: 61

TP Elv. 729.56

Test Pit Location: Heifer Farm: South of FSA

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elv.
	0	1	ML	Topsoil Dry				
	1	10	CL	Dry, massive, Firm @5ft seam of CL Platey 2.5YR4/6	2.5YR 4/4			#1e 5ft
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Logged by: MHP + JS

Test Pit Number: 62

Test Pit Location: North of the MainFarm FSA

Date: 10/19/17

TP Elv. 810.99

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	0.15'		TOPSoil				
	0.15'	1.0'	CL	MASSIVE, MOIST	5YR 5/3			Sampl 1e6
	1.0	3.0	SC	CLAY SAND	7.5YR 5/3			
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained [illegible]0% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW

Date: 10/19/17

Logged by: MHP + TSS

Test Pit Number: 63

TP Elv.

Test Pit Location: North of TP 62

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	0	0.15"		TOPSOIL				
	0.15	1'	CL	CLAY	5YR 5/3			Samp. 6"
	1'	3'	SC	CLAY SAND	7.5YR 5/3			Sampl 2.5'
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW FARMS

Date: 10/25/17

Logged by: MHP

Test Pit Number: 64

TP Elv. 825.75

Test Pit Location: EAST OF Heifer Lot on the Main Farm

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp. ID & E
	0	1.5		TOPSOIL				
	1.5	3	CL	MASSIVE MOIST	7.5 YR 5/6			1@3
	3	10	ML	DAMP	7.5 YR 4/6			2@7
				No Groundwater				
				Bedrock @10'				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview Main Site
Date: 10/25/17
Logged by: MHP
Test Pit Number: 65
TP Elv. 820.1
Test Pit Location: South of L1

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
818.1	0	2	ML	Topsoil / Fill	-	-	-	-
817.1	2	3	CL	Dry, massive, Firm, lean	2.5YR 4/4	-	-	-
				No Groundwater No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview Main Site
Logged by: MHP
Test Pit Number: 66
Test Pit Location: North of L1

Date: 10/25/19
TP Elv. 819.0

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
818.0	0	1	ML	Topsoil	–	–	–	–
809.0	1	10	CL	Dry, massive, firm, lean	2.5YR 4/4	–	–	–
				No Ground water No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine orained ; 50% more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview Dairy
Date: 9/15/17
Logged by: RE
Test Pit Number: 406D
TP Elv. 716.4
Test Pit Location: West of FSA - Heifer Farm

Elev.	TP Depth From	TP Depth To	Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & E
716.4	0	16"		Topsoil				
	16"	24"	Cl	Clay, dry massive, firm	5 YR 4/4			
				No Groundwater				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained soils more than 50% retained on No. 4 sieve	Gravel >50% of coarse fraction retained on No. 4 sieve	clean gravel <5% smaller than No. 200 sieve	GW	well-graded gravel (diverse particle size)
			GP	poorly graded gravel (uniform particle size)
		gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with >12% fines	SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
	silt and clay liquid limit > 50	inorganic	MH	silt of high plasticity, elastic silt
			CH	clay of high plasticity, fat clay
		organic	OH	organic clay, organic silt
			Pt	peat and other highly organic soils

Exhibit 5

Soil Analysis Summary Worksheet

Owner: Ledgeview Farm

Project: 2017 Waste Storage Facilty and Runoff Management Systems

Prepared By: Roach

Date Prepared: 2017

Test Pit (Number)	Sample No	P200 Fines (%)	Plasticity Index
6	3889	96	33
7	3900	99	30
8	3901	100	27
9	3902	98	18
10	3903	100	24
11	3904	96	23
11	3905	100	17
12	3906	99	17
12	3907	91	22
13	3908	98	19
17	1	78.9	21.6
19	1	89.3	19.2
20	1	84.1	23.8
21	1	80.5	23.1
23	1	85.5	25.2
54	2	99.5	29.3
55	1	82.2	21.8
57	1	85.3	33.7
57	1	81.9	27.4
59	1	82.6	28.9
62	1	76.5	24.5
LV CF	1	61.5	11.5

REPORT OF LABORATORY ANALYSIS OF SOIL

Engineering Resources, Testing Solutions

1280 Parkview Road
Green Bay, WI 54304
ph 920-347-9040
fax 920-347-9044
www.rvtcorp.com

Project:	**LEDGEVIEW FARMS** **DE PERE, WISCONSIN**	Copies:	Mr. Dave Wetenkamp Brown County Land & Water Conervation Dept. e) Wetenkamp_dl@co.brown.wi.us
Client:	Mr. Jason Pansier Ledgeview Farms e) jasonpansier@gmail.com		
Date:	June 27, 2017	RVT File No:	G17-194

GENERAL:

Scope of Work: Perform percent material passing the #200 sieve, atterberg limits, and visual classification of soils on the submitted samples.

Date of Tests: 6/26/17 — Technician: N Flory

Sampled By: Mr. Dave Wetenkamp with BCLWC — Material Source: Native

Sample Description: 3899) LEAN CLAY, brown (CL) — Date Delivered: 6/20/17

3900) LEAN CLAY, brown (CL)
3901) LEAN CLAY, brown (CL)
3902) LEAN CLAY, brown (CL)

RESULTS:

Test Method:

	ASTM D2487	Classification of Soils for Engineering Purposes
	ASTM D1140	Percent Material Finer than the No 200 Sieve
	ASTM D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils

Sample Number	3899	3900	3901	3902	Project Specifications
Sample Depth	TP6 (6' – 10')	TP7 (6' – 8')	TP8 (6' – 8')	TP9 (6' – 12')	
USCS Classification	CL	CL	CL	CL	---
% Passing #200 Sieve	96	99	100	98	50 min
Liquid Limit (LL)	47	46	46	38	---
Plastic Limit (PL)	14	16	19	20	---
Plasticity Index (PI)	33	30	27	18	12 min

REMARKS:

The above samples meet project specifications. A portion of the sample will be held for 30 days after the date of this report and then will be discarded unless notified otherwise.

Respectfully Submitted,
River Valley Testing Corp.

Engineering Resources, Testing Solutions

REPORT OF LABORATORY ANALYSIS OF SOIL

1280 Parkview Road
Green Bay, WI 54304
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Project: **LEDGEVIEW FARMS**
DE PERE, WISCONSIN

Copies: Mr. Dave Wetenkamp
Brown County Land & Water Conervation Dept.
e) Wetenkamp_dl@co.brown.wi.us

Client: Mr. Jason Pansier
Ledgeview Farms
e) jasonpansier@gmail.com

Date: June 27, 2017

RVT File No: G17-194

GENERAL:

Scope of Work: Perform percent material passing the #200 sieve, atterberg limits, and visual classification of soils on the submitted samples.

Date of Tests: 6/26/17
Technician: N Flory
Sampled By: Mr. Dave Wetenkamp with BCLWC
Material Source: Native
Sample Description: 3903) LEAN CLAY, brown (CL)
3904) LEAN CLAY, brown (CL)
3905) LEAN CLAY, brown (CL)
3906) LEAN CLAY, brown (CL)
Date Delivered: 6/20/17

RESULTS:

Test Method:
ASTM D2487 Classification of Soils for Engineering Purposes
ASTM D1140 Percent Material Finer than the No 200 Sieve
ASTM D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

Sample Number	3903	3904	3905	3906	Project Specifications
Sample Depth	TP10 (8' – 12')	TP11 (4' – 12')	TP11 (12' – 15')	TP12 (4' – 12')	
USCS Classification	CL	CL	CL	CL	---
% Passing #200 Sieve	100	96	100	99	50 min
Liquid Limit (LL)	43	37	35	37	---
Plastic Limit (PL)	19	14	18	20	---
Plasticity Index (PI)	24	23	17	17	12 min

REMARKS:

The above samples meet project specifications. A portion of the sample will be held for 30 days after the date of this report and then will be discarded unless notified otherwise.

Respectfully Submitted,
River Valley Testing Corp.

RVT
Engineering Resources, Testing Solutions

REPORT OF LABORATORY ANALYSIS OF SOIL

1280 Parkview Road
Green Bay, WI 54304
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Project: **LEDGEVIEW FARMS**
DE PERE, WISCONSIN

Copies: Mr. Dave Wetenkamp
Brown County Land & Water Conervation Dept.
e) Wetenkamp_dl@co.brown.wi.us

Client: Mr. Jason Pansier
Ledgeview Farms
e) jasonpansier@gmail.com

Date: June 27, 2017

RVT File No: G17-194

GENERAL:

Scope of Work: Perform percent material passing the #200 sieve, atterberg limits, and visual classification of soils on the submitted samples.

Date of Tests: 6/26/17
Sampled By: Mr. Dave Wetenkamp with BCLWC
Sample Description: 3907) LEAN CLAY, brown (CL)
3908) LEAN CLAY, brown (CL)
3909) LEAN CLAY, brown (CL)
3917) LEAN CLAY, brown (CL)

Technician: N Flory
Material Source: Native
Date Delivered: 6/20/17

RESULTS:

Test Method:
ASTM D2487 Classification of Soils for Engineering Purposes
ASTM D1140 Percent Material Finer than the No 200 Sieve
ASTM D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

Sample Number	3907	3908	3909	3917	Project Specifications
Sample Depth	TP12 (13' – 12')	TP13 (4' – 12')	Composite A	Composite A	
USCS Classification	CL	CL	CL	CL	---
% Passing #200 Sieve	91	98	88	88	50 min
Liquid Limit (LL)	36	41	40	41	---
Plastic Limit (PL)	14	22	13	15	---
Plasticity Index (PI)	22	19	27	26	12 min

REMARKS:

The above samples meet project specifications. A portion of the sample will be held for 30 days after the date of this report and then will be discarded unless notified otherwise.

Respectfully Submitted,
River Valley Testing Corp.

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 17
Sample No:	TP-17-S1
Depth of Sample:	
Date Received:	10/13/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 4/4
Date Sampled:	10/11/17

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 506.7

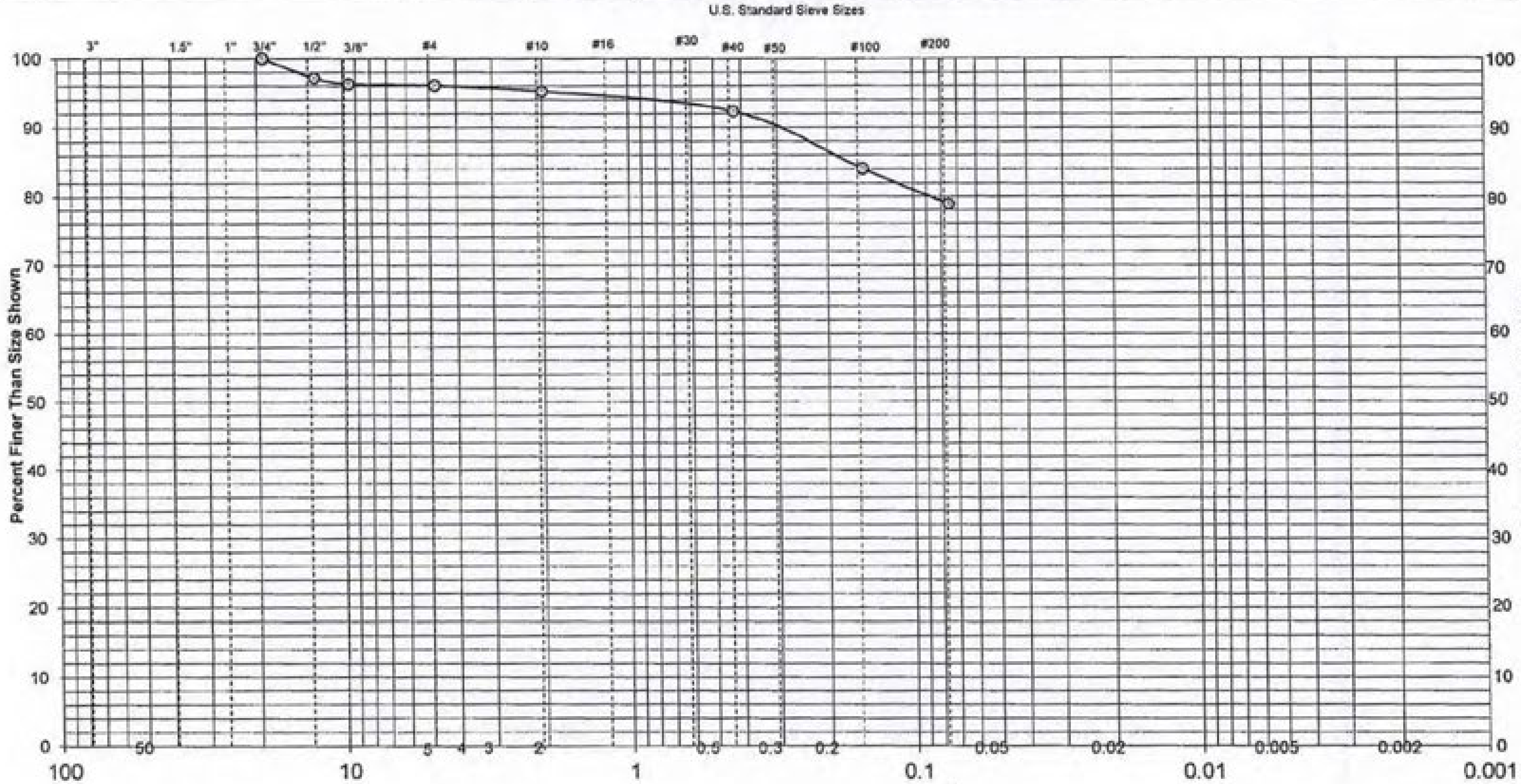
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	14.4	2.8	97.2		
3/8"	4.4	0.9	96.3		
#4	1.2	0.2	96.1		
#10	4.8	0.9	95.2		
#40	14.9	2.9	92.3		
#100	41.5	8.2	84.1		
#200	26.3	5.2	78.9		

REVIEWED BY:	Robert R Roose
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP17-S1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
	3.9%	0.9%	2.9%	13.4%	78.9%

Soil Classification: LEAN CLAY W/SAND, a little gravel, reddish brown (CL)

Location Sampled: Test Pit 17	Elevation or Depth:	Date Sampled: 10/11/17	
Sample Number: TP-17-S1	Sampled Moisture Content (%): 16.4	Report No.: TP17-S1	
Sample Source:	CQM, INC.		
Atterberg Limits: LL= 40.0 PL= 18.4 PI= 21.6	Client: Roach & Associates		
Munsell Color Code: 5YR 4/4	Project: Ledgeview Dairy	Page:	2
Date Received: 10/13/17	Prepared by: Bob J. Peeters	Date:	10/24/17
Coefficients: Cc= Cu=	Checked by: Robert R. Rouse	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 19
Sample No:	TP-19-S1
Depth of Sample:	
Date Received:	10/13/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 4/4
Date Sampled:	10/11/17

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO		
Washed Gradation:	YES	Dry Weight of Soil (gms):	445.5

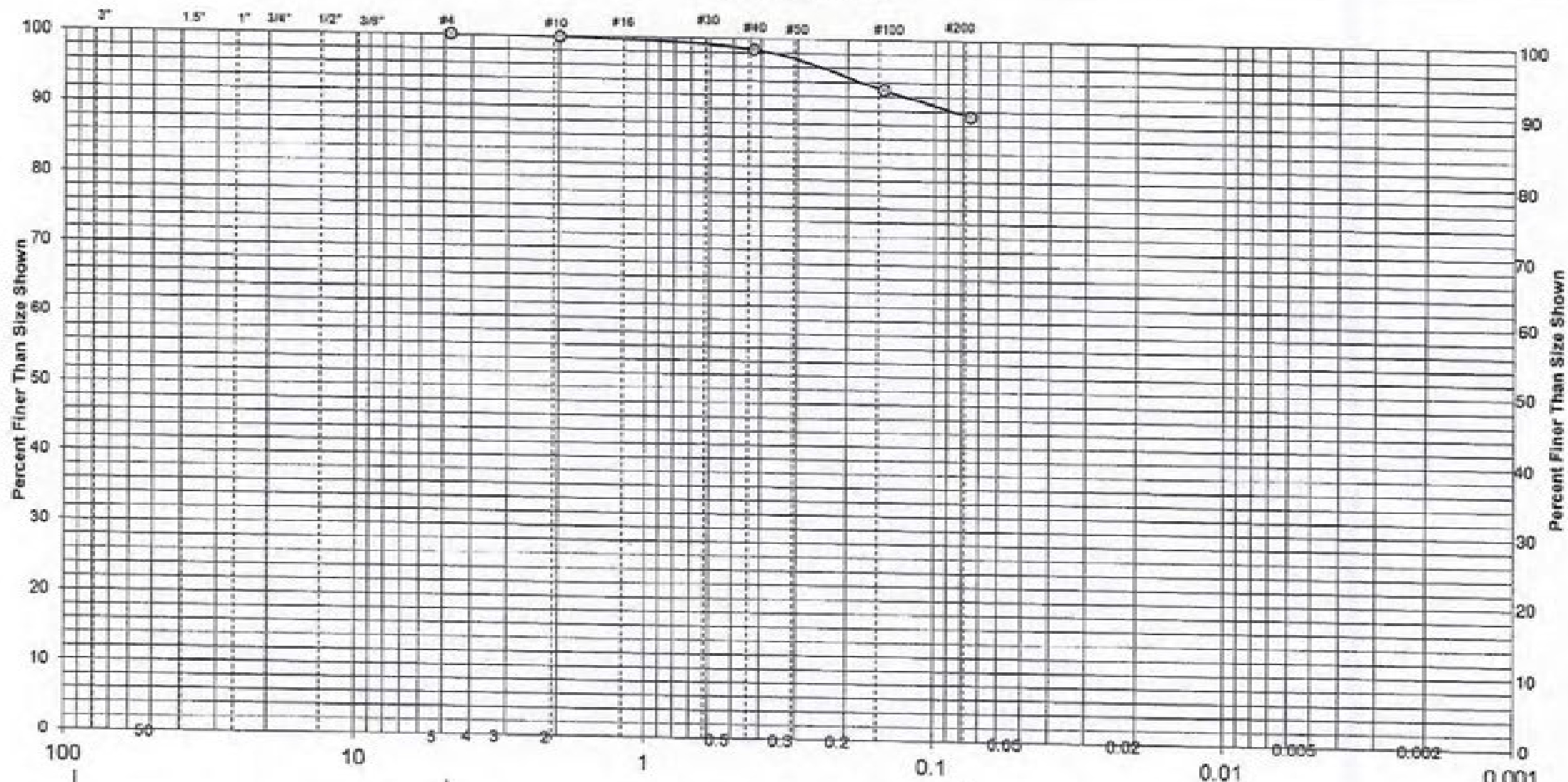
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"					
#4	0.0	0.0	100.0		
#10	0.7	0.2	99.8		
#40	6.3	1.4	98.4		
#100	24.7	5.5	92.9		
#200	16.1	3.6	89.3		

REVIEWED BY:	Robert A. Rowe
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP19-S1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
		0.2%	1.4%	9.1%	89.3%

Soil Classification: LEAN CLAY, reddish brown (CL)			
Location Sampled: Test Pit 19		Elevation or Depth:	Date Sampled: 10/11/17
Sample Number: TP-19-S1		Sampled Moisture Content (%): 16.6	Report No.: TP19-S1
Sample Source:		**CQM, INC.**	
Atterberg Limits: LL= 35.5	PL= 16.3	PI= 19.2	Client: Roach & Associates
Munsell Color Code: 5YR 4/4		Project: Ledgeview Dairy	Page: 2
Date Received: 10/13/17		Prepared by: Bob J. Peeters	Date: 10/26/17
Coefficients: Cc=	Cu=	Checked by: Robert R Rouse	Date: 10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 20
Sample No:	TP-20-S1
Depth of Sample:	
Date Received:	10/13/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 4/4
Date Sampled:	10/11/17

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 406.6

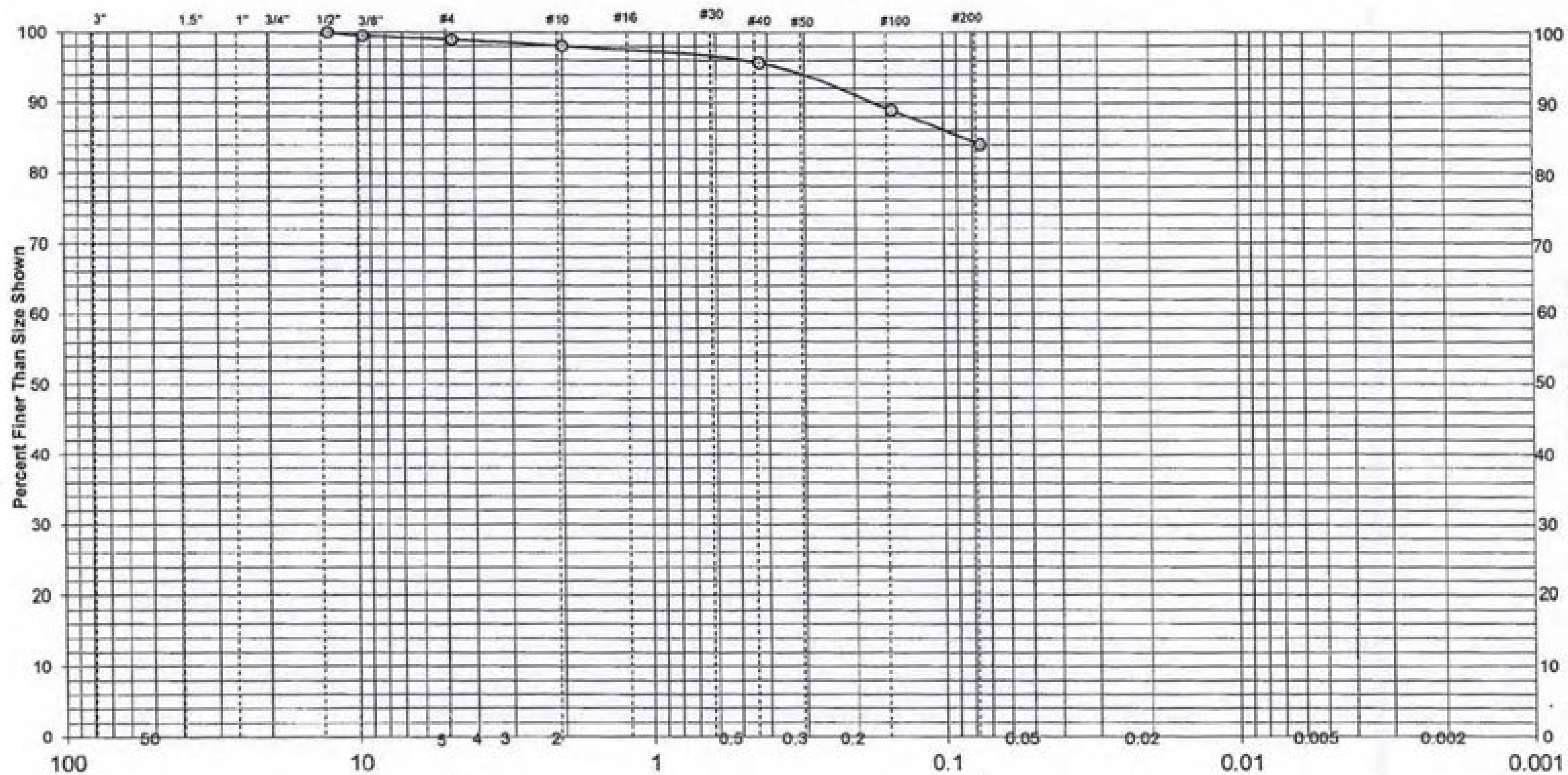
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	2.0	0.5	99.5		
#4	2.4	0.6	98.9		
#10	3.5	0.9	98.0		
#40	9.9	2.4	95.6		
#100	27.3	6.7	88.9		
#200	19.7	4.8	84.1		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP20-S1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt-Clay
	1.1%	0.9%	2.4%	11.5%	84.1%

Soil Classification: LEAN CLAY W/SAND, reddish brown (CL)					
Location Sampled: Test Pit 20			Elevation or Depth:	Date Sampled: 10/11/17	
Sample Number: TP-20-S1			Sampled Moisture Content (%): 16.6	Report No.: TP20-S1	
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 39.1	PL= 15.3	PI= 23.8	Client: Roach & Associates	
Munsell Color Code: 5YR 4/4				Project: Ledgeview Dairy	Page: 2
Date Received: 10/13/17				Prepared by: Bob J. Peeters	Date: 10/26/17
Coefficients: Cc=	Cu=			Checked by: Robert R Rouse	Date: 10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	**Roach & Associates**
Project:	**Ledgeview Dairy**
Location Sampled:	**Test Pit 21**
Sample No:	**TP-21-S1**
Depth of Sample:	
Date Received:	**10/13/17**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**5YR 4/4**
Date Sampled:	**10/11/17**

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 470.7

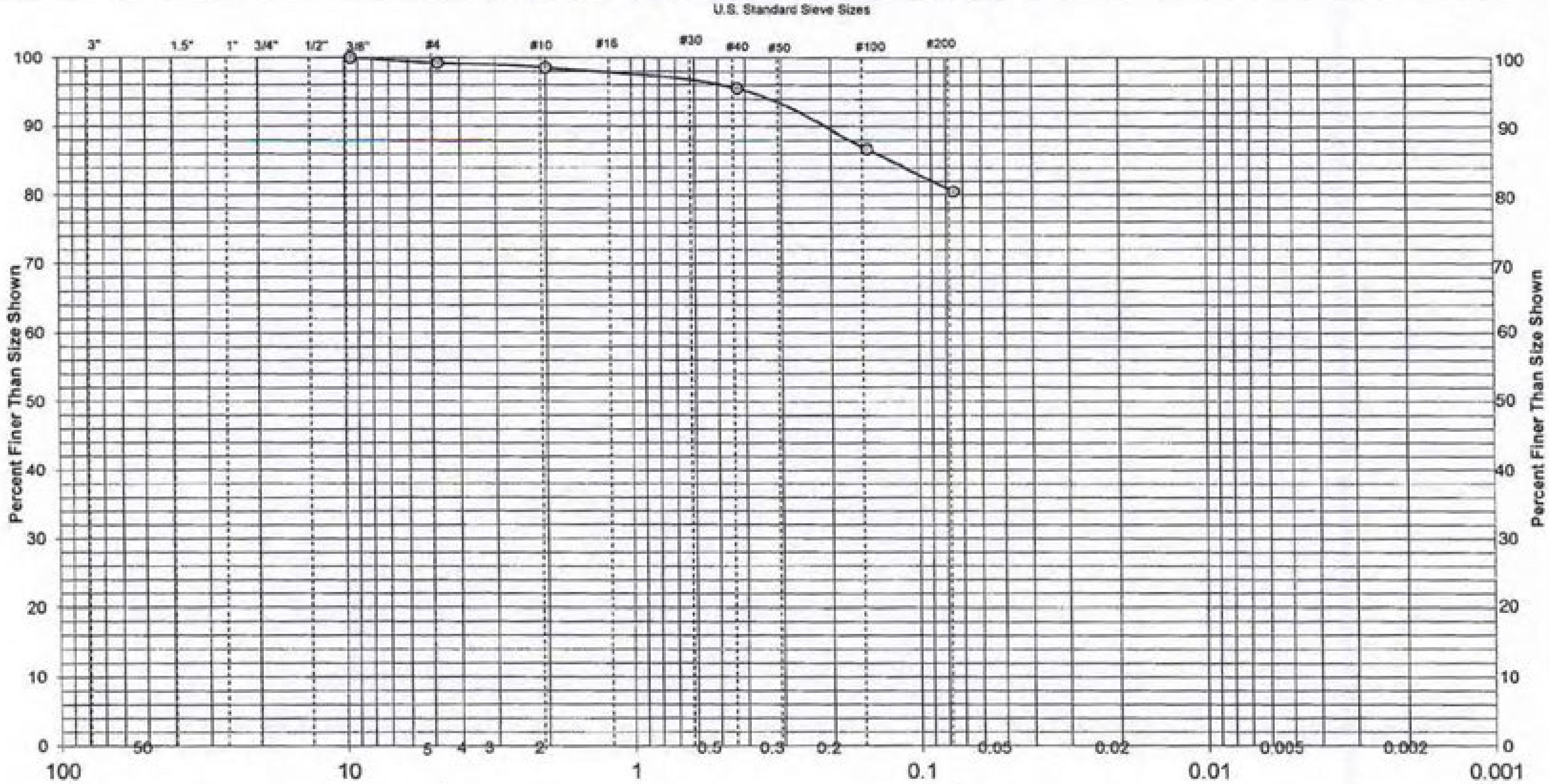
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	3.7	0.8	99.2		
#10	3.2	0.7	98.5		
#40	13.9	3.0	95.5		
#100	41.5	8.8	86.7		
#200	29.0	6.2	80.5		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP21-S1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt
	0.8%	0.7%	3.0%	15.0%	80.5%

Soil Classification: LEAN CLAY W/SAND, reddish brown (CL)

Location Sampled: Test Pit 21			Elevation or Depth:	Date Sampled:	10/11/17
Sample Number: TP-21-S1			Sampled Moisture Content (%): 15.0	Report No.:	TP21-S1
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 37.2	PL= 14.1	PI= 23.1		
Munsell Color Code: 5YR 4/4			Client: Roach & Associates		
Date Received: 10/13/17			Project: Ledgeview Dairy	Page:	2
			Prepared by: Bob J. Peeters	Date:	10/26/17
Coefficients: Cc=	Cu=		Checked by: Robert R. Rowe	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 23
Sample No:	TP-23-S1
Depth of Sample:	
Date Received:	10/13/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 4/4
Date Sampled:	10/11/17

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 411.0

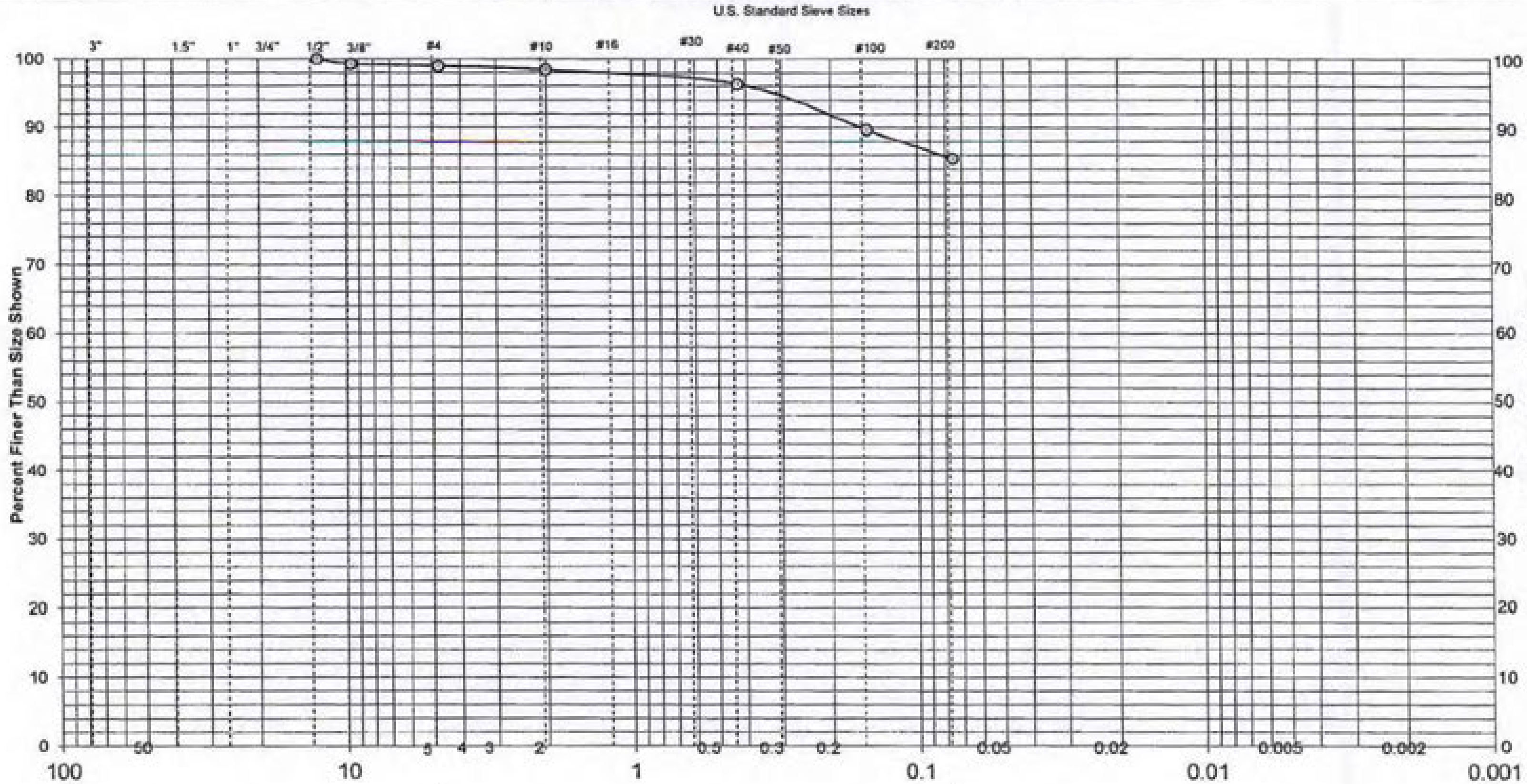
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	3.1	0.8	99.2		
#4	1.3	0.3	98.9		
#10	2.2	0.5	98.4		
#40	8.6	2.1	96.3		
#100	27.2	6.6	89.7		
#200	17.4	4.2	85.5		

REVIEWED BY:	Robert A Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP23-S1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
	1.1%	0.5%	2.1%	10.8%	85.5%

Soil Classification: LEAN CLAY, reddish brown (CL)					
Location Sampled: Test Pit 23			Elevation or Depth:	Date Sampled: 10/11/17	
Sample Number: TP-23-S1			Sampled Moisture Content (%): 17.8	Report No.: TP23-S1	
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 41.3	PL= 16.1	PI= 25.2	Client: Roach & Associates	
Munsell Color Code: 5YR 4/4				Project: Ledgeview Dairy	Page: 2
Date Received: 10/13/17				Prepared by: Bob J. Peeters	Date: 10/26/17
Coefficients: Cc=	Cu=			Checked by: Robert R Rouse	Date: 10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 23
Sample No:	TP-23-S2
Depth of Sample:	
Date Received:	10/13/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 4/4
Date Sampled:	10/11/17

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 374.8

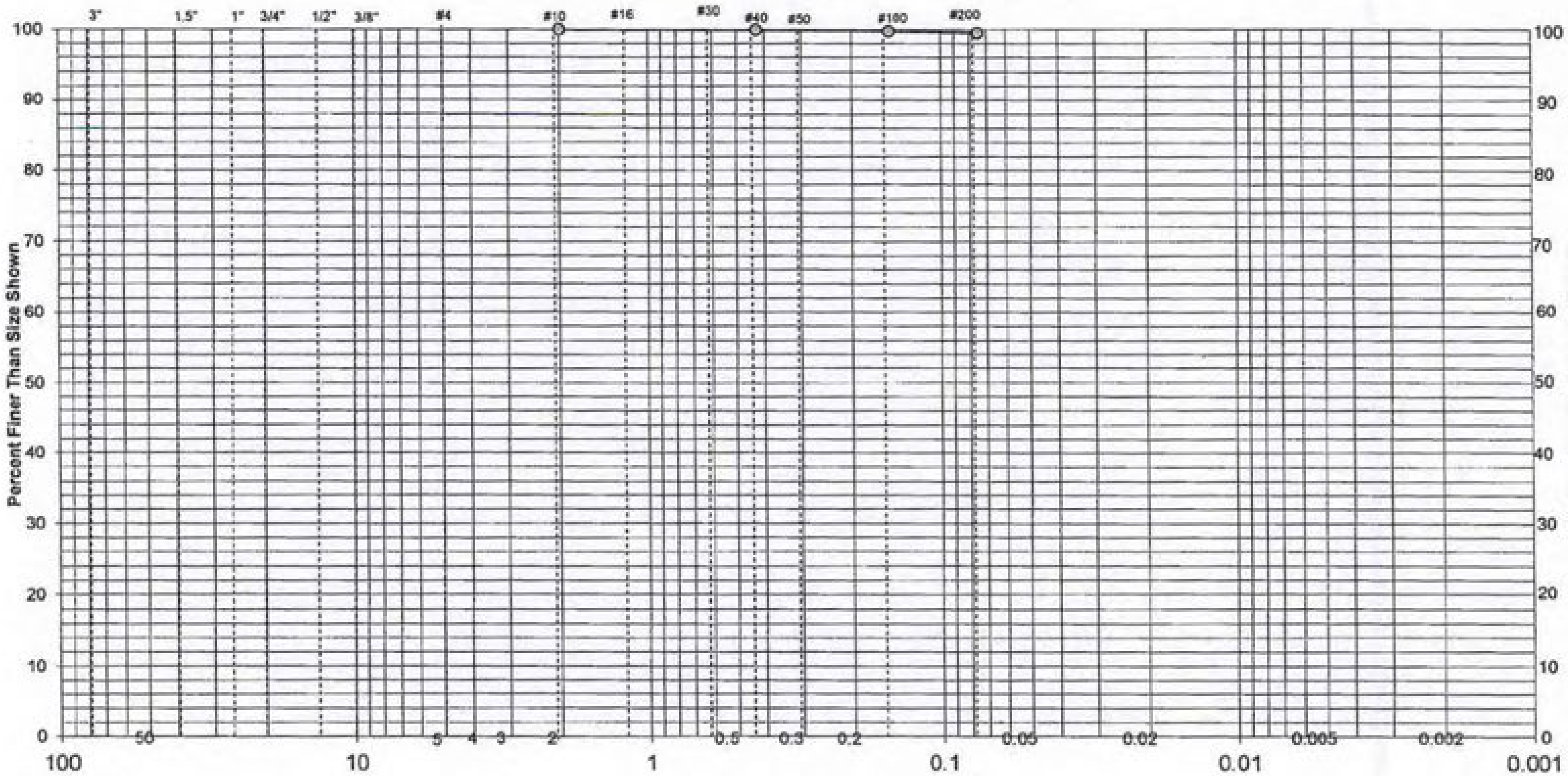
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"					
#4					
#10	0.0	0.0	100.0		
#40	0.3	0.1	99.9		
#100	0.8	0.2	99.7		
#200	0.8	0.2	99.5		

REVIEWED BY:	Robert R Rowe
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-TP23-S2

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
			0.1%	0.4%	99.5%

Soil Classification: LEAN CLAY, reddish brown (CL)					
Location Sampled: Test Pit 23			Elevation or Depth:	Date Sampled: 10/11/17	
Sample Number: TP-23-S2			Sampled Moisture Content (%): 22.9	Report No.: TP23-S2	
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 48.2	PL= 18.9	PI= 29.3	Client: Roach & Associates	
Munsell Color Code: 5YR 4/4			Project: Ledgeview Dairy	Page:	2
Date Received: 10/13/17			Prepared by: Bob J. Peeters	Date:	10/26/17
Coefficients: Cc=	Cu=		Checked by: Robert R Rouse	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 54
Sample No:	TP-54 S-1
Depth of Sample:	
Date Received:	10/20/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	2.5YR 4/8
Date Sampled:	10/19/17

LABORATORY DATA:

Date Tested:	October 23-25, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 376.3

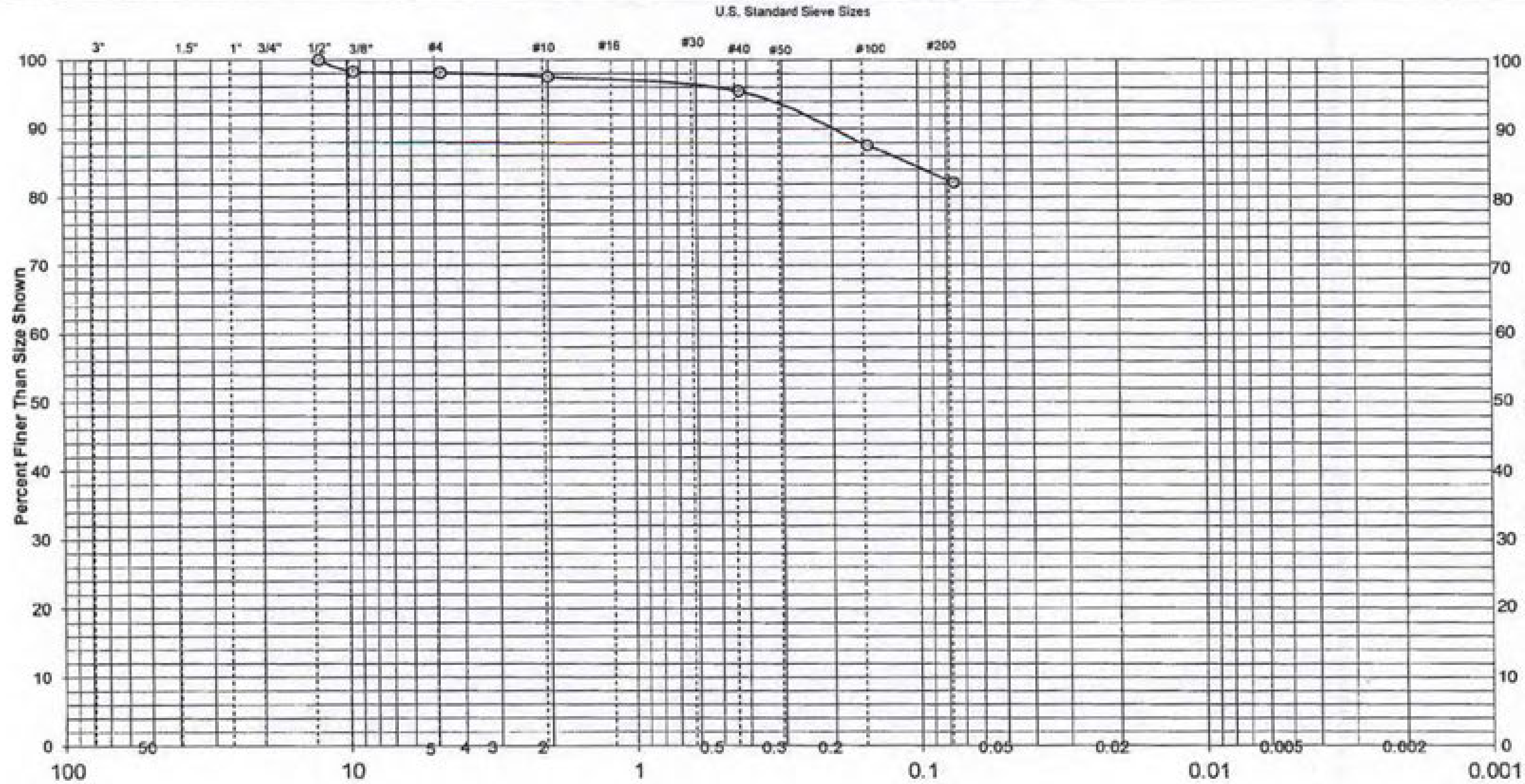
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	6.4	1.7	98.3		
#4	0.8	0.2	98.1		
#10	2.2	0.6	97.5		
#40	7.9	2.1	95.4		
#100	29.4	7.8	87.6		
#200	20.3	5.4	82.2		

REVIEWED BY:	Robert R Rocue
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-TP54 S-1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
	1.9%	0.6%	2.1%	13.2%	82.2%

Soil Classification: LEAN CLAY W/SAND, red (CL)					
Location Sampled: Test Pit 54			Elevation or Depth:	Date Sampled: 10/19/17	
Sample Number: TP-54 S-1			Sampled Moisture Content (%): 17.2	Report No.: TP54-S1	
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 38.7	PL= 16.9	PI= 21.8	Client: Roach & Associates	
Munsell Color Code: 2.5YR 4/8			Project: Ledgeview Dairy	Page:	2
Date Received: 10/20/17			Prepared by: Bob J. Peeters	Date:	10/26/17
Coefficients: Cc=	Cu=		Checked by: Robert R Rouse	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 56
Sample No:	TP-56 S-1
Depth of Sample:	
Date Received:	10/20/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	2.5YR 4/8
Date Sampled:	10/19/17

LABORATORY DATA:

Date Tested:	October 23-25, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 388.4

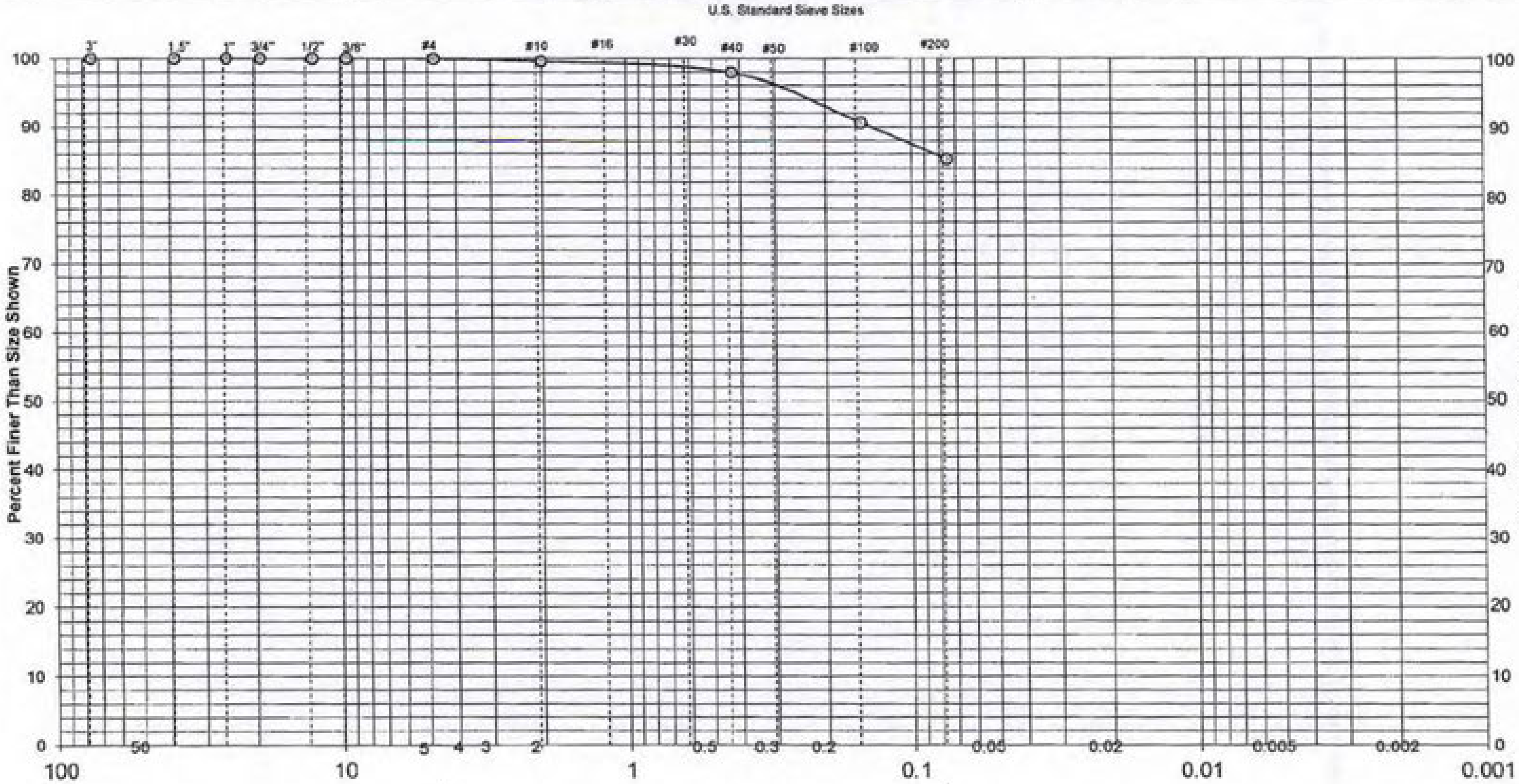
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	0.3	0.1	99.9		
#10	1.5	0.4	99.5		
#40	6.1	1.6	97.9		
#100	28.3	7.3	90.6		
#200	20.7	5.3	85.3		

REVIEWED BY:	Robert Rlowe
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-TP56 S-1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	0.1%	0.4%	1.6%	12.6%	85.3%

Soil Classification:	FAT CLAY, red (CL)				
Location Sampled:	Test Pit 56	Elevation or Depth:		Date Sampled:	10/19/17
Sample Number:	TP-56 S-1	Sampled Moisture Content (%):	22.8	Report No.:	TP56-S1
Sample Source:		*CQM, INC.*			
Atterberg Limits: LL= 51.3	PL= 17.6 / PI= 33.7	Client:	Roach & Associates		
Munsell Color Code:	2.5YR 4/8	Project:	Ledgeview Dairy	Page:	2
Date Received:	10/20/17	Prepared by:	Bob J. Peeters	Date:	10/26/17
Coefficients: Cc=	Cu=	Checked by:	Robert R. Rouse	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 57
Sample No:	TP-57 S-1
Depth of Sample:	
Date Received:	10/20/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 5/6
Date Sampled:	10/19/17

LABORATORY DATA:

Date Tested:	October 23-25, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 361.7

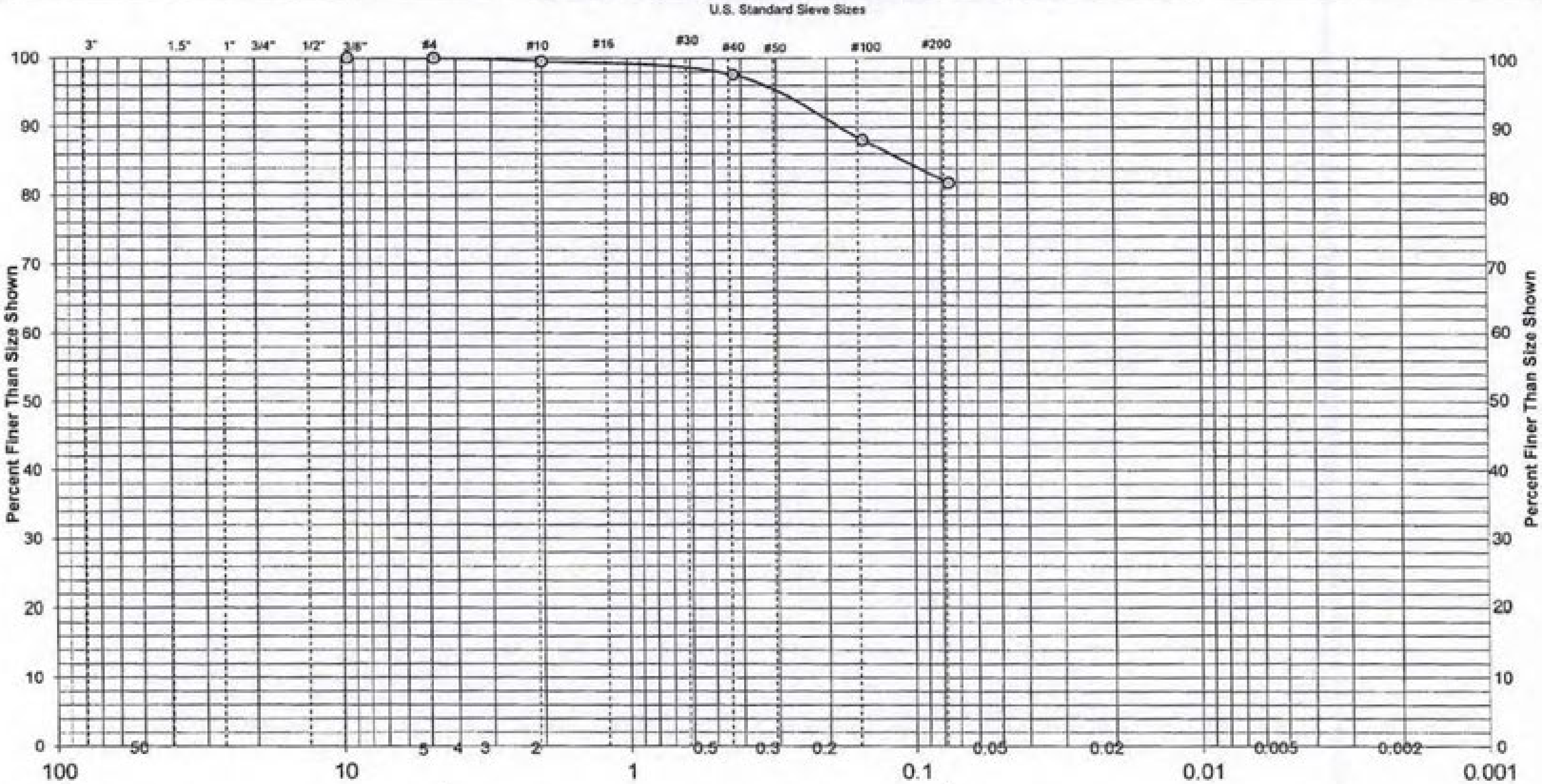
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	0.2	0.1	99.9		
#10	1.6	0.4	99.5		
#40	7.0	1.9	97.6		
#100	34.3	9.5	88.1		
#200	22.3	6.2	81.9		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-TP57 S-1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	0.1%	0.4%	1.9%	15.7%	81.9%

Soil Classification: LEAN CLAY W/SAND, yellowish red (CL)					
Location Sampled: Test Pit 57		Elevation or Depth:		Date Sampled: 10/19/17	
Sample Number: TP-57 S-1		Sampled Moisture Content (%): 24.3		Report No.: TP57-S1	
Sample Source:		*CQM, INC.*			
Atterberg Limits: LL= 45.2	PL= 17.8	PI= 27.4	Client: Roach & Associates		
Munsell Color Code: 5YR 5/6		Project: Ledgeview Dairy		Page:	2
Date Received: 10/20/17		Prepared by: Bob J. Peeters		Date:	10/26/17
Coefficients: Cc=	Cu=	Checked by: Robert R. Rouse		Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 59
Sample No:	TP-59 S-1
Depth of Sample:	
Date Received:	10/20/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	5YR 6/6
Date Sampled:	10/19/17

LABORATORY DATA:

Date Tested:	October 23-25, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 403.1

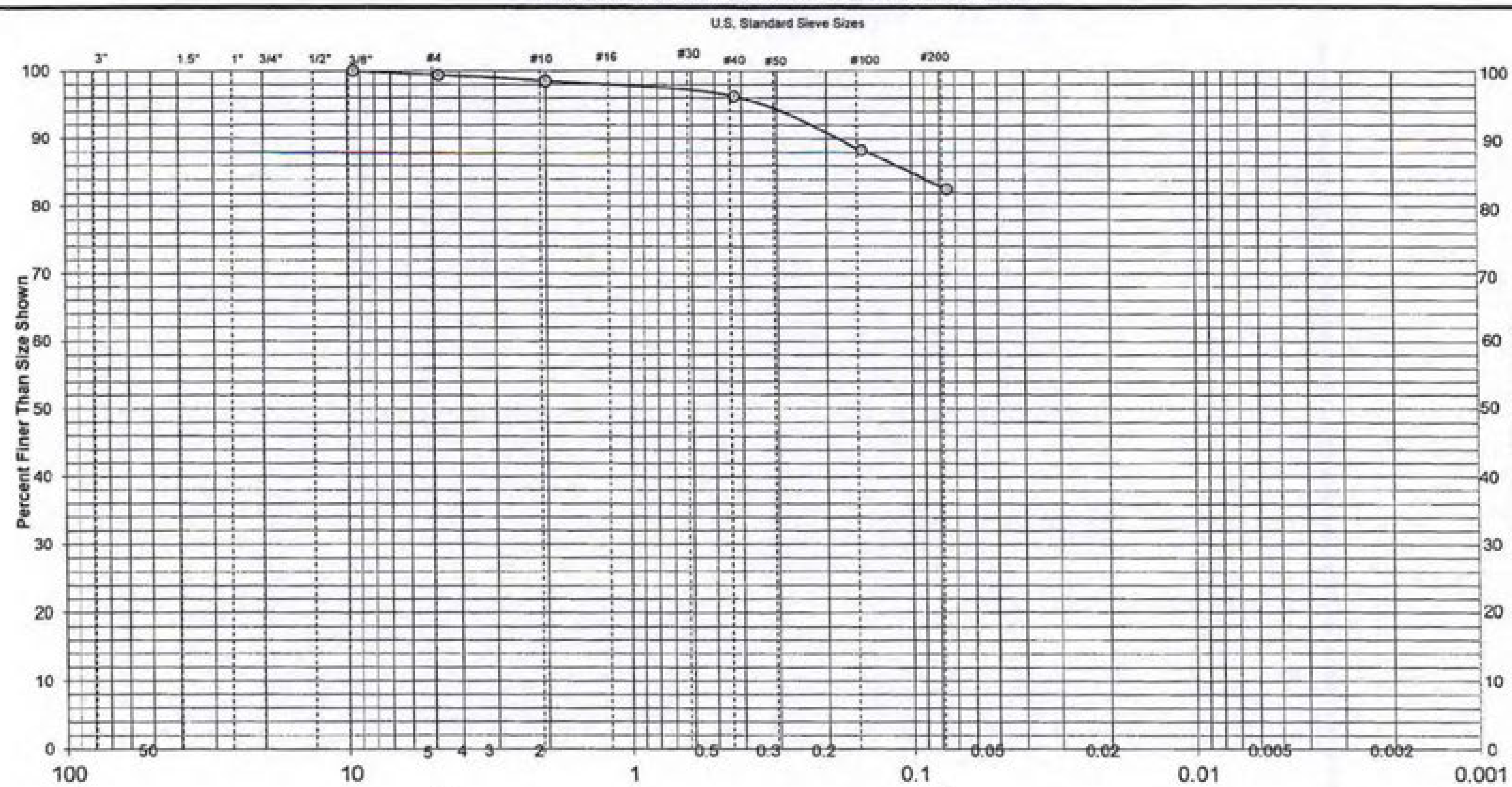
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	2.6	0.6	99.4		
#10	3.5	0.9	98.5		
#40	9.2	2.3	96.2		
#100	31.7	7.9	88.3		
#200	23.1	5.7	82.6		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-TP59 S-1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
	0.6%	0.9%	2.3%	13.6%	82.6%

Soil Classification: LEAN CLAY, reddish yellow (CL)			
Location Sampled: Test Pit 59		Elevation or Depth:	Date Sampled: 10/19/17
Sample Number: TP-59 S-1		Sampled Moisture Content (%): 15.9	Report No.: TP59-S1
Sample Source:		*CQM, INC.*	
Atterberg Limits: LL= 45.2	PL= 16.3 / PI= 28.9	Client: Roach & Associates	
Munsell Color Code: 5YR 6/6		Project: Ledgeview Dairy	Page: 2
Date Received: 10/20/17		Prepared by: Bob J. Peeters	Date: 10/26/17
Coefficients: Cc=	Cu=	Checked by: Robert R Rouse	Date: 10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	Roach & Associates
Project:	Ledgeview Dairy
Location Sampled:	Test Pit 62
Sample No:	TP-62 S-1
Depth of Sample:	
Date Received:	10/20/17
Sample Designated For:	Soil Classification
Source of Sample:	
Munsell Color Code:	7.5YR 5/3
Date Sampled:	10/19/17

LABORATORY DATA:

Date Tested:	October 23-25, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 368.0

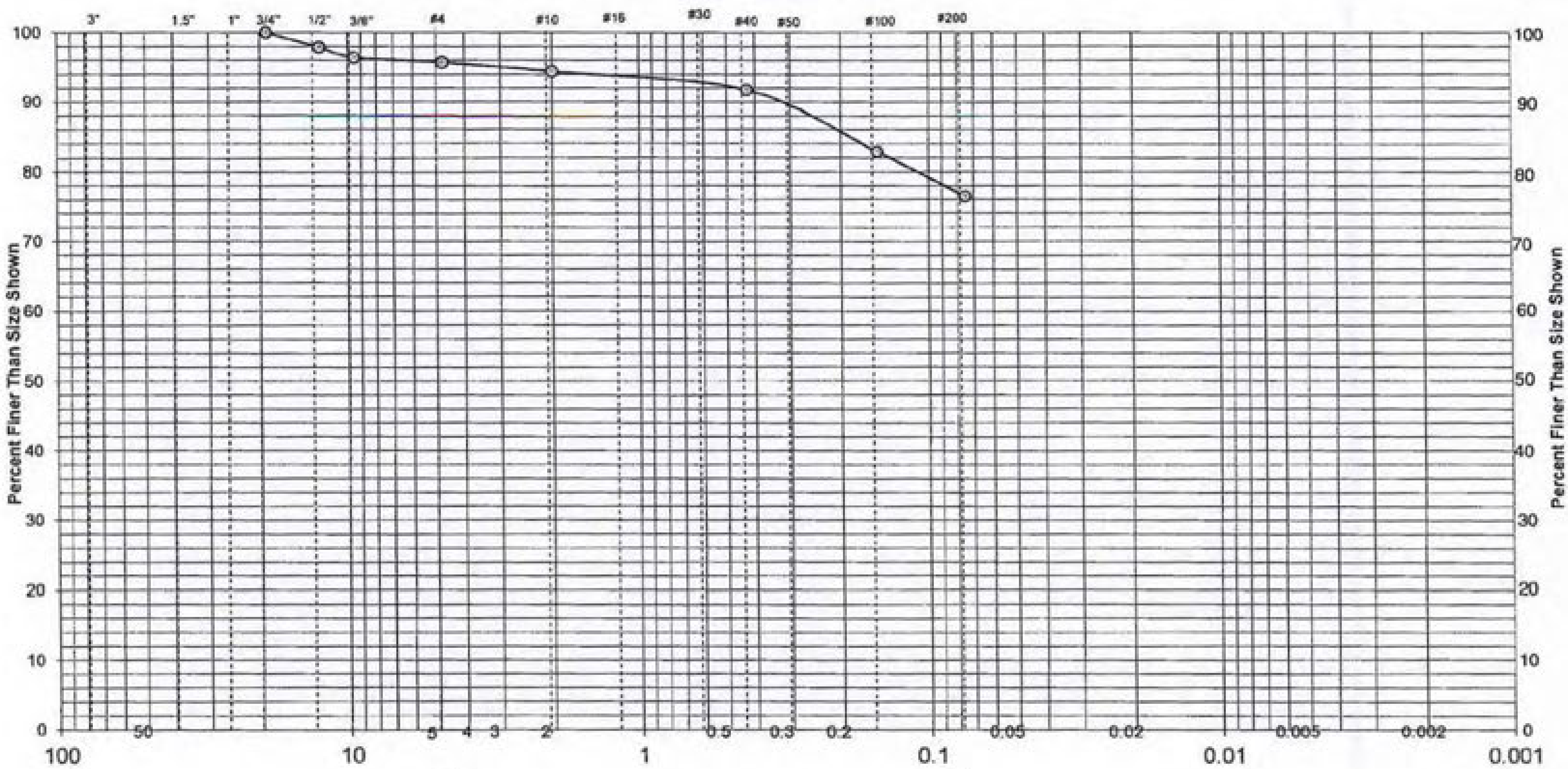
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	7.9	2.1	97.9		
3/8"	5.7	1.5	96.4		
#4	2.5	0.7	95.7		
#10	4.8	1.3	94.4		
#40	10.0	2.7	91.7		
#100	32.3	8.8	82.9		
#200	23.6	6.4	76.5		

REVIEWED BY:	Robert R Rouse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-TP62 S-1

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	Silt - Clay
	4.3%	1.3%	2.7%	15.2%	76.5%

Soil Classification:	LEAN CLAY W/SAND, a little gravel, brown (CL)				
Location Sampled:	Test Pit 62	Elevation or Depth:		Date Sampled:	10/19/17
Sample Number:	TP-62 S-1	Sampled Moisture Content (%):	19.8	Report No.:	TP62-S1
Sample Source:		*CQM, INC.*			
Atterberg Limits:	LL= 43.5 / PL= 19.1 / PI= 24.5	Client:	Roach & Associates		
Munsell Color Code:	7.5YR 5/3	Project:	Ledgeview Dairy	Page:	2
Date Received:	10/20/17	Prepared by:	Bob J. Peeters	Date:	10/26/17
Coefficients: Cc=	Cu=	Checked by:	Robert R Rouse	Date:	10/26/17

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D1140)

GENERAL DATA:

Client:	**Roach & Associates**
Project:	**Ledgeview Dairy**
Location Sampled:	**Channel Fill**
Sample No:	**LV-CF-1**
Depth of Sample:	
Date Received:	**10/13/17**
Sample Designated For:	**Soil Classification**
Source of Sample:	
Munsell Color Code:	**5YR 4/4**
Date Sampled:	**10/11/17**

LABORATORY DATA:

Date Tested:	October 16-18, 2017
Test Performed By:	TAH

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 429.9

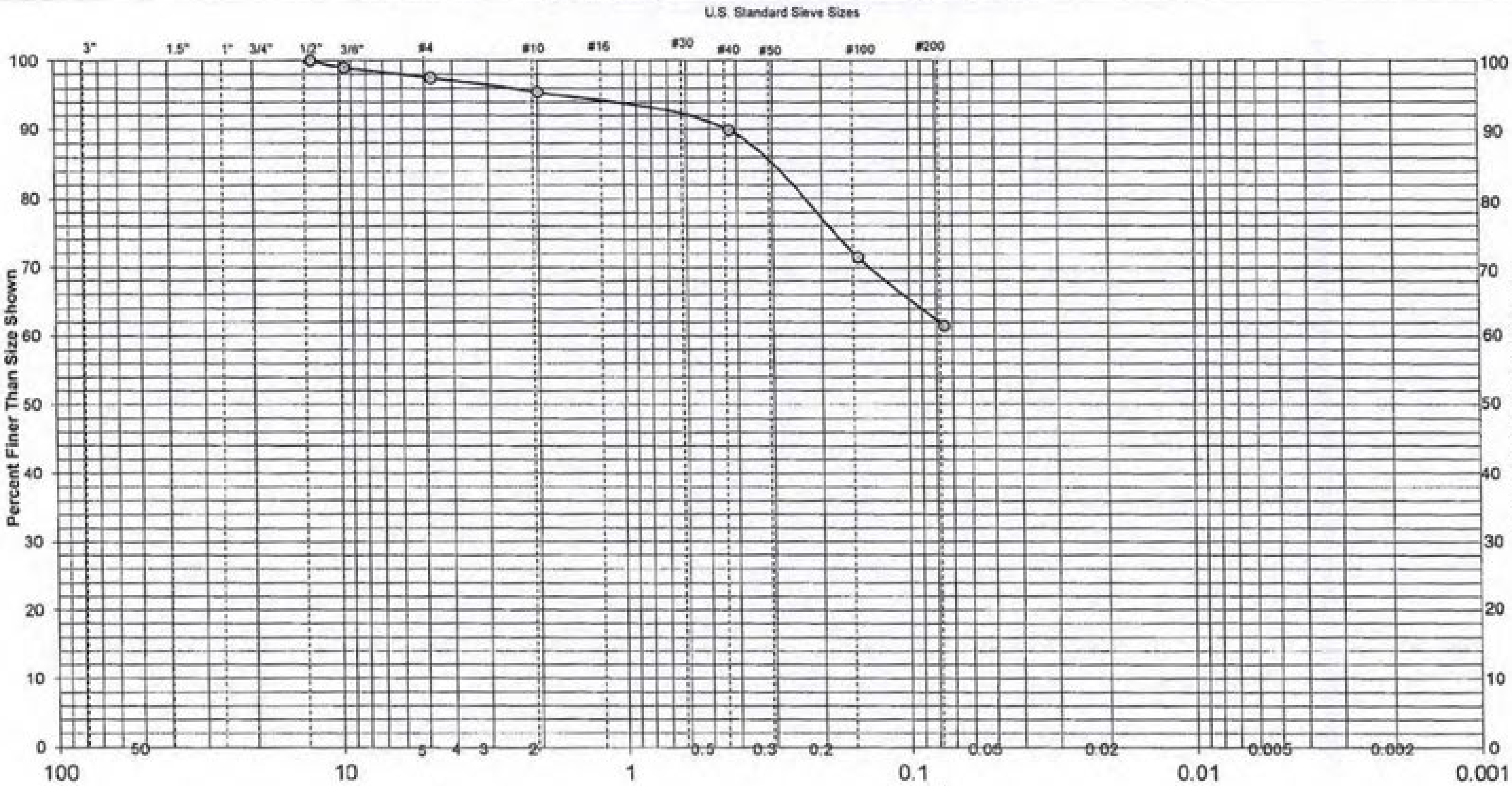
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	4.6	1.1	98.9		
#4	5.9	1.4	97.5		
#10	9.0	2.1	95.4		
#40	24.2	5.6	89.8		
#100	79.1	18.4	71.4		
#200	42.4	9.9	61.5		

REVIEWED BY:	Robert R. Rowse
DATE REVIEWED:	10/26/17

Remarks:

10/26/2017 TLS G-RA-LV-CHANNELFILL

GRAIN SIZE DISTRIBUTION CURVE



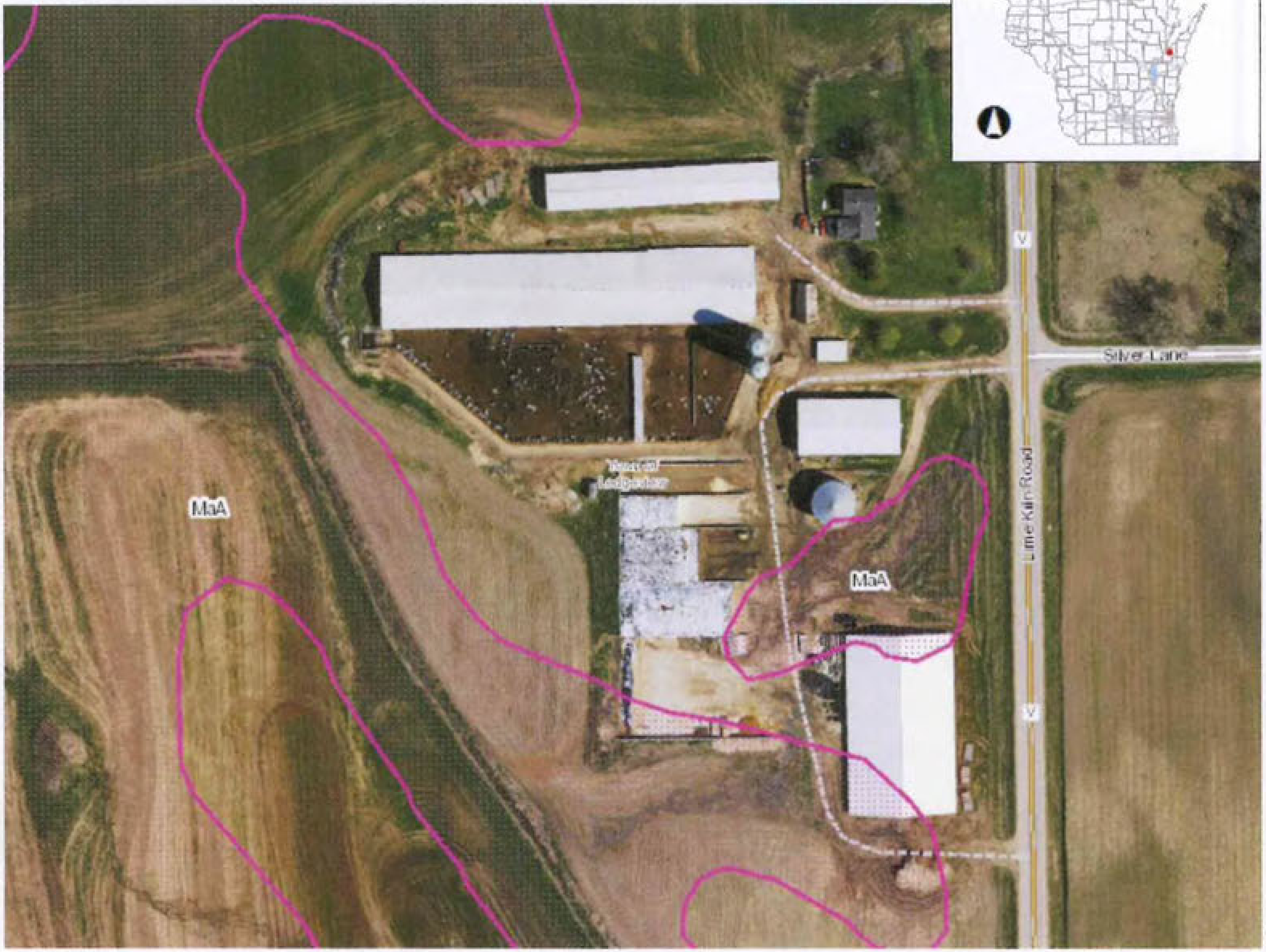
Gravel		Sand			
Coarse	Fine	Coarse	Medium	Fine	Silt-Clay
	2.5%	2.1%	5.6%	28.3%	61.5%

Soil Classification: SANDY LEAN CLAY, reddish brown (CL)

Location Sampled: Channel Fill			Elevation or Depth:	Date Sampled:	10/11/17
Sample Number: LV-CF-1			Sampled Moisture Content (%): 15.0	Report No.:	CF-1
Sample Source:			*CQM, INC.*		
Atterberg Limits:	LL= 23.5	PL= 12.0	PI= 11.5	Client: Roach & Associates	
Munsell Color Code: 5YR 4/4			Project: Ledgeview Dairy	Page:	2
Date Received: 10/13/17			Prepared by: Bob J. Peeters	Date:	10/24/17
Coefficients: Cc=	Cu=		Checked by: Robert R. Rouse	Date:	10/26/17

Exhibit 6

Ledgeview Heifer Farm-Wetlands Map



Legend

Wetland Class Points
- Dammed pond
- Excavated pond
- Filled excavated pond
- Filled/drained wetland
- Wetland too small to delineate

Filled Points

Wetland Class Areas
- Wetland
- Upland

Filled Areas

NRCS Wetspots

Wetland Indicators

Municipality

State Boundaries

County Boundaries

Major Roads
- Interstate Highway
- State Highway
- US Highway

County and Local Roads
- County HWY
- Local Road

Railroads

Tribal Lands

Rivers and Streams

Intermittent Streams

Lakes and Open water

Index to EN_Image_Basemap_Leaf_Off

Notes

0.1 0 0.03 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 1,980

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Oshkosh Service Center
625 E County Road Y, Suite 700
Oshkosh, WI 54901-9731

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

WISCONSIN DEPT. OF NATURAL RESOURCES

November 7, 2017 WIC-NE-2017-5-03382

Ledgeview Dairy
Jason Pansier
3875 Dickinson Road
DePere, WI 54115

RE: Wetland Delineation Report for 7.0 acres located in the NW1/4 of the SW1/4 of Section 28, Township 23 North, Range 21 East, Town of Ledgeview, Brown County

Dear Mr. Pansier:

We have received and reviewed the wetland delineation report prepared for the above mentioned site by Roach & Associates, LLC. This letter will serve as confirmation that the wetland boundaries as shown on the revised wetland delineation map received October 20, 2017 are acceptable. This finding is based upon an October 11, 2017 field visit. Any filling or grading within these areas will require DNR approvals. Our wetland confirmation is valid for five years unless altered site conditions warrant a new wetland delineation be conducted. Be sure to send a copy of the report, as well as any approved revisions, to the U.S. Army Corps of Engineers.

In order to comply with Chapter 23.321, State Statutes, please supply the department with a polygon shapefile of the wetland boundaries delineated within the project area. Please do not include data such as parcel boundaries, project limits, wetland graphic representation symbols, etc. If internal upland polygons are found within a wetland polygon, then please label as UPLAND. The shapefile should utilize a State Plane Projection, and be overlain onto recent aerial photography. If a different projection system is used, please indicate what system the data are projected to. In the correspondence sent with the shapefile, please supply a brief description of each wetland's plant community (eg: wet meadow, floodplain forest, etc.). Please send these data to Calvin Lawrence (608-266-0756, or calvin.lawrence@wisconsin.gov).

There may be a navigable stream identified on the property. DNR Chapter 30 permits will be needed if earthwork (filling, dredging, etc.) or structures (culverts, bridges, erosion control, etc.) are proposed in or adjacent to the waterway.

If you are planning development on the property, you are required to avoid take of endangered and threatened species, or obtain an incidental take authorization or permit, to comply with the state's Endangered Species Law. To insure compliance with the law, you should submit an endangered resources review form (Form 1700-047), available at http://dnr.wi.gov/topic/ERReview/Review.html. The Endangered Resources Program will provide a review response letter identifying any endangered and threatened species and any conditions that must be followed to address potential incidental take.

In addition to contacting WDNR, be sure to contact your local zoning office and U.S. Army Corps of Engineers to determine if any local or federal permits may be required for your project.

If you have any questions, please contact me at (920) 424-3058 or email Allison.Willman@wisconsin.gov.

Sincerely,

Allison Willman
Wetland Identification Specialist

cc: Jessica Kempke, Project Manager, U.S. Army Corps of Engineers
Bill Bosiacki, Zoning Administrator, Brown County
Rachel Ecker, Roach & Associates, LLC.
Crystal Von Holdt, DNR Water Management Specialist

ROJECT NO.	X	REVISIONS BY	DATE	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION	LEDGEVIEW DAIRY SATILITE FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 125'	WETLAND MAP	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 1
ATE:	09/19/2017	•	•	•	•	•	•					
RAWN BY:	MHP											
HECKED BY:	RE											

Exhibit 7

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH
See Instructions on Reverse Side

1. County Brown — Town ☒ Village ☐ City ☐ De Pere — Check one and give name

2. Location NE, S.W. ¼ of the N.W. ¼ of Sec. 33, T. ~~24N~~ T23N, R.21E
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☐ or Agent ☐ Pleasant View School, District No. 3
Name of individual, partnership or firm

4. Mail Address Route 3, Green Bay, Wis.
Complete address required

5. From well to nearest: Building 48 ft; ~~sewer~~ privy 50 ft; drain ___ ft; septic tank ___ ft; dry well or filter bed ___ ft; abandoned well 95 ft. to be filled in by school board

6. Well is intended to supply water for: School

RECEIVED JAN 3 BUREAU SAN. ENG.

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	0	78½			
6	78½	174			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	Standard Weight		
	Steel Pipe --	0	78½
	welded joints		

9. GROUT:

Kind	From (ft.)	To (ft.)
Puddled Clay	0	4
Neat Cement	4	78½

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Hard Pan	0	3
Shell Rock	3	25
Shale	25	76
Limestone	76	87
Shale & Limestone	87	140
Limestone	140	174

Construction of the well was completed on: December 15, 1949

The well is terminated 6 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No ___

Was the well sealed watertight upon completion? Yes X No ___

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 5 GPM.

Depth from surface to water-level: 67 ft.

Water-level when pumping: 68 ft.

Water sample was sent to the state laboratory at: Green Bay, Wis. (City) on Dec. 15 1949

Signature Gleason Well Drilling Co. [signature] Registered Well Driller — 1169 Pine Street, Green Bay, Wis. Complete Mail Address

Please do not write in space below

Rec'd ___ No. ___

Ans'd ___

Interpretation ___

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ___

BN3945

DEC 3 0 1975 BN-1051-U

WELL CONSTRUCTOR'S REPORT
FORM 3300-15

DEC 1 1 1975

NOTE
WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

COUNTY: Brown | CHECK ONE: ☒ Town ☐ Village ☐ City | NAME: De Pere

2. LOCATION – ¼ Section: SE, SW, NE | Section: 32 | Township: 23N | Range: 21 E

OR – Grid or street no: in 1992 = 3701 | Street name: Hwy G, Dickinson

AND – If available subdivision name, lot & block no

3. OWNER AT TIME OF DRILLING: Dennis Panzier

ADDRESS: R.1 Ledgeview Rd.

POST OFFICE: De Pere, Wis.

4. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C.I.	SANITARY SEWER TILE	FLOOR DRAIN C.I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C.I.	WASTE WATER DRAIN TILE
12	–	–	–	–	–	11	–	–

CLEAR WATER DRAIN C.I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
–	–	40	–	–	75	–	–	–	–

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)
–

5. Well is intended to supply water for:
Home

6. DRILLHOLE

Dia (in.)	From (ft.)	To (ft.)	Dia (in.)	From (ft.)	To (ft.)
10	Surface	61	6	61	130

7. CASING, LINER, CURBING, AND SCREEN

Dia (in.)	Kind and Weight	From (ft.)	To (ft.)
6	New Seamless Pipe Reamed + Drifted – Welded joint wt 18.97 per ft. API 5A Jones + Laughlin	Surface	61

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Drilling mud	Surface	61

9. FORMATIONS

Kind	From (ft.)	To (ft.)
clay	Surface	50
boulders & clay	50	61
shalerock	61	130

10. TYPE OF DRILLING MACHINE USED

☐ Cable Tool ☐ Direct Rotary ☐ Reverse Rotary
☐ Rotary – air w/drilling mud ☒ Rotary – hammer with drilling mud & air ☐ Jetting with ☐ Air ☐ Water

Well construction completed on October 14 1975

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

11. MISCELLANEOUS DATA

Yield test: 4 Hrs. at 2 GPM

Depth from surface to normal water level 23 ft.

Depth to water level when pumping 23 ft.

Water sample sent to Madison laboratory on: December 2, 1975

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Leonard Willems — Registered Well Driller

COMPLETE MAIL ADDRESS: R.1 Greenleaf Wis.

Please do not write in space below

CC	GAS – 24 HRS	GAS – 48 HRS	CONFIRMED	REMARKS
RE				

BN3934

Exhibit 8

Exhibit 8-1
Waste Storage Facility Summary-Annual Storage Period
Leachate, Runoff Generation and Storage Capacity
Ledgeview Farm

Source	**Volume** (ft^3)	**Volume** (gallons)	**Comments**
Waste Generation			
Manure and Wastewater-Dairy	2,051,871	15,347,995	Exhibit 8-2
Manure and Wastewater-Steers	382,284	2,859,484	Exhibit 8-3
FSA Leachate-Heifer Farm	16,786	125,556	Exhibit 8-4
FSA Runoff-Heifer Farm	285,046	2,132,140	Exhibit 8-6
FSA Leachate-HQ*	1,683	12,589	Exhibit 8-9
FSA Runoff-HQ*	13,029	97,453	Exhibit 8-11
Y1 Heifer Farm Lot Runoff	84,856	634,723	Exhibit 8-8
Y1 HQ Farm Lot Runoff*	14,822	110,869	Exhibit 8-13
Sub-total	**2,850,376**	**21,320,809**	
Net Precipitation**			
WSF 1	111,303	832,546	
WSF 2	351,609	2,630,038	
Sub-total	**462,912**	**3,462,583**	
Total Waste Gnerated	**3,313,288**	**24,783,392**	
Waste Stored Above the MOL			
FSA-Heifer Farm 25 yr-24 hr	41,427	309,873	Exhibit 8-5
FSA-HQ 25 yr-24hr*	3,199	23,927	Exhibit 8-10
Y1 Hefier Farm Lot Runoff 25 yr-24 hr	13,263	99,204	Exhibit 8-7
Y1 HQ Farm Lot 25 yr-24 hr*	2,070	15,483	Exhibit 8-12
Total Waste Above MOL	59,958	448,487	
Waste Storage Facilities***			
WSF 1	669,334	5,006,618	
WSF 2	1,971,800	14,749,062	
Total Storage Volume	**2,641,134**	**19,755,680**	
Storage Capacity Evaluation			
Total Storage Volume	2,641,134	19,755,680	
Average Annual Storage Period	291	days	

*Allowance for future runoff collection system
**Net precipitation; 1.7 ft/year x WSF surface area
***MOL volume, determined by CADD

Exhibit 8-1A
MOL Calculations
Ledgeview Farm

Summary Table - WSF			
Elevation	ft3	Gallons	Description
720.00	2,296,306	17,176,366	Lowest Berm
719.00	2,096,174	15,679,378	MOS
	(71,256)	(532,992)	WSF
	(40,208)	(300,756)	FSA
	(12,910)	(96,568)	Y1: Heifer Yard
718.36	1,971,800	14,749,062	MOL

	WSF			
Elevation	**Area ft^2 (from AutoCAD)**	**Volume ft^3**	**Volume gallons**	
706.60	141,524	-	-	
707.00	143,233	56,951	425,997	
708.00	147,535	202,336	1,513,470	
709.00	151,880	352,043	2,633,283	
710.00	156,266	506,116	3,785,750	
711.00	160,695	664,597	4,971,185	
712.00	165,166	827,527	6,189,905	
713.00	169,679	994,950	7,442,224	
714.00	174,234	1,166,906	8,728,458	
715.00	178,831	1,343,439	10,048,922	
716.00	183,471	1,524,590	11,403,930	
717.00	188,152	1,710,401	12,793,799	
718.00	192,876	1,900,915	14,218,843	
718.36		1,971,800	14,749,062	MOL
719.00	197,642	2,096,174	15,679,378	
720.00	202,623	2,296,306	17,176,366	Bank Top

25yr-24hr Storm Event	Rain Depth inches	Area sq.ft.	Volume cu.ft.	Volume gallons
WSF (RCN 100)	4.22	202,623	71,256	532,992
FSA (RCN 98)	3.98	121,230	40,208	300,756
Y1: Heifer Yard (RCN 98)	3.98	38,925	12,910	96,568
Total			124,374	930,316

Ex 8-2 **WASTE STORAGE FACILITY DESIGN - 313 STANDARD** Ver. March 2015

CLIENT: Ledgeview Farm COUNTY: BROWN DATE: 12/5/17

DSN BY: JMR CHK BY: ____________ DATE: ________

COMMENTS Waste Generation - Dairy Projected

ANIMAL TYPE> 1 (1=DAIRY, 2=BEEF, 3=VEAL, 4=SWINE(finishing), 5=SWINE(farrowing), 6=POULTRY, 0=OTHER)

For Dairy: Rolling Herd Average 25,000 lbs/cow/yr Is it a stanchion barn? n (Y or N)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT.	DAILY OUTPUT, CU FT			DAYS OF	VOLUME	ANIMAL
KIND	NUMBER	PER HEAD	MANURE	BEDDING	TOTAL	STORAGE	REQUIRED	UNITS
Cows Milk	1125	1,400	2.53	0.3	3183.8	365	1,162,069	1,575
Cows Dry	230	1,400	2.00	0.3	529.0	365	193,085	322
Heifers	450	1,000	1.60	0.3	855.0	365	312,075	450
Heifers	270	600	0.96	0.3	340.2	365	124,173	162
Calves	270	350	0.56	0.4	245.7	365	89,681	95

WASTEWATER: 3500 GAL/DAY 467.9 CU FT/DAY 2,604 TOT. A.U.

TOTAL DAILY VOLUME: 5621.6 CU FT / DAY

15,347,995 GALLONS

Total Manure and Wastewater **2,051,871 CU FT**

Expected % solids in waste (Includes runoff and precip.) 9.9 %

Ex 8-3 **WASTE STORAGE FACILITY DESIGN - 313 STANDARD** Ver. March 2015

CLIENT: Ledgeview Farm COUNTY: BROWN DATE: 12/5/17
DSN BY: JMR CHK BY: ______________ DATE: ________
COMMENTS Waste Generation Steers - Projected

ANIMAL TYPE> 2 (1=DAIRY, 2=BEEF, 3=VEAL, 4=SWINE(finishing), 5=SWINE(farrowing), 6=POULTRY, 0=OTHER)

n

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT.	DAILY OUTPUT, CU FT			DAYS OF	VOLUME	ANIMAL
KIND	NUMBER	PER HEAD	MANURE	BEDDING	TOTAL	STORAGE	REQUIRED	UNITS
Beef	550	350	0.35	0.3	357.5	365	130,488	193
Beef	525	750	1.00	0.3	682.5	365	249,113	394

WASTEWATER: 55 GAL/DAY 7.4 CU FT/DAY 586 TOT. A.U.
TOTAL DAILY VOLUME: 1047.4 CU FT / DAY

2,859,483 GALLONS
Total Manure and Wastewater **382,284** **CU FT**
Expected % solids in waste (Includes runoff and precip.) 10.1 %

Exhibit 8-4

Leachate and First Flush Volume Calculation Worksheet
Ledgeview Farm - Heifer Farm

Prepared By: Roach
Date: 2017

Input Data	Dimensions Length	Width	Area ft^2
Existing FSA	varies	varies	93,253
			-
			-
			-

Total Area With Apron	93,253	ft^2
Total Area With Apron	2.1	Acres
Total Feed Storage Area Less Apron	93,253	ft^2

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (defalt)	60	lbs/ft^3
Silage Volume	33,571	tons

Calculated Annual Leachate Volume

Silage Stored	33,571	tons
Leachate Volume Generated per Ton	0.5	ft^3/ton
Annual Leachate Generated	16,786	ft^3
Annual Leachate Generated	125,556	gal
Leachate Generated Per Day (30 day period)	4,185	gal/day
Leachate Generated Per Day (30 day period)	560	ft^3/day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	93,253	ft^2
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft^3/event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft^3
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume	125,556	gal
Total Daily Leachate & First Flush Volume	4,185	gal
Volume to Use For Calculation	7,500	gal

Leachate Collection Tank Volume		
Leachate Volume	560	ft^3/day
1st Flush Volume	-	ft^3/event
Total Design Volume	**560**	ft^3
	20.72	

Summary		
Annual Leachate Generated	16,786	ft^3
Annual First Flush Runoff Generated	-	ft^3
Total Annual Volume to Store	16,786	ft^3
Total Annual Volume to Store	125,556	gal

Cell to Enter Data Into	
Cell has Formula and is Calculated	

Exhibit 8-5

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT:	Ledgeview	COUNTY:	BROWN	DATE:	11/27/2017
DSN BY:	Roach	CHK BY:		DATE:	
COMMENTS:	Feed Storage Area-Heifer Farm				

Drainage Area	2.78	Acres
Runoff Curve Number	98.00	
Time of Concentration	0.07	Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.19	0.54	0.70	0.81	0.95	1.07	1.14
Peak Discharge, qp	cfs	**3.97**	**11.1**	**14.4**	**16.8**	**19.6**	**22.0**	**23.4**

Total Runoff One Inch Rain	=	0.19 ac-ft	8,381 cubic feet	62,690 gallons
Total Runoff 25 year Event	=	0.95 ac-ft	41,427 cubic feet	309,873 gallons
Peak Flow	=	19.63 cfs	8,810 gpm	

Exhibit 8-6
Monthly Feed Storage Area Runoff-Heifer Farm
Ledgeview Farm

	FSA Runoff Volume*		**Runoff Volume to WSF**	
Month	**(ft^3)**	**(gallons)**	**(ft^3)**	**(gallons)**
Jan**	7,129	53,325	0	0
Feb**	6,463	48,343	0	0
March***	14,992	112,140	7,496	56,070
April	26,343	197,046	26,343	197,046
May	33,722	252,241	33,722	252,241
June	43,560	325,829	43,560	325,829
July	41,109	307,495	41,109	307,495
Aug	42,379	316,995	42,379	316,995
Sept	38,740	289,775	38,740	289,775
Oct	27,062	202,424	27,062	202,424
Nov	19,428	145,321	19,428	145,321
Dec***	10,413	77,889	5,207	38,945
	311,340	2,328,823	285,046	2,132,140
Winter Months (Nov-April)			58,474	437,382

*121,097 sq ft FSA, RCN 98

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 41,427 cu ft 309,873 gallons

Exhibit 8-7

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT:	Ledgeview	COUNTY:	BROWN	DATE:	5/24/2011
DSN BY:	Roach	CHK BY:		DATE:	
COMMENTS:	Y1 Animal Lot - Heifer Farm				

Drainage Area	0.89	Acres
Runoff Curve Number	98.00	
Time of Concentration	0.07	Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.06	0.17	0.22	0.26	0.30	0.34	0.36
Peak Discharge, qp	cfs	**1.27**	**3.5**	**4.6**	**5.4**	**6.3**	**7.0**	**7.5**

Total Runoff One Inch Rain	=	0.06 ac-ft	2,683 cubic feet	20,070 gallons
Total Runoff 25 year Event	=	0.30 ac-ft	13,263 cubic feet	99,204 gallons
Peak Flow	=	6.28 cfs	2,821 gpm	

Exhibit 8-8

Monthly Animal Lot Runoff-Heifer Farm

Ledgeview Dairy

	Y1 Runoff Volume*		Runoff Volume to WSF	
Month	**(ft^3)**	**(gallons)**	**(ft^3)**	**(gallons)**
Jan**	2,291	17,137	0	0
Feb**	2,077	15,536	0	0
March***	4,819	36,046	2,410	18,023
April	8,468	63,341	8,468	63,341
May	10,840	81,083	10,840	81,083
June	14,002	104,735	14,002	104,735
July	13,214	98,841	13,214	98,841
Aug	13,622	101,893	13,622	101,893
Sept	8,699	65,069	8,699	65,069
Oct	6,245	46,713	6,245	46,713
Nov	3,347	25,036	3,347	25,036
Dec***	8,019	59,982	4,010	29,991
	95,643	715,410	84,856	634,723
Winter Months (Nov-April)			18,234	136,390

*38,925 sq ft FSA, RCN 98

**Snow removal

***Fifty percent snow removal

25 year, 24 hour rainfall runoff	13,263	cu ft	99,204	gallons

Exhibit 8-9

Leachate and First Flush Volume Calculation Worksheet
Ledgeview - Headquarters Farm

Prepared By: Roach
Date: 2017

Input Data	Dimensions* Length	Width	Area ft^2
FSA Home Farm	170	55	9,350
			-
			-
			-
			-

Total Area With Apron	9,350	ft^2
Total Area With Apron	0.2	Acres
Total Feed Storage Area Less Apron	9,350	ft^2

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (defalt)	60	lbs/ft^3
Silage Volume	3,366	tons

Calculated Annual Leachate Volume

Silage Stored	3,366	tons
Leachate Volume Generated per Ton	0.5	ft^3/ton
Annual Leachate Generated	1,683	ft^3
Annual Leachate Generated	12,589	gal
Leachate Generated Per Day (30 day period)	420	gal/day
Leachate Generated Per Day (30 day period)	56	ft^3/day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	9,350	ft^2
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	$ft^3/event$
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft^3
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume	12,589	gal
Total Daily Leachate & First Flush Volume	420	gal
Volume to Use For Calculation		gal

Leachate Collection Tank Volume		
Leachate Volume	56	ft^3/day
1st Flush Volume	-	$ft^3/event$
Total Design Volume	**56**	**ft^3**
	2.08	

Summary		
Annual Leachate Generated	1,683	ft^3
Annual First Flush Runoff Generated	-	ft^3
Total Annual Volume to Store	1,683	ft^3
Total Annual Volume to Store	12,589	gal

Cell to Enter Data Into
Cell has Formula and is Calculated

Exhibit 8-10

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT:	Ledgeview Farm	COUNTY:	BROWN	DATE:	5/24/2011
DSN BY:	Roach	CHK BY:		DATE:	
COMMENTS:	Feed Storage Area Headquartrs Farm				

Drainage Area	0.21	Acres
Runoff Curve Number	98.00	
Time of Concentration	0.07	Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.01	0.04	0.05	0.06	0.07	0.08	0.09
Peak Discharge, qp	cfs	**0.31**	**0.9**	**1.1**	**1.3**	**1.5**	**1.7**	**1.8**

Total Runoff One Inch Rain	=	0.01 ac-ft	647 cubic feet	4,841 gallons
Total Runoff 25 year Event	=	0.07 ac-ft	3,199 cubic feet	23,927 gallons
Peak Flow	=		1.5 cfs	680 gpm

Exhibit 8-11
Monthly Feed Storage Area Runoff-Headquarters Farm
Ledgeview Dairy

	FSA Runoff Volume*		**Runoff Volume to WSF**	
Month	**(ft^3)**	**(gallons)**	**(ft^3)**	**(gallons)**
Jan**	834	6,238	0	0
Feb**	779	5,827	0	0
March***	1,340	10,023	670	5,012
April	1,792	13,404	1,792	13,404
May	1,434	10,726	1,434	10,726
June	1,348	10,083	1,348	10,083
July	982	7,345	982	7,345
Aug	1,286	9,619	1,286	9,619
Sept	1,683	12,589	1,683	12,589
Oct	1,675	12,529	1,675	12,529
Nov	1,621	12,125	1,621	12,125
Dec***	1,075	8,041	538	4,021
	15,849	118,551	13,029	97,453
Winter Months (Nov-April)			4,621	34,561

*9,350 sq ft FSA, RCN 98
**Snow removal
***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

Exhibit 8-12

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT:	Ledgeview Farm	COUNTY:	BROWN	DATE:	5/24/2011
DSN BY:	Roach	CHK BY:		DATE:	
COMMENTS:	Animal Lot Headquarters Farm				

Drainage Area	0.14	Acres
Runoff Curve Number	98.00	

Time of Concentration 0.07 Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
	ac-ft	0.01	0.03	0.03	0.04	0.05	0.05	0.06
Peak Discharge, qp	cfs	0.20	0.6	0.7	0.8	1.0	1.1	1.2

Total Runoff One Inch Rain	=	0.01 ac-ft	419 cubic feet	3,132 gallons
Total Runoff 25 year Event	=	0.05 ac-ft	2,070 cubic feet	15,483 gallons
Peak Flow	=		1.0 cfs	440 gpm

Exhibit 8-13
Monthly Animal Lot Runoff-Headquarters Farm
Ledgeview Dairy

	FSA Runoff Volume*		Runoff Volume to WSF	
Month	**(ft^3)**	**(gallons)**	**(ft^3)**	**(gallons)**
Jan**	356	2,663	0	0
Feb**	323	2,416	0	0
March***	749	5,603	375	2,801
April	1,316	9,844	1,316	9,844
May	1,685	12,604	1,685	12,604
June	2,176	16,276	2,176	16,276
July	2,054	15,364	2,054	15,364
Aug	2,117	15,835	2,117	15,835
Sept	1,935	14,474	1,935	14,474
Oct	971	7,263	971	7,263
Nov	520	3,890	520	3,890
Dec***	3,347	25,036	1,674	12,518
	17,549	131,267	14,822	110,869
Winter Months (Nov-April)			3,884	29,052

*6,050 sq ft FSA, RCN 98
**Snow removal
***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

Exhibit 9

Exhibit 9-1
Piping System
Detention Basin - WSF 2
Ledgeview Farm

Piping System						
Pipe Diameter	**12**		**18**		**20**	
Item	**Ke**	**Le**	**Ke**	**Le**	**Ke**	**Le**
entrance			0.5			
bends (6)			3			
Manholes (2)			1			
1064				1064		
exit			1			
Total	0	0	5.5	1,064	0	0

Piping System
Detention Basin - WSF 2

Diameter (in)	Flow (gpm)	Velocity (ft/sec)	s* (ft/ft)	HK e (ft)	HL e (ft)	Static Min (ft)	Static Max (ft)	Discharge Pressure (ft)	Discharge Pressure (psi)	TDH Min (ft)	TDH Max (ft)	TDH Min (psi)	TDH Max (psi)
12	3000	8.5	0.0225	0.0	0.0								
18	3000	3.8	0.0031	1.2	3.3								
20	3000	3.1	0.0019	0.0	0.0								
				1.2	3.3	-9.6	-9.6	0	0	-5	-5	-2	-2
12	4000	11.4	0.0384	0.0	0.0								
18	4000	5.0	0.0053	2.2	5.7								
20	4000	4.1	0.0032	0.0	0.0								
				2.2	5.7	-9.6	-9.6	0	0	-2	-2	-1	-1
12	4450	12.6	0.0467	0.0	0.0								
18	4450	5.6	0.0065	2.7	6.9								
20	4450	4.5	0.0039	0.0	0.0								
				2.7	6.9	-9.6	-9.6	0	0	0	0	0	0
12	5000	14.2	0.0580	0.0	0.0								
18	5000	6.3	0.0080	3.4	8.6								
20	5000	5.1	0.0048	0.0	0.0								
				3.4	8.6	-9.6	-9.6	0	0	2	2	1	1

*Friction loss using Hazen-Williams, C = 120

Exhibit 9-2
Piping System
Collection Basin - WSF 2
Ledgeview Farm

Piping System

Pipe Diameter	**12**		**15**		**20**	
Item	**Ke**	**Le**	**Ke**	**Le**	**Ke**	**Le**
entrance			0.5			
300				300		
exit			1			
Total	0	0	1.5	300	0	0

Piping System
Collection Basin - WSF 2

Diameter (in)	Flow (gpm)	Velocity (ft/sec)	s* (ft/ft)	HK e (ft)	HL e (ft)	Static Min (ft)	Static Max (ft)	Discharge Pressure (ft)	Discharge Pressure (psi)	TDH Min (ft)	TDH Max (ft)	TDH Min (psi)	TDH Max (psi)
12	1500	4.3	0.0062	0.0	0.0								
15	1500	2.7	0.0021	0.2	0.6								
20	1500	1.5	0.0005	0.0	0.0								
				0.2	0.6	-0.6	-7.5	0	0	0	-7	0	-3
12	2000	5.7	0.0106	0.0	0.0								
15	2000	3.6	0.0036	0.3	1.1								
20	2000	2.0	0.0009	0.0	0.0								
				0.3	1.1	-0.6	-7.5	0	0	1	-6	0	-3
12	2821	8.0	0.0201	0.0	0.0								
15	2821	5.1	0.0068	0.6	2.0								
20	2821	2.9	0.0017	0.0	0.0								
				0.6	2.0	-0.6	-7.5	0	0	2	-5	1	-2
12	3500	9.9	0.0300	0.0	0.0								
15	3500	6.4	0.0101	0.9	3.0								
20	3500	3.6	0.0025	0.0	0.0								
				0.9	3.0	-0.6	-7.5	0	0	3	-4	1	-2

*Friction loss using Hazen-Williams, C = 120

Exhibit 10

Exhibit 10-1
Detention Basin Volume
Client: Ledgeview Farm

Detention Basin

Elevation	Acres	Area ft^2 (from AutoCAD)	Volume ft^3	Volume gallons	ac-ft	18" Pipe (CFS)
724.50	0.0073462	320	-	-	0.0000	0.00
725.00	0.0118672	517	209	1,565	0.0048	8.49
726.00	0.0228008	993	964	7,213	0.0221	9.14
727.00	0.0441052	1,921	2,422	18,113	0.0556	9.76
728.00	0.1476749	6,433	6,598	49,357	0.1515	10.35

Exhibit 10-2 HEC-HMS Input Variables Feed F
Client: Ledgeview Farm
Date: 11/28/2017
By: TJS

Existing Feed Pad	**FSA Existing & Proposed**
Subbasin	
Area (mi^2)	0.004348528
Loss Method	SCS Curve Number
Transform Method	Kinematic Wave
Plane 1	
Length (feet)	350
Slope (FT/FT)	0.007
Roughness	0.015
Area (%)	100
Routing Steps	5
Loss 1	
Curve Number	98
Impervious (%)	0
Plane 2	
Length (feet)	na
Slope (FT/FT)	na
Roughness	na
Area (%)	na
Routing Steps	na
Loss 2	
Curve Number	na
Impervious (%)	na
Channel	
Route Upstream	No
Routing Method	Kinematic Wave
Length (feet)	200
Slope (FT/FT)	0.002
Subreaches	5
Shape	Triangle
Manning's n	0.015
Slope (xH:1V)	20

Exhibit 10-2: Equalization Basin, HEC-HMS Results

Client: Ledgeview Farm, LLC
Date: 11/29/2017
By: TJS

Summary Results for Reservoir "detention basin"

Project: HMS Simulation Run: 25yr-24hr
Reservoir: detention basin

Start of Run:	01Jan2017, 00:00	Basin Model:	2017 FSA
End of Run:	02Jan2017, 00:01	Meteorologic Model:	25yr-24hr Storm
Compute Time:	30Nov2017, 15:10:53	Control Specifications:	24hr

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Inflow:	16.3 (CFS)	Date/Time of Peak Inflow:	01Jan2017, 11:55
Peak Discharge:	9.9 (CFS)	Date/Time of Peak Discharge:	01Jan2017, 12:01
Inflow Volume:	4.00 (IN)	Peak Storage:	0.077 (AC-FT)
Discharge Volume:	4.00 (IN)	Peak Elevation:	727.22 (FT)

Figure 1. HEC-HMS Results, Equalization Basin, Volume Units - Inches

Summary Results for Reservoir "detention basin"

Project: HMS Simulation Run: 25yr-24hr
Reservoir: detention basin

Start of Run:	01Jan2017, 00:00	Basin Model:	2017 FSA
End of Run:	02Jan2017, 00:01	Meteorologic Model:	25yr-24hr Storm
Compute Time:	30Nov2017, 15:10:53	Control Specifications:	24hr

Volume Units: ( ) IN (•) AC-FT

Computed Results

Peak Inflow:	16.3 (CFS)	Date/Time of Peak Inflow:	01Jan2017, 11:55
Peak Discharge:	9.9 (CFS)	Date/Time of Peak Discharge:	01Jan2017, 12:01
Inflow Volume:	0.929 (AC-FT)	Peak Storage:	0.077 (AC-FT)
Discharge Volume:	0.929 (AC-FT)	Peak Elevation:	727.22 (FT)

Figure 2. HEC-HMS Results, Equalization Basin, Volume Units – Acre-Feet

Exhibit 10-2: Feed Pad Runoff, HEC-HMS Results

Client: Ledgeview Farm, LLC
Date: 11/29/2017
By: TJS

Summary Results for Subbasin "FSA"

Project: HMS   Simulation Run: 25yr-24hr
Subbasin: FSA

Start of Run:	01Jan2017, 00:00	Basin Model:	2017 FSA
End of Run:	02Jan2017, 00:01	Meteorologic Model:	25yr-24hr Storm
Compute Time:	28Nov2017, 13:53:07	Control Specifications:	24hr

Volume Units: (●) IN ( ) AC-FT

Computed Results

Peak Discharge:	16.3 (CFS)	Date/Time of Peak Discharge:	01Jan2017, 11:55
Precipitation Volume:	4.22 (IN)	Direct Runoff Volume:	4.00 (IN)
Loss Volume:	0.19 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	4.03 (IN)	Discharge Volume:	4.00 (IN)

Figure 1. HEC-HMS Results, Peak Discharge from Feed Pad, Volume Units – Inches

Summary Results for Subbasin "FSA"

Project: HMS   Simulation Run: 25yr-24hr
Subbasin: FSA

Start of Run:	01Jan2017, 00:00	Basin Model:	2017 FSA
End of Run:	02Jan2017, 00:01	Meteorologic Model:	25yr-24hr Storm
Compute Time:	28Nov2017, 13:53:07	Control Specifications:	24hr

Volume Units: ( ) IN (●) AC-FT

Computed Results

Peak Discharge:	16.3 (CFS)	Date/Time of Peak Discharge:	01Jan2017, 11:55
Precipitation Volume:	0.979 (AC-FT)	Direct Runoff Volume:	0.929 (AC-FT)
Loss Volume:	0.045 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.934 (AC-FT)	Discharge Volume:	0.929 (AC-FT)

Figure 2. HEC-HMS Results, Peak Discharges, Volume Units – acre-feet

Exhibit 11

Emergency Response Contacts Summary

Farm Name: Ledgeview Dairy

Owner/Operator: Jason Pansier Phone: (920) 655-3875 Cell:_____________

Owner/Operator: _____________ Phone: __________ Cell:_____________

Farm Address: 3875 Dickinson Road, DePere, WI 54115

Farm Location: T23N R21E Section 29 & 33 County: Brown

Driving Directions or Emergency Coordinates: From DePere travel East on Chicago Street/Dickinson Road in Ledgeview. Farm will be on left in approx. 4.7 miles.

In Case of Injury, Fire, or Rescue Emergency, Immediately Implement the Following:

1. Assess the condition of the victim, extent of the emergency (fire, rescue) and call for help.
2. Stabilize the victim, use on-site rescue equipment, evacuate buildings, or begin fire suppression as necessary.
3. Brief emergency responders upon arrival on current status of situation.

In Case of a Spill, Leak, or Failure at the Storage Facility, During Transport, or Land Application, Immediately Implement the Following:

1. Stop the source of the leak or spill.
2. Make appropriate calls for people, equipment, and materials. See contacts below.
   - Notify DNR spill hotline: 1-800-943-0003 (Spill reporting is mandatory by state law.)
   - Call sheriff's office if spilled on public roads or its right-of-ways for traffic control.
   - Clear the road and roadside of spilled material immediately.
3. Contain the spill
4. Prevent spillage from entering surface waters, tile intakes, or waterways.
5. Begin cleanup and land apply on approved cropland at appropriate rates.
6. Document your actions.

Emergency Contacts	Contact Person (or Company)	Phone Number
Fire/Rescue	Ledgeview Fire Department	911 or 920-336-3360
County Sheriff	Brown County Sheriff's Department	911 or 920-448-4200
Farm Emergency Coordinator	Jason Pansier	920-655-3875
DNR Hazardous Spill Line		1-800-943-0003
DNR Permit Contact/Warden	Heidi Schmitt-Marquez	
Veterinarian	Ken Foust	920-336-7233
Equipment/Supplies	**Contact Person (or Company)**	**Phone Number**
On-Farm Equipment Operator	Jason Pansier	920-655-3875
Excavation Contractor	Jason Pansier	920-655-3875
Manure Hauler	Jason Pansier	920-655-3875
Septic Tank Pumping Truck	Kiekhaefer Septic Service	920-864-7025
Mortality Disposal Contractor	Circle R Mink Ranch	920-434-0218
Local Government Contacts	**Contact Person**	**Phone Number**
Town Chairman Town of Ledgeview	Phil Danen	920-336-3360
LCD County Conservationist	Dave Wettencamp	920-391-4639
NRCS District Conservationist	John Malvitz	920-884-3910

Be prepared to provide the following information:

- Your name and contact information
- Farm address, location and other pertinent identification information.
- Nature of emergency (employee injury, fire, discharge of manure or hazardous materials).
- Emergency equipment and personnel that are needed.
- Potential for manure or hazardous materials to reach surface waters or major field drains.
- Current status of containment efforts.
- Location of hazardous/flammable materials, and fire suppression equipment
- Location of emergency cutoff switches or valves.

Exhibit 12

Exhibit 12 – List of Design Standards Referenced

NRCS Practice Standards

- NRCS Practice Standard 313 – Waste Storage Facility (10/17)
- NRCS Practice Standard 522 – Pond Sealing or Lining – Concrete (10/17)
- NRCS Practice Standard 634 – Waste Transfer (1/14)

Wisconsin Construction Specifications

- Wisconsin Construction Specification 4 – Concrete (10/17)
- Wisconsin Construction Specification 004 Embedded or Expansive Waterstop (10/17)
- Wisconsin Construction Specification 204 – Earthfill for Waste Storage Facilities (10/12)
- Wisconsin Construction Specification 300 – Clay Liner (3/16)
- Wisconsin Construction Specification -- 634 Waste Transfer Pipe (8/16)

Wisconsin Administrative Code

- NR 213 Lining of Industrial Lagoons and Design of Storage Structures

Exhibit 13

Authority of the Inspector - Memorandum of Understanding

This Authority of the Inspector - Memorandum of Understanding has been developed so that before the project begins the contractors performing work on the job site understand the role of the inspector as well as the authority level that the inspector has as it relates to the Areas to be Inspected in the Construction Documents.

The Inspector's role is to act as a third party and provide independent inspection and verification that the Areas to be Inspected have been constructed as they were designed in the construction plans.

The owner(s) of the project have asked the inspector to act on their behalf as it relates to ensuring that the Inspectable Components identified in the Areas to be Inspected are installed and constructed as they are shown and designed on the construction plans.

The Inspector will use all reasonable care in arriving at alternative solutions that meet the intent on the design plans when situations develop that make following the construction plans difficult or add additional cost to construction.

The contractor and owner(s) agree that the decision of the Inspector is final as it relates to certification of the Areas to be Inspected.

The Inspector will be asked to sign a document that certifies that, to the best of their knowledge and professional judgment, the Inspectable Components Listed in Section A have been constructed as designed in the construction plans.

Owner	Date	Contractor	Date

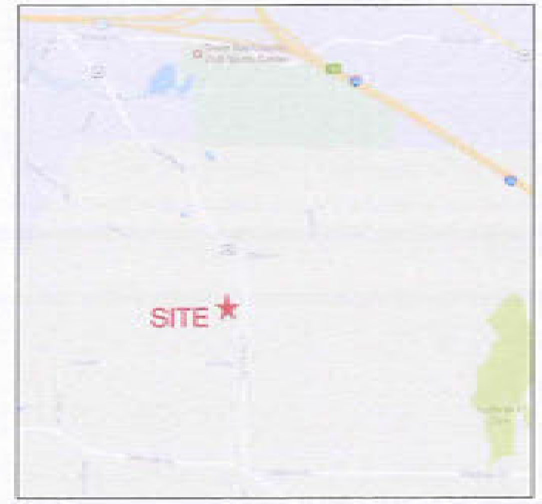
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS

3688 LIME KILN ROAD
DE PERE, WI
BROWN COUNTY

OFFICE USE ONLY

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS

NTS



SITE VICINITY MAP

LEGEND

- 500 499 EXISTING CONTOURS
- 500 499 PROPOSED CONTOURS
- PROPOSED CONCRETE
- EXISTING CONCRETE
- PROPOSED ASPHALT
- COMPACTED FILL
- PROPOSED GRAVEL DRIVE
- IN-PLACE EARTH LINER
- COMPACTED CLAY LINER
- EXISTING BUILDING
- PROPOSED BUILDING
- PRESSURE TRANSFER PIPE
- GRAVITY TRANSFER PIPE
- TILE LINE
- SILT FENCE
- BALE DIVERSION
- ELECTRIC LINE
- WL WETLAND (DELINEATED)
- DITCH CHECK
- TEST PIT
- WELL
- BENCH MARK

PLAN TABLE OF CONTENTS

SHEET #	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	WASTE STORAGE FACILITY PLAN
4	WASTE STORAGE FACILITY PROFILES
	1: PLAN – WATERSTOP PLACEMENT
	2: PROFILE – WASTE STORAGE FACILITY
	3: PROFILE – WASTE STORAGE FACILITY
	4: 5" CONCRETE DETAIL
	5: 7" CONCRETE DETAIL
5	DETENTION BASIN PLAN AND PROFILES
	1: PLAN – DETENTION BASIN
	2: PROFILE – DETENTION BASIN
	3: PROFILE – DETENTION BASIN
	4: PROFILE – DETENTION BASIN
	5: 5" CONCRETE DETAIL
	6: 7" CONCRETE DETAIL
	7: CONCRETE CONNECTION DETAIL
6	WASTE TRANSFER PIPE #1 PLAN AND PROFILE
	1: PLAN – WASTE TRANSFER PIPE #1
	2: PROFILE – WASTE TRANSFER PIPE #1
	3: ALTERNATE PIPE MATERIALS
	4: MANHOLE @ STA. 11+00 DETAIL
	5: PIPE TRENCH DETAIL
7	WASTE TRANSFER PIPE #2 PLAN AND PROFILE
	1: PLAN – WASTE TRANSFER PIPE #2
	2: PROFILE – WASTE TRANSFER PIPE #2
	3: LINER PENETRATION DETAIL
	4: TANK PENETRATION DETAIL
	5: DOUBLE CLEANOUT DETAIL
	6: 4-FT MANHOLE DETAIL
8	CONSTRUCTION DETAILS
	1: WATERSTOP JOINT DETAIL
	2: WATERSTOP INSTALLATION DETAIL
	3: DEPTH GAUGE DETAIL
	4: FENCE DETAIL
	5: PIPE PENETRATION DETAIL

NO REPRESENTATION IS MADE BY ROACH & ASSOCIATES AS TO THE EXISTENCE OR NONEXISTENCE OF UNDERGROUND HAZARDS. PRIOR TO THE START OF CONSTRUCTION THE OWNERS OF UTILITIES MUST BE NOTIFIED OF THE PENDING CONSTRUCTION. CONTRACTOR WILL BE LIABLE FOR DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES. (CALL DIGGERS HOTLINE)

WISCONSIN
CLARK J FOX
E-45021
LITTLE CHUTE WIS.
PROFESSIONAL ENGINEER

Clark Fox
11/2/18

ENGINEER:

ROACH & ASSOCIATES, LLC
856 N. MAIN ST., SEYMOUR, WI 54165
PHONE: 920-833-6340

To the best of my professional knowledge, judgment and belief, this design and these construction plans 2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS, meet the criteria, standards and specifications outlined in USDA Natural Resources Conservation Service Field Office Technical Guide, Section IV, Standards 313(10/17), 522(10/12), and 634(1/14), Spec.'s 4(10/12), 004(10/17), 204(10/12) and 634(8/16)

Clark Fox

Date 11/2/18

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	WTS	MOVED WSF 40FT WEST	*	*	*
DRAWN BY:	TJS	11-02-18	WTS	ROTATED WSF	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

TITLE SHEET

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 1

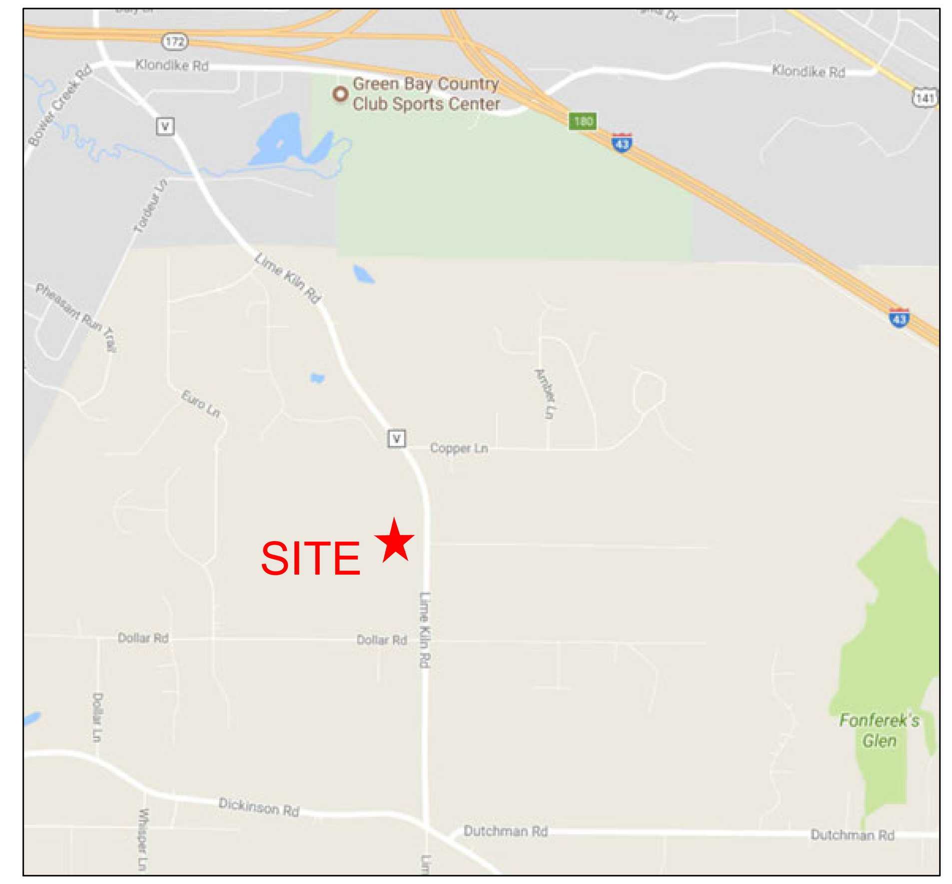
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS

3688 LIME KILN ROAD
DE PERE, WI
BROWN COUNTY

OFFICE USE ONLY

LEDGEVIEW FARM, LLC
2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS

NTS



SITE VICINITY MAP

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED CONCRETE
- EXISTING CONCRETE
- PROPOSED ASPHALT
- COMPACTED FILL
- PROPOSED GRAVEL DRIVE
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To the best of my professional knowledge, judgment and belief, this design and these construction plans 2017 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS, meet the criteria, standards and specifications outlined in USDA Natural Resources Conservation Service Field Office Technical Guide, Section IV, Standards 313(10/17), 522(10/12), and 634(1/14), Spec.'s 4(10/12), 004(10/17), 204(10/12) and 634(8/16)

Date

ENGINEER:

ROACH & ASSOCIATES, LLC
856 N. MAIN ST., SEYMOUR, WI 54165
PHONE: 920-833-6340

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	•	•	•
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	•	•	•
CHECKED BY:	JMR	•	•	•	•	•	•

LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

TITLE SHEET

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 1

WSF: CUT & FILL BALANCE (CU.YD.)		
FILL		−28,851.7
TOPSOIL		−11,446.4
CUT	28,843.6	
7" CONCRETE	3,111.3	
5" CONCRETE	969.2	
SUBTOTALS	32,924.1	−40,298.1
TOTAL−SHORTFALL	7,374.0	

DB: CUT & FILL BALANCE (CU.YD.)		
FILL		−112.5
TOPSOIL		−376.4
CUT	173.7	
7" CONCRETE	79.0	
5" CONCRETE	31.0	
SUBTOTALS	283.7	−488.9
TOTAL−SHORT FALL		−205.2

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06−01−18	MTS	MOVED WSF 40FT WEST	*	*	*
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CHECKED BY:	JMR	*	*	*	*	*	*

LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE 1"=60'

SITE PLAN

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920−833−6340 Fax: 920−833−9851

SHEET NO. 2

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*	*
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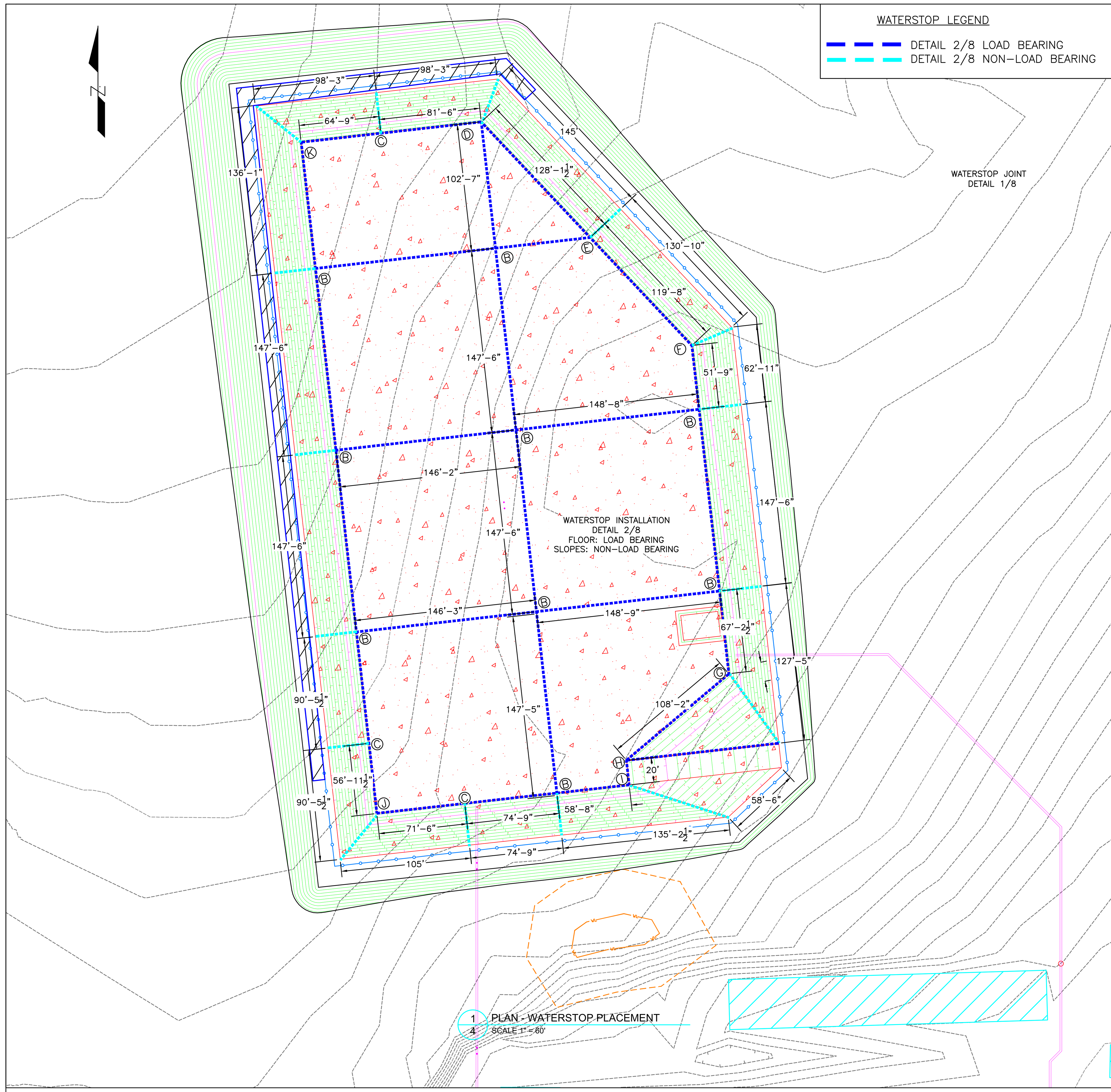
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE
1"=30'

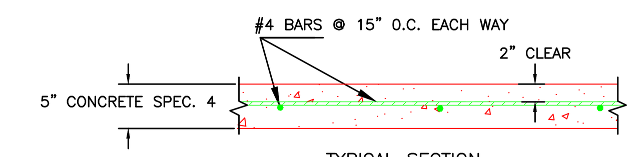
WASTE STORAGE FACILITY PLAN

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
3



1 / 4 PLAN - WATERSTOP PLACEMENT
SCALE 1" = 60'



TYPICAL SECTION

GENERAL CONSTRUCTION NOTES:

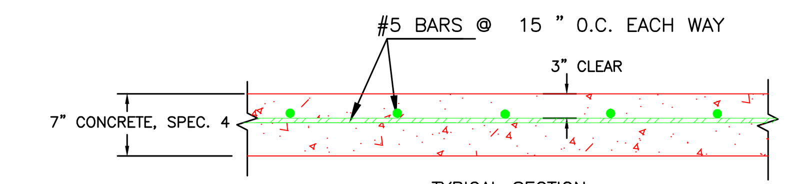
1. CONCRETE IS TO BE MIXED AND PLACED ACCORDING TO SPEC. 4 AND SHALL BE CONSOLIDATED AS NECESSARY TO INSURE DENSE CONCRETE
2. JOINTS, IF USED, ARE TO BE SPACED AS SPECIFIED ELSEWHERE
3. WHITE CURING COMPOUND SHALL BE APPLIED TO CONCRETE AS SOON AS THE CONCRETE CAN BE WALKED ON.
4. SITE PREPARATION: REMOVE ALL ORGANIC AND UNCOMPACTED MATERIAL BEFORE PLACING SUBGRADE.
5. SUB-LINER IS TO BE CLEAN, COMPACTED, MINERAL SOILS WITH GREATER THAN OR EQUAL TO 40% FINES PASSING A #200 SIEVE, AND A PI GREATER THAN OR EQUAL TO 12. DAMPEN THE SUB-LINER BEFORE THE CONCRETE IS POURED.
6. METAL CHAIRS, METAL HANGERS, METAL SPACERS, CONCRETE SPACERS OR PLASTIC CHAIRS SHALL BE USED TO SUPPORT THE REINFORCEMENT. ANY METAL SUPPORTING DEVICES SHALL HAVE A PROTECTIVE COATING, BARRIER, OR FINISH BETWEEN THE REINFORCING STEEL AND THE SUPPORT AND/OR BETWEEN THE GROUND AND THE SUPPORT, IF THE SUPPORT IS NOT FULLY ENCASED IN CONCRETE. THE COATING, BARRIER, OR FINISH CAN BE HOT DIP GALVANIZING, EPOXY, PLASTIC, OR STAINLESS STEEL. CONCRETE CHAIRS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH EQUAL TO, OR GREATER THAN, THAT OF THE CONCRETE BEING PLACED.

7 #4 LAP = 16"

QUANTITIES: LOCATION OF SLAB – WSF SIDE SLOPES

SLAB AREA –	62,805	SQ. FT.
REBARS: (#4 @ 15" O.C., EACH WAY, 1.71FT/FT2)	107,397	LIN.FT.
CONCRETE SLAB (5" SLAB – 1.55 CU. YD. PER 100 SQ. FT.)	970	CU.YD.
WHITE CURING COMPOUND SQ.FT. (ASTM C-309, TYPE 2)	62,805	SQ. FT.

4 / 4 5" CONCRETE DETAIL
NTS



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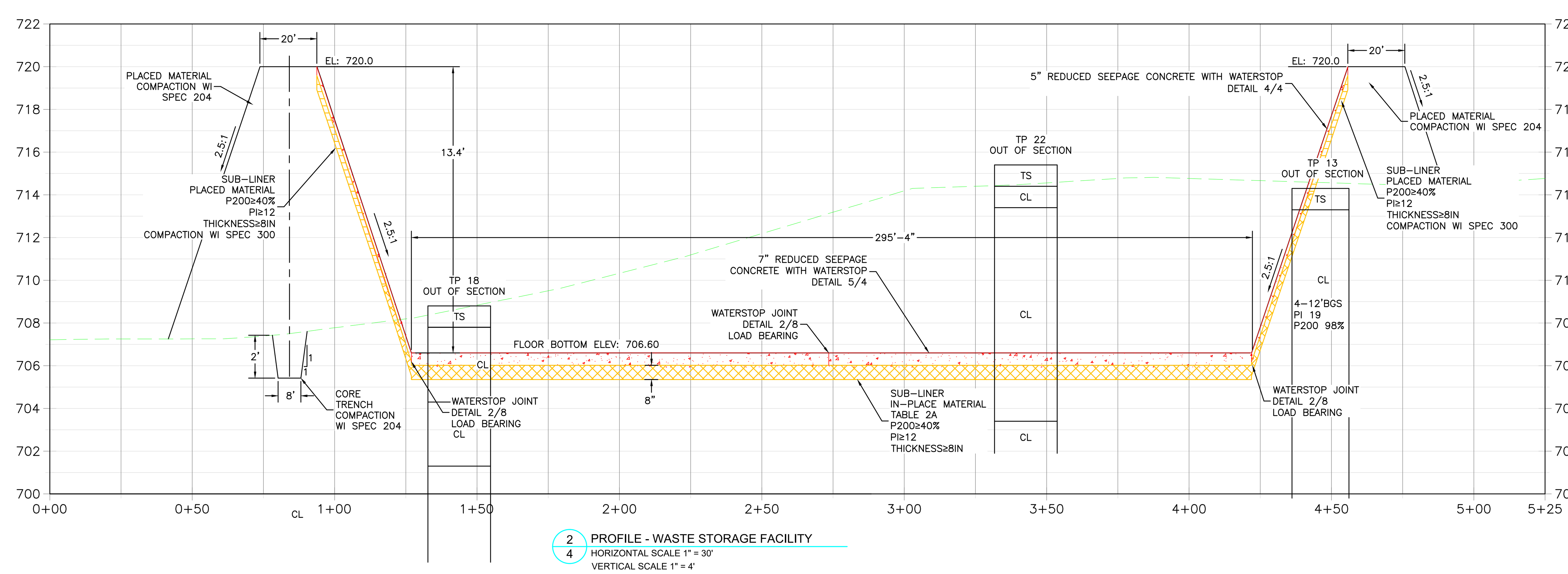
7. #5 LAP = 20"

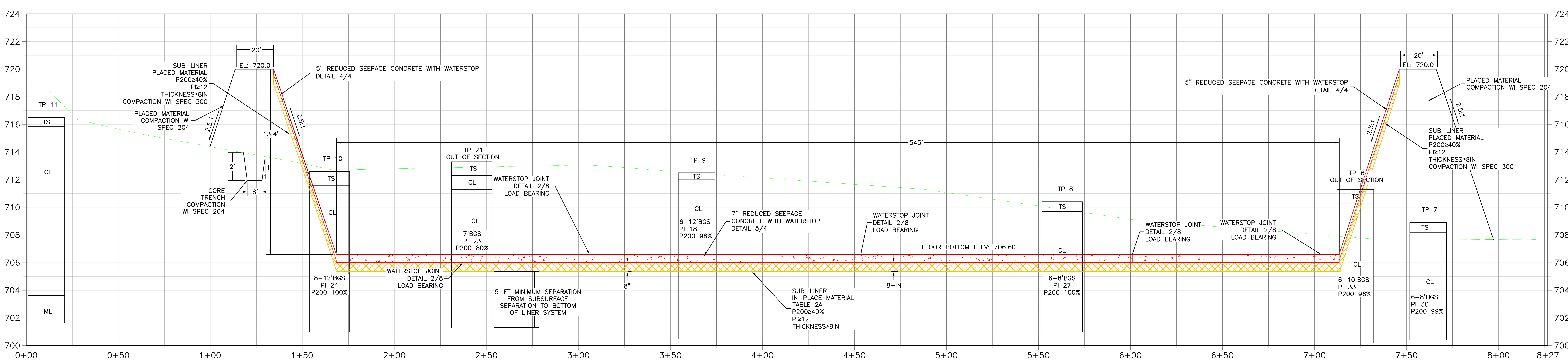
QUANTITIES: LOCATION OF SLAB – WSF RAMP, WSF FLOOR AND TRANSFER APRONS

SLAB AREA –	144,008	SQ. FT.
REBARS: (#5 @ 15" O.C., EACH WAY, 1.74 FT/FT2	250,574	LIN.FT.
CONCRETE SLAB (7" SLAB– 2.16 CU. YD. PER 100 SQ. FT.)	3,112	CU.YD.
WHITE CURING COMPOUND SQ.FT. (ASTM C-309, TYPE 2)	144,008	SQ. FT.

5 / 4 7" CONCRETE DETAIL
NTS



2 / 4 PROFILE - WASTE STORAGE FACILITY
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 4'



3 / 4 PROFILE - WASTE STORAGE FACILITY
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 4'

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*	*
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

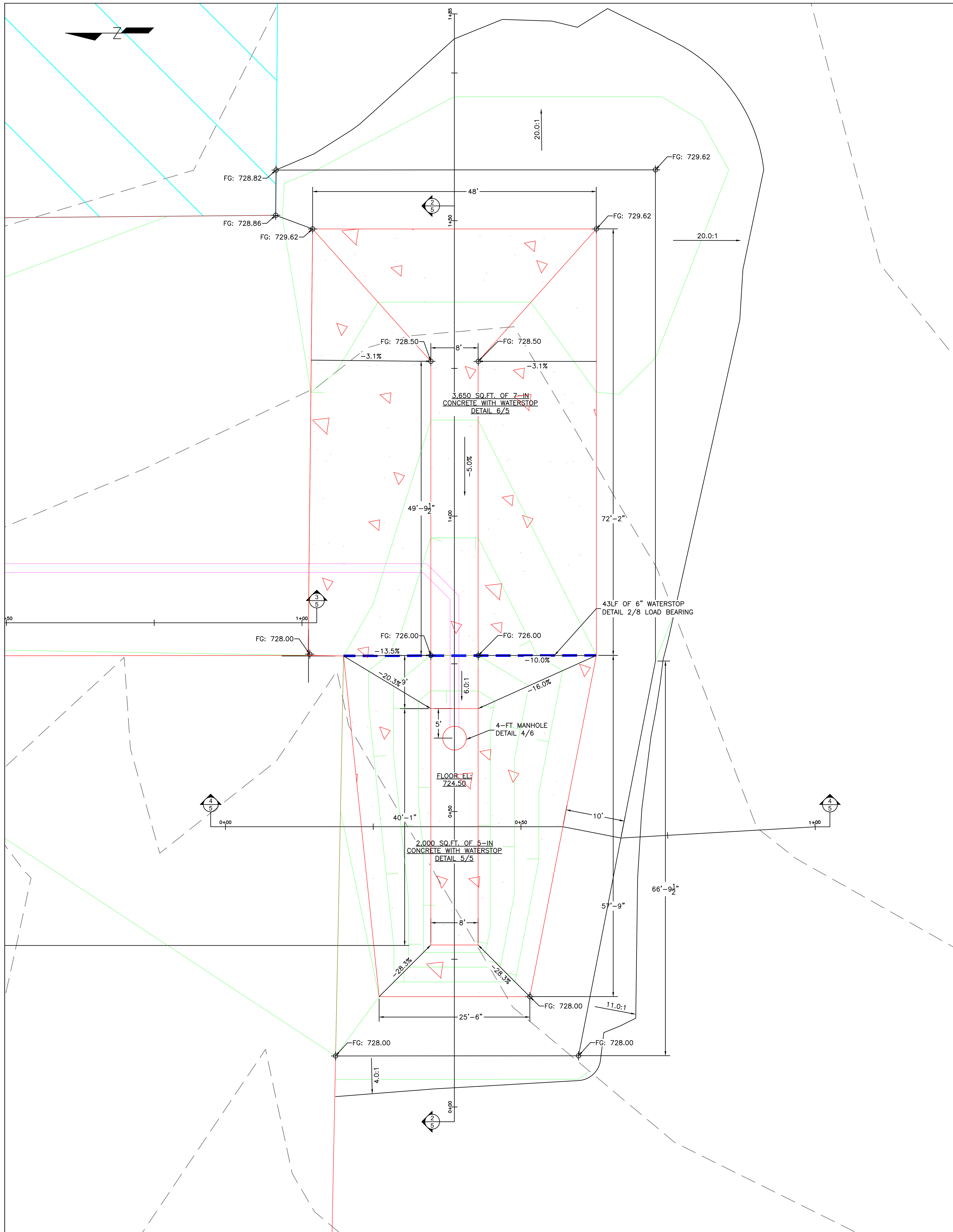
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

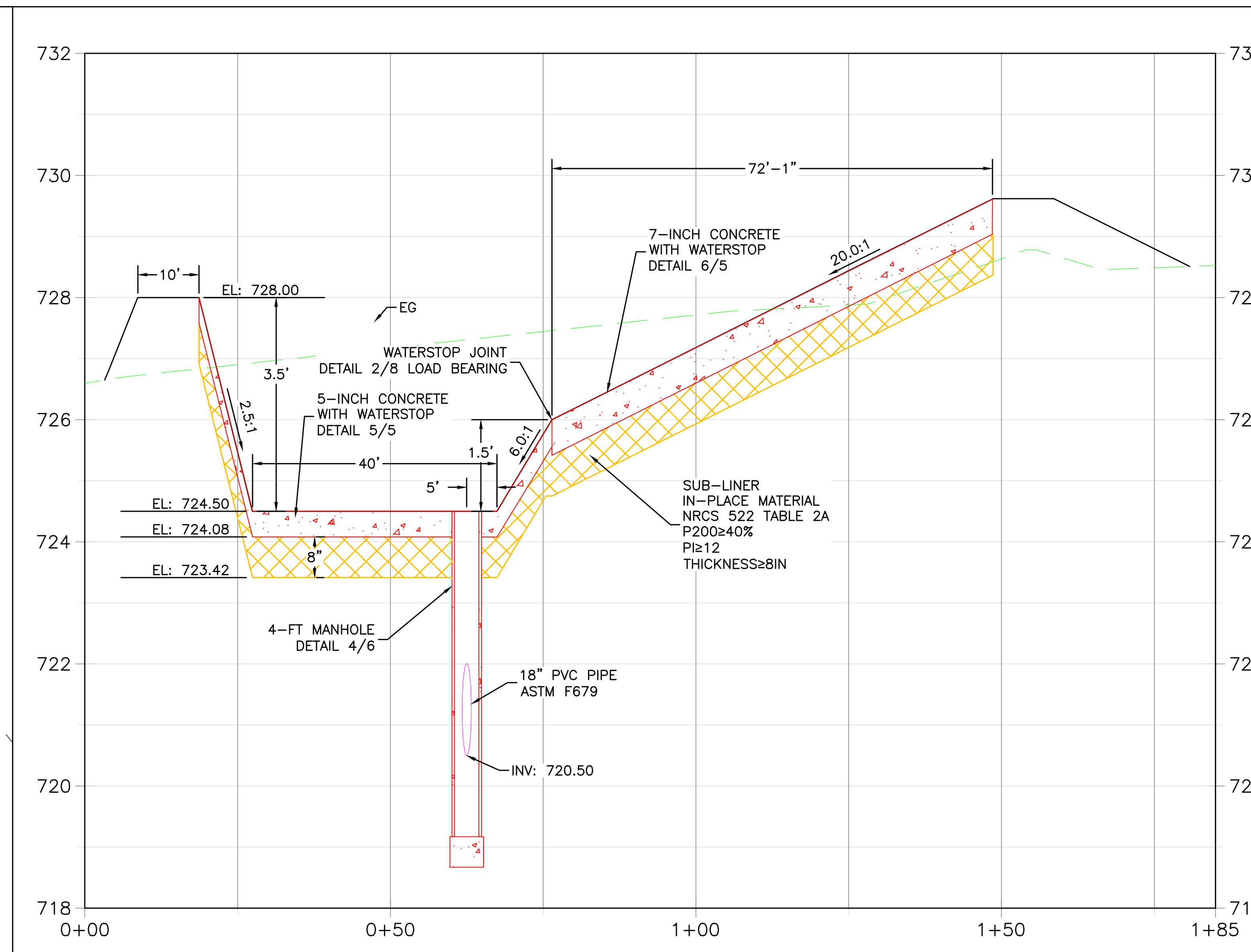
WASTE STORAGE FACILITY PROFILES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

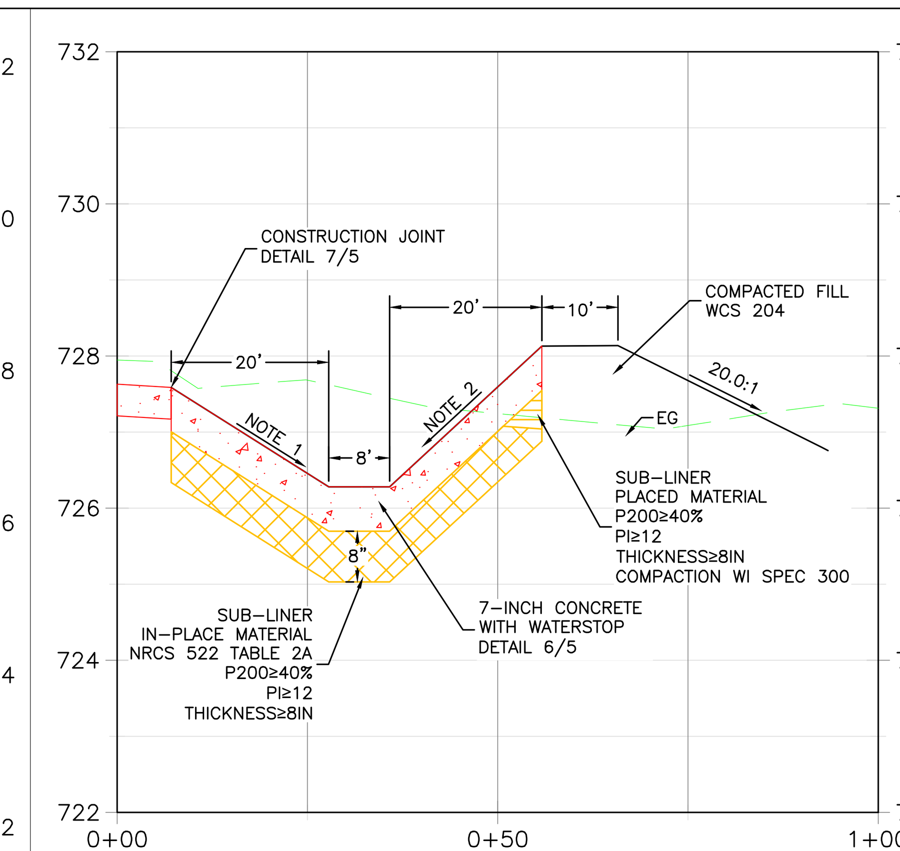
SHEET NO. 4



1 / 5 PLAN - DETENTION BASIN
SCALE 1" = 10'

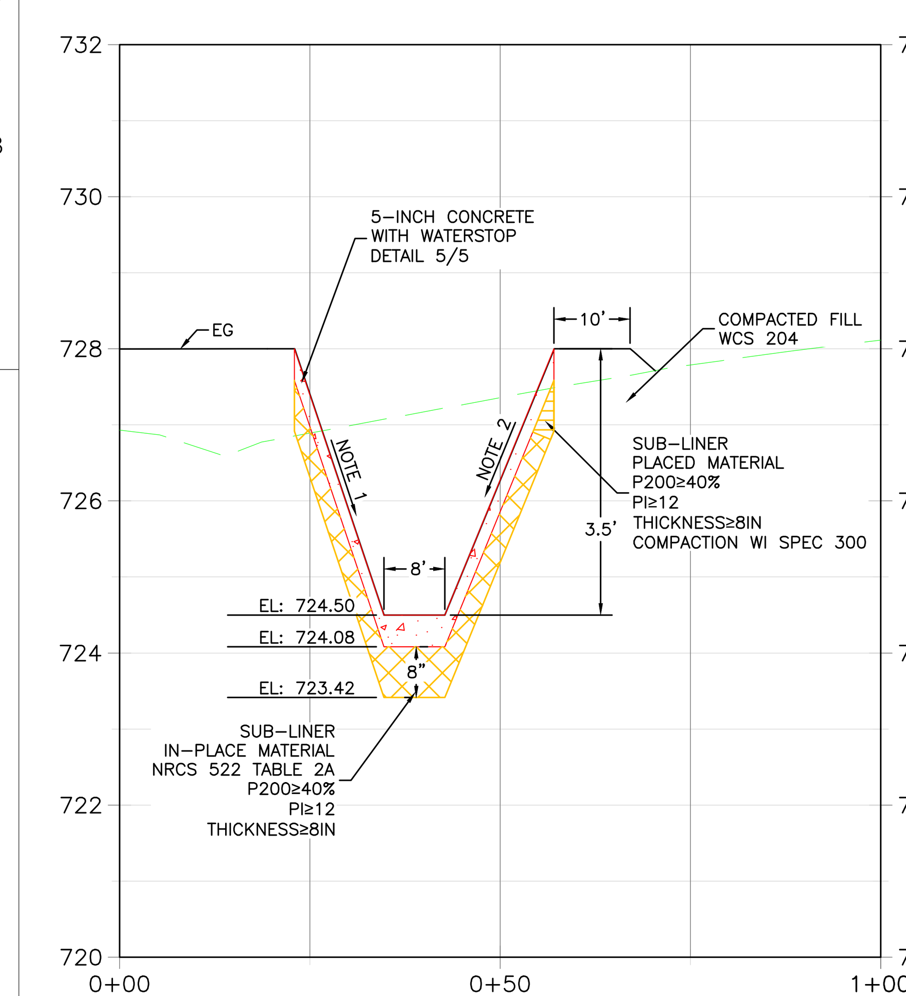


2 / 5 PROFILE - DETENTION BASIN
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



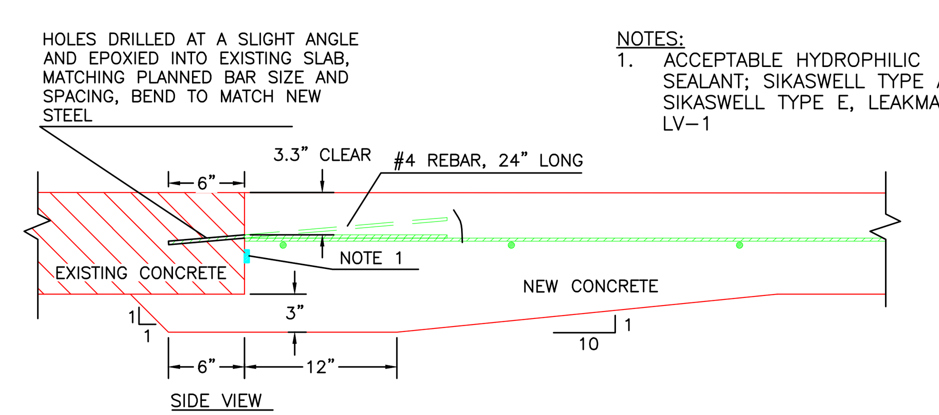
NOTES:
1) SLOPE VARIES BETWEEN HORIZONTAL AND 10%
2) SLOPE VARIES BETWEEN 3.4% AND 10%

3 / 5 PROFILE - DETENTION BASIN
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



NOTES:
1) SLOPE VARIES BETWEEN 20% AND 28%
2) SLOPE VARIES BETWEEN 16% AND 28%

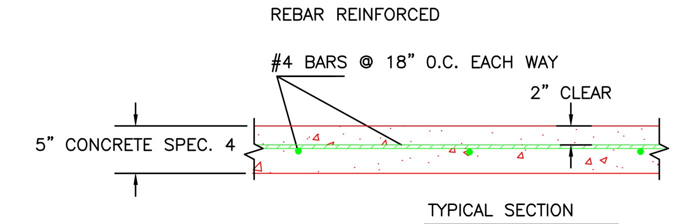
4 / 5 PROFILE - DETENTION BASIN
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



NOTES:
1. ACCEPTABLE HYDROPHILIC SEALANT; SIKASWELL TYPE A, SIKASWELL TYPE E, LEAKMASTER LV-1

7 / 5 CONCRETE CONNECTION DETAIL
NTS

REBAR REINFORCED



GENERAL CONSTRUCTION NOTES:

1. CONCRETE IS TO BE MIXED AND PLACED ACCORDING TO SPEC. 4 AND SHALL BE CONSOLIDATED AS NECESSARY TO INSURE DENSE CONCRETE
2. JOINTS, IF USED, ARE TO BE SPACED AS SPECIFIED ELSEWHERE
3. WHITE CURING COMPOUND SHALL BE APPLIED TO CONCRETE AS SOON AS THE CONCRETE CAN BE WALKED ON.
4. SITE PREPARATION: REMOVE ALL ORGANIC AND UNCOMPACTED MATERIAL BEFORE PLACING SUB-LINER.
5. SUB-LINER IS TO BE CLEAN, COMPACTED, MINERAL SOILS WITH GREATER THAN OR EQUAL TO 40% FINES PASSING A #200 SIEVE AND A PI GREATER THAN OR EQUAL TO 12. DAMPEN THE SUB-LINER BEFORE THE CONCRETE IS POURED.
6. METAL CHAIRS, METAL HANGERS, METAL SPACERS, CONCRETE SPACERS OR PLASTIC CHAIRS SHALL BE USED TO SUPPORT THE REINFORCEMENT. ANY METAL SUPPORTING DEVICES SHALL HAVE A PROTECTIVE COATING, BARRIER, OR FINISH BETWEEN THE REINFORCING STEEL AND THE SUPPORT AND/OR BETWEEN THE GROUND AND THE SUPPORT, IF THE SUPPORT IS NOT FULLY ENCASED IN CONCRETE. THE COATING, BARRIER, OR FINISH CAN BE HOT DIP GALVANIZING, EPOXY, PLASTIC, OR STAINLESS STEEL. CONCRETE CHAIRS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH EQUAL TO, OR GREATER THAN, THAT OF THE CONCRETE BEING PLACED.

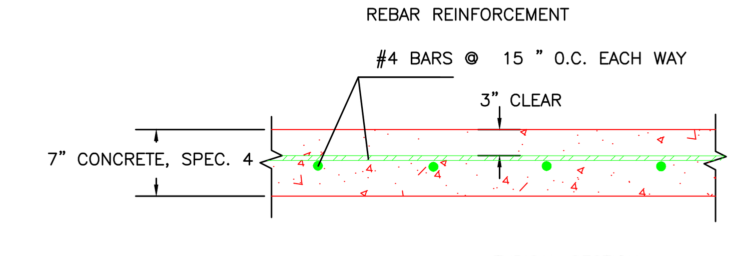
7 #4 LAP = 16"

QUANTITIES: LOCATION OF SLAB – DETENTION BASIN

SLAB AREA –	2,000 SQ. FT.
REBARS: (#4 @ 18" O.C., EACH WAY 1.42 LF/SQ.FT.)	2,840 LIN.FT.
CONCRETE SLAB:	31 CU.YD.
WHITE CURING COMPOUND SQ.FT. (ASTM C-309, TYPE 2)	2,000 SQ. FT.

5 / 5 5" CONCRETE DETAIL
NTS

REBAR REINFORCEMENT



GENERAL CONSTRUCTION NOTES:

1. CONCRETE IS TO BE MIXED AND PLACED ACCORDING TO SPEC. 4 AND SHALL BE CONSOLIDATED AS NECESSARY TO INSURE DENSE CONCRETE
2. JOINTS, IF USED, ARE TO BE SPACED AS SPECIFIED ELSEWHERE
3. WHITE CURING COMPOUND SHALL BE APPLIED TO CONCRETE AS SOON AS THE CONCRETE CAN BE WALKED ON.
4. SITE PREPARATION: REMOVE ALL ORGANIC AND UNCOMPACTED MATERIAL BEFORE PLACING SUB-LINER.
5. SUB-LINER IS TO BE CLEAN, COMPACTED, MINERAL SOILS WITH GREATER THAN OR EQUAL TO 20% FINES PASSING A #200 SIEVE AND A PI GREATER THAN OR EQUAL TO 12. DAMPEN THE SUB-LINER BEFORE THE CONCRETE IS POURED.
6. METAL CHAIRS, METAL HANGERS, METAL SPACERS, CONCRETE SPACERS OR PLASTIC CHAIRS SHALL BE USED TO SUPPORT THE REINFORCEMENT. ANY METAL SUPPORTING DEVICES SHALL HAVE A PROTECTIVE COATING, BARRIER, OR FINISH BETWEEN THE REINFORCING STEEL AND THE SUPPORT AND/OR BETWEEN THE GROUND AND THE SUPPORT, IF THE SUPPORT IS NOT FULLY ENCASED IN CONCRETE. THE COATING, BARRIER, OR FINISH CAN BE HOT DIP GALVANIZING, EPOXY, PLASTIC, OR STAINLESS STEEL. CONCRETE CHAIRS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH EQUAL TO, OR GREATER THAN, THAT OF THE CONCRETE BEING PLACED.
7. #4 LAP = 16"

QUANTITIES: LOCATION OF SLAB – DETENTION BASIN

SLAB AREA –	3,650 SQ. FT.
REBARS: (#4 @ 15" O.C., EACH WAY, 1.71LF/SQ.FT.)	6,242 LIN.FT.
CONCRETE SLAB	79 CU.YD.
WHITE CURING COMPOUND SQ.FT. (ASTM C-309, TYPE 2)	3,650 SQ. FT.

6 / 5 7" CONCRETE DETAIL
NTS

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	*	*	*	*	*	*
DRAWN BY:	TJS	*	*	*	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

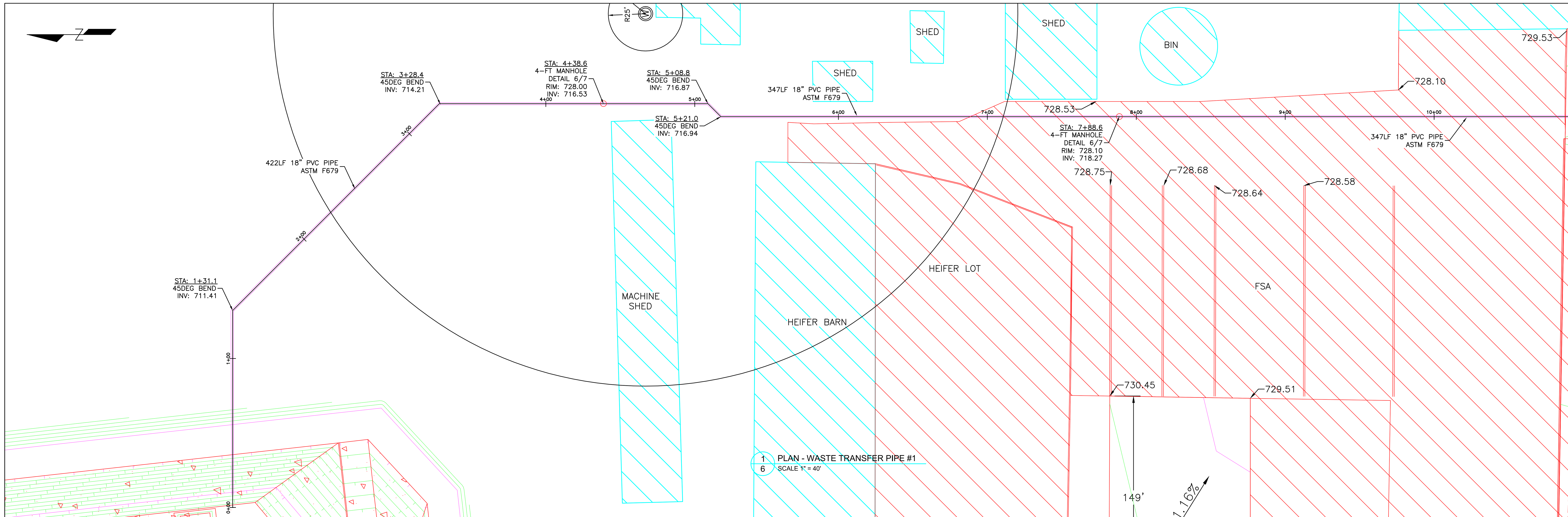
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

DETENTION BASIN PLAN AND PROFILES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO. 5



1 / 6 PLAN - WASTE TRANSFER PIPE #1
SCALE 1" = 40'

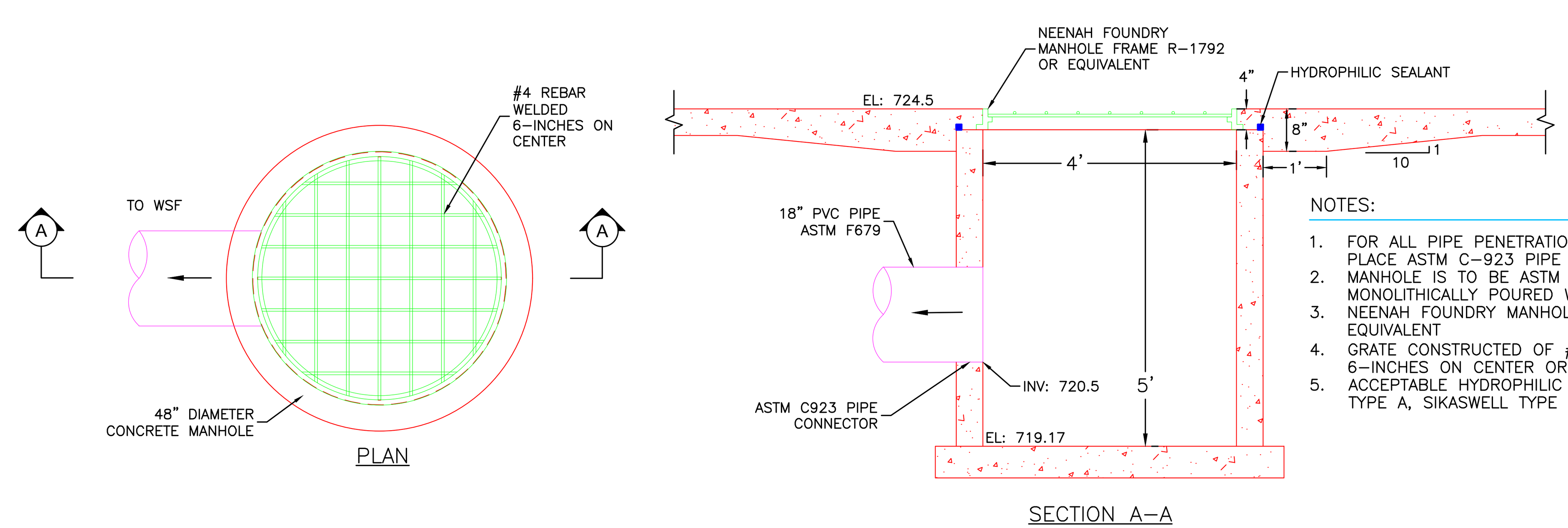
TABLE 1: GRAVITY PIPELINES (INCLUDING ABRASIVE MATERIALS)				
SIZE	MATERIAL	SPECIFICATION	JOINT PERFORMANCE SPECS	JOINT FITTING SPEC
4"–10"	HDPE	AASHTO M252, TYPE S	ASTM D3212 (10.8 PSI)	F2306/F477)
12"–60"	HDPE	AASHTO M294, TYPE S OR ASTM F2306	ASTM D3212 (10.8 PSI)	F2306/F477)
18"–48"	PVC	ASTM F679	ASTM D3212, D3139, D2672	ASTM F679
3"–15"	PVC	ASTM D3034 (SDR35)	ASTM D3212, D3139, D2672	ASTM D3034
1/8"–36"	PVC	ASTM D2241 (SDR32.5)	ASTM D3212, D3139, D2672	ASTM D2241

PIPE JOINTS AND FITTINGS MUST MEET THE DESIGNATED MAXIMUM OPERATING PRESSURE.

OTHER JOINTS AND METAL/CAST FITTINGS MAY BE USED IF PRESSURE RATING OF FITTING IS GREATER THAN PRESSURE RATING OF THE PIPE TO BE INSTALLED.

3 / 6 ALTERNATE PIPE MATERIALS

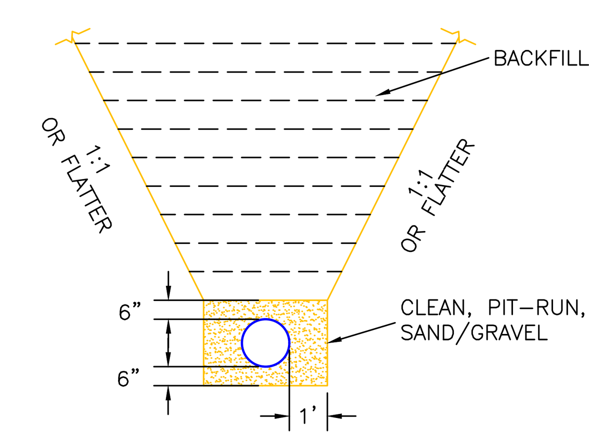
2 / 6 PROFILE - WASTE TRANSFER PIPE #1
HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1" = 5'



NOTES:

1. FOR ALL PIPE PENETRATIONS USE CAST IN PLACE ASTM C-923 PIPE CONNECTOR
2. MANHOLE IS TO BE ASTM C-478 MONOLITHICALLY POURED WITH THE BASE
3. NEENAH FOUNDRY MANHOLE FRAME R-1792 OR EQUIVALENT
4. GRATE CONSTRUCTED OF #4 REBAR, WELDED 6-INCHES ON CENTER OR EQUIVALENT
5. ACCEPTABLE HYDROPHILIC SEALANT; SIKASWELL TYPE A, SIKASWELL TYPE E, LEAKMASTER LV-1

4 / 6 MANHOLE @ STA: 11+00 DETAIL
SCALE 1" = 2'



PIPE BEDDING AND BACKFILL NOTES:

1. MINIMUM PIPE COVER TO BE 4 FT.
2. BED THE TRANSFER PIPE WITH CLEAN, PIT-RUN, SAND/GRAVEL COMPACTED IN 4-INCH LIFTS TO 6" ABOVE TOP OF PIPE.

5 / 6 PIPE TRENCH DETAIL
NTS

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*	*
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

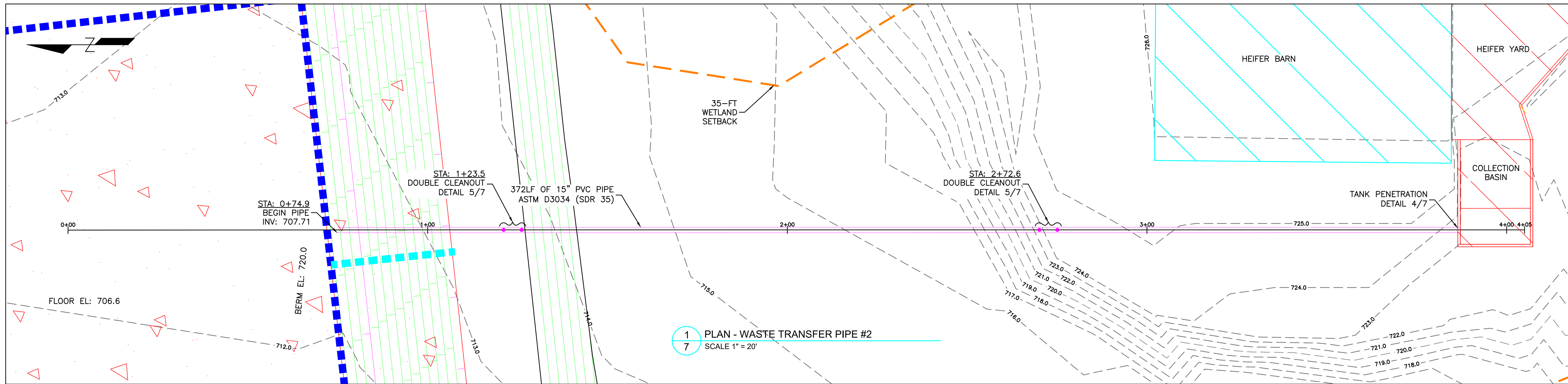
LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
BROWN COUNTY, WISCONSIN

SCALE: VARIES

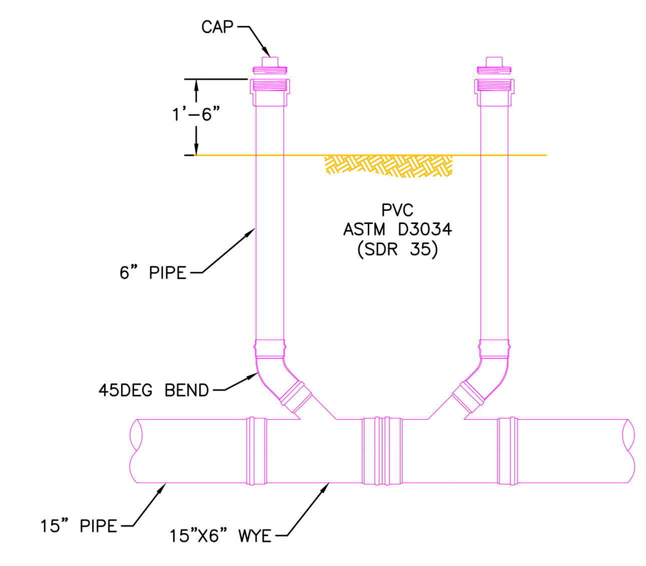
WASTE TRANSFER PIPE #1
PLAN AND PROFILE

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

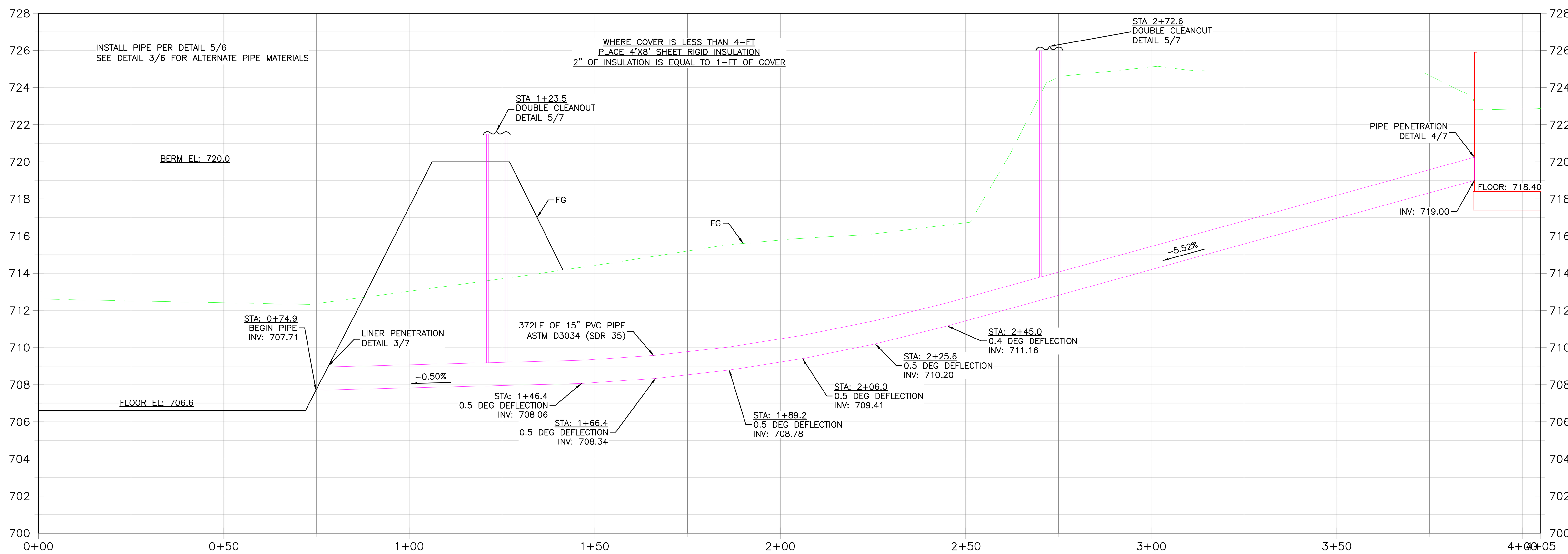
SHEET NO. 6



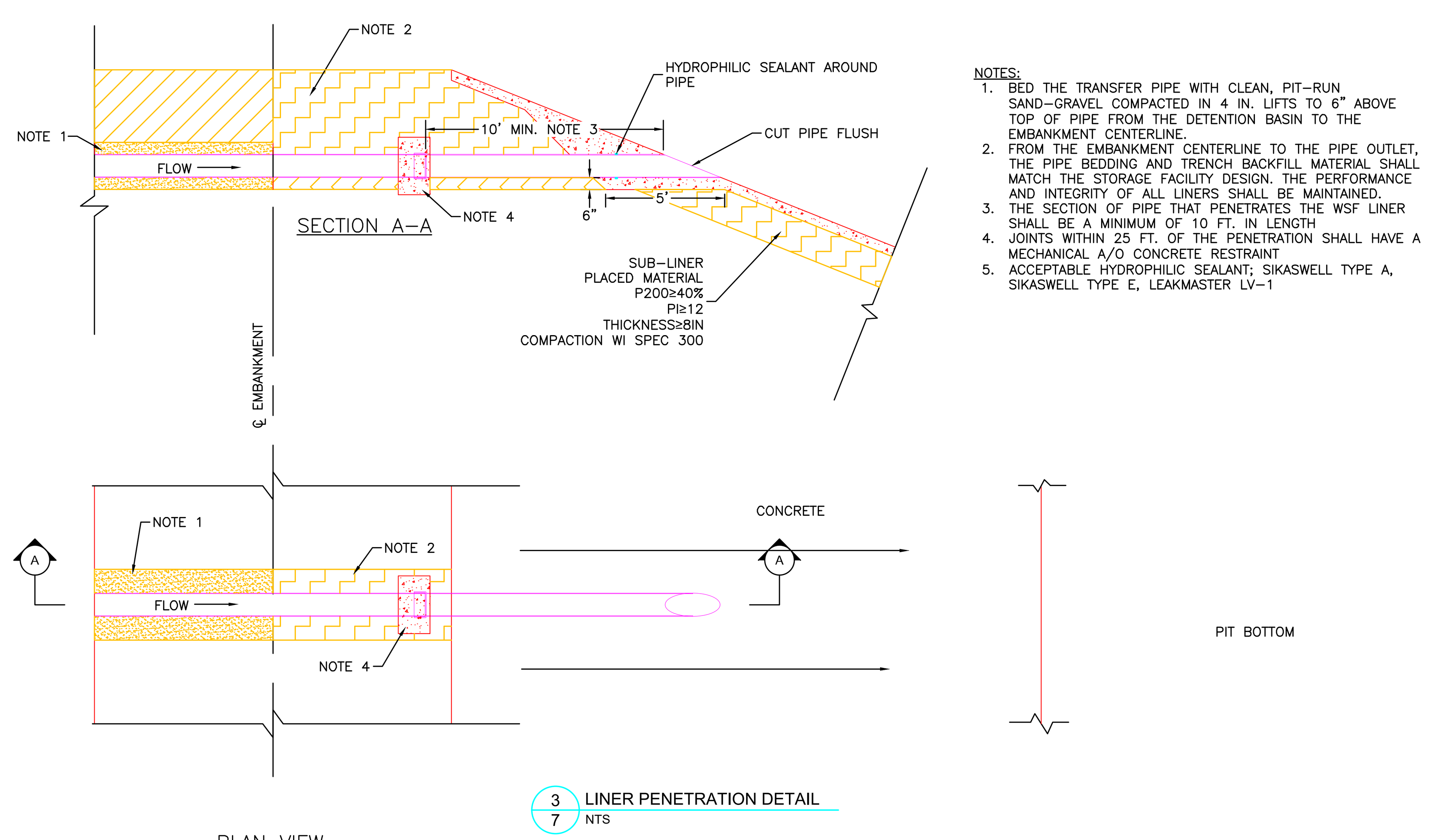
1/7 PLAN - WASTE TRANSFER PIPE #2
SCALE 1" = 20'



5/7 DOUBLE CLEANOUT DETAIL
NTS

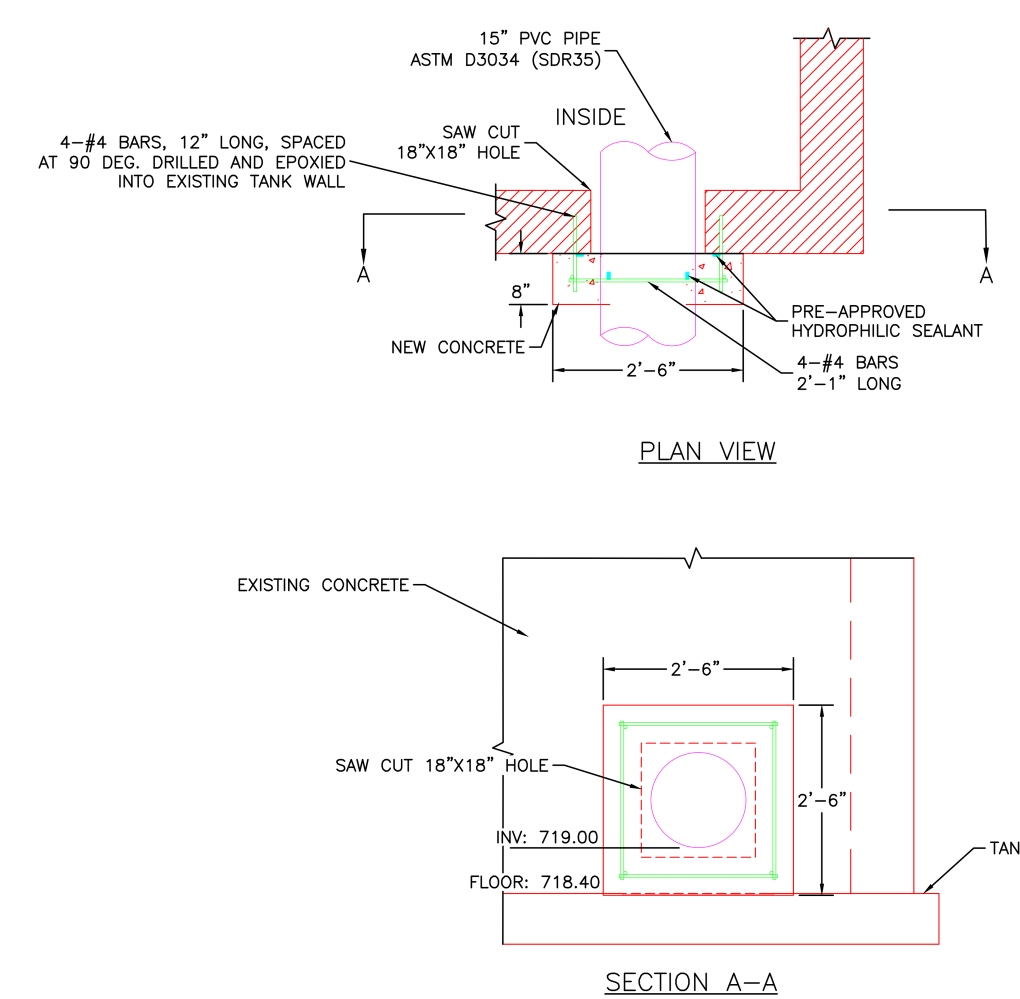


2/7 PROFILE - WASTE TRANSFER PIPE #2
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'

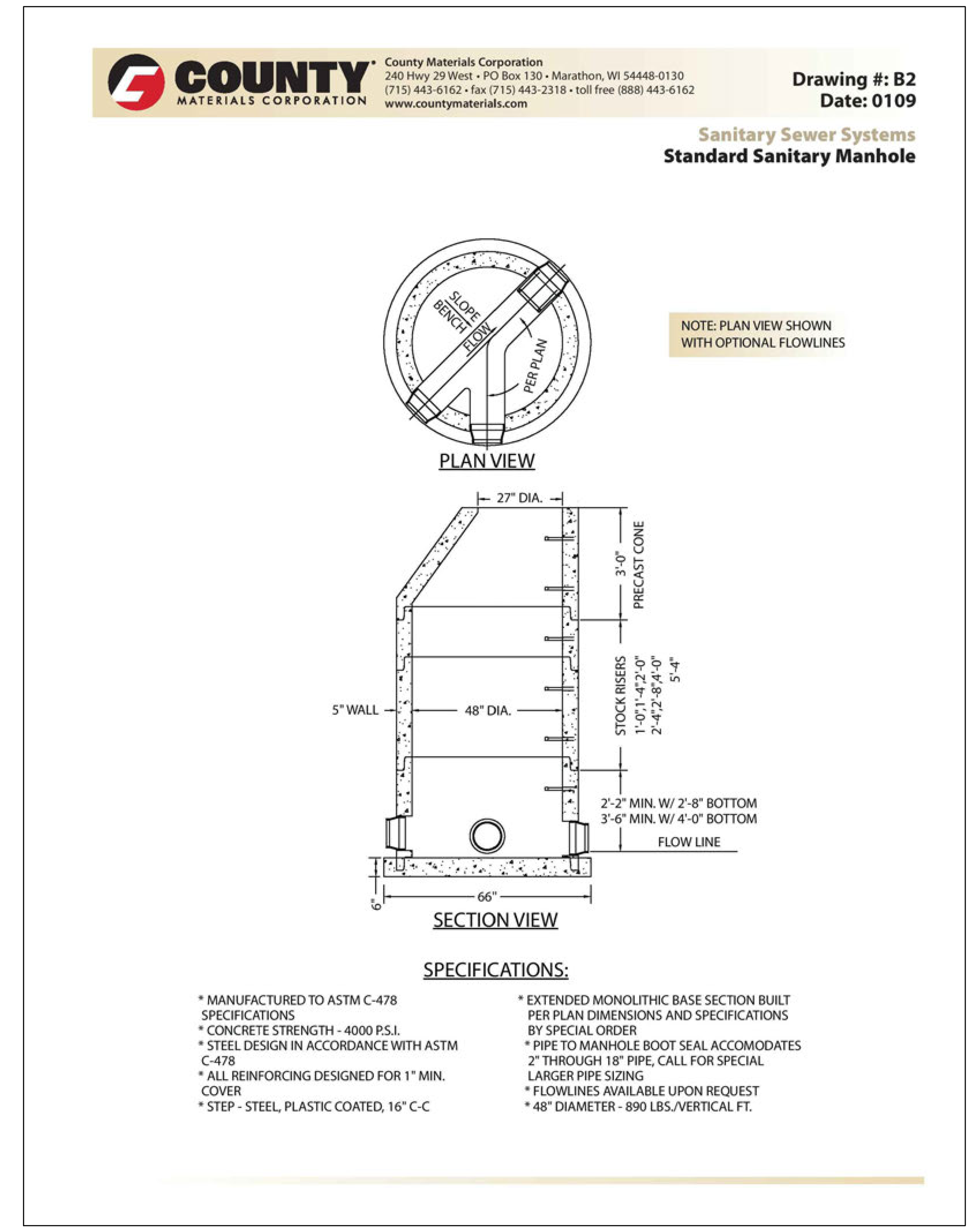


NOTES:
1. BED THE TRANSFER PIPE WITH CLEAN, PIT-RUN SAND-GRAVEL COMPACTED IN 4 IN. LIFTS TO 6" ABOVE TOP OF PIPE FROM THE DETENTION BASIN TO THE EMBANKMENT CENTERLINE.
2. FROM THE EMBANKMENT CENTERLINE TO THE PIPE OUTLET, THE PIPE BEDDING AND TRENCH BACKFILL MATERIAL SHALL MATCH THE STORAGE FACILITY DESIGN. THE PERFORMANCE AND INTEGRITY OF ALL LINERS SHALL BE MAINTAINED.
3. THE SECTION OF PIPE THAT PENETRATES THE WSF LINER SHALL BE A MINIMUM OF 10 FT. IN LENGTH
4. JOINTS WITHIN 25 FT. OF THE PENETRATION SHALL HAVE A MECHANICAL A/O CONCRETE RESTRAINT
5. ACCEPTABLE HYDROPHILIC SEALANT; SIKASWELL TYPE A, SIKASWELL TYPE E, LEAKMASTER LV-1

3/7 LINER PENETRATION DETAIL
NTS



4/7 TANK PENETRATION DETAIL
NTS



6/7 4-FT MANHOLE DETAIL
NTS

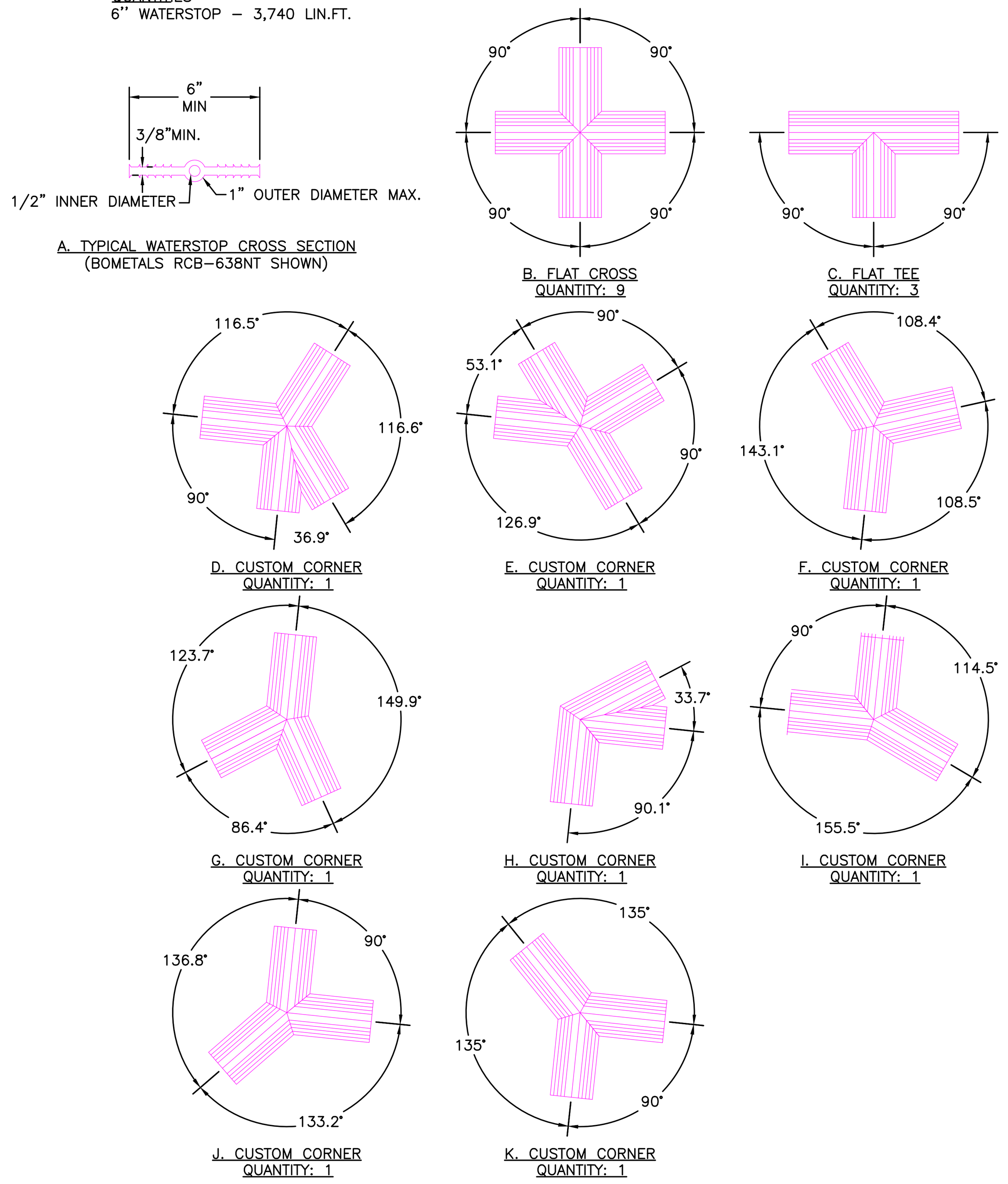
		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*	*
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

LEDGEVIEW FARM, LLC 2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS BROWN COUNTY, WISCONSIN	SCALE VARIES	WASTE TRANSFER PIPE #2 PLAN AND PROFILE	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 7

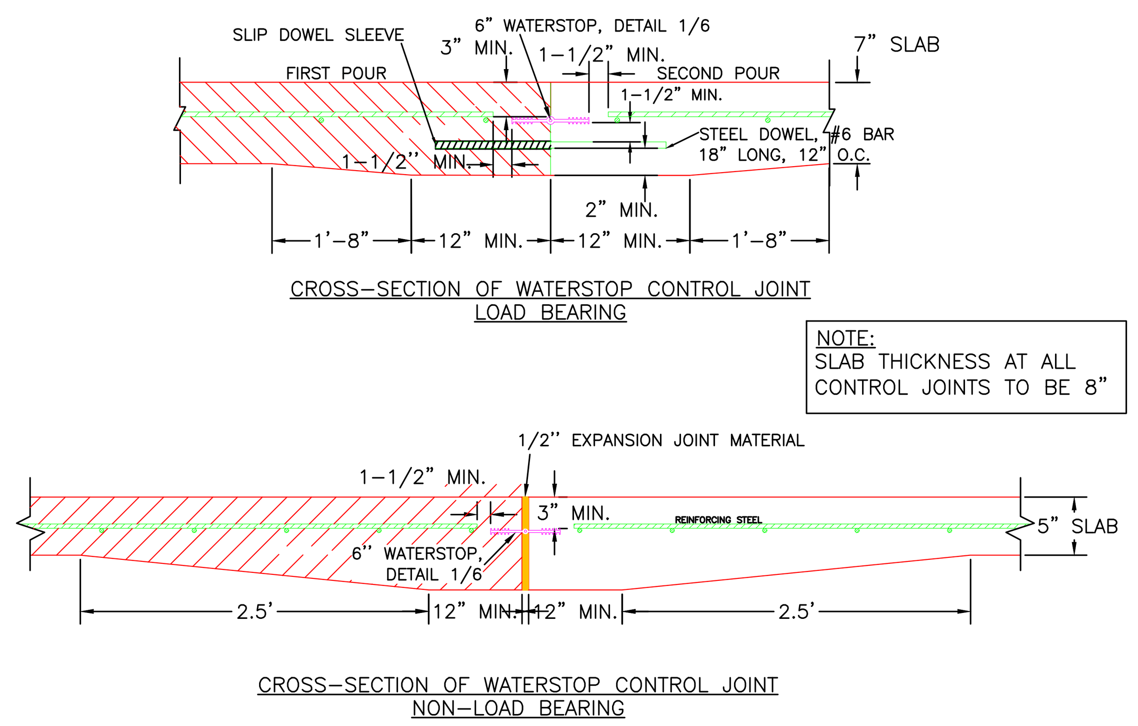
CONSTRUCTION NOTES

1. FACTORY PREFABRICATED CORNERS AND TRANSITIONS SHALL BE USED, LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR FIELD WELDING.
2. SEE DETAIL FOR PREFABRICATED TRANSITIONS NEEDED.
3. SEE JOINT PLAN, SHEET 8, FOR LOCATIONS AND DETAILS OF JOINTS
4. PROVIDE FACTORY WELDED WATERSTOP INTERSECTIONS AS SHOWN.
5. WATERSTOP IS TO BE MANUFACTURED PVC, TPE, OR PE, WITH A MINIMUM WEB THICKNESS OF 3/8".
6. ACCEPTABLE MODELS: GREENSTREAK 706, 717, 779, BOMETALS RCB-638LB, RCB-612, RCB-638NT, DURAJOINT TYPE 9.
7. EMBEDDED WATERSTOPS MAY NOT BE WELDED OR JOINED TO OTHER WATERSTOPS OF DIFFERENT SIZE, CONFIGURATION, OR MATERIAL.

QUANTITIES
6" WATERSTOP – 3,740 LIN.FT.



1/8 WATERSTOP JOINT DETAIL
NTS



INSTALLATION:

A. CENTER THE WATERSTOP ON THE JOINT.

B. SECURE THE WATERSTOP ALONG ITS LENGTH AT THE CENTER BULB AND SUFFICIENTLY AT THE WEB TO HOLD IT IN PLACE.

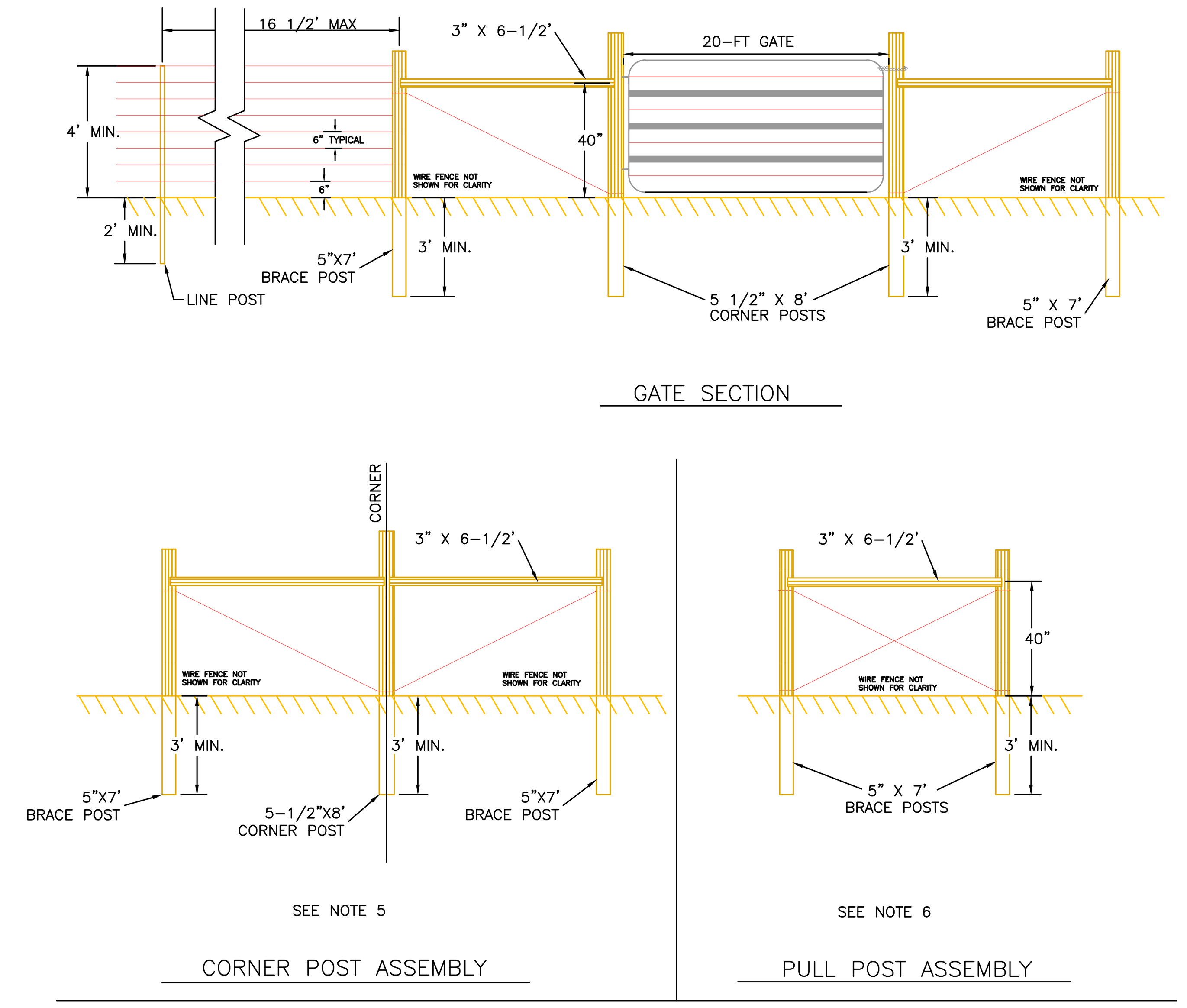
C. PLACE CONCRETE WITHOUT DISPLACING THE WATERSTOP.

D. THOROUGHLY VIBRATE CONCRETE AROUND THE WATERSTOP TO PREVENT VOIDS.

E. AFTER THE FIRST POUR, CLEAN THE UNEMBEDDED WATERSTOP WEB TO INSURE FULL CONTACT WITH THE SECOND POUR OF CONCRETE.

F. KEEP THE CENTER BULB UNEMBEDDED AT THE JOINT CENTERLINE.

2/8 WATERSTOP INSTALLATION DETAIL
NTS

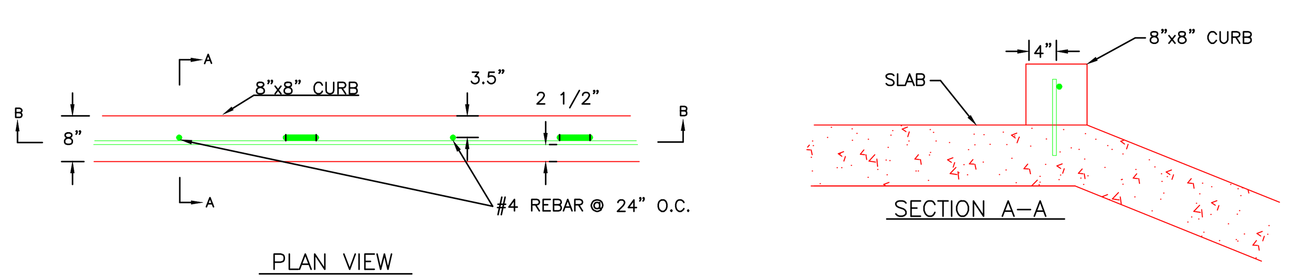


QUANTITIES

TOTAL LENGTH OF FENCE	1,852 LIN. FT.
NUMBER OF CORNERS	5 EA.
NUMBER OF PULL POST ASSEMBLIES	0 EA.
CORNER POSTS (5 1/2" X 8')	7 EA.
BRACE POSTS (5" X 7')	12 EA.
HORIZONTAL BRACES (3" X 6 1/2')	12 EA.
LINE POSTS	112 EA.
WIRE FENCE (12-1/2 GAGE)	14,812 LIN. FT

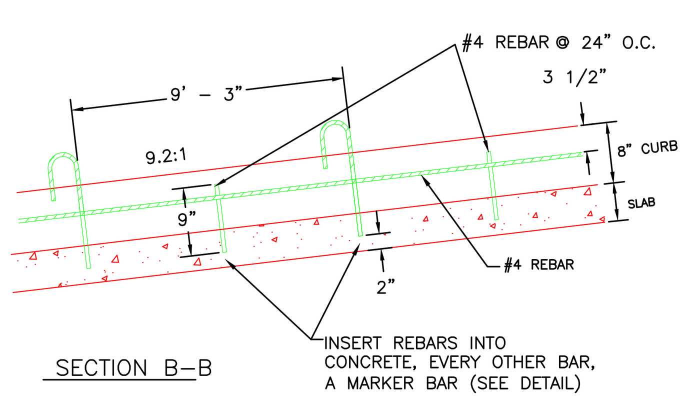
NOTES
1. USE PRESSURE TREATED POSTS WITH BRACING AT THE CORNERS AND GATES. STEEL POSTS 6.5 FEET LONG MAY BE USED FOR LINE POSTS
2. MAXIMUM POST SPACING IS 16.5 FEET
3. WOVEN OR WELDED WIRE TO BE A MINIMUM 12-1/2 GAGE NON-CLIMB TYPE WITH 2"X4" OPENINGS OR CYCLONE DIAMOND SHAPE
4. FENCE HEIGHT TO BE A MINIMUM OF 48"
5. CORNER POST ASSEMBLIES NEEDED AT CORNERS OF DEFINITE ANGLES (NOT JUST 90°)
6. PULL POST ASSEMBLY NEEDED EVERY 660 FEET.

4/8 FENCE DETAIL
NTS

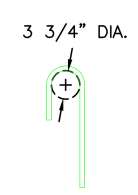


QUANTITIES

CONCRETE (.0164 CU.YDS. PER LIN.FT.)	2 CU.YD.
#4 REBAR	124 FT.



NOTE: ALL STEEL SHALL BE TIED PRIOR TO POURING



EPOXY COATED #4 BAR, 24" LONG, CENTER OF BEND 8" FROM END

NOTE
INSTALL MARKERS AT THE FOLLOWING ELEVATIONS; 707.6, 708.6, 709.6, 710.6, 711.6, 712.6, 713.6, 714.6, 715.6, 716.6, 717.6
MOL – EL: 718.36
MOS – EL: 719.00

3/8 DEPTH GAUGE DETAIL
NTS

		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DATE:	12/06/2017	*	*	*	*	*	*
DRAWN BY:	TJS	*	*	*	*	*	*
CHECKED BY:	JMR	*	*	*	*	*	*

LEDGEVIEW FARM, LLC
2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS
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SCALE: VARIES

CONSTRUCTION DETAILS

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SHEET NO. 8

Ledgview Dairy

WETLAND DELINEATION CONFIRMATION REQUEST CHECK LIST

WDNR WETLAND IDENTIFICATION PROGRAM

The following is the preferred order for all information provided in wetland delineation reports submitted for wetland confirmation. All of the following must be included with all wetland delineation reports that are submitted for confirmation:

X Introductory Section
- Why the delineation was undertaken
- Date the field work was completed
- Who conducted field work
- Qualifications

X Methods used during the wetland delineation
- Description of methods
- Sources Reviewed (WWI mapping, Soil Survey, etc.)
- Description of any site specific agency guidance (site meetings, etc.)

X Results and Discussion
- Antecedent hydrologic condition analysis
- Previous wetland delineation mapping
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetland located within the project area
- Discussion explaining how the wetland/upland boundary was differentiated
- Disturbed and problematic areas encountered during the delineation
- Other water resources located in the project area (navigable streams, etc.)

X Topographic mapping
- Map scale
- Clearly identified project area
- A north arrow

X WWI mapping
- Map scale
- Clearly identified project area
- A north arrow

X Soil Survey mapping
- Map scale
- Clearly identified project area
- A north arrow

X Wetland Delineation Map
- Map scale
- Clearly identified project area
- A north arrow
- Accurate depiction of wetland boundaries and data points identified during the field investigation

X Complete, legible wetland delineation data forms from the appropriate regional supplement

X Site photos

X Any previous delineation information

X Areas that are currently, or were recently (less than three years prior to the delineation) under agricultural production must include a Farm Service Agency Slide Review. All FSA Slide Reviews should include the following:

- Copies or photos of slides if available
- A completed wetland documentation form (NRCS form NRCS-CPA-32W)
- A copy of the draft NRCS Wetland Inventory map if available

X Literature Cited

Please include this completed checklist with all wetland delineation report submittals.

Wetland Determination Report

Ledgeview Dairy
3499 Lime Kiln Road
Green Bay, WI 54311

Section 28 & 29, T.23N.-R.21E.
Town of Ledgeview, Brown County

September 19, 2017

Prepared by:
Rachel Ecker
Roach & Associates, LLC
856 N. Main Street
Seymour, WI 54165
Office (920) 833-6340

Wetland Determination Table of Contents
Ledgeview Dairy

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Project Location Map 1
Maps, Historical Aerial Photos & Site Photos 2
Historical Aerial Photo Hydrologic Review 3
Soils Characteristics & Hydric Soil Rating 4
Weather Information 5
Wetland Determination Data Forms 6
Sample Point Location & Proposed Pipeline Location 7

Wetland Determination Report

Wetland Determination Report

Introduction

Ledgeview Dairy has retained Roach & Associates, LLC to design a waste storage facility. Ledgeview Dairy is located at 3499 Lime Kiln Road, Green Bay, WI. The proposed waste storage facility will be constructed in a cropfield north of the satellite heifer site. Exhibit 1 – Project Location Map. Ledgeview Dairy is located in Section 28, T23N-R21E, Town of Ledgeview, Brown County. The Wisconsin Department of Natural Resources (WDNR) Surface Water Data Viewer (SWDV) has identified wetland indicator soils in the proposed project area.

On September 5, 2017, Rachel Ecker of Roach & Associates, LLC conducted a site visit to complete a wetland investigation at Ledgeview Dairy. Rachel completed the UW LaCrosse Wetland Delineation Training Workshops in 2015.

Methodology

The wetland investigation followed the protocols outlined in the United States Army Corps of Engineers (USACE) Corps of Engineers 1987 Wetland Delineation Manual and 2012 Regional Supplement to the Corps of Engineers 1987 Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0).

- Vegetation was observed within a 5', 15' and 30' radius of the sample points.
- All species identified and percent cover was recorded on the wetland determination data form identifying the dominant species.
- Each sample point area was observed for indicators of hydrology, surface water, water table or saturation. If an indicator was observed or water was present, the depth and indicator was recorded on the data form.
- Test pits were excavated to a minimum depth of 24" to confirm the presence or absence of hydric soil indicators and the water table.
- The soil matrix color and texture were determined and recorded on the data form.
- The Northcentral/Northeast Region Wetland Determination Data Form was used to record information at each sample point.

Sources Reviewed – Exhibit 2

Prior to completing the field investigation, aerial photographs, soils map, topographic maps and wetland maps were reviewed to identify specific areas on site requiring an investigation within the Project Area. Site photos were taken to provide a visual of the site and show existing conditions at the time of the field investigations.

Aerial Photographs, Maps and Related

- Plat Map – Town of Ledgeview, Brown County
- Historical Aerial Photo: FSA aerial imagery – 1981 – 2002
  Google Earth Pro – 2005, 2006, 2008, 2010, 2011, 2015 & 2017
- Soils: NRCS web soil survey map
- Topography: Brown County GIS Topographical Map
- Wetland: WDNR SWDV Wetland Indicator Map

Twenty eight (28) historical aerial images were reviewed and an aerial photo hydrologic review was completed for the project areas, see Exhibit 3. A total of nineteen (19) aerial photos were identified as receiving normal precipitation amounts in the three month period prior. Wet signatures were identified on three (3) out of the 19 normal precipitation historical images for Project Area 1 and Project Area 2.

The NRCS web soil survey map, hydric soils rating and hydric soils list was reviewed to identify the soils onsite and soil characteristics. Soil KhB – Kewanee silt loam, 2-6% slopes was investigated in Project Area 1. Soil MaA – Manawa sandy loam, 1-3% slopes was investigated in Project Area 1 and 2. KhB is defined as adequately drained and is not considered to be hydric. MaA is defined as somewhat poorly drained and rated as 1-32% hydric. Hydric soil rating and soils characteristic information can be found in Exhibit 4 for the above listed soils.

Weather Information – (Exhibit 5)

Weather information from the Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section II, Climatic Data, for the period prior to the field investigation was recorded. Weather data from the Green Bay A S Intl AP WETS Station was used. The NRCS Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination is used to evaluate the precipitation Condition Value for the three (3) months prior to the field investigation and the historical aerial photo hydrologic review. The three month period prior to the field investigations was considered normal.

Agency Guidance

No agency guidance was obtained.

Site History and Current Land Use

In 1985, Ledgeview Dairy purchased the housing facilities and associated cropland to house steers and young stock. In 1988, 1994 and 2000, the dairy operation expanded their milking cow herd which required an increase in the heifers. In those three years, the operation constructed additional housing for the heifers located on Lime Kiln Road reaching their current cattle numbers and existing housing facilities. The feed storage area was expanded in the early 1990's to accommodate for additional feed needed for the increase in the number of heifers. The feed storage area was recently expanded to the west.

Results and Discussion

Project Area 1 Observation & Results

Project Area 1 is located north of the existing housing facilities. One wetland was identified within project area 1 and labeled Wetland 1. Two (2) sample points were excavated within the wetland to identify the wetland boundary (see Exhibit 6 – Wetland Determination Data Forms). The waste storage facility is proposed to be constructed north of Wetland 1 in the cropfield.

Wetland 1

Sample points 102A and 103A were excavated within Wetland 1 to identify the wetland boundary. Sample point 103A was observed as an upland point. Sample point 102A was observed as a wetland point. Hydrology indicators present were D2 – Geomorphic position and D5 – FAC-Neutral Test. Hydric soil indicator F6 – Redox Dark Surface was observed and the dominant hydrophytic vegetation observes was Phragmites australis. Wetland 1 is located at the toe of slope of the berm constructed to reach the required elevation for the housing facilities.

Wetland 1 is a wetland that appears to have been created due to the construction of the housing facilities. Roof runoff from the machine shed and freestall barn flows north and west to Wetland 1. Additional sample points were excavated to the south and west of Wetland 1. Sample point 101A was excavated west of the machine shed. Hydrology indicator B9 – Water Stained Leaves and dominant hydrophyte Phragmites australis was observed within the sample point. No hydric soils were identified. Sample point 104A was excavated along the toe of slope showing no indicators of hydrology or hydric soils. Vegetation was dominated by hydrophyte Phragmites australis. Sample point 105A was excavated west of 104A along the toe of slope. No hydrology indicators were observed. Hydric soil indicator F6 – Redox Dark

Surface and vegetation was dominated by hydrophyte Phragmites australis. Sample points 101A, 104A and 105A were not identified as wetland sample points since all wetland indicators were not observed. A site plan with the Project Area, sample point locations, wetland boundary and proposed facilities location can be found in Exhibit 7.

Sample Points 201B-205B
Sample points 201B-205B were excavated west of the proposed waste storage facility in the same cropfield (see Exhibit 6 – Wetland Determination Data Forms). Sample points 201B and 203B showed no indicators of hydrology, hydric soils or hydrophytic vegetation. Sample point 202B, 204B and 205B showed no indicators of hydrology or hydrophytic vegetation. Hydric soil indicator F6 – Redox Dark Surface was observed. At the time of the field investigations, the cropfield was plowed and no vegetation was present for observation within the five (5) sample points. Sample points 202B, 204B and 205B were not identified as wetland sample points since two (2) out of three (3) wetland indicators were not observed.

A site plan with the Project Area, sample point locations, wetland boundary and proposed facilities location can be found in Exhibit 7.

Sample Points 301C-303C
Sample points 301C-303C were excavated within the footprint of the proposed waste storage facility in the cropfield north of the existing facilities (see Exhibit 6 – Wetland Determination Data Forms). Sample points 301C-303C showed no indicators of hydrology, hydric soils or hydrophytic vegetation. At the time of the field investigations, the cropfield was plowed and no vegetation was present for observation within the three (3) sample points. No hydrology indicators were observed. Soils identified was a silt loam colored as 10YR 3/2 down to 7"-16" and a clay colored as 5YR 4/4 down to 24". A wetland was not identified since no wetland indicators were observed within the sample point locations.

A site plan with the Project Area, sample point locations, wetland boundary and proposed facilities location can be found in Exhibit 7.

Project Area 2 Observation & Results
Project Area 2 is located within the feed storage area, south of the existing housing facilities and cow yard. One wetland was identified near the project area and labeled Wetland 2. Six (6) sample points were excavated within the wetland to identify the wetland boundary (see Exhibit 6 – Wetland Determination Data Forms). Ledgeview Dairy proposes to expand the feed storage area to the south of the existing feed storage area.

Wetland 2
Sample points 402D, 404D and 406D were observed as upland points. Sample point 404D showed no indicators present. Sample points 402D and 406D showed no hydrology or hydric soil indicators but Ambrosia trifida was observed as a dominant hydrophyte. Sample points 401D, 403D and 405D were observed as wetland points. Hydrology indicators present were C3 – Oxidized Rhizospheres on Living Roots, D2 – Geomorphic Position and D5 – FAC-Neutral Test. Hydric soil indicators observed were F6 – Redox Dark Surface and A11 – Depleted Below Dark Surface with Phragmites australis and Phalaris arundinacea as dominant hydrophytic vegetation.

Wetland 2 has been identified as a farm drainage ditch that starts approximately 475' south of the existing feed storage and flows northwest. An artesian well is located at the start of the farm drainage ditch. The proposed expansion of the feed storage area will extend approximately 100 feet south of the existing feed storage area.

A site plan with the Project Areas, Wetlands and Sample Point locations along with the proposed facilities location can be found in Exhibit 7.

Conclusion

Roach & Associates, LLC identified one wetland within the Project Area 1 and one wetland west of Project Area 2. WDNR and/or ACOE must provide the final wetland determination and a WDNR and/or ACOE concurrence is required before the construction of the proposed waste storage facility and feed storage area. When the wetland determination receives concurrence and dependent on the proposed construction activities, necessary permits must be obtained prior to construction.

To the best of my professional knowledge, judgment and belief, wetland 1 and wetland 2 boundaries have been identified as accurately as possible based on the field data recorded. My opinion is based upon the wetland protocols outlined in the United States Army Corps of Engineers (USACE) 2012 Regional Supplement to the Corps of Engineers 1987 Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0).

Rachel Ecker

Rachel Ecker, Wetland Coordinator

9-19-17

Date

References

1. US Army Corps of Engineers (USACOE), Regional Supplement to the Corps of Engineers Wetland Delineation Manual, 1987

2. US Army Corps of Engineers (USACOE), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, (version 2.0), 2012

3. USDA, NRCS, Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.1, 2017

4. Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner, USACOE The National Wetland Plant List: 2016 Update of Wetland Ratings, Phytoneuron 2016-30: 1-17. Published 28 April 2016.

5. USDA, FSA Aerial Imagery

6. Google Earth Pro Aerial Images

7. WDNR, SWDV, wetland indicator soil map and topographical map

8. USDA, NRCS, Web Soil Survey

9. USDA, NRCS, Hydric Rating by Map Unit

10. Brown County GIS

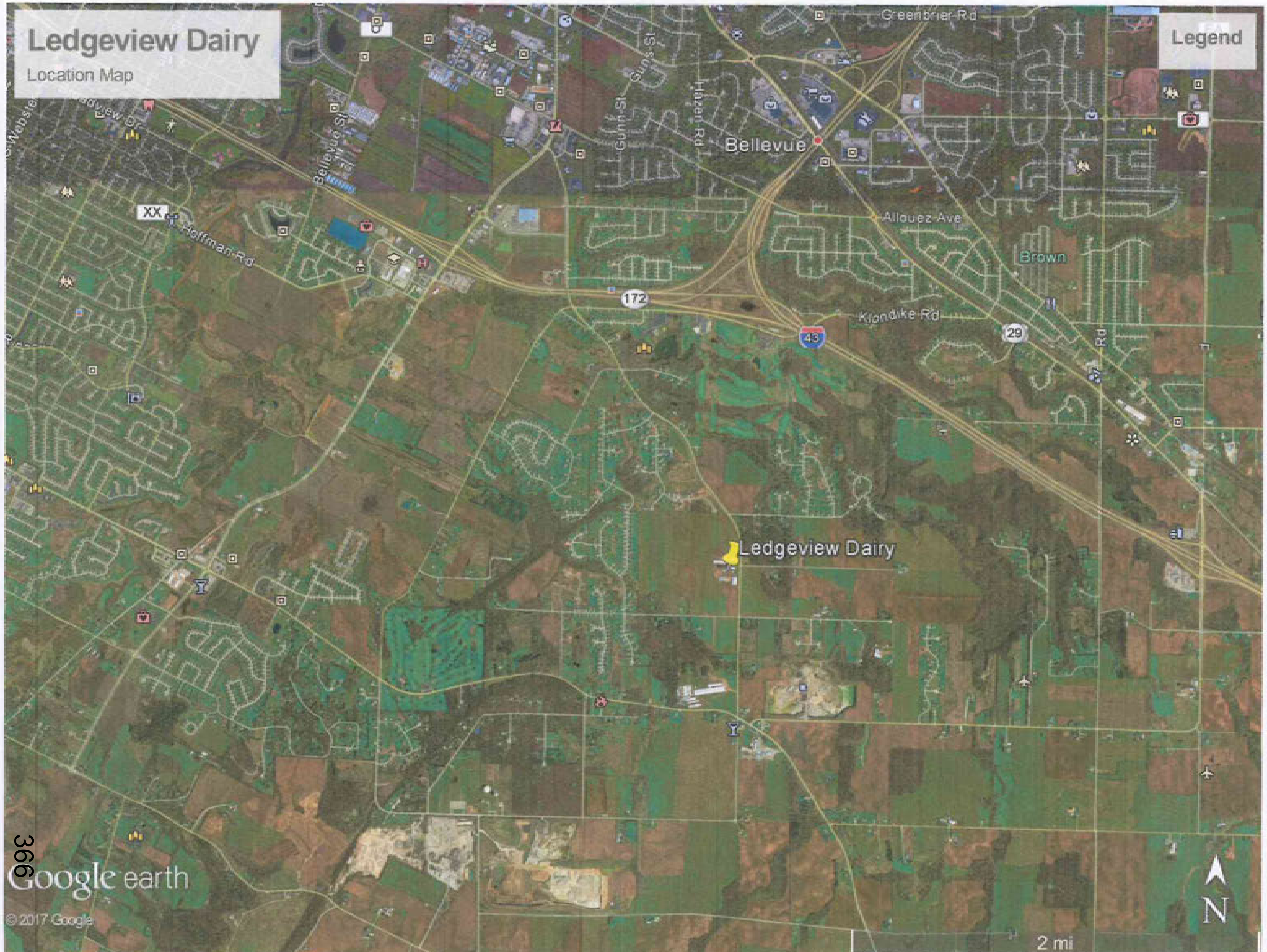
11. USDA, NRCS, FOTG, Section II, Climatic Data, Agricultural Applied Climate Information System

12. Judziewicz, Emmet J., Clark, Lynn G., Freckmann, Robert W., and Black, Merel R., 2014, Field Guide to Wisconsin Grasses, Madison, Wisconsin, The University of Wisconsin Press

13. Hipp, Andrew L., 2008, Field Guide to Wisconsin Sedges, An Introduction to the Genus *Carex* (Cyperaceae), Madison, Wisconsin, The University of Wisconsin Press

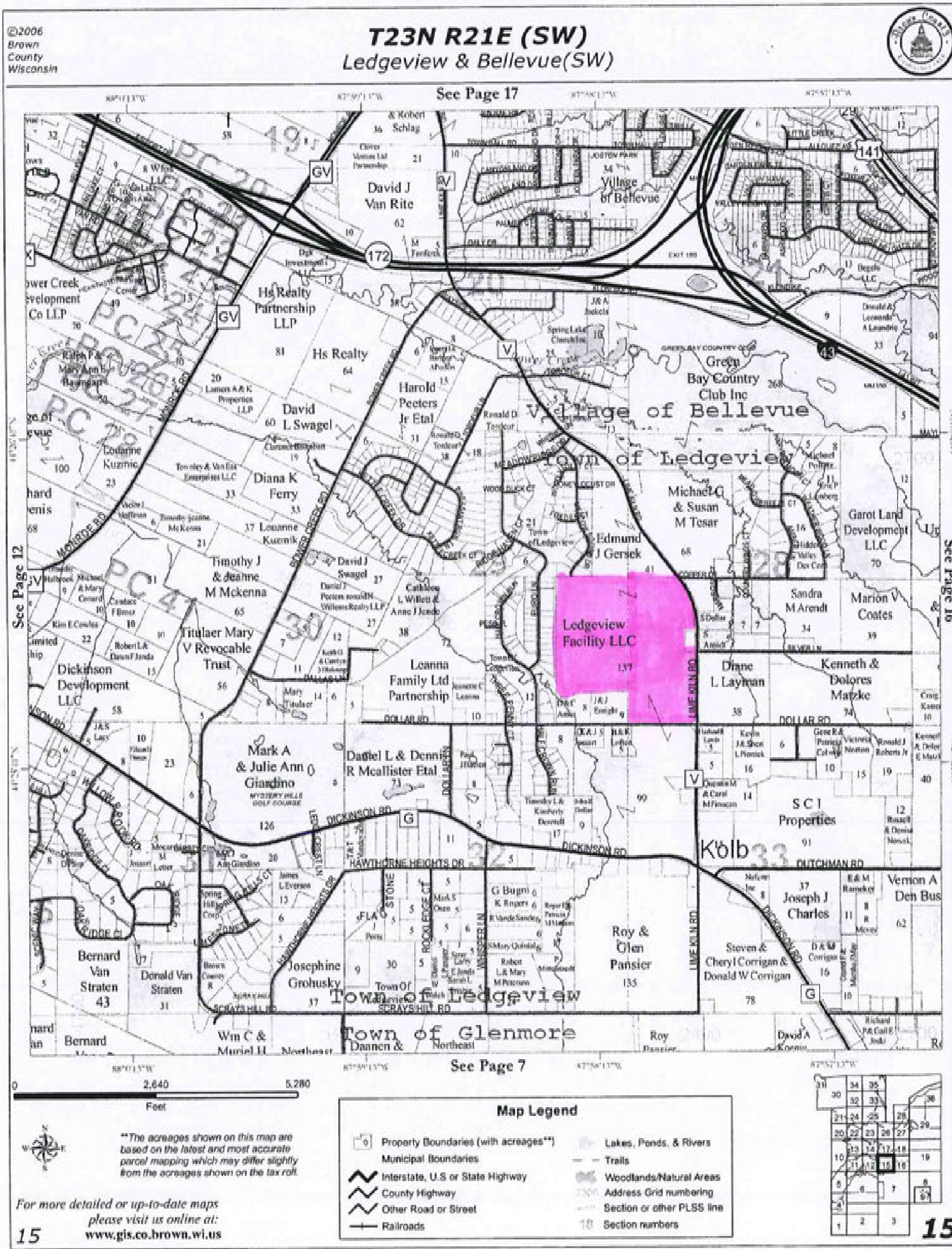
14. Black, Merel R. and Judziewics, Emmet J., 2009, Wildflowers of Wisconsin and The Great Lakes Region, Madison, Wisconsin, The University of Wisconsin Press

Exhibit 1

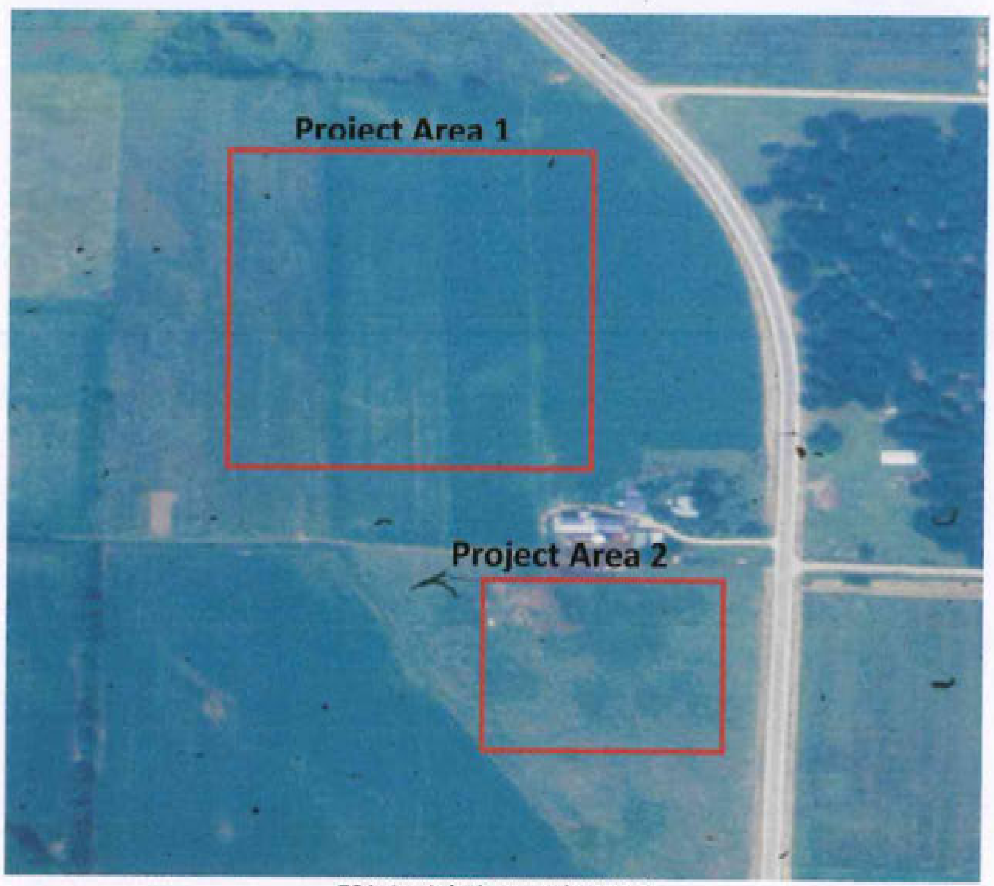


Ledgeview Dairy
Location Map
Legend
Bellevue
Greenbrier Rd
Gunn St
Hazen Rd
Alllouez Ave
Brown
Klondike Rd
172
43
29
Bellevue St
Hoffman Rd
XX
Ledgeview Dairy
Google earth
© 2017 Google
2 mi
N

Exhibit 2


©2006 Brown County Wisconsin
T23N R21E (SW)
Ledgeview & Bellevue(SW)
See Page 17
See Page 12
See Page 16
See Page 7
David J Van Rite
Hs Realty Partnership LLP
Hs Realty
Harold Peeters Jr Etal
David L Swagel
Diana K Ferry
Timothy J & Jeanne M Mckenna
Titulaer Mary V Revocable Trust
Dickinson Development LLC
Leanna Family Ltd Partnership
Village of Bellevue
Town of Ledgeview
Green Bay Country Club Inc
Michael G & Susan M Tesar
Edmund J Gersek
Garot Land Development LLC
Ledgeview Facility LLC
Sandra M Arendt
Marion V Coates
Diane L Layman
Kenneth & Dolores Matzke
Mark A & Julie Ann Giardino
Daniel L & Dennis R Mcallister Etal
S C I Properties
Kolb
Joseph J Charles
Roy & Glen Pansier
Steven & Cheryl Corrigan & Donald W Corrigan
Josephine Grohusky
Bernard Van Straten
Donald Van Straten
Town of Glenmore
DICKINSON RD
DOLLAR RD
DUTCHMAN RD
HAWTHORNE HEIGHTS DR
LIME KILN RD
2,640
5,280
Feet
**The acreages shown on this map are based on the latest and most accurate parcel mapping which may differ slightly from the acreages shown on the tax roll.
Map Legend
Property Boundaries (with acreages**)
Municipal Boundaries
Interstate, U.S or State Highway
County Highway
Other Road or Street
Railroads
Lakes, Ponds, & Rivers
Trails
Woodlands/Natural Areas
Address Grid numbering
Section or other PLSS line
Section numbers
For more detailed or up-to-date maps please visit us online at:
www.gis.co.brown.wi.us
15
15

FSA Aerial Photo July 1981



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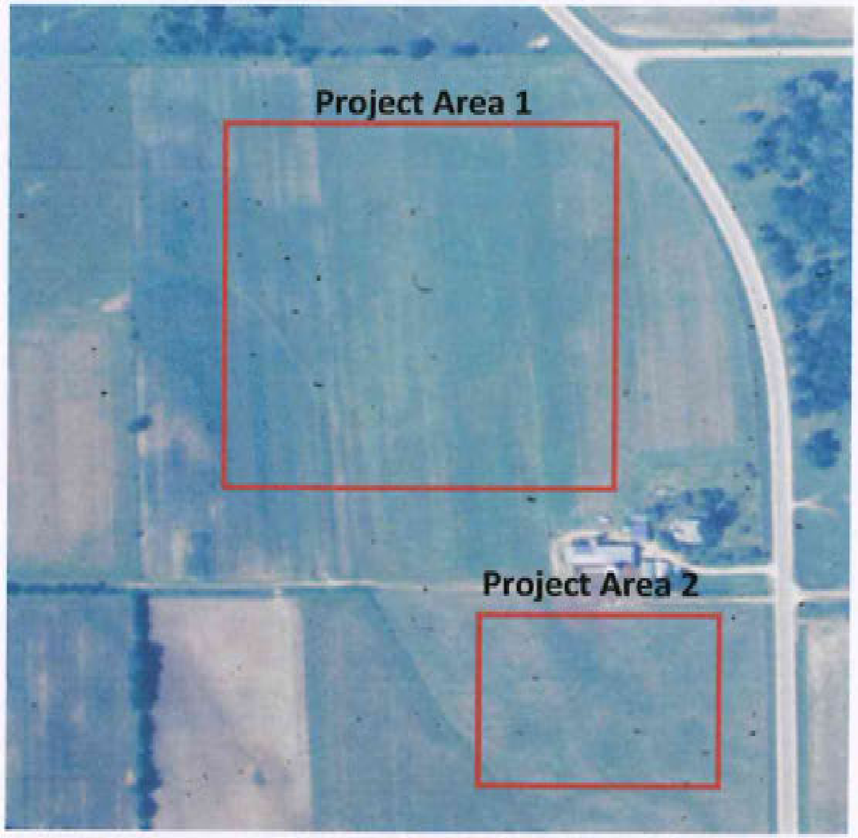
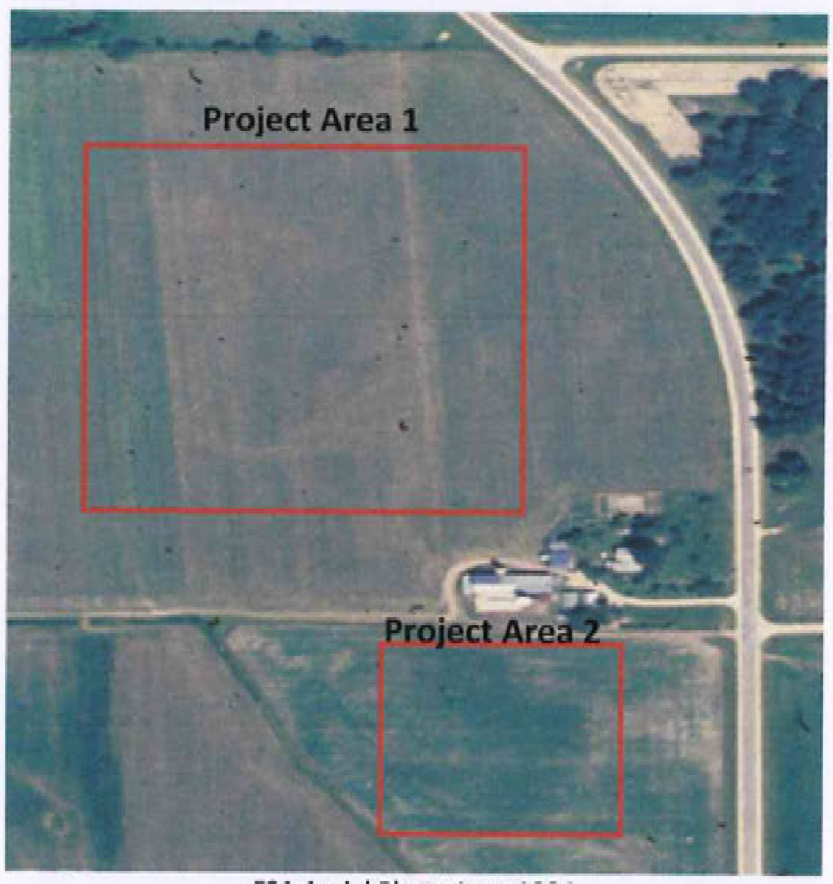
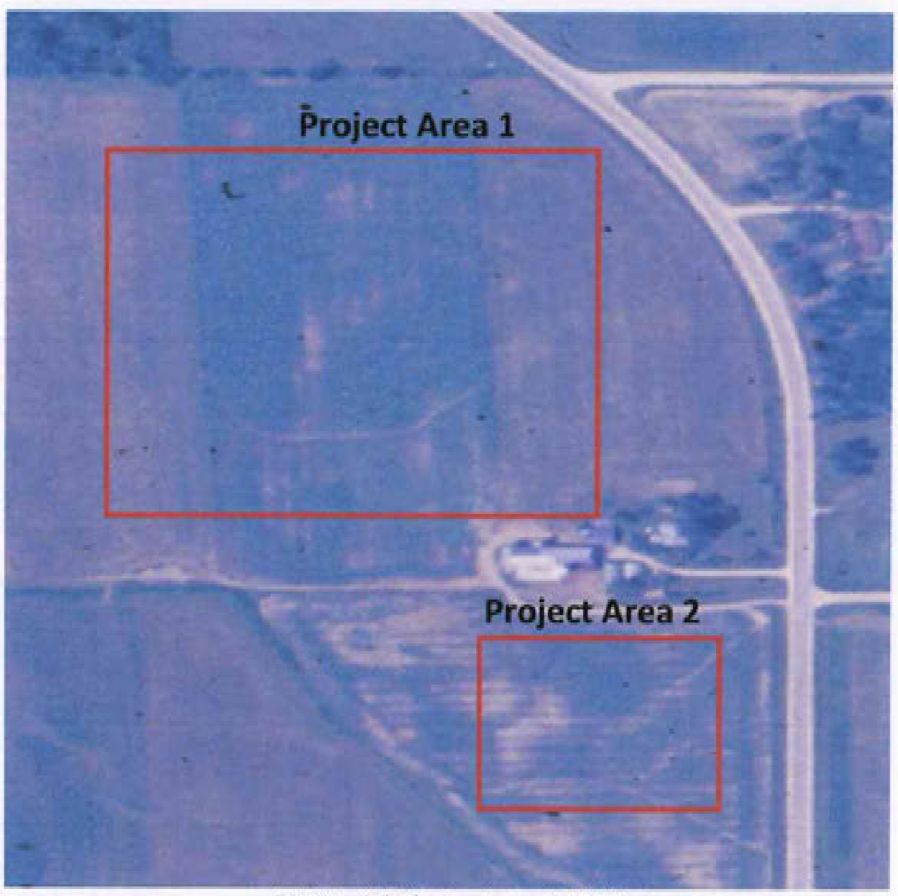


FSA Aerial Photo July 1983



FSA Aerial Photo June 1984

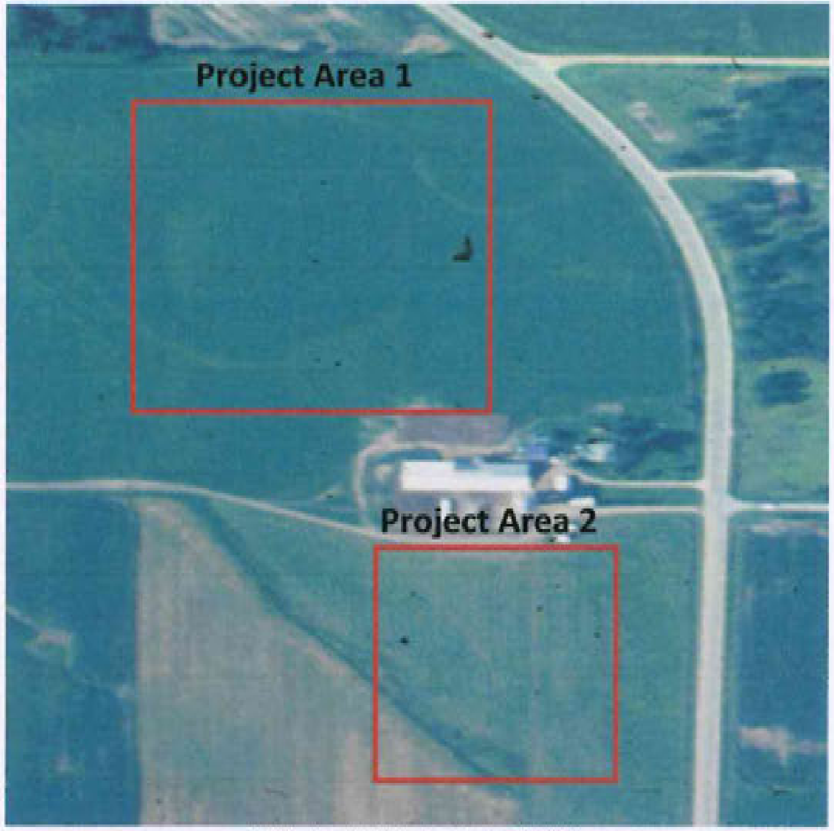
FSA Aerial Photo July 1985



FSA Aerial Photo August 1986

FSA Aerial Photo 1987 – Unknown Month of Photo

FSA Aerial Photo June 1989



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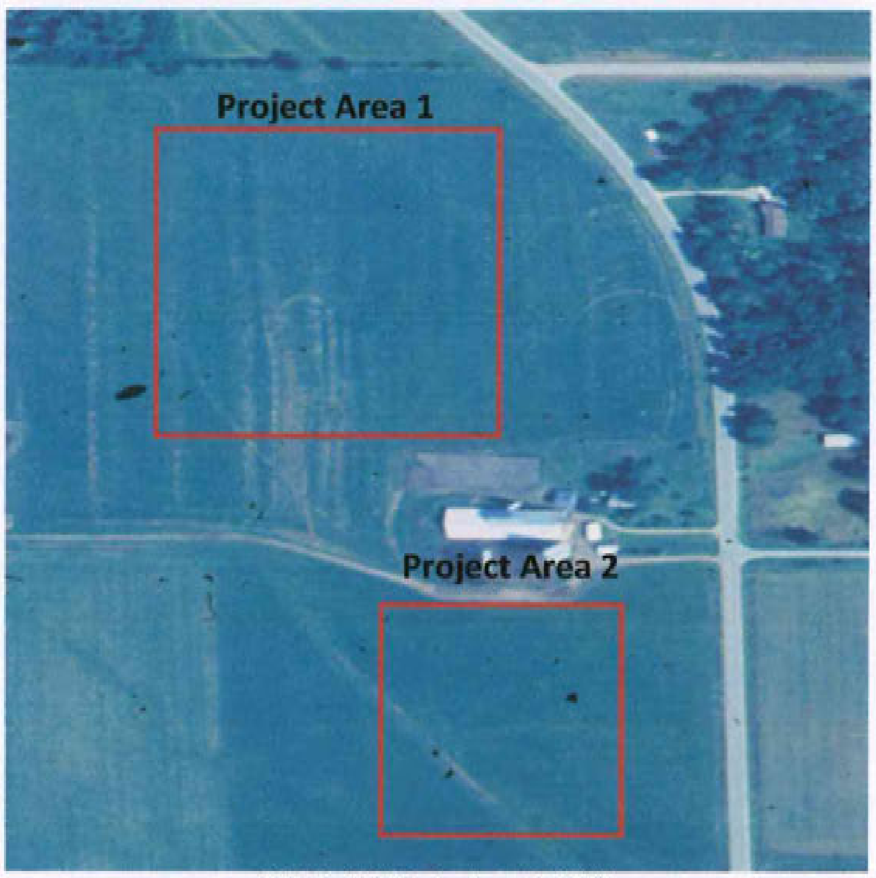

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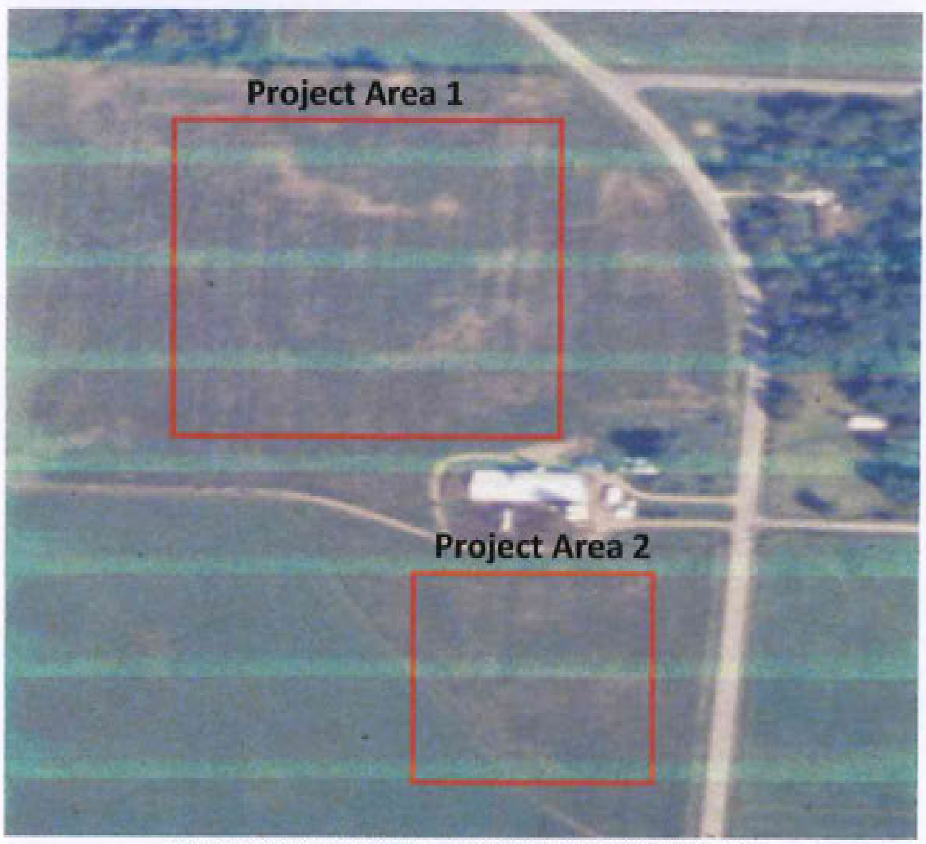
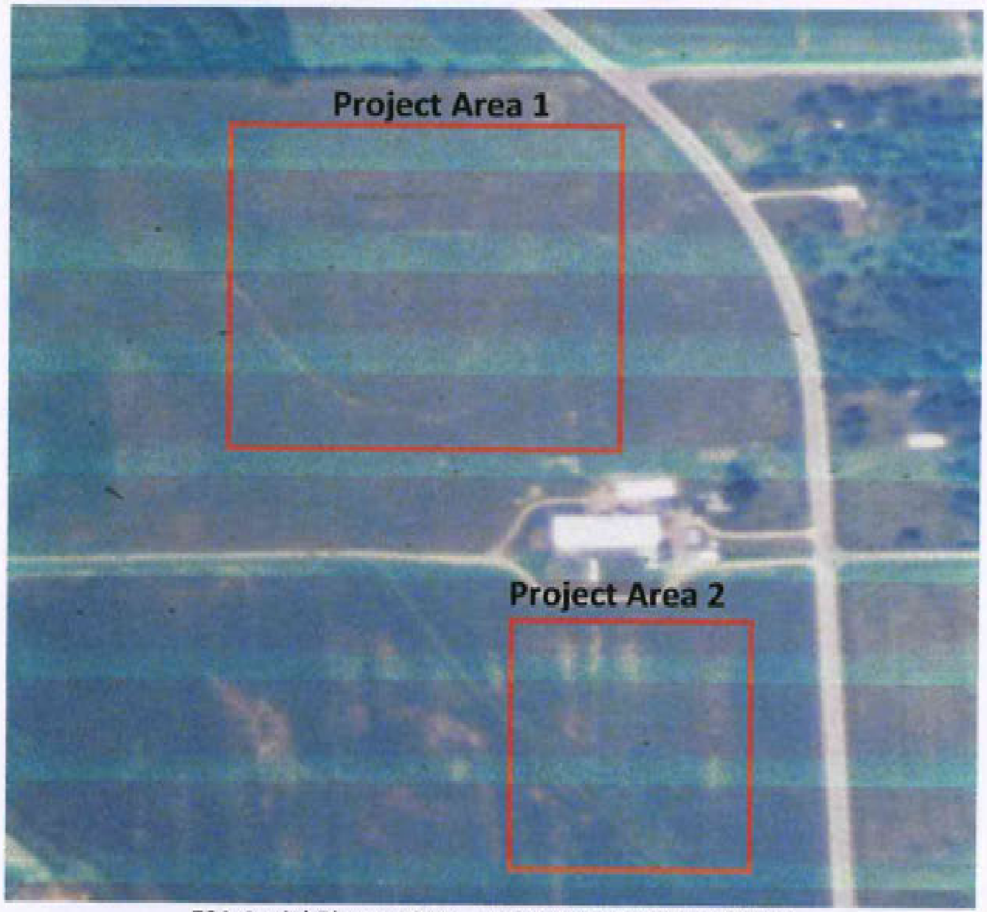
FSA Aerial Photo 1992 – Unknown Month of Photo



FSA Aerial Photo 1993 – Unknown Month of Photo



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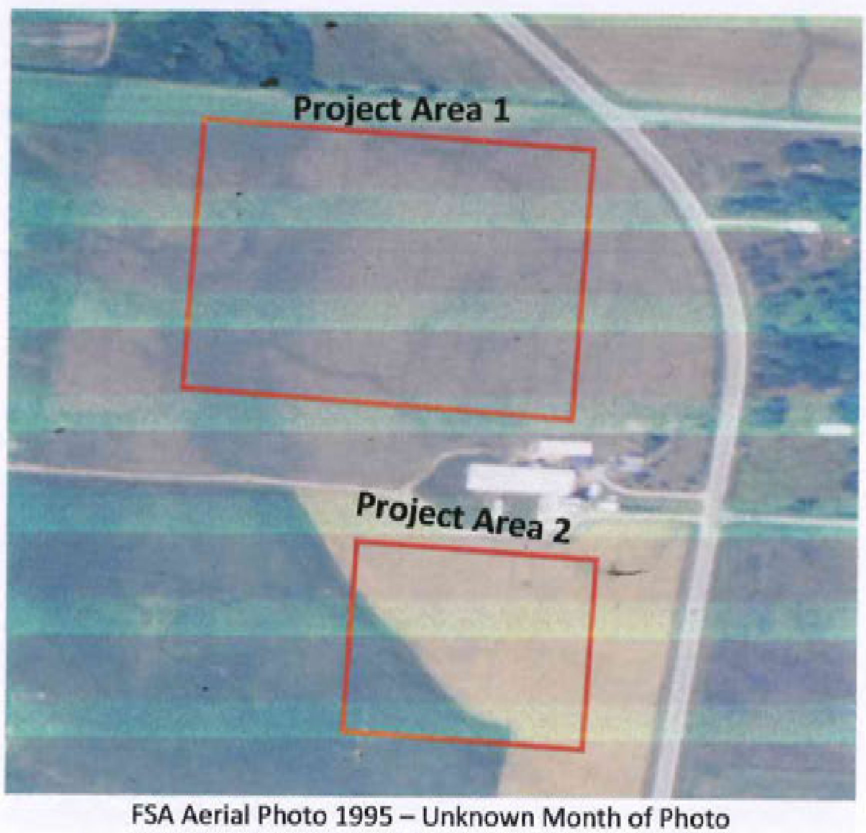

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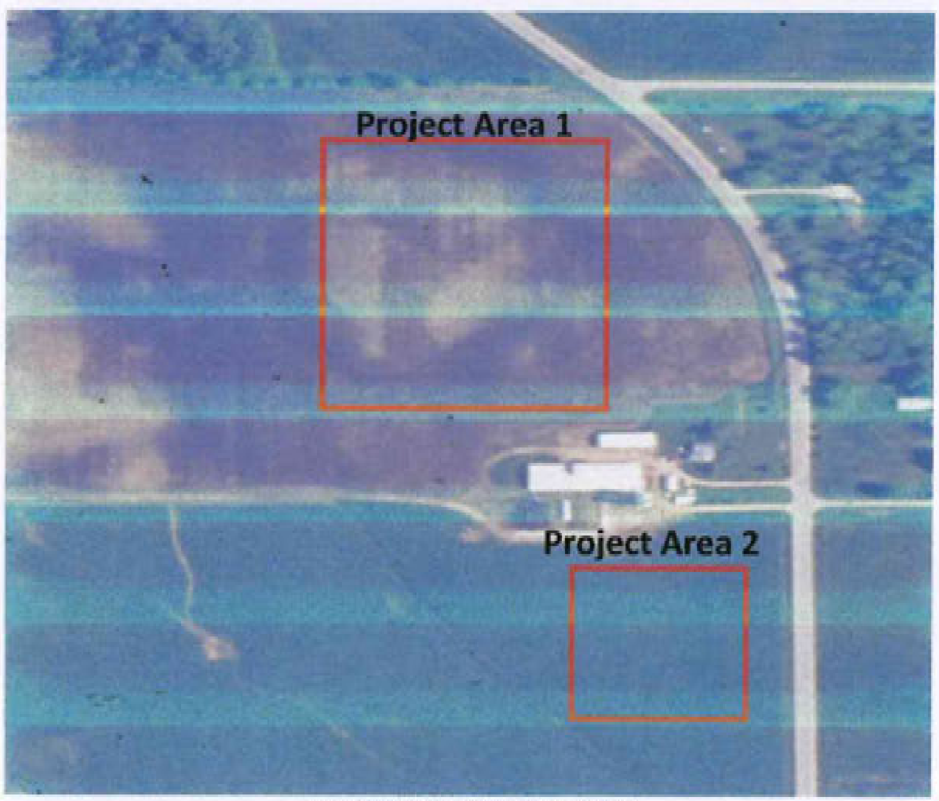
FSA Aerial Photo June 1996



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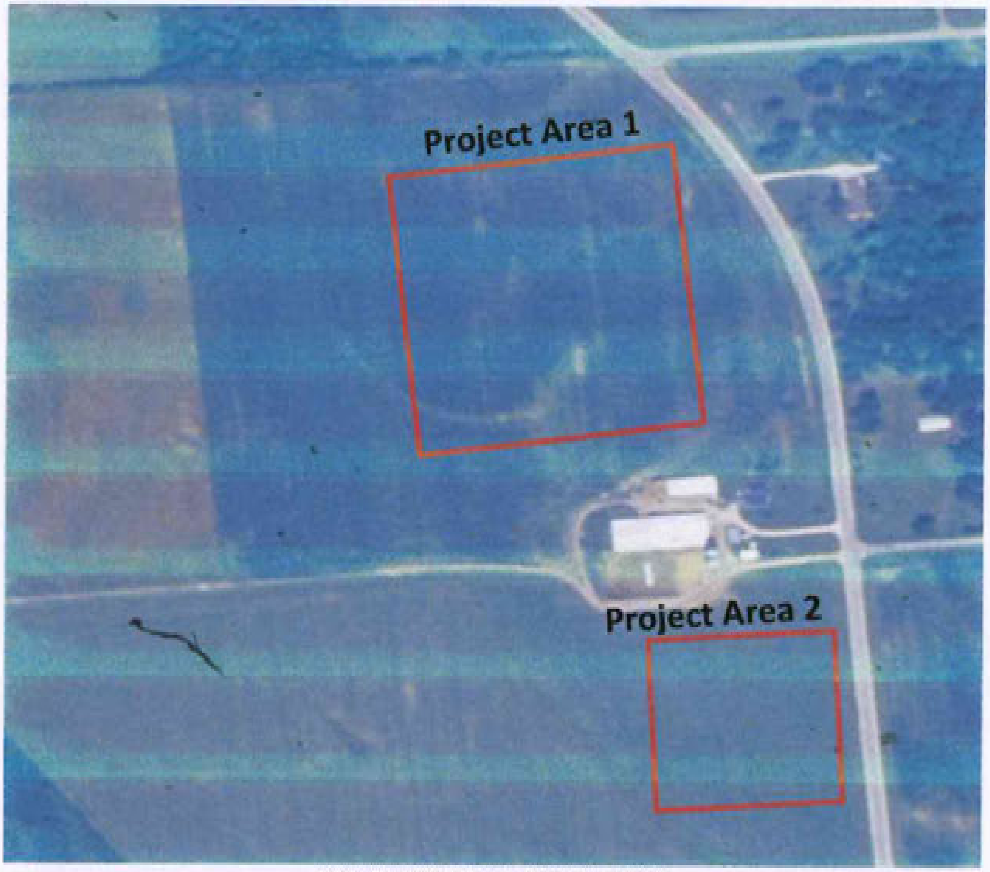

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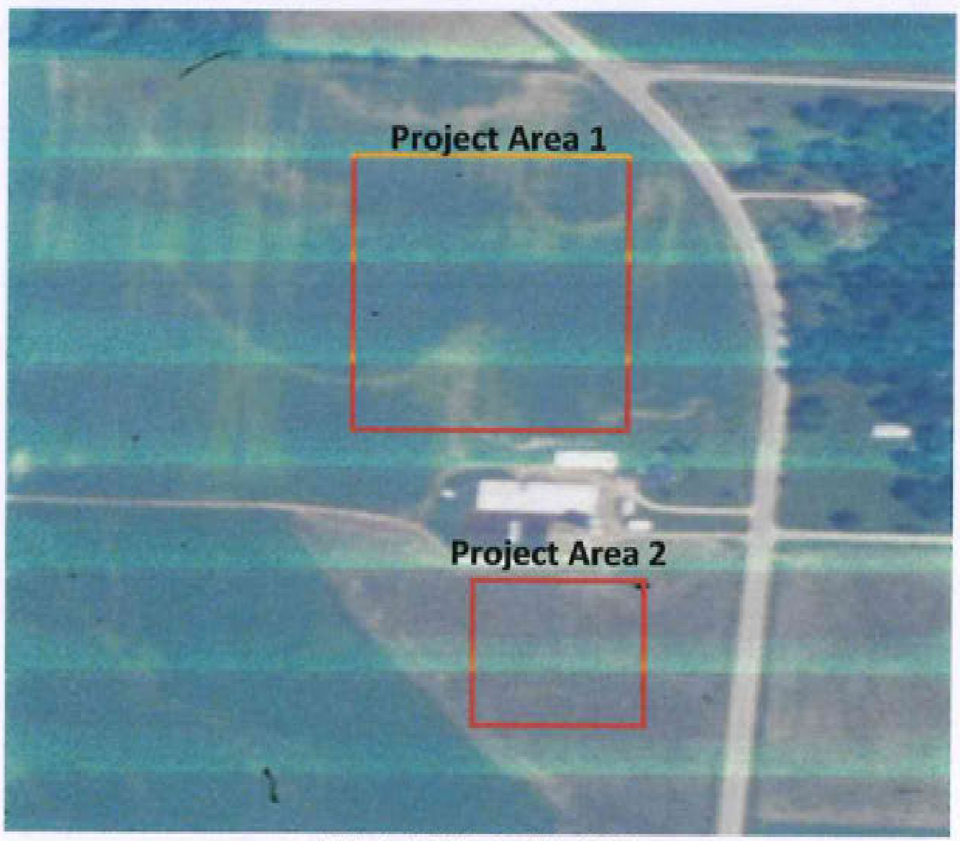

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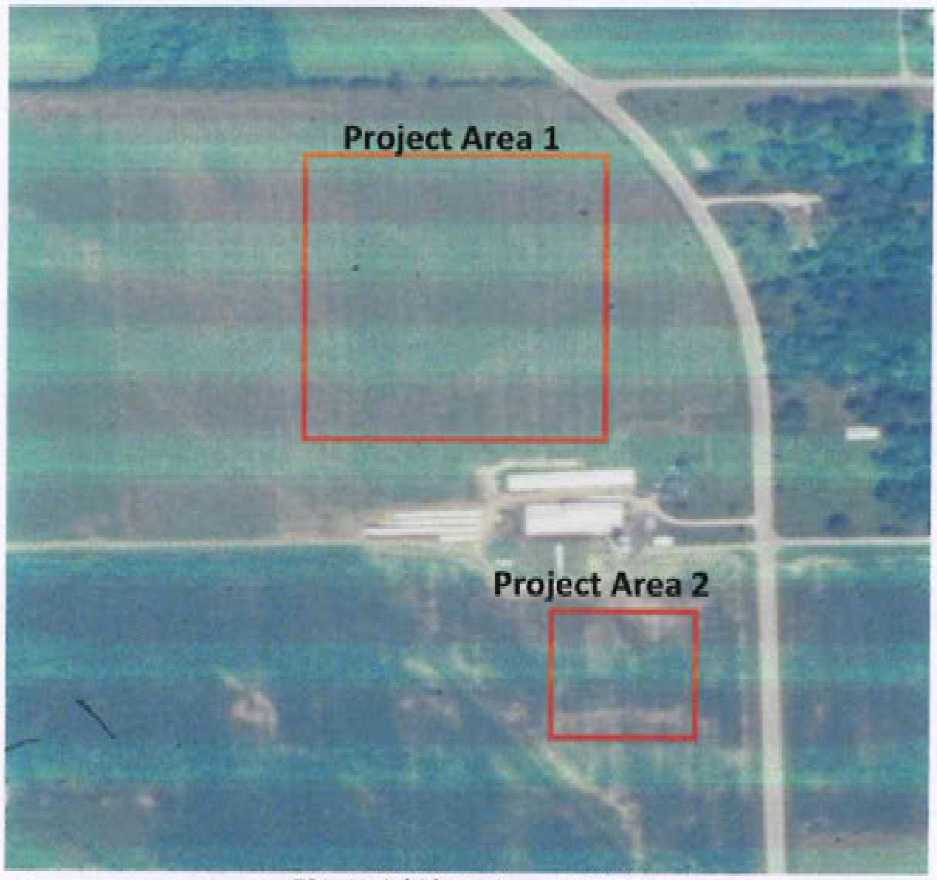
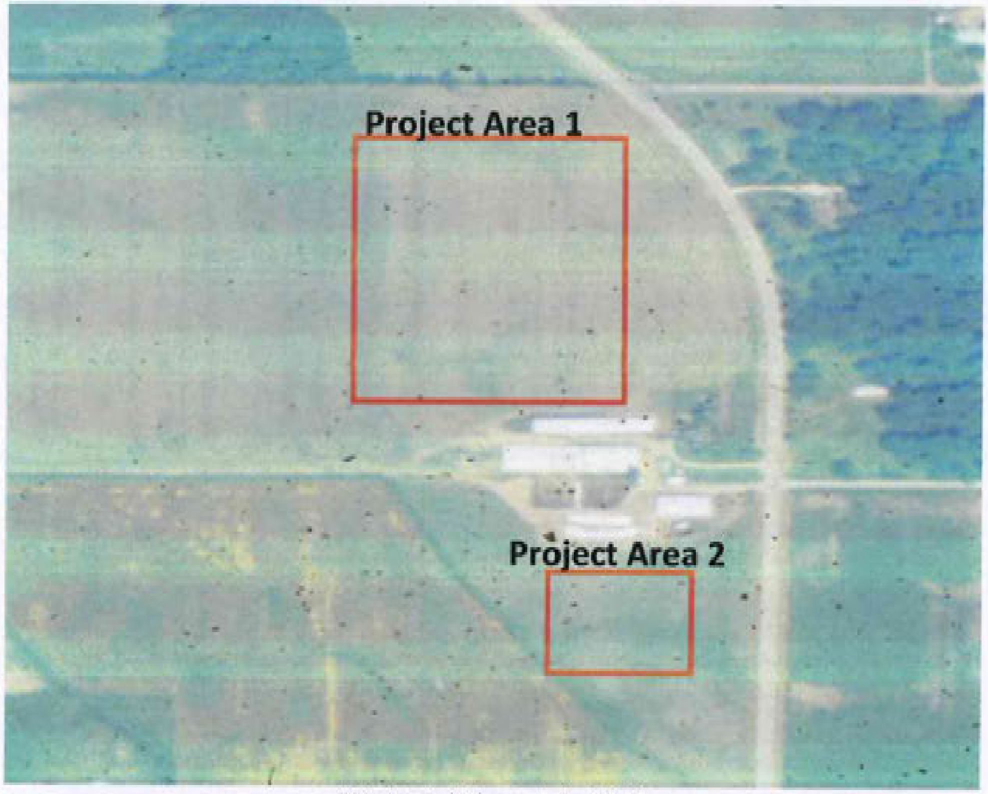


FSA Aerial Photo August 2000

FSA Aerial Photo June 2001



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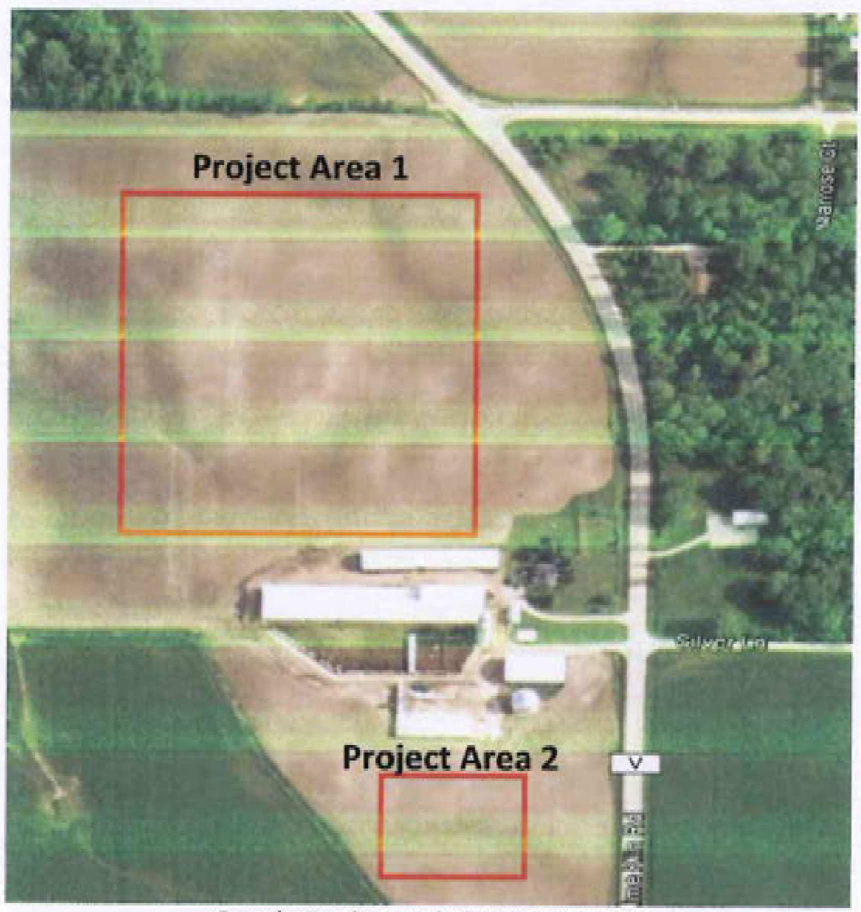
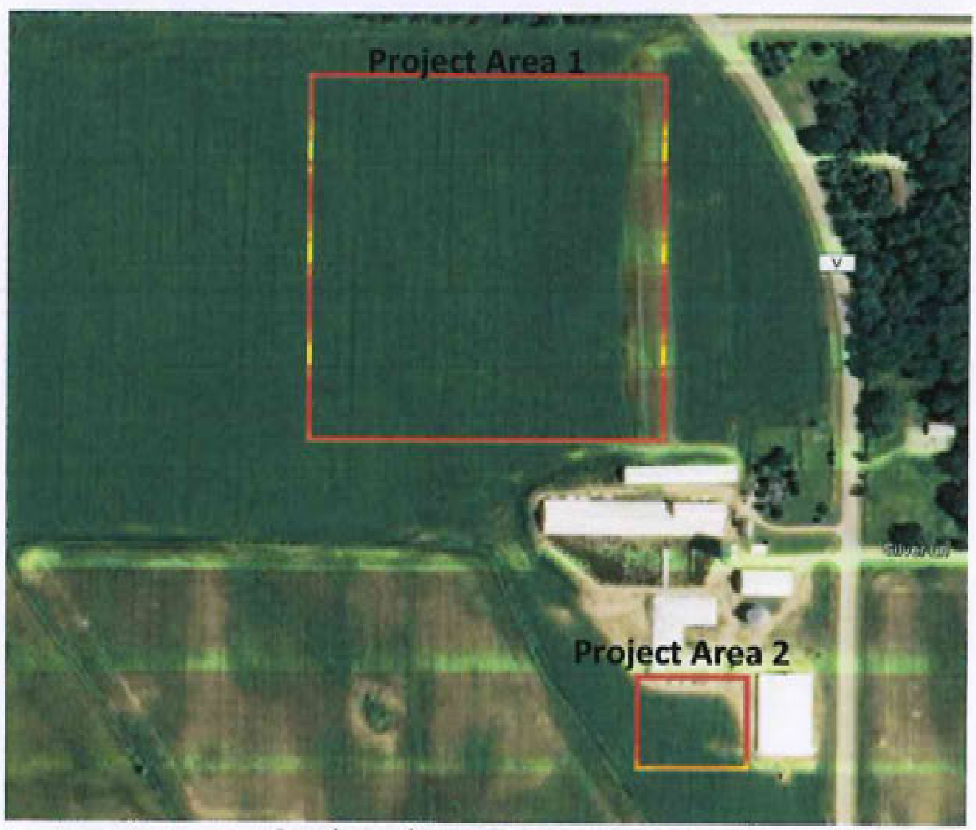
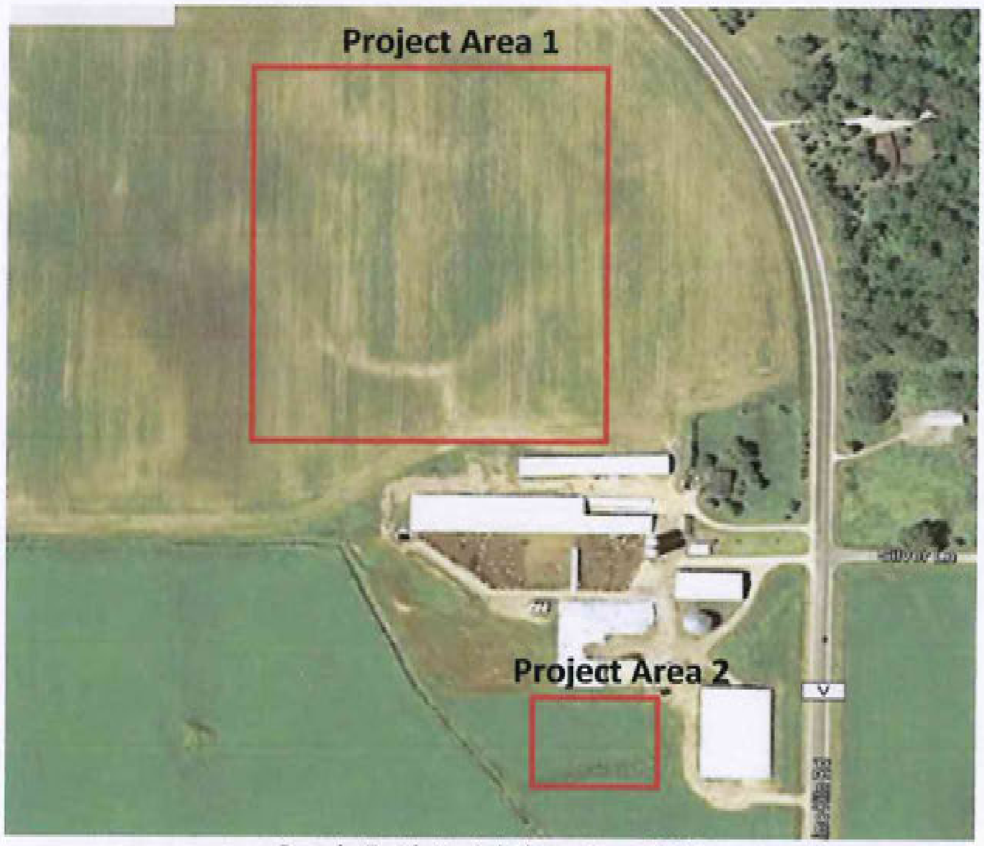


Google Earth Aerial Photo May 2005

Google Earth Aerial Photo June 2006



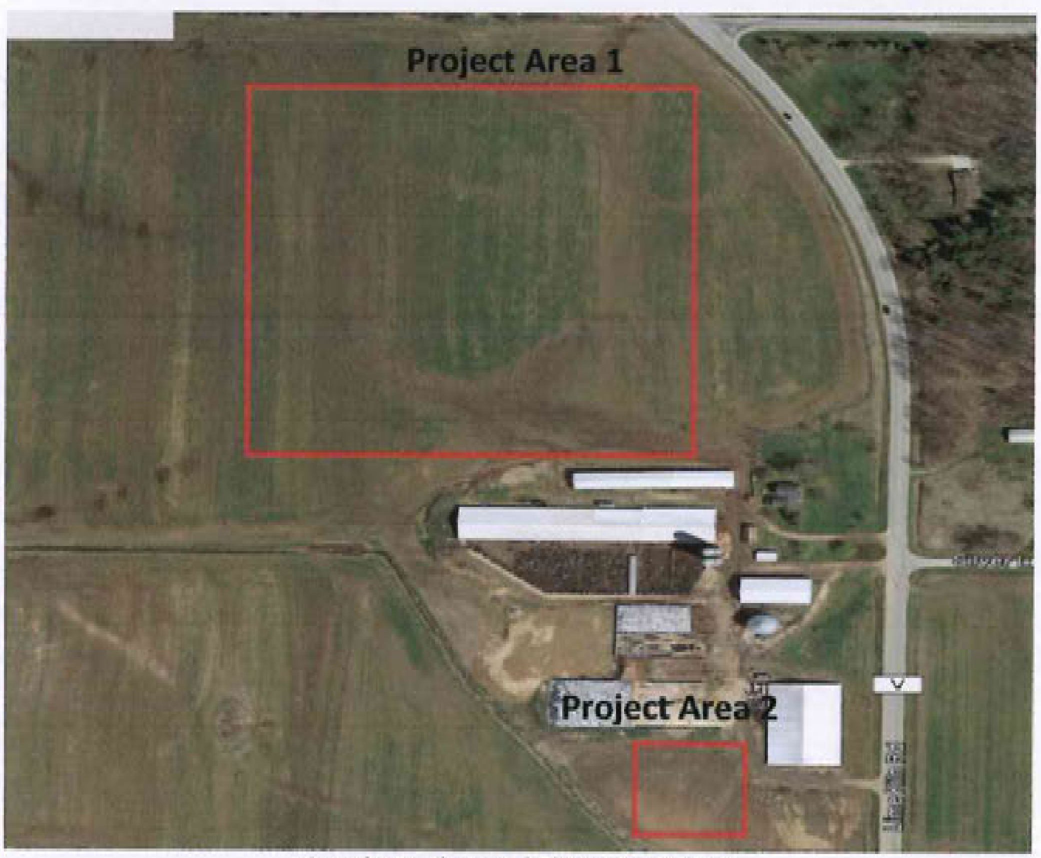
Google Earth Aerial Photo June 2008



Google Earth Aerial Photo June 2010

Google Earth Aerial Photo October 2011

Google Earth Aerial Photo April 2015



Google Earth Aerial Photo April 2017

Soil Map—Brown County, Wisconsin
(Ledgeview Dairy - Soils Map)

Map Scale: 1:4,650 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 200, 400, 800, 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 10, Sep 27, 2016

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

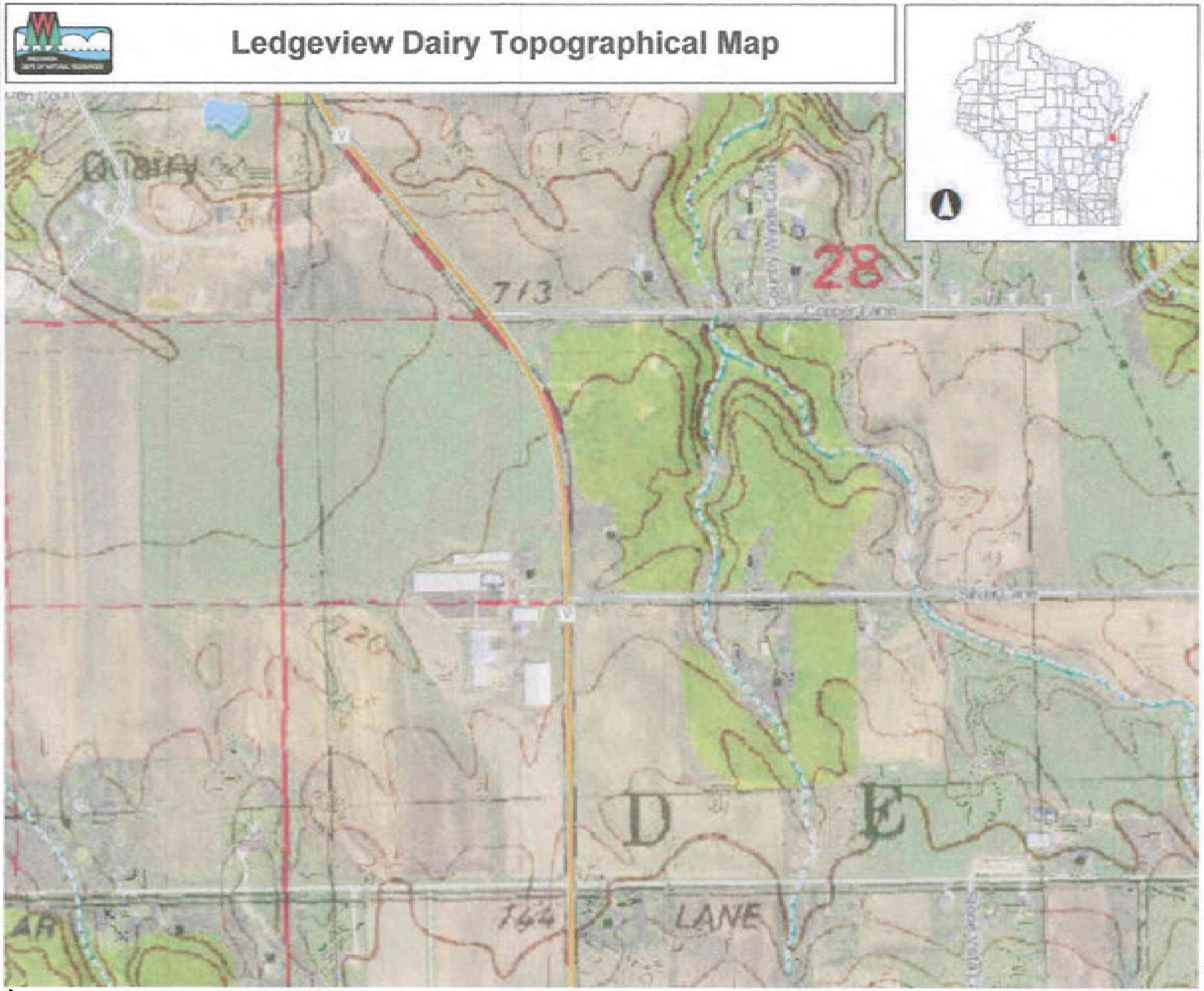
Date(s) aerial images were photographed: Sep 9, 2011—Aug 14, 2014

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

Map Unit Legend

Brown County, Wisconsin (WI009)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AeA	Allendale fine sandy loam, 0 to 3 percent slopes	5.8	7.5%
KhB	Kewaunee silt loam, 2 to 6 percent slopes	39.3	51.1%
KhB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	1.5	1.9%
KhC2	Kewaunee silt loam, 6 to 12 percent slopes, eroded	2.0	2.6%
MaA	Manawa sandy loam, 1 to 3 percent slopes	25.9	33.6%
McA	Manawa silty clay loam, 0 to 3 percent slopes	1.9	2.5%
Po	Poygan silty clay loam, 0 to 2 percent slopes, drained	0.6	0.8%
Totals for Area of Interest		**77.0**	**100.0%**

Ledgeview Dairy Topographical Map



Legend

- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

0.3 0 0.13 0.3 Miles

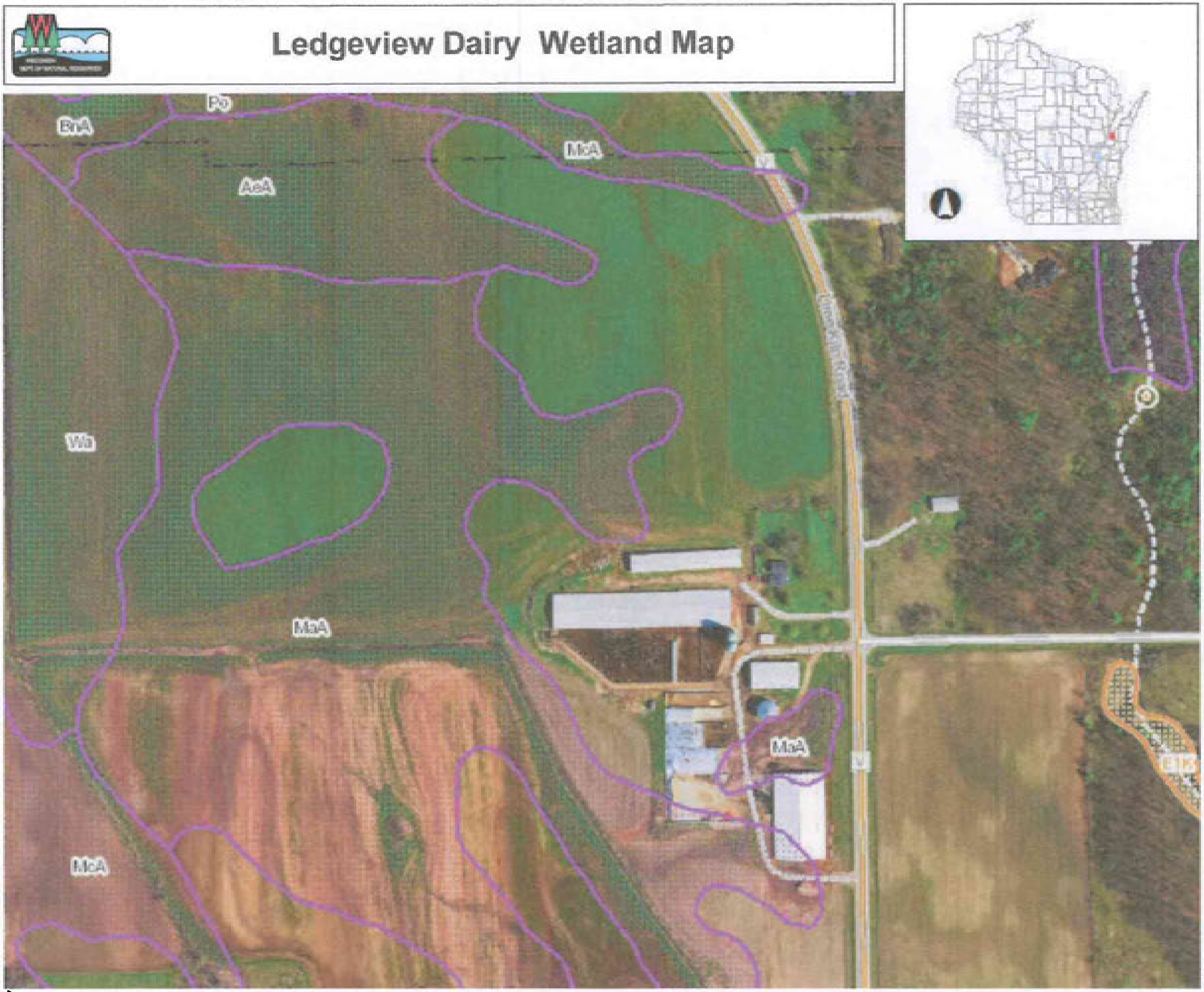
NAD_1983_HARN_Wisconsin_TM

1: 7,920

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

Notes

Ledgeview Dairy Wetland Map



0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960

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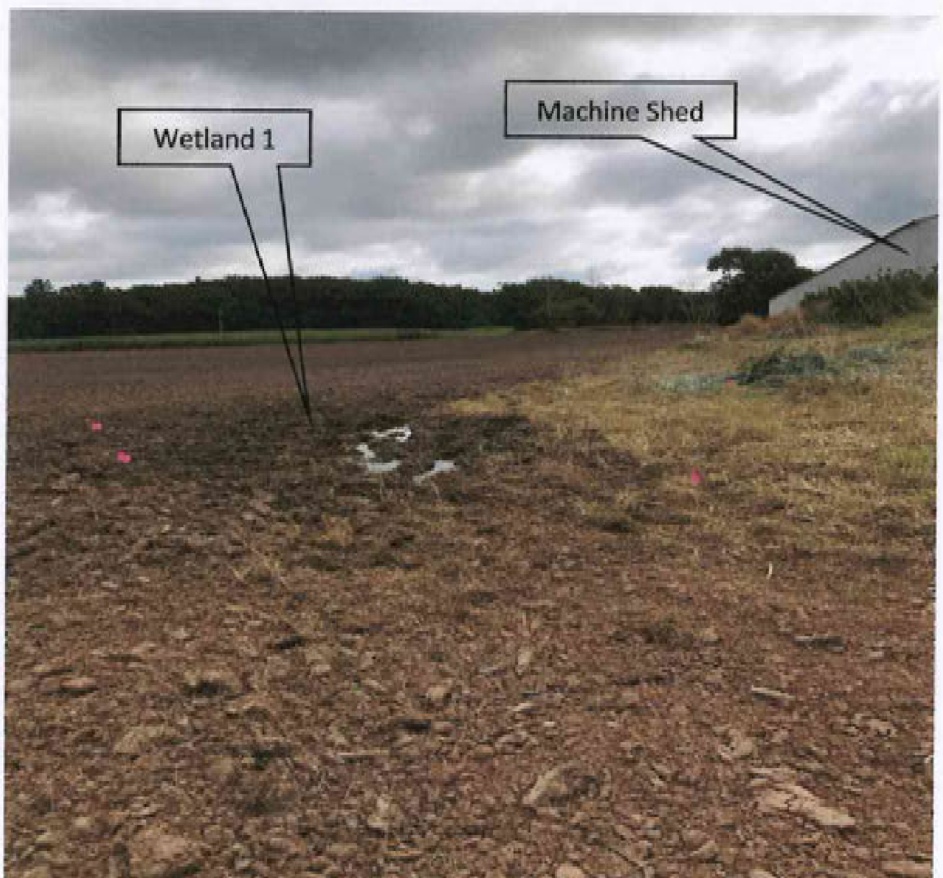
Legend

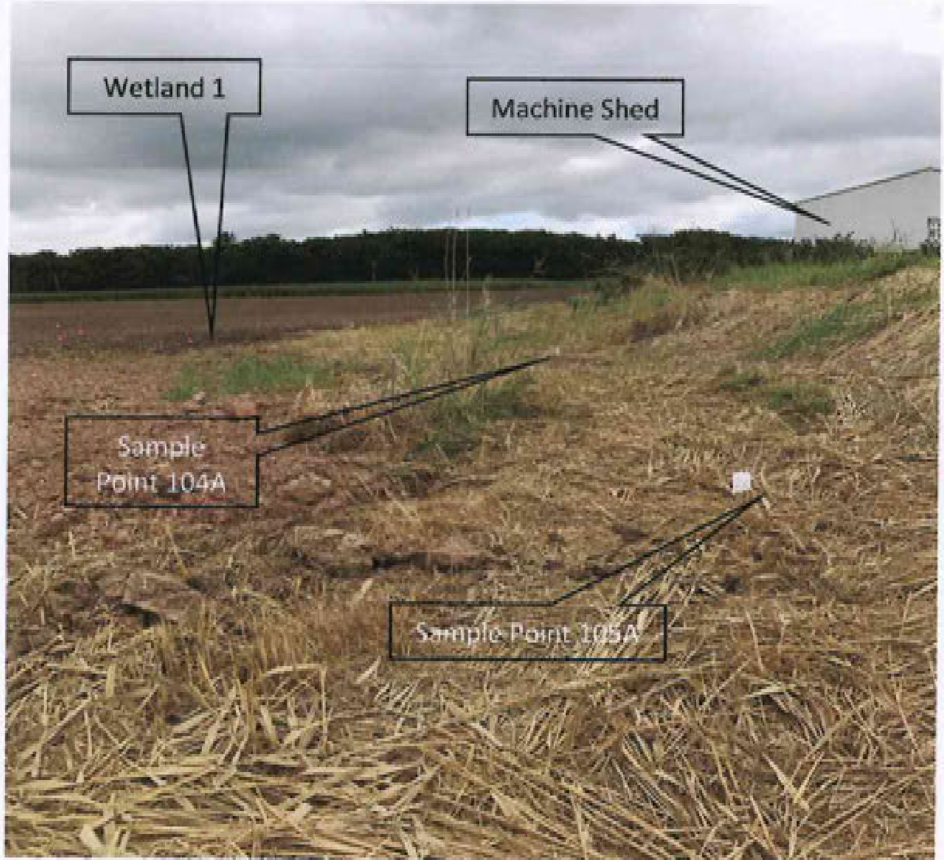
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Wetland Indicators
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

Notes

At west side of sample point 101A looking southeast.



At west side of Wetland 1 looking east.

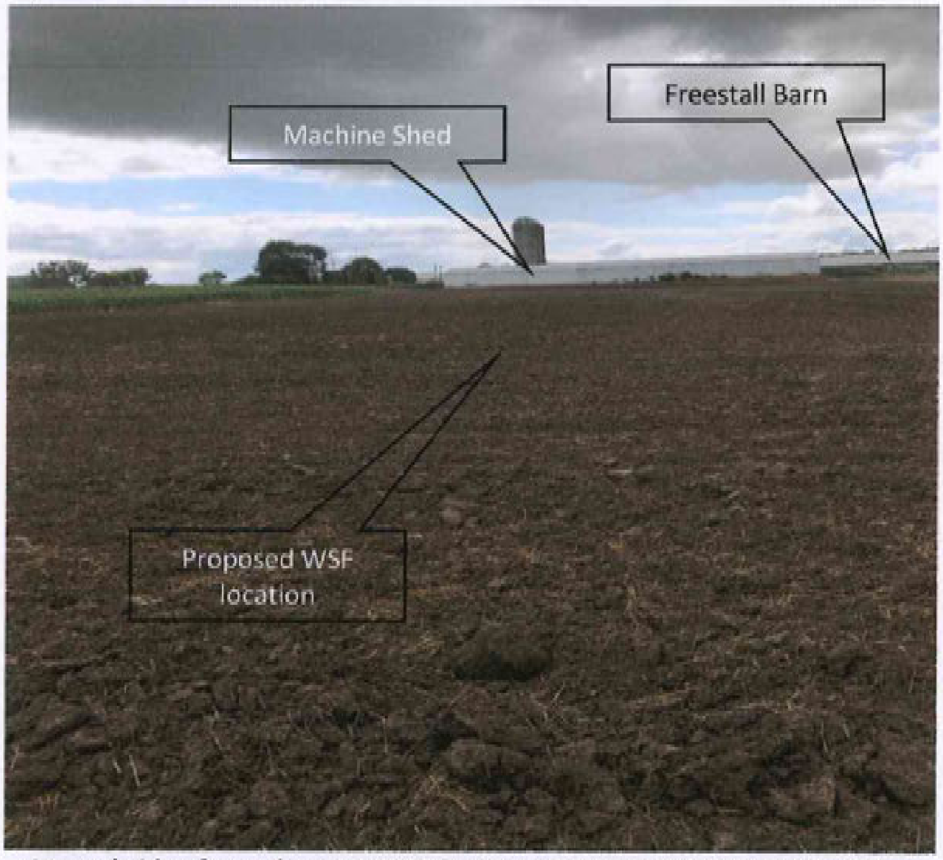


West of sample point 105A looking east.

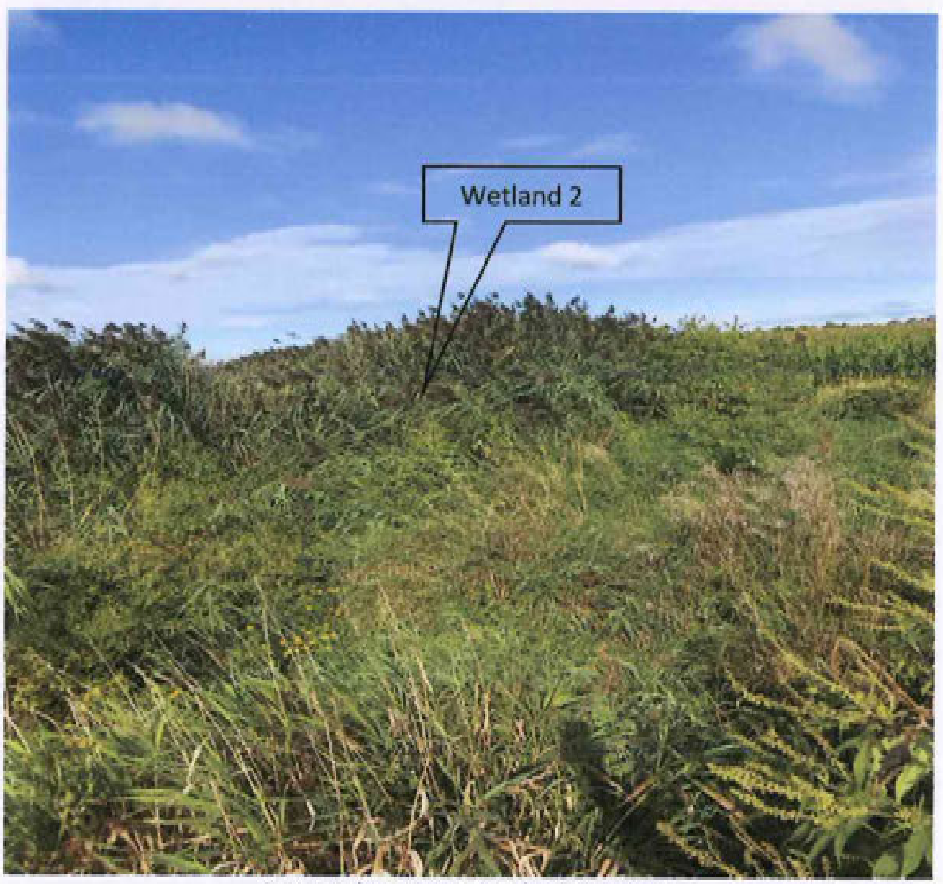
North side of sample point 201B looking south.

At sample point 203B looking northeast.

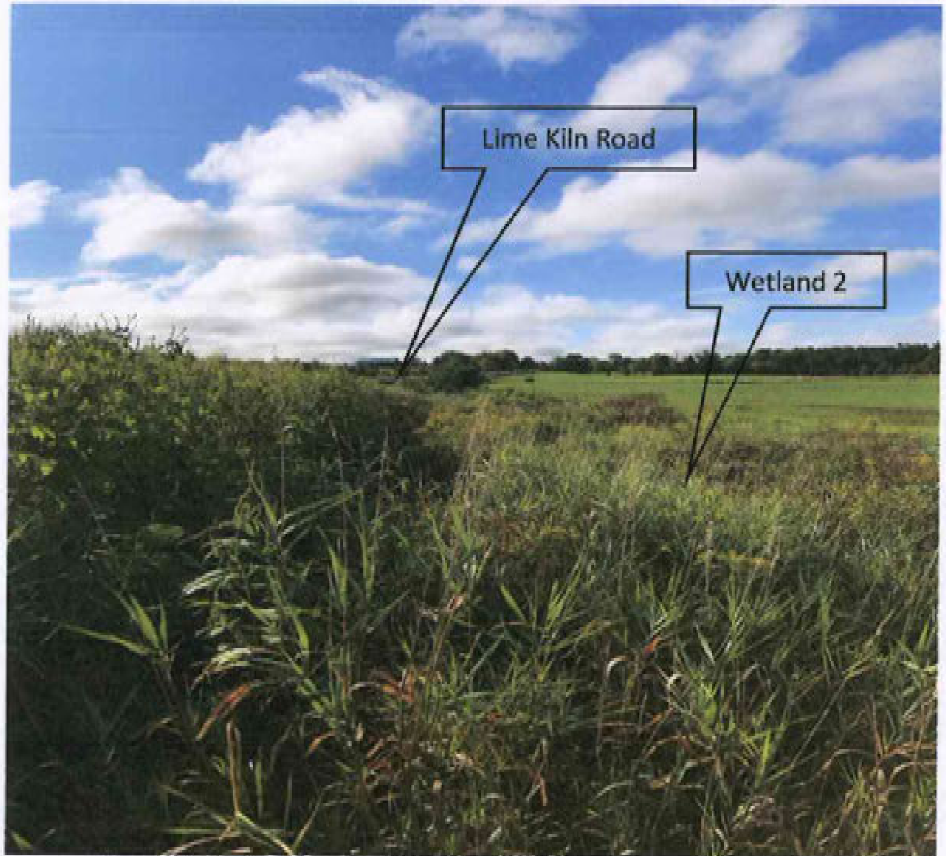
At southside of sample point 205B looking southwest.



At southside of sample point 301C looking south towards housing facilities.



At sample point 401D looking west.



At sample point 403D looking southeast towards Lime Kiln Road.

At sample point 403D looking northwest.

Exhibit 3

Aerial Photo Hydrologic Review

Date: 8.31.17

Landowner: Ledgeview Dairy

Location: Section 28, T23N-R21E, Town of Ledgeview, Brown County

Site Idenfication: Project Area 1 & 2

# of Photos	Aerial Photo Month/Year	Photo Source	Wet, Normal or Dry	Project Area 1 Photo Observations	Project Area 2 Photo Observations
1	July 1981	FSA	N	None	None
2	July 1982	FSA	N	None	None
3	July 1983	FSA	N	None	None
4	June 1984	FSA	N	None	SS
5	July 1985	FSA	N	None	None
6	August 1986	FSA	N	None	SS
7	1987	FSA	Unknown Month of Photo		
8	1988	FSA	Unknown Month of Photo		
9	June 1989	FSA	N	None	None
10	June 1990	FSA	N	None	None
11	August 1991	FSA	N	None	None
12	1992	FSA	Unknown Month of Photo		
13	1993	FSA	Unknown Month of Photo		
14	1994	FSA	Unknown Month of Photo		
15	1995	FSA	Unknown Month of Photo		
16	June 1996	FSA	N	None	None
17	June 1997	FSA	N	SS	None
18	August 1998	FSA	N	None	None
19	July 1999	FSA	N	None	None
20	August 2000	FSA	W	None	SS
21	June 2001	FSA	W	None	None
22	July 2002	FSA	W	None	None
23	May 2005	Google Earth	N	SS	None
24	June 2006	Google Earth	N	None	None
25	June 2008	Google Earth	N	None	None
26	June 2010	Google Earth	N	None	SS
27	October 2011	Google Earth	N	None	None
28	April 2015	Google Earth	D	SS	SS
29	April 2017	Google Earth	N	SS	None

 # normal years: 19

 # normal years with wet signatures Project Area 1: 3

 # normal years with wet signatures Project Area 2: 3

Key

CS - Crop Stress
DO - Drowned Out
NC - Not Cropped
SW - Standing Water
WS - Wetland Signature
NV - Normal Vegetative Cover
NSS - No Soil Wetness
AP - Altered Pattern
SS - Soil Wetness Signature
O - Other Signature

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1981
Photo/obs Date	July 1981	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	2.63	N	2	3	6
2nd Prior Month*	May	1.60	3.34	0.56	D	1	2	2
3rd Prior Month*	April	1.89	3.01	4.22	W	3	1	3
							Sum	11

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1982
Photo/obs Date	July 1982	**Soil Name**	

shaded cells are locked or calculated

	Long-term rainfall statistics (from WETS table or State Climatology Office)							
	Month	**30% chance <**	**30% chance >**	**Precip**	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	2.67	N	2	3	6
2nd Prior Month*	May	1.60	3.34	2.74	N	2	2	4
3rd Prior Month*	April	1.89	3.01	2.66	N	2	1	2
	*compared to photo/observation date						**Sum**	**12**

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1983
Photo/obs Date	July 1983	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	1.82	D	1	3	3
2nd Prior Month*	May	1.60	3.34	4.80	W	3	2	6
3rd Prior Month*	April	1.89	3.01	1.39	D	1	1	1
							Sum	10

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1984
Photo/obs Date	June 1984	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	**30% chance <**	**30% chance >**	**Precip**	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	1.55	D	1	3	3
2nd Prior Month*	April	1.89	3.01	3.33	W	3	2	6
3rd Prior Month*	March	1.21	2.50	1.64	N	2	1	2
							Sum	11

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1985
Photo/obs Date	July 1985	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	2.21	N	2	3	6
2nd Prior Month*	May	1.60	3.34	2.58	N	2	2	4
3rd Prior Month*	April	1.89	3.01	2.24	N	2	1	2
							Sum	12

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1986
Photo/obs Date	August 1986	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	July	2.39	4.09	4.95	W	3	3	9
2nd Prior Month*	June	2.05	4.15	4.06	N	2	2	4
3rd Prior Month*	May	1.60	3.34	1.15	D	1	1	1
							Sum	**14**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1989
Photo/obs Date	June 1989	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	4.22	W	3	3	9
2nd Prior Month*	April	1.89	3.01	0.49	D	1	2	2
3rd Prior Month*	March	1.21	2.50	2.88	W	3	1	3
							Sum	14

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: prior period has been normal

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1990
Photo/obs Date	June 1990	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	**30% chance <**	**30% chance >**	**Precip**	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	3.99	W	3	3	9
2nd Prior Month*	April	1.89	3.01	1.28	D	1	2	2
3rd Prior Month*	March	1.21	2.50	3.25	W	3	1	3
							Sum	**14**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1991
Photo/obs Date	August 1991	**Soil Name**	

shaded cells are locked or calculated

	Long-term rainfall statistics (from WETS table or State Climatology Office)							
	Month	**30% chance <**	**30% chance >**	**Precip**	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	July	2.39	4.09	4.16	W	3	3	9
2nd Prior Month*	June	2.05	4.15	1.08	D	1	2	2
3rd Prior Month*	May	1.60	3.34	2.42	N	2	1	2
							Sum	**13**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1996
Photo/obs Date	June 1996	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	1.40	D	1	3	3
2nd Prior Month*	April	1.89	3.01	3.85	W	3	2	6
3rd Prior Month*	March	1.21	2.50	1.16	D	1	1	1
							Sum	**10**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1997
Photo/obs Date	June 1997	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	2.60	N	2	3	6
2nd Prior Month*	April	1.89	3.01	1.57	D	1	2	2
3rd Prior Month*	March	1.21	2.50	1.92	N	2	1	2
							Sum	**10**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1998
Photo/obs Date	August 1998	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	July	2.39	4.09	1.86	D	1	3	3
2nd Prior Month*	June	2.05	4.15	6.17	W	3	2	6
3rd Prior Month*	May	1.60	3.34	2.21	N	2	1	2
							Sum	**11**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	1999
Photo/obs Date	July 1999	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	3.98	N	2	3	6
2nd Prior Month*	May	1.60	3.34	3.77	W	3	2	6
3rd Prior Month*	April	1.89	3.01	2.11	N	2	1	2
							Sum	14

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: prior period has been normal

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2000
Photo/obs Date	August 2000	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	July	2.39	4.09	6.27	W	3	3	9
2nd Prior Month*	June	2.05	4.15	5.33	W	3	2	6
3rd Prior Month*	May	1.60	3.34	4.41	W	3	1	3
							Sum	**18**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been wetter than normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2001
Photo/obs Date	June 2001	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	4.74	W	3	3	9
2nd Prior Month*	April	1.89	3.01	3.66	W	3	2	6
3rd Prior Month*	March	1.21	2.50	0.42	D	1	1	1
							Sum	**16**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been wetter than normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2002
Photo/obs Date	July 2002	**Soil Name**	

shaded cells are locked or calculated

	Long-term rainfall statistics (from WETS table or State Climatology Office)							
	Month	**30% chance <**	**30% chance >**	**Precip**	Condition **Dry, Wet,** Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	June	2.05	4.16	4.69	W	3	3	9
2nd Prior Month*	May	1.60	3.34	2.81	N	2	2	4
3rd Prior Month*	April	1.89	3.01	3.02	W	3	1	3
	*compared to photo/observation date						**Sum**	**16**

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions:	**prior period has been wetter than normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2005
Photo/obs Date	May 2005	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	April	1.89	3.01	1.53	D	1	3	3
2nd Prior Month*	March	1.21	2.55	1.33	N	2	2	4
3rd Prior Month*	February	0.61	1.22	1.33	W	3	1	3
							Sum	10

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2006
Photo/obs Date	June 2006	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	5.90	W	3	3	9
2nd Prior Month*	April	1.89	3.01	1.97	N	2	2	4
3rd Prior Month*	March	1.21	2.50	1.16	D	1	1	1
							Sum	**14**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2008
Photo/obs Date	June 2008	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	1.43	D	1	3	3
2nd Prior Month*	April	1.89	3.01	4.61	W	3	2	6
3rd Prior Month*	March	1.21	2.50	2.52	W	3	1	3
							Sum	12

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2010
Photo/obs Date	June 2010	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	May	1.60	3.34	1.99	N	2	3	6
2nd Prior Month*	April	1.89	3.01	3.63	W	3	2	6
3rd Prior Month*	March	1.21	2.50	0.31	D	1	1	1
							Sum	13

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: prior period has been normal

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2011
Photo/obs Date	October 2011	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	September	1.89	3.76	4.54	W	3	3	9
2nd Prior Month*	August	2.49	4.52	1.71	D	1	2	2
3rd Prior Month*	July	2.39	4.09	5.30	W	3	1	3
							Sum	**14**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2015
Photo/obs Date	April 2015	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	March	1.21	2.50	0.90	D	1	3	3
2nd Prior Month*	February	0.50	1.22	0.41	D	1	2	2
3rd Prior Month*	January	0.78	1.45	0.56	D	1	1	1
							Sum	6

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been drier than normal**

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2017
Photo/obs Date	April 2017	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	March	1.21	2.50	2.30	N	2	3	6
2nd Prior Month*	February	0.50	1.22	0.82	N	2	2	4
3rd Prior Month*	January	0.78	1.45	2.43	W	3	1	3
							Sum	13

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

Exhibit 4

Hydric Rating by Map Unit—Brown County, Wisconsin
(Ledgeview Dairy - Hydric Soil Ratings)

Map Scale: 1:4,670 if printed on A portrait (8.5" x 11") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 10, Sep 27, 2016

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

Date(s) aerial images were photographed: Sep 9, 2011—Aug 14, 2014

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

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Brown County, Wisconsin (WI009)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AeA	Allendale fine sandy loam, 0 to 3 percent slopes	2	5.3	7.0%
KhB	Kewaunee silt loam, 2 to 6 percent slopes	3	39.0	51.8%
KhB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	2	1.6	2.1%
KhC2	Kewaunee silt loam, 6 to 12 percent slopes, eroded	0	2.4	3.2%
MaA	Manawa sandy loam, 1 to 3 percent slopes	0	24.6	32.7%
McA	Manawa silty clay loam, 0 to 3 percent slopes	4	2.0	2.7%
Po	Poygan silty clay loam, 0 to 2 percent slopes, drained	88	0.5	0.6%
Totals for Area of Interest			**75.2**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Brown County, Wisconsin

AeA—Allendale fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wpwp
Elevation: 590 to 870 feet
Mean annual precipitation: 29 to 31 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Allendale and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allendale

Setting

Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy lacustrine deposits over clayey lacustrine deposits

Typical profile

Ap - 0 to 11 inches: fine sandy loam
E - 11 to 15 inches: fine sand
Bhs - 15 to 32 inches: fine sand
E' - 32 to 35 inches: fine sand
Bt - 35 to 39 inches: sandy loam
2Bt - 39 to 44 inches: silty clay
2C - 44 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 37 to 41 inches to abrupt textural change
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 4 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Allendale

Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Wauseon

Percent of map unit: 2 percent
Landform: Flats
Landform position (three-dimensional): Rise
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 10, Sep 27, 2016

Brown County, Wisconsin

KhB—Kewaunee silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2t040
Elevation: 580 to 1,210 feet
Mean annual precipitation: 27 to 35 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 130 to 194 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kewaunee and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kewaunee

Setting

Landform: Ground moraines
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Thin loess over calcareous clayey till

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 13 inches: silty clay loam
2Bt - 13 to 29 inches: clay
2Cd - 29 to 79 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 26 to 40 inches to densic material
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 60 to 67 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Poygan, drained

Percent of map unit: 3 percent
Landform: Till plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Manawa

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Data Source Information

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 10, Sep 27, 2016

Brown County, Wisconsin

MaA—Manawa sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tjxl
Elevation: 560 to 950 feet
Mean annual precipitation: 29 to 31 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Manawa and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manawa

Setting

Landform: Drainageways
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy glaciofluvial deposits over clayey till

Typical profile

Ap - 0 to 8 inches: sandy loam
2Bt - 8 to 30 inches: silty clay
2Cd - 30 to 79 inches: silty clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Allendale

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Kewaunee

Percent of map unit: 5 percent
Landform: Moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Brown County, Wisconsin
Survey Area Data: Version 10, Sep 27, 2016

Exhibit 5

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	8.31.17	**Landowner/Project**	Ledgeview Dairy
Weather Station	Green Bay A S Intl AP	**State**	WI
County	Brown	**Growing Season**	2017
Photo/obs Date	9.5.17 Field Observations	**Soil Name**	

shaded cells are locked or calculated

	Long-term rainfall statistics (from WETS table or State Climatology Office)							
	Month	**30% chance <**	**30% chance >**	**Precip**	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	August	2.49	4.52	4.05	N	2	3	6
2nd Prior Month*	July	2.39	4.09	4.56	W	3	2	6
3rd Prior Month*	June	2.05	4.16	3.78	N	2	1	2
	*compared to photo/observation date						**Sum**	**14**

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been normal**

Ledgeview Dairy

WETS Table

WETS Station: GREEN BAY A S INTL AP, WI								
Requested years: 1971 - 2000								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	23.7	7.2	15.4	1.21	0.78	1.45	4	14.0
Feb	28.5	11.9	20.2	1.01	0.61	1.22	3	8.6
Mar	39.4	22.4	30.9	2.06	1.21	2.50	5	9.2
Apr	54.0	33.7	43.8	2.56	1.89	3.01	6	2.9
May	67.6	44.5	56.1	2.75	1.60	3.34	6	0.2
Jun	76.6	54.0	65.3	3.43	2.05	4.16	6	0.0
Jul	81.0	59.0	70.0	3.44	2.39	4.09	6	0.0
Aug	78.3	57.3	67.8	3.77	2.49	4.52	7	0.0
Sep	69.8	48.6	59.2	3.11	1.89	3.76	6	0.0
Oct	57.5	38.0	47.7	2.17	1.36	2.62	5	0.2
Nov	41.9	26.4	34.2	2.27	1.35	2.76	5	5.4
Dec	28.6	13.7	21.1	1.41	0.90	1.70	4	12.6
Annual:					26.46	31.52		
Average	53.9	34.7	44.3	-	-	-	-	-
Total	-	-	-	29.18			64	53.1

GROWING SEASON DATES			
Years with missing data:	24 deg = 0	28 deg = 0	32 deg = 0
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 30	28 deg = 30	32 deg = 30
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/10 to 10/29: 202 days	4/24 to 10/13: 172 days	5/6 to 10/4: 151 days
70 percent *	4/6 to 11/2: 210 days	4/20 to 10/18: 181 days	5/3 to 10/8: 158 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1886									3.58	5.40	2.88	1.36	13.22
1887	2.51	3.99	1.01	1.76	0.90	2.38	4.31	2.93	3.29	3.90	1.57	4.01	32.56
1888	2.38	2.11	5.69	2.90	3.79	1.14	3.13	2.34	5.36	1.45	2.12	3.01	35.42
1889	3.75	3.30	0.74	1.09	4.75	3.06	2.55	1.36	4.68	0.26	3.62	3.38	32.54
1890	3.29	3.16	1.87	2.75	3.08	5.18	4.50	4.61	1.77	3.55	1.72	0.75	36.23
1891	2.30	1.96	3.33	1.93	0.12	1.73	1.80	4.02	0.60	2.24	2.32	3.68	26.03
1892	1.80	1.84	0.86	1.67	5.10	5.84	2.76	3.87	3.40	1.62	2.93	1.33	33.02
1893	1.73	1.82	2.63	3.80	3.54	2.48	4.12	1.52	3.51	1.37	2.27	4.20	32.99
1894	1.98	1.40	2.39	2.75	6.93	5.32	1.86	1.34	3.	4.	2.	1.	35.

								27	33	86	46	89
1895	1.96	0.74	0.41	1.21	4.28	2.37	1.44	3.71	1.24	0.40	1.50	1.78	21.04
1896	0.98	0.26	1.19	5.48	3.60	3.35	2.45	2.96	5.21	3.13	3.60	0.88	33.09
1897	1.69	1.69	2.52	4.09	2.40	7.56	3.92	1.79	3.21	2.50	1.56	1.20	34.13
1898	1.20	1.09	2.96	2.57	3.13	3.60	3.16	2.65	3.07	4.04	0.87	0.74	29.08
1899	0.98	0.96	2.93	3.15	1.95	4.85	4.99	0.36	2.16	1.35	0.54	1.54	25.76
1900	0.77	1.67	1.07	2.88	2.10	2.30	5.70	4.28	5.09	4.29	1.98	0.63	32.76
1901	0.90	0.49	2.75	0.51	2.71	3.80	4.11	1.58	4.15	3.60	0.80	1.06	26.46
1902	0.45	1.39	2.65	1.49	4.20	4.71	4.10	1.23	2.63	1.56	1.42	1.78	27.61
1903	1.03	1.35	3.76	2.79	3.32	1.03	3.54	5.38	3.39	1.72	1.25	0.34	28.89
1904	0.45	1.43	3.05	2.07	6.53	1.55	3.83	1.41	4.44	3.19	0.34	2.34	30.63
1905	1.43	1.17	2.77	2.04	3.75	3.28	5.26	4.41	2.42	2.71	1.70	0.97	31.91
1906	2.58	0.87	3.39	2.05	2.84	4.38	3.59	7.93	2.20	2.68	3.76	1.63	37.90
1907	2.17	0.08	2.04	3.39	2.64	3.22	1.75	4.17	3.80	0.82	1.29	2.05	27.32
1908	0.90	1.75	2.38	2.84	3.64	1.74	2.44	1.19	1.45	0.57	1.61	1.40	21.91
1909	0.66	1.49	1.63	4.00	4.28	4.16	1.04	1.24	2.68	0.95	2.55	2.10	26.78
1910	1.02	1.07	0.19	4.90	1.87	0.94	2.02	6.08	6.24	1.41	2.65	0.75	29.14
1911	0.87	1.96	0.75	1.43	5.72	2.23	1.59	1.56	5.16	4.68	2.54	2.20	30.69
1912	0.59	0.61	0.88	2.06	7.24	1.03	7.46	3.92	4.70	2.19	1.15	1.49	33.32
1913	1.17	1.67	3.03	2.37	5.49	2.70	4.91	1.01	3.56	2.55	1.91	0.46	30.83
1914	0.91	0.83	0.87	2.75	4.42	8.68	4.95	5.26	4.86	1.73	1.78	0.99	38.03
1915	1.29	2.44	0.86	1.33	3.32	2.54	2.62	3.66	5.10	0.85	2.87	0.86	27.74
1916	2.39	1.09	1.53	2.39	3.94	6.73	2.42	1.39	3.27	4.73	3.27	1.04	34.19
1917	1.96	0.50	2.45	2.32	1.12	4.92	1.52	2.07	1.95	2.38	0.70	0.38	22.27
1918	2.22	1.21	1.98	2.44	9.70	2.59	1.52	2.05	1.71	2.18	2.16	1.81	31.57
1919	0.67	1.51	1.26	3.20	4.53	0.83	5.39	1.60	2.97	2.37	2.26	0.36	26.95
1920	0.98	0.47	4.12	2.11	1.43	6.00	3.49	1.80	0.91	2.27	3.48	1.70	28.76
1921	0.50	0.73	2.08	4.13	1.04	0.71	2.48	4.97	2.62	2.04	1.14	3.65	26.09
1922	0.88	4.54	1.74	4.62	1.79	4.88	5.88	4.10	2.74	0.47	2.25	0.59	34.48
1923	1.73	0.91	2.93	2.33	1.50	2.53	3.31	3.65	1.48	1.98	0.60	1.19	24.14
1924	0.78	1.55	2.49	4.64	4.72	2.74	2.96	4.82	3.04	0.08	2.01	0.80	30.63
1925	0.27	1.79	0.59	1.84	1.21	5.96	3.04	2.61	3.38	2.05	0.48	1.07	24.29
1926	0.53	1.59	1.28	1.95	3.83	4.50	2.13	3.36	4.87	2.76	2.78	1.67	31.25
1927	1.05	0.34	2.17	1.81	3.40	1.96	2.99	0.59	4.82	1.97	2.32	1.89	25.31
1928	0.36	1.89	2.40	2.29	1.17	5.50	3.46	3.82	2.	3.	1.	0.	29.

									34	71	18	92	04
1929	2.54	1.58	2.11	6.47	1.70	3.75	2.04	1.70	2.38	1.86	0.53	0.91	27.57
1930	0.90	1.67	0.72	1.01	1.94	3.02	2.15	0.59	1.64	1.70	0.64	0.33	16.31
1931	0.64	0.64	1.71	0.63	1.08	3.17	3.31	2.34	5.84	3.76	3.61	1.10	27.83
1932	2.15	1.23	0.95	1.28	2.79	1.76	2.21	1.26	1.21	1.58	1.01	2.04	19.47
1933	1.43	0.75	2.26	2.54	2.40	5.07	3.43	1.10	2.01	3.59	0.70	1.19	26.47
1934	0.92	0.44	2.37	1.91	2.01	4.47	2.34	3.85	1.91	1.60	6.19	0.98	28.99
1935	1.44	1.28	0.70	1.70	1.46	4.69	1.70	4.31	3.29	1.21	1.53	0.90	24.21
1936	1.42	1.45	1.18	1.26	1.73	1.24	1.02	3.28	2.23	2.04	0.59	1.03	18.47
1937	2.43	2.33	0.44	3.42	1.12	1.39	2.15	2.62	2.84	2.30	1.91	0.85	23.80
1938	2.06	3.16	2.32	1.68	2.32	2.03	1.84	3.75	6.31	0.75	1.50	1.33	29.05
1939	1.83	1.33	0.77	1.94	2.39	4.56	0.79	2.27	3.27	2.83	0.45	0.68	23.11
1940	0.99	0.57	0.66	2.91	3.38	6.11	1.90	6.12	2.36	1.87	3.25	1.38	31.50
1941	1.70	0.67	1.34	2.31	3.77	1.47	1.14	4.08	4.08	3.39	1.02	1.45	26.42
1942	0.78	0.79	2.80	2.08	7.10	4.83	1.88	1.11	3.43	1.24	1.81	2.25	30.10
1943	1.86	0.60	1.85	1.53	4.44	4.04	2.54	3.21	0.81	0.83	2.41	0.03	24.15
1944	0.99	1.02	1.82	1.81	1.20	5.27	2.25	4.80	3.99	0.85	2.43	0.65	27.08
1945	0.52	2.23	1.12	4.12	4.38	4.92	1.18	3.96	2.57	0.99	3.91	1.37	31.27
1946	1.89	0.77	2.47	0.67	4.33	4.17	0.70	1.88	2.81	1.49	2.60	1.75	25.53
1947	1.08	0.51	1.46	3.25	4.43	3.10	3.26	4.66	2.97	2.08	1.84	1.29	29.93
1948	0.56	1.93	1.91	2.93	0.91	2.67	3.04	0.96	1.40	0.71	4.99	1.43	23.43
1949	1.84	1.07	3.75	2.69	0.71	3.58	4.89	2.45	1.25	1.05	1.50	1.17	25.95
1950	2.54	1.45	2.49	3.39	1.50	3.11	6.50	2.72	2.20	1.14	1.12	1.84	30.10
1951	0.87	1.72	2.66	4.79	0.89	2.30	4.12	5.50	2.93	4.82	1.66	1.09	33.35
1952	2.06	0.70	1.98	1.57	2.92	2.36	3.82	2.06	0.82	T	2.24	1.45	21.98
1953	1.10	3.56	1.94	5.52	1.41	1.90	3.15	2.05	2.02	0.22	0.39	1.59	24.85
1954	0.43	0.98	1.11	4.45	3.22	4.38	2.94	1.61	5.78	5.00	0.89	0.42	31.21
1955	0.78	1.37	1.40	2.40	2.39	3.25	4.78	0.90	0.76	3.58	1.04	0.89	23.54
1956	0.56	0.60	1.86	1.45	4.66	3.90	5.85	3.09	1.65	0.65	2.13	0.87	27.27
1957	0.35	0.43	0.46	2.93	5.28	2.48	3.18	3.46	2.15	1.35	3.52	1.59	27.18
1958	0.42	0.16	0.50	2.56	1.27	1.82	2.07	2.68	3.20	2.25	1.34	0.16	18.43
1959	1.04	1.98	1.87	2.84	3.86	1.26	4.21	2.71	5.17	3.27	1.47	2.85	32.53
1960	1.04	0.48	1.21	3.13	7.75	3.07	1.87	3.52	3.09	2.32	0.69	0.10	28.27
1961	0.31	0.93	2.12	1.67	1.42	4.31	4.91	2.84	5.02	3.34	2.60	1.27	30.74
1962	1.27	2.02	1.13	2.55	2.86	4.35	2.70	2.88	3.	1.	0.	1.	27.

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
									87	94	84	03	44
1963	0.68	0.59	2.58	0.98	1.54	2.67	2.77	2.07	3.00	0.73	1.63	0.73	19.97
1964	1.14	0.26	1.76	2.55	4.14	1.05	4.55	2.72	6.74	0.44	2.07	0.70	28.12
1965	0.93	0.85	2.38	3.62	3.95	1.89	1.96	3.38	7.80	1.32	2.19	2.31	32.58
1966	1.18	2.25	2.46	1.38	1.28	1.09	4.19	2.65	1.21	0.72	1.58	1.65	21.64
1967	2.52	0.84	1.13	2.77	2.45	8.47	1.96	2.43	0.46	4.71	1.66	1.17	30.57
1968	0.94	0.45	0.97	4.84	3.10	6.97	2.00	2.66	3.31	1.01	1.01	2.69	29.95
1969	2.60	0.04	1.04	2.86	2.66	7.62	2.51	1.19	2.03	3.46	0.43	1.43	27.87
1970	0.73	0.23	1.07	1.61	5.76	1.11	4.02	1.25	6.11	2.98	2.68	1.24	28.79
1971	1.60	2.03	2.04	1.05	1.67	1.87	3.44	2.99	3.36	2.01	3.21	3.15	28.42
1972	0.65	0.96	2.19	1.45	0.82	2.25	1.85	5.86	5.76	1.84	1.15	2.49	27.27
1973	1.86	0.72	2.43	3.23	8.21	3.20	1.93	2.57	2.91	3.96	1.45	2.41	34.88
1974	1.71	1.17	1.07	2.62	4.46	4.91	4.25	1.61	1.05	1.72	2.09	1.67	28.33
1975	1.52	1.48	3.44	2.35	2.79	5.27	1.78	9.04	3.18	0.36	3.42	0.84	35.47
1976	1.72	1.33	3.65	2.44	2.42	0.31	2.96	1.15	0.28	0.82	0.16	0.61	17.85
1977	0.67	1.38	4.68	3.33	2.47	2.27	2.13	2.37	2.44	1.36	2.70	2.31	28.11
1978	1.33	0.35	0.31	3.44	3.38	2.72	6.03	4.36	4.82	2.33	2.93	1.30	33.30
1979	1.78	1.17	4.49	1.93	3.01	2.21	3.56	5.97	0.76	2.72	2.49	1.28	31.36
1980	1.92	0.35	1.00	2.73	1.77	3.82	1.87	7.31	3.42	1.79	1.25	1.35	28.58
1981	0.12	2.76	0.42	4.22	0.66	2.63	0.83	3.37	3.25	3.44	1.08	1.10	23.78
1982	1.34	0.14	1.96	2.66	2.74	2.67	5.10	2.91	1.43	1.20	4.51	2.50	29.15
1983	0.72	1.46	1.52	1.39	4.80	1.82	3.76	5.27	3.59	2.24	2.63	1.18	30.38
1984	0.59	1.59	1.64	3.33	1.65	5.60	3.17	3.78	5.66	4.92	2.55	1.72	36.20
1985	0.86	2.55	2.70	2.24	2.58	2.21	4.03	8.03	3.65	2.72	4.96	1.83	38.36
1986	0.60	0.83	2.48	2.26	1.15	4.06	4.95	3.85	7.51	1.89	1.27	0.48	31.33
1987	0.47	0.39	1.53	2.33	2.58	1.83	2.18	3.41	1.57	1.76	3.07	2.04	23.16
1988	1.79	0.73	1.10	2.53	0.06	0.67	2.34	3.47	4.11	1.96	4.43	0.84	24.03
1989	0.41	0.38	2.88	0.49	4.22	1.56	2.27	1.06	0.58	4.76	1.25	0.65	20.40
1990	0.64	0.58	3.25	1.28	3.99	10.29	2.93	2.51	5.13	2.34	1.61	2.10	36.65
1991	0.57	0.37	2.87	2.77	2.42	1.08	4.16	2.11	2.55	3.50	2.72	1.42	26.54
1992	0.72	0.55	2.48	3.01	1.54	1.61	4.18	2.10	5.61	0.92	5.32	2.27	30.31
1993	1.42	0.34	0.76	3.99	4.28	6.82	6.83	2.30	2.78	2.29	1.56	0.44	33.81
1994	1.47	1.11	1.14	5.91	1.69	2.84	7.00	3.69	2.19	0.98	1.43	0.34	29.79
1995	0.65	0.39	1.92	2.22	2.88	1.80	1.15	7.31	2.76	4.80	3.32	1.25	30.45
1996	1.77	0.76	1.16	3.85	1.40	5.57	2.49	1.40	1.	2.	0.	1.	25.

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
										93	80	89	42
1997	1.81	1.40	1.92	1.67	2.60	5.61	2.11	5.73	2.76	0.93	0.30	0.61	27.35
1998	2.21	0.80	3.66	1.85	2.21	6.17	1.86	2.93	3.54	1.56	1.67	0.30	28.76
1999	2.37	1.10	0.15	2.11	3.77	3.98	5.67	1.32	1.24	0.67	1.57	0.83	24.78
2000	0.87	1.04	0.98	2.15	4.41	5.33	6.27	3.38	3.94	0.46	1.25	1.16	31.24
2001	1.19	1.26	0.42	3.66	4.74	5.17	0.85	3.42	2.35	1.71	1.70	1.23	27.70
2002	0.60	1.50	2.08	3.02	2.81	4.69	2.16	4.01	2.67	3.26	0.44	0.73	27.97
2003	0.58	0.56	2.32	2.36	3.17	3.71	4.26	4.15	3.32	1.05	3.83	1.68	30.99
2004	1.24	1.62	3.58	1.56	8.31	4.87	1.78	2.00	0.47	3.70	1.80	2.26	33.19
2005	1.60	1.33	1.33	1.53	2.52	3.44	1.46	4.23	3.08	1.69	3.07	1.04	26.22
2006	1.64	1.34	1.16	1.97	5.90	2.83	3.14	2.11	3.33	3.14	1.23	2.88	30.67
2007	0.63	1.39	2.74	1.72	2.39	3.71	2.41	2.72	3.16	3.62	0.11	2.54	27.14
2008	3.65	2.30	2.52	4.61	1.43	4.77	4.71	0.59	1.89	1.59	1.49	3.72	33.27
2009	0.66	1.55	2.59	2.62	3.01	2.53	1.33	3.33	1.22	5.16	1.38	2.28	27.66
2010	0.67	1.05	0.31	3.63	1.99	6.73	9.51	4.42	4.48	2.12	1.33	1.91	38.15
2011	1.23	1.34	3.08	6.24	2.81	5.12	5.30	1.71	4.54	1.66	3.42	1.40	37.85
2012	1.40	1.12	2.21	2.39	3.43	1.71	6.01	3.66	1.09	4.92	1.05	2.54	31.53
2013	2.36	2.30	2.01	3.38	3.72	3.82	3.35	3.05	2.89	2.95	3.44	1.89	35.16
2014	1.33	1.46	0.91	4.01	2.95	4.05	1.21	4.80	4.69	2.51	2.52	1.68	32 12
2015	0.56	0.41	0.90	1.63	3.44	3.24	1.80	4.22	5.85	2.64	2.49	5.71	32.89
2016	1.33	1.15	4.05	1.29	3.36	4.44	3.22	2.78	4.29	2.66	2.29	2.25	33.11
2017	2.43	0.82	2.30	4.48	2.97	3.78	4.56	4.05	M0.51				25.90

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22

Ledgeview Dairy

Climatological Data for GREEN BAY A S INTL AP, WI - August 2017

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2017-08-01	84	62	73.0	33	23	0.00	0.0	0
2017-08-02	76	63	69.5	30	20	0.03	0.0	0
2017-08-03	68	57	62.5	23	13	0.61	0.0	0
2017-08-04	68	53	60.5	21	11	0.59	0.0	0
2017-08-05	76	52	64.0	24	14	0.09	0.0	0
2017-08-06	80	53	66.5	27	17	0.02	0.0	0
2017-08-07	77	56	66.5	27	17	0.00	0.0	0
2017-08-08	82	56	69.0	29	19	0.00	0.0	0
2017-08-09	80	55	67.5	28	18	0.00	0.0	0
2017-08-10	78	59	68.5	29	19	0.54	0.0	0
2017-08-11	72	56	64.0	24	14	T	0.0	0
2017-08-12	78	55	66.5	27	17	0.00	0.0	0
2017-08-13	79	52	65.5	26	16	0.00	0.0	0
2017-08-14	76	58	67.0	27	17	0.25	0.0	0
2017-08-15	78	59	68.5	29	19	T	0.0	0
2017-08-16	77	60	68.5	29	19	0.35	0.0	0
2017-08-17	79	65	72.0	32	22	0.22	0.0	0
2017-08-18	73	62	67.5	28	18	0.00	0.0	0
2017-08-19	81	58	69.5	30	20	0.00	0.0	0
2017-08-20	79	56	67.5	28	18	0.00	0.0	0
2017-08-21	80	62	71.0	31	21	0.01	0.0	0
2017-08-22	75	57	66.0	26	16	0.00	0.0	0
2017-08-23	74	52	63.0	23	13	0.00	0.0	0
2017-08-24	68	47	57.5	18	8	0.00	0.0	0
2017-08-25	72	43	57.5	18	8	0.00	0.0	0
2017-08-26	68	47	57.5	18	8	0.11	0.0	0
2017-08-27	68	59	63.5	24	14	0.15	0.0	0
2017-08-28	72	55	63.5	24	14	0.17	0.0	0
2017-08-29	75	54	64.5	25	15	0.00	0.0	0
2017-08-30	81	53	67.0	27	17	0.91	0.0	0
2017-08-31	65	51	58.0	18	8	0.00	0.0	0
Average/Sum	75.5	55.7	65.6	803	493	4.05	0.0	0.0

Exhibit 6

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 101A

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes ___ No X Wetland Hydrology Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface to 2"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 101A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Phragmites australis	80	Y	FacW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 40 .2 = 16	80	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 101A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15"	5YR 4/4	100					SiSaL	
15-24"	5YR 4/4	90	5YR 4/6	10	C	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 102A

Investigator(s): Rachel Ecker Section, Township, Range: Section 28,T23N-R21E

Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Hydrology is disturbed. Roof Runoff from the machine shed and freestall barn flow to this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 102A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phragmites australis	85	Y	FacW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 42.5 .2 = 17	85	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 102A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 3/2	90	7.5YR 4/6	10	C	M	SiL	
8-24"	5YR 4/4	95	5YR 4/6	5	C	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) (**LRR R, MLRA 149B**)
- __ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- __ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- __ Loamy Mucky Mineral (F1) (**LRR K, L**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- __ Coast Prairie Redox (A16) (**LRR K, L, R**)
- __ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- __ Dark Surface (S7) (**LRR K, L**)
- __ Polyvalue Below Surface (S8) (**LRR K, L**)
- __ Thin Dark Surface (S9) (**LRR K, L**)
- __ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- __ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- __ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** X **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 103A

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______	

Remarks: (Explain alternative procedures here or in a separate report.)

Sample location is within a cropfield.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ______	
Water Table Present?	Yes ___ No X	Depth (inches): ______	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ______	Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 103A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. No vegetation within cropfield			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 103A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15"	10YR 3/1	80	7.5YR 4/6	20	C	M	SiL	
15-24"	5YR 4/4	95	5YR 4/6	5	C	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jaso Pansier - Ledgeview Dairy State: WI Sampling Point: 104A

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.49" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present? Yes ___ No X		
Wetland Hydrology Present? Yes ___ No X		If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 104A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	.0 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Phragmites australis	90	Y	FacW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 45 .2 = 18	90 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 104A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 3/2	100					SIL	
18-24"	5YR 4/4	100					CI	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7) (**LRR R, MLRA 149B**)
__ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
__ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
__ Loamy Mucky Mineral (F1) (**LRR K, L**)
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
__ Coast Prairie Redox (A16) (**LRR K, L, R**)
__ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
__ Dark Surface (S7) (**LRR K, L**)
__ Polyvalue Below Surface (S8) (**LRR K, L**)
__ Thin Dark Surface (S9) (**LRR K, L**)
__ Iron-Manganese Masses (F12) (**LRR K, L, R**)
__ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
__ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
__ Red Parent Material (F21)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 105A

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 105A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phragmites australis	80	Y	FacW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 40 .2 = 16	80	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 105A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	90	7.5YR 4/6	10	C	M	SiL	
16-24"	5YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7) **(LRR R, MLRA 149B)**
__ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
__ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
__ Loamy Mucky Mineral (F1) **(LRR K, L)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
X Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
__ Coast Prairie Redox (A16) **(LRR K, L, R)**
__ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
__ Dark Surface (S7) **(LRR K, L)**
__ Polyvalue Below Surface (S8) **(LRR K, L)**
__ Thin Dark Surface (S9) **(LRR K, L)**
__ Iron-Manganese Masses (F12) **(LRR K, L, R)**
__ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
__ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
__ Red Parent Material (F21)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No __

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 201B

Investigator(s): Rachel Ecker Section, Township, Range: Section 8, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.49" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 201B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. No vegetation	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 201B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 3/2	100					SiL	
8-16"	5YR 4/4	90	5YR 4/6	10	C	M	SaSiCl	
16-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 202B

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X , Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? Yes ___ No X Depth (inches): ______
(includes capillary fringe)

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 202B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. No vegetation	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 202B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-17"	10YR 3/1	90	10YR 4/6	10	C	M	SiL	
17-24"	10YR 4/1	85	10YR 4/6	15	D	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 203B

Investigator(s): Rachel Ecker Section, Township, Range: Section 28,T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	**Wetland Hydrology Present? Yes ___ No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 203B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. No vegetation present			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION – Use scientific names of plants.

Sampling Point: 203B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. No vegetation present			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 203B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 3/1	100					SiL	
10-12"	10YR 3/1	90	7.5YR 4/6	10	C	M	SiSaL	
12-22"	5YR 4/4	100					SiSa	
22-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 204B

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X , Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No X		Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes ___ No X		If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 204B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. No vegetation			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 204B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 3/1	100					SiL	
2-13"	10YR 3/1	90	7.5YR 4/6	10	C	M	SiL	
13-24"	10YR 4/1	95	7.5YR 4/6	5	C	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR R, MLRA 149B)**
- __ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- __ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- __ Loamy Mucky Mineral (F1) **(LRR K, L)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- __ Coast Prairie Redox (A16) **(LRR K, L, R)**
- __ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- __ Dark Surface (S7) **(LRR K, L)**
- __ Polyvalue Below Surface (S8) **(LRR K, L)**
- __ Thin Dark Surface (S9) **(LRR K, L)**
- __ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- __ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 205B

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: AeA - Allendale fine sandy loam, 0-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 205B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. No vegetation			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 205B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-13"	10YR 3/2	95	10YR 4/6	5	C	M	SIL	
13-24"	5YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) (**LRR R, MLRA 149B**)
- __ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- __ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- __ Loamy Mucky Mineral (F1) (**LRR K, L**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- __ Coast Prairie Redox (A16) (**LRR K, L, R**)
- __ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- __ Dark Surface (S7) (**LRR K, L**)
- __ Polyvalue Below Surface (S8) (**LRR K, L**)
- __ Thin Dark Surface (S9) (**LRR K, L**)
- __ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- __ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- __ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 301C

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21N

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ______

Water Table Present? Yes ____ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ______

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 301C

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. No vegetation	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 301C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	100					SiL	
16-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 302C

Investigator(s): Rachel Ecker Section, Township, Range: Secion 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.49" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No X		Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present? Yes ___ No X		
Wetland Hydrology Present? Yes ___ No X		If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 302C

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. No vegetation	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 302C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/2	100					SiL	
12-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 303C

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: KhB - Kewaunee silt loam, 2-6% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland?	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 303C

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. No vegetation	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 303C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7"	10YR 3/2	100					SiL	
7-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR R, MLRA 149B)**
- __ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- __ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- __ Loamy Mucky Mineral (F1) **(LRR K, L)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- __ Coast Prairie Redox (A16) **(LRR K, L, R)**
- __ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- __ Dark Surface (S7) **(LRR K, L)**
- __ Polyvalue Below Surface (S8) **(LRR K, L)**
- __ Thin Dark Surface (S9) **(LRR K, L)**
- __ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- __ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 401D

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present? Yes X No ___	
Wetland Hydrology Present? Yes X No ___	If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 18"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 401D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Phragmites australis	85	Y	FacW
2. Impatiens capensis	20	N	FacW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 52.5 .2 = 21	105	= Total Cover	

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 401D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7"	10YR 3/1	90	10YR 4/6	10	C	M	SiL	
7-24"	5YR 5/2	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) (**LRR R, MLRA 149B**)
- __ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- __ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- __ Loamy Mucky Mineral (F1) (**LRR K, L**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- __ Coast Prairie Redox (A16) (**LRR K, L, R**)
- __ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- __ Dark Surface (S7) (**LRR K, L**)
- __ Polyvalue Below Surface (S8) (**LRR K, L**)
- __ Thin Dark Surface (S9) (**LRR K, L**)
- __ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- __ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- __ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 402D

Investigator(s): Rachel Ecker Section, Township, Range: Seecion 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 402D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Ambrosia trifida	50	Y	FacW
2. Phragmites australis	45	Y	Fac
3. Abutilon theophrasti	5	N	FacU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 50 .2 = 20	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes Y No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 402D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14"	10YR 3/2	100					SiL	
14-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 403D

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 88° 57' 52.49" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes X	No ___	Depth (inches): 17"	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): surface	**Wetland Hydrology Present?** Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 403D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	15	Y	FacW
2.			
3.			
4.			
5.			
6.			
7.			
.5 = 7.5 .2 = 3	15	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	75	Y	FacW
2. Impatiens capensis	20	Y	FaW
3. Typha latifolia	5	N	Obl
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 50 .2 = 20	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 403D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5"	10YR 3/2	100					SiL	
5-12"	10YR 3/1	80	10YR 4/6	20	C	M	L	
12-24"	10YR 5/2	80	10YR 4/6	20	D	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 404D

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ___	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 404D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Bromus inermis	85	Y	FacU
2. Ambrosia trifida	15	N	Fac
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 50 .2 = 20	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ~~100~~ 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ~~X~~ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 404D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22"	10YR 3/2	100					SiL	
22-24"	10YR 3/2	90	10YR 4/6	10	C	M	Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 405D

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.49" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes X No ___ Wetland Hydrology Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___ If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 405D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phragmites australis	90	Y	FacW
2. Impatiens capensis	15	N	FacW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 52.5 .2 = 21	105	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 405D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5"	10YR 3/1	100					SiL	
5-24"	5YR 5/2	90	7.5YR 4/6	10	D	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 3499 Lime Kiln Road City/County: Green Bay/Brown Sampling Date: 9-5-17

Applicant/Owner: Jason Pansier - Ledgeview Dairy State: WI Sampling Point: 406D

Investigator(s): Rachel Ecker Section, Township, Range: Section 28, T23N-R21E

Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 44° 25' 59.49" Long: 87° 57' 52.59" Datum: Google Earth

Soil Map Unit Name: MaA - Manawa sandy loam, 1-3% slopes NWI classification: Wetland Indicator Soils

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 406D

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Ambrosia trifida	60	Y	Fac
2. Bromus inermis	30	Y	FacU
3. Abutilon theophrasti	20	N	FacU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
.5 = 55 .2 = 22	110	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 406D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	100					SiL	
16-24"	5YR 4/4	100					Cl	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Exhibit 7

PROJECT NO.	X	REVISIONS BY	DATE	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION	LEDGEVIEW DAIRY SATILITE FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 125'	WETLAND MAP	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 1 of X
DATE:	09/19/2017	•	•	•	•	•	•					
DRAWN BY:	MHP											
CHECKED BY:	INITIALS											