

## Charlotte Nagel

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**From:** John Roach <john@jmroach.com>  
**Sent:** Wednesday, November 07, 2018 3:03 PM  
**To:** Sarah Burdette  
**Cc:** Courtney Roach; Pat Roach; Vicki Geiger; 'Jason Pansier'; Charlotte Nagel; Joan Pansier (joan.pansier@yahoo.com)  
**Subject:** RE: Ledgeview Farm, LLC

Sarah,

Thank you.

John Roach  
General Manager  
Office: 920.833.6340  
Cell: 920.858.5868  
Email: john@jmroach.com

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**From:** Sarah Burdette [mailto:sburdette@ledgeviewwisconsin.com]  
**Sent:** Wednesday, November 07, 2018 1:03 PM  
**To:** John Roach  
**Cc:** Courtney Roach; Pat Roach; Vicki Geiger; 'Jason Pansier'; Charlotte Nagel  
**Subject:** RE: Ledgeview Farm, LLC

John,  
The email below will be printed and included in the Specifications document as you requested.  
Sarah

Sarah K. Burdette  
Administrator  
Town of Ledgeview



3700 Dickinson Road  
De Pere, WI 54115  
Phone: 920.336.3360, ext. 108  
Cell/Text: 920-639-6083  
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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**From:** John Roach [mailto:john@jmroach.com]  
**Sent:** Wednesday, November 07, 2018 12:14 PM  
**To:** Sarah Burdette (sburdette@ledgeviewwisconsin.com) <sburdette@ledgeviewwisconsin.com>  
**Cc:** Courtney Roach <Courtney@jmroach.com>; Pat Roach <Pat@jmroach.com>; Vicki Geiger <vicki@jmroach.com>; Jason Pansier (jasonpansier@gmail.com) <jasonpansier@gmail.com>  
**Subject:** FW: Ledgeview Farm, LLC

Sarah,

As I am sure you are aware, Ledgeview Farm submitted a new Livestock Facility Siting License on November 5, 2018. Would you please insert the attached email from Brown County stating that the changed location does not require a new Animal Waste Storage permit from Brown County? I just received confirmation today. Please insert the email in the Specifications document, just before the Table of Contents and after the email from DNR. If you prefer, Roach & Associates would be happy to come to your office and insert the email into the original and copies of the Specifications. Please let me know your preference.  
Thank you.

Regards,

John Roach  
General Manager  
Office: 920.833.6340  
Cell: 920.858.5868  
Email: [john@jmroach.com](mailto:john@jmroach.com)

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**From:** Wetenkamp, Dave L. [mailto:Wetenkamp\_DL@co.brown.wi.us]  
**Sent:** Tuesday, November 06, 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

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**From:** John Roach <[john@jmroach.com](mailto:john@jmroach.com)>  
**Sent:** Monday, November 5, 2018 10:50 AM  
**To:** Wetenkamp, Dave L. <[Wetenkamp\\_DL@co.brown.wi.us](mailto: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](mailto:john@jmroach.com)

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**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 email 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](mailto:jeff.kreider@wisconsin.gov)

-----Original Message-----

**From:** John Roach [[john@jmroach.com](mailto:john@jmroach.com)]  
**Received:** Thursday, 01 Nov 2018, 11:33AM  
**To:** Kreider, Jeff C - DNR [[Jeff.Kreider@wisconsin.gov](mailto:Jeff.Kreider@wisconsin.gov)]  
**CC:** Pat Roach [[Pat@jmroach.com](mailto:Pat@jmroach.com)]; Courtney Roach [[Courtney@jmroach.com](mailto:Courtney@jmroach.com)]; Matthew Schwalenberg [[matt@jmroach.com](mailto: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](mailto:john@jmroach.com)

## Table of Contents

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### **Attachments (In the order attached)**

Letter with Intercalated Responses

(3) Cluster B Site Map 1

(3) Cluster B Site Map 2

(4) Well Variance for Detention Basin Info, Exhibit 18

(22) Corrected Worksheet 3 - Part B

(30) Updated Exhibit 15, Y1 Yard Runoff Controls

(30 and B) Updated Exhibit 6, Waste Storage Facility Summary

(B) Updated Exhibit 16, Operation and Maintenance

(B) Updated Exhibit 14, Abandonment Plan WSFs Cluster A

(B) Exhibit 19, Worksheet 5 - Additional Information

(B) Updated Worksheet 1

(B) Updated Exhibit 10, Odor Scores, Cluster A

(B) Updated Worksheet 2, Cluster A

Updated Narrative to Reflect some of the above changes

***Roach and Associates, LLC responses to the town of Ledgeview's comments are intercalated below in bold and italic.***

January 4, 2019

Ledgeview Farm, LLC  
c/o Jason Pansier  
3875 Dickinson Road  
DePere, WI 54115

RE: Ledgeview Farm, LLC  
Second Application for Livestock Siting Approval

Dear Mr. Pansier:  
VIA EMAIL AND U.S. MAIL  
([jasonpansier@gmail.com](mailto:jasonpansier@gmail.com))

You submitted a request to the Town of Ledgeview for a livestock siting approval and made additional insertions to that submittal through November 20, 2018. The Town is in the process of evaluating whether this submittal was untimely or inappropriately filed with the Town. In the interest of avoiding delay, the Town provides the following as a completeness determination for the application so that your work toward completion can continue should the Town subsequently determine that the submittal is appropriately before it for a Town decision. The issuance of this completeness determination is not an acknowledgement by the Town that the application was timely and appropriately filed with the Town.

Wis. Stat. § 93.90 (4) (a) provides in part that "[n]o later than 45 days after a political subdivision receives an application for approval, the political subdivision shall notify the applicant whether the application for approval is complete and, if it is not complete, what information is needed to complete the application for approval."

Your application of November 20, 2018, is incomplete. The following information is needed:

A. The following comments correspond to the ATCP 51 Application Review Checklist Completeness Determination:

3) Cluster B Site Maps- Map 1 is missing north arrow and Map 2 north arrow in wrong orientation.

***Response:***

- ***The north arrow has been added to Cluster B Site - Map 1 and is attached.***
- ***The north arrow direction has been changed to Cluster B Site - Map 2 and is attached.***

4) Location of Livestock Structures- Well Variance not provided for existing well at Heifer Site not 250' from Detention Basin.

***Response:***

- ***The DNR Well Variance for the Detention Basin is found attached (page 7, labeled Exhibit 18).***

22) Total acres of cropland in Worksheet 3 Part B #4 not consistent with Worksheet 3

Part C. (2,752 acres versus 2,759 acres).

**Response:**

- ***The correct total cropland acres appear in Worksheet 3 Part C (2,759).***
- ***A corrected Part B worksheet is attached.***

30) Verify modifications on Animal Lot Y1 at Headquarters site provides 6" of freeboard. Plans callout addition of 1ft wall. Does this wall provide the required freeboard? Does existing wall provide required freeboard?

NCSS 634-Reception structures receiving runoff and/or precipitation shall be sized to contain a minimum of one full day's manure production, plus six inches extra depth for safety, and the volume of runoff and/or precipitation from a 25-year, 24-hour rainfall event. The increase in storage volume due to runoff and/or precipitation may be reduced if a portion of this runoff and/or precipitation can be safely routed to and contained within the waste management system

**Response:**

- ***An updated design package (Exhibit 15) is included. The design and calculations that were included in the Livestock Siting Application were based on an early design and not the construction plans that were constructed. The updated Exhibit 15 is attached.***
  - ***The Y1 Yard provides >6 inches of freeboard.***
  - ***The one foot wall is an extension of the feeding curb to the drivable curb to maintain containment. Containment structures for the Y1 Yard are the following:***
    - ***South side; containment is provided by the feeding curb.***
    - ***East and west sides; containment is provided by the drivable curb.***
    - ***North side; containment is provided by the L5 barn.***

30) Future runoff collection system for the FSA at the Headquarters site were noted in the Waste Storage Calculations in Exhibit 6-1. No plans or specifications were attached.

**Response:**

- ***The Reference "Allowance for future runoff collection system" is included as a reference to the reviewer, to note that the volume of the runoff and leachate includes a future expansion of the Feed Storage Area (FSA). The plans and Specifications have not yet been developed and are not part of this Livestock Siting Application.***
- ***The updated Exhibit 6 is attached***

B. The following identify additional information needed for the Town to conduct an application review:

- For clarity it would be beneficial for the documents to be updated to be consistent regarding labelling of the animal lot at Headquarters as Y1 and the animal lot at the Heifer Site as Y2.

**Response:**

- ***The documents have already been updated with the exception of the approved plans under seal.***

- How will manure and precipitation collected in the animal lot Y1 at the Headquarters site be transferred to storage?

**Response:**

- *Exhibit 16 has been updated to include an O&M plan for the Y1 Yard. The O&M Plan addresses manure removal from the Y1 Yard.*

• Was nutrient management plan approved by ON R?

**Response:**

- *Yes, the Nutrient Management Plan was approved by DNR on June 29, 2017*

• Was Evaluation of WSF1 at Headquarters site approved by DNR?

**Response:**

- *Yes, the Evaluation of WSF 1 was approved by DNR on May 3, 2018*

• Documentation or calculations of volume of WSF1 at Headquarters site?

**Response:**

- *WSF 1 has a ramp into it and is irregularly shaped. We have determined the volume of WSF 1 in CAD. Exhibit 6-14 shows the volume of WSF 1 and Exhibit 6-1 is updated. An updated Exhibit 6 is attached.*

• Has closure to Pit 1 and Pit 2 occurred? Were there impacted soils? Outlet installed?

**Response:**

- *Pits 1 & 2 have not yet been abandoned. The abandonment is expected to take place in 2019.*

Explain need for waste transfer in Inspection Plan section of Closure Plan.

**Response:**

- *The reference to "waste transfer inspection" has been removed. An updated Exhibit 14 is attached.*

• Does proposed FSA meet requirements of Worksheet 5 3 c) and d)?

**Response:**

- *The FSA is not required to meet the requirements found in Worksheet 5 – Feed Storage 3(c) (d). This section applies only if the feed stored has moisture content of 70% or higher. The moisture content of the forages stored by Ledgeview Farms, LLC is substantially below 70%. We have attached historical forage test reports as evidence of the forage moisture below 70%.*
- *Ledgeview Farms, LLC meets the requirements of Worksheet 5 – Feed Storage 1. General. "The operator agrees to manage feed storage to prevent significant discharge of leachate or polluted runoff to waters of the state."*
- *Evidence is provide in Exhibit 19*

• The Application does not include sufficient information about the current number of animal units present on the site. The narrative lists the milking and dry cow numbers, the heifer numbers, and the steer numbers, but does not provide information about the corresponding animal unit calculation for (at least the latter two of) these categories to allow accurate current total animal unit calculations.

**Response:**

- *Ledgeview Farms, LLC is applying for approval because it meets the requirements found in ATCP 51.06(2). The animal units Ledgeview Farms, LLC is seeking approval for is found on Worksheet 1. We are not aware of a requirement in ATCP 51 where the existing Animal Unit calculations are required. Please site the reference in ATCP 51 where this requirement can be found.*

- Exhibit 6-3 lists 550 calf steers and 525 steers at the Heifer Site; this not match Worksheet 1-Animal Units which lists 675 steers and 400 steer calves. Please clarify.

**Response:**

- ***Exhibit 6-3 is correct. Worksheet 1 is updated and is attached.***
- Exhibit 6-13 lists the area of the Headquarters Animal Lot as 6,050 sqft, the Odor Score spreadsheet lists the lot area as 5,953 sqft and Exhibit 15 lists the lot area as 5,976 sqft. Please clarify.

**Response:**

- ***Exhibit 15 is correct at 5,976 ft<sup>2</sup>.***
- ***Exhibit 6-13 is updated and attached, in Exhibit 6***
- ***Worksheet 2 – Odor Management, Cluster A and Exhibit 10 have been updated and are attached.***

The ATCP 51 Application Review Checklist is enclosed.

Sincerely,

Philip J. Danen, Chairman

Town of Ledgeview

Enclosure

cc: Stafford Rosenbaum, LLP (via email)

Eric M. Mcleod, Husch Blackwell (via email)









## **Exhibit 18 - ATCP 51 Appendix A Worksheet 4 – Waste Storage Facilities**

### **Heifer Site Proposed W2 Waste Storage Facility, Detention Basin, Transfer Pipe and Feed Storage Area Runoff Controls**

- 1) The full Plans and Specifications for the above described facilities can be found in Attachment 1.
- 2) On December 6, 2017 Roach & Associates, LLC submitted plans and Specifications to the Wisconsin Department of Natural Resources (WDNR) for the construction of a Waste Storage Facility, Detention Basin, Transfer system and Feed Storage Area Runoff Controls at the Ledgeview Farms, LLC Heifer Site. On January 18, 2018 WDNR issued an approval for the above described facilities as well as granted a Waiver to allow the waste transfer pipe to be installed within 250' of a groundwater supply well. The WDNR approval letter is attached.
- 3) On June 26, 2018 WDNR granted a Waiver to allow the Detention Basin to be installed within 250' of a groundwater supply well. The WDNR approval letter is attached.
- 4) On November 5, 2018 Jeff Kreider of WDNR issued an email approval to allow the W2 WSF to be rotated to its current footprint as is shown on the Plans and Specifications found in Attachment 1. The WDNR approval email is attached.
- 5) On November 6, 2018, Dave Wetenkamp, Brown County Engineering Technician, issued an email approval to allow the W2 WSF to be rotated to its current footprint as is shown on the Plans and Specifications found in Attachment 1. The approval email is attached.





January 18, 2018

FILE REF: R-2017-0226  
WPDES Permit #: WI-0065421

Jason Pansier  
Ledgeview Farms, LLC  
3875 Dickinson Rd.  
DePere, WI 54115

Subject: Conditional Approval of Plans & Specifications for a Waste Storage Facilities and Transfer Systems and a Grant of Waiver for Well Setback at, Ledgeview Farms, LLC, (Heifer Farm) at Sec 28, T23N, R21E, Ledgeview Township, Brown County

Dear Mr. Pansier:

The Division of External Services conditionally approves the above referenced plans and specifications, submitted by Richard Seas, P.E., Roach & Associates, LLC and received on December 6, 2017. The evaluation was submitted because of a permit issuance. The review was conducted in accordance with s. 281.41 Wis. Stats., chs. NR 151 and NR 243, Wis. Adm. Code, and applicable NRCS Standards. Construction is approved to commence for a period of two years from the approval date. If work will commence later, or will occur over a longer period without continuous work (other than due to weather) a new written approval must be obtained. Questions may be directed to the regional office, or the review engineer Jeff Kreider, DNR Madison Office (contact information is at the end of this letter).

**Proposed Project:** The proposed project will construct a waste storage pond and detention basin that will collect manure and leachate runoff from an existing animal lot and feed storage areas. Final disposition of wastes will be land applied in accordance with an approved nutrient management plan (NMP).

**Site Assessment:** Geographical features of the site include soils that are Kewaunee silt loam. There are no streams or wetlands, other than what was identified at the farm, within proposed construction area. Clean runoff will be diverted around waste handling areas to existing waterways. No karst features are known to exist within 1,000 ft of the proposed facilities or systems. One ground water supply well is located within 250 feet of the proposed facilities or systems. A well waiver was submitted along with the proposed plans and specifications. A wetland delineation was conducted and concurred by the Department on November 7, 2017 at the construction site. Wetlands were outlined and the construction sites will not be located within these designated areas.

Fifteen test pits were collected with soils analysis finding the percent passing a 200 sieve ranges between 78.9% to 82.6% and plasticity index range between 17 to 28.9. Bedrock was not found. Saturated soils were found in one test pit at 9.2 feet below the bottom of the proposed waste storage pond 2.

**Waste Storage:** The proposed design was submitted to meet NRCS Standard 313 (10/17) and 522, Table 2 and 2A – Concrete Liner With Waterstop, Column 1 (10/17). The design is in compliance with ss. NR 213 and NR 243.15(3), Wis. Adm. Code. Below is a summary of what is proposed.

- The proposed irregular shaped waste storage designated as WSF2 will be 146-312 ft x 545 ft x 13.4 ft deep. Six inch PVC waterstop will be used at construction joints.
- The embankment walls and floor are designed with 5 inch and 7 inch thick steel reinforced concrete respectively. An 8-inch clay subliner will be constructed beneath the proposed concrete liner.
- The proposed storage will have a maximum operating level (MOL) volume of 14,749,062 gallons. This will provide the permittee a total of 291 days of storage.
- The floor elevation will be 706.6 ft and the MOL elevation will be 718.4 ft. Interior and exterior embankment slopes will be 2.5:1 and 4:1 respectively with a berm width of 20 ft.
- A core trench will be constructed along the western side and a portion of the northern side.



- The agitation pad and sump will be 30 ft x 20 ft x 1 ft deep. A 20 ft wide ramp will extend down the side of the proposed storage pond on the southeast corner to the sump. The MOL, MOS and elevation markers will be located along the ramp side.

**Detention Basin:** The proposed design was submitted to meet with NRCS Standard 313 (10/17) and 522, Table 2 and 2A – Concrete Liner With Waterstop, Column 1 (10/17). The design is in compliance with ss. NR 213 and NR 243.15(3), Wis. Adm. Code. Below is a summary of what is proposed.

- The proposed rectangular shaped detention basin will be 48 ft x 130 ft x 3.5 ft deep.
- The embankment walls and floor are designed with 7-inch thick steel reinforced concrete. An 8-inch clay subliner will be constructed beneath the proposed concrete liner.
- The floor elevation will be 724.5 ft. Interior and exterior embankment slopes will be 3:1 and 20:1 respectively.
- The proposed basin will have a volume of 49,353 gallons and is designed to be empty. A 4 ft diameter x 6 ft deep manhole will be placed in the bottom of the basin. All runoff will flow into the manhole, which will be connected to a transfer pipe that gravity flows to WSF2.

**Transfer Pipe:** The proposed design was submitted to meet with NRCS Standard 634 (1/14). The design is in compliance with s. NR 243.15(4), Wis. Adm. Code.

- The proposed transfer pipes are approved, but have not been reviewed. The transfer pipes are still subject to the requirements of ch. NR 243, Wis. Adm. Code and all applicable technical standards.

**Feed Storage Area Runoff Controls:** The proposed design is in compliance with s. NR 243.15(2), Wis. Adm. Code. Below is a summary of what is proposed.

- The existing feed storage area is sloped towards the south. Runoff from the feed storage area will then flow into the proposed detention basin which is designed to detain up to a 25-year/24-hour storm event. A proposed 18-inch ASTM F679 PVC gravity pipe will transfer the runoff from the basin to the proposed WSF2.
- The existing animal lot is sloped towards the west. Runoff from the animal lot will flow into an existing collection tank which is designed to detain up to a 25-year/24-hour storm event. A proposed 15-inch SDR35 PVC gravity pipe will transfer the runoff from the collection tank to the proposed WSF2.

**Days of Storage:** When the proposed projects are constructed, the permittee will have 291 days of storage. Below is a summary of what was submitted in determining the days of storage.

- Waste storage pond #1 has an MOL volume of 5,006,618 gallons.
- Waste storage pond #2 has an MOL volume of 14,749,062 gallons.
- Manure and wastewater generated: 18,207,479 gallons.
- Leachate and runoff from the Head Quarters Farm: 110,042 gallons.
- Leachate and runoff from the Heifer Farm: 2,257,696 gallons.
- Animal lot runoff from the Head Quarters Farm: 110,869 gallons.
- Animal lot runoff from the Heifer Farm: 634,723 gallons.
- Runoff from animal lots and feed storage areas from a 25-year/24-hour storm event: 448,487 gallons.

**Conditions of Approval:** The plans and specifications for project number R-2017-0226 are hereby approved and subject to chs. NR 151 and NR 243, Wis. Adm. Code, and the conditions listed below:

1. **Notification:** Prior to construction and when construction is complete, notify the DNR regional contact and county contact provided a copy of the approval (contact information is at the end of this letter).
2. **Inspection:** During the construction of critical components, inspection shall be performed by a Wisconsin registered professional engineer or other qualified third party (excludes the owner and construction contractor and their employees).
3. **Post-Construction Documentation:** Within 60 days of completing construction, submit to the DNR's e-Permitting website (<http://dnr.wi.gov/permits/water>) the post-construction report and send one paper copy to the DNR's regional contact. The report shall include the requirements within s. NR 243.15(10) and ch. NR 108, Wis. Adm. Code.

**Grant of Waiver:** In accordance with s. NR 243.15(1)(c), Wis. Adm. Code, a waiver is hereby granted from s. NR 243.15(1)(a)2., Wis. Adm. Code, to allow a waste transfer pipe from the proposed detention basin to the proposed waste storage pond #2. to be located within 250 ft of a groundwater supply well, based on justifications set forth in the proposed plans and specifications.

**Limitation of Approval:** The DNR reserves the right to order changes or additions should conditions arise making this necessary. This approval is not to be construed as a DNR determination on the issuance of a Wisconsin Pollutant Discharge Elimination System Permit or opinion as to the ability of the proposed system to comply with effluent limitations in such a permit, approval of an Environmental Impact Statement that may be prepared, or approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. Where necessary, plans and specifications should be submitted to the Department of Safety and Professional Services (formerly Department of Commerce) or other state or local agencies to ensure conformance with applicable codes or regulations of such agencies.

**Tax Treatment:** Tangible personal property, that becomes part of a waste treatment of pollution abatement plant or equipment, may be exempt from sales tax under s. 77.45(26), Wis. Stats. Similarly, property purchased or constructed as a waste treatment facility and used for industrial waste treatment may be exempt from general property taxes under s. 70.11(21), Wis. Stats. A prerequisite to exemption is filing a statement on prescribed forms. To obtain the forms, and information about this sales tax exemption, please contact the Department of Revenue, P.O. Box 8933, Madison, WI 53708, or check their website <http://www.revenue.wi.gov/>.

**Appeal Notice:** If you believe that you have a right to challenge this decision, you should know that the Wisconsin Statutes and Administrative Rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent. To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with s. NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with s. NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
For the Secretary



Mary Anne Lowndes  
Chief, Runoff Management Section  
Bureau of Watershed Management



Jeff C. Kreider  
Engineer, Runoff Management Section  
Bureau of Watershed Management

email: Richard Seas, P.E.; Roach & Associated, LLC  
(920) 833-6340; richard@jmroach.com

Mike Mushinski; Brown County Conservationist  
(920) 391-4621; mushinski\_ML@co.brown.wi.us

Matt Woodrow, P.E.; DATCP  
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez; DNR, Northeast Region  
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider; DNR, Central Office  
(608) 266-0856; jeff.kreider@wisconsin.gov





June 26, 2018

FILE REF: R-2017-0226  
WPDES Permit #: WI-0065421

Jason Pansier  
Ledgeview Farms, LLC  
3875 Dickinson Rd.  
DePere, WI 54115

Subject: Conditional Modification to Previously Approved Plans & Specifications of a Detention Basin and a Grant of Waiver for Well Setback, Ledgeview Farms, LLC, (Heifer Farm) at, Ledgeview Township, Brown County

Dear Mr. Pansier:

The Division of External Services conditionally approves the modification for the above referenced modification to the previously approved plans and specifications dated January 18, 2018, submitted by Richard Seas, PE, Roach & Associates, LLC and received on June 22, 2018. The review was conducted in accordance with s. 281.41 Wis. Stats., chs. NR 151 and NR 243, Wis. Adm. Code, and applicable NRCS Standards. Questions may be directed to the regional office, or the review engineer Jeff Kreider, DNR Madison Office (contact information is at the end of this letter).

**Proposed Project:** The proposed modification will move the previously approved detention basin to the east approximately 100 feet. The modification does not change the previously approved design and will be located closer to the original design test pits. Therefore, the modification is approved. However the new location places the detention basin within 250 feet of a groundwater supply well.

**Grant of Waiver:** In accordance with s. NR 243.15(1)(c), Wis. Adm. Code, a waiver is hereby granted from s. NR 243.15(1)(a)2., Wis. Adm. Code, to allow a detention basin to be located within 250 ft of a groundwater supply well, based on justifications set forth in the proposed plans and specifications. The detention basin is designed to be empty on a daily basis.

**Limitation of Approval:** The DNR reserves the right to order changes or additions should conditions arise making this necessary. This approval is not to be construed as a DNR determination on the issuance of a Wisconsin Pollutant Discharge Elimination System Permit or opinion as to the ability of the proposed system to comply with effluent limitations in such a permit, approval of an Environmental Impact Statement that may be prepared, or approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. Where necessary, plans and specifications should be submitted to the Department of Safety and Professional Services (formerly Department of Commerce) or other state or local agencies to ensure conformance with applicable codes or regulations of such agencies.

**Tax Treatment:** Tangible personal property, that becomes part of a waste treatment of pollution abatement plant or equipment, may be exempt from sales tax under s. 77.45(26), Wis. Stats. Similarly, property purchased or constructed as a waste treatment facility and used for industrial waste treatment may be exempt from general property taxes under s. 70.11(21), Wis. Stats. A prerequisite to exemption is filing a statement on prescribed forms. To obtain the forms, and information about this sales tax exemption, please contact the Department of Revenue, P.O. Box 8933, Madison, WI 53708, or check their website <http://www.revenue.wi.gov/>.

**NOTICE OF APPEAL RIGHTS**

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
For the Secretary



Mary Anne Lowndes  
Chief, Runoff Management Section  
Bureau of Watershed Management



Jeff Kreider  
Engineer, Runoff Management Section  
Bureau of Watershed Management

Enclosures: State of Wisconsin Engineering Report

email: Richard Seas; Engineer  
Roach & Associates, LLC  
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist  
Brown County  
(920) 391-4621; mushinski\_ML@co.brown.wi.us

Matt Woodrow, P.E.  
DATCP  
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez  
DNR, Northeast Region  
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider  
DNR, Central Office  
(608) 266-0856; Jeff.Kreider@wisconsin.gov

## 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 email 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](mailto:jeff.kreider@wisconsin.gov)

-----Original Message-----

**From:** John Roach [[john@jmroach.com](mailto:john@jmroach.com)]  
**Received:** Thursday, 01 Nov 2018, 11:33AM  
**To:** Kreider, Jeff C - DNR [[Jeff.Kreider@wisconsin.gov](mailto:Jeff.Kreider@wisconsin.gov)]  
**CC:** Pat Roach [[Pat@jmroach.com](mailto:Pat@jmroach.com)]; Courtney Roach [[Courtney@jmroach.com](mailto:Courtney@jmroach.com)]; Matthew Schwalenberg [[matt@jmroach.com](mailto: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](mailto: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](mailto: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 email 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](mailto: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](mailto:john@jmroach.com)

Worksheet 3 (continued)	
Amber - 11/04 January 2006	
<b>Part B – Land Base for Applying Nutrients</b>	
1. Enter total <i>animal units</i> in proposed <i>livestock facility</i> (from worksheet 1)	3408
2. What percentage of the waste from the <i>livestock facility</i> 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 <i>animal units</i> in line 1. Result (# of <i>animal units</i> ):	
3408	
4. Total acres of cropland currently available for land application (owned, rented, or landspreading agreement):	
2759	
5. Divide # of acres in line 4 by # of <i>animal units</i> in line 3 to obtain ratio of acres to <i>animal units</i> :	
0.81	
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 <i>animal units</i> in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.	

Table 1: Acreage per Animal Unit

Animal Type	Acres per Animal Unit
Dairy	1.6
Beef	1.6
Swine	1.0
Chickens/Ducks	2.5
Turkeys	5.0
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 Paris*  
 Signature of Applicant or Authorized Representative

1/10/19

Date

## **Design Rational for the Headquarters Site Y1 Yard Runoff Control Measures - Amended**

### **Introduction**

Ledgeview Farm, LLC (LF) is an existing dairy that conducts operations under a WPDES Permit Number: WI-0065421 and 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 Headquarters Site, Y1 Yard and the L5 Barn provides housing for 300 cattle weighing approximately 250 pounds. The Y1 Yard is an unroofed concrete yard on the south side of the L5 Barn. There is a 1 foot tall feeding curb along the south side, drivable curbs on the east and west sides, and the L5 barn along the north side. No roof water from the L5 Barn falls on the Y1 Yard. Together these structures provide containment for manure and runoff within the Y1 Yard. The Y1 Yard provides containment for one days manure, the runoff from a 25-yr, 24-hr rain event and 6 inches of depth for safety.

The surface of the Y1 Yard is irregular and therefore the storage volume has been calculated in CAD, and is found in the attached Cut/Fill Report.

### **Design Assumptions**

- The housing system is defined by the Y1 Yard (5976 ft<sup>2</sup>) and the L5 Barn (15103 ft<sup>2</sup>).
- The cattle in the housing system have equal access to the Y1 Yard and L5 Barn bedded pack area and therefore, the manure is distributed equally between both areas.
- 300 head of 250 pound cattle housed on the Y1 Yard & L5 Barn
- Daily manure generation 300 hd. x .32 ft<sup>3</sup> per day = 96 ft<sup>3</sup>.
- The area of the Y1 Yard is 28% of the total area.
- One days manure on the Y1 Yard is 96 ft<sup>3</sup> x 28.35% = 27.2 ft<sup>3</sup>/day.
- Volume of a 25-yr, 24-hr rain event is 1817 ft<sup>3</sup> NRCS 313 Design Worksheet
- 0.5 feet for safety is 5976 ft<sup>2</sup> x 0.5 ft. = 2988 ft<sup>3</sup>
- Storage volume on the Y1 Yard is 5462 ft<sup>3</sup>
- Storage is calculated as 5462 ft<sup>3</sup> – 2988 ft<sup>3</sup> – 1817 ft<sup>3</sup> - 27.2 ft<sup>3</sup> = 629.8 ft<sup>3</sup> reserve capacity for additional safety.
- Freeboard therefore, is greater than 0.5 feet.

Y1 Yard Capacity

# Cut/Fill Report

**Generated:** 2019-01-10 15:27:14  
**By user:** matt  
**Drawing:** F:\Clients\Ledgeview Farms, LLC\CADD\F:\Clients\Ledgeview Farms, LLC\CADD\Ledgeview-y1.dwg

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Y1 Concrete Yard Volume	full	1.0000	1.0000	5976.00	0.2	202.3	202.1<Fill>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	5976.00	0.2	202.3	202.1<Fill>

\* Value adjusted by cut or fill factor other than 1.0

202.3 CUFT x 27CUFT/CUYD = 5462 CUFT



## Ver. March 2016

DATE: 1/10/19

DATE:

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

Is it a stanchion barn?  (Y or N)

[illegible]

**TOTAL DAILY VOLUME: 156.0 CU FT / DAY**

425,911 GALLONS

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

#DIV/0!

RCN 95 21.39 IN.  
12

X 5,976 Ft2 Drainage Area = 10,653 CU FT  
(Do not include waste storage facility area)

### RUNOFF VOLUME STORED ABOVE THE MOL

$$\frac{\text{RCN} \quad 95 \quad 3.65 \text{ IN.}}{12.00}$$

X 5,976 Ft2 Drainage Area= 1,817 CU FT  
'(Do not include waste storage facility area)



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

Source	Volume		Comments
	(ft <sup>3</sup> )	(gallons)	
<b>Waste Generation</b>			
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*	283,137	2,117,865	Exhibit 6-6
FSA Leachate-HQ	1,683	12,589	Exhibit 6-9
FSA Runoff-HQ	13,029	97,453	Exhibit 6-11
Y2 Heifer Farm Lot Runoff	100,076	748,568	Exhibit 6-8
Y1 HQ Farm Lot Runoff	15,364	114,923	Exhibit 6-13
<b>Sub-total</b>	<b>2,864,229</b>	<b>21,424,433</b>	
<b>Net Precipitation**</b>			
WSF 1	101,378	758,307	Exhibit 6-14
WSF 2	351,609	2,630,038	
<b>Sub-total</b>	<b>452,987</b>	<b>3,388,345</b>	
<b>Total Waste Generated</b>	<b>3,317,216</b>	<b>24,812,778</b>	
<b>Waste Stored Above the MOL</b>			
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
<b>Total Waste Above MOL</b>	<b>59,958</b>	<b>448,487</b>	
<b>Waste Storage Facilities***</b>			
WSF 1	684,097	5,117,046	Exhibit 6-14
WSF 2	1,971,800	14,749,062	
<b>Total Storage Volume</b>	<b>2,655,897</b>	<b>19,866,107</b>	
<b>Storage Capacity Evaluation</b>			
Total Storage Volume	2,655,897	19,866,107	
Average Annual Storage Period	292	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: 1/10/19				
DSN BY: JMR		CHK BY: _____		DATE: _____				
COMMENTS 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)				
<b>MANURE AND WASTEWATER</b>								
LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
Cows Milkin	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		
Total Manure and Wastewater Expected % solids in waste (Includes runoff and precip.)							15,347,995	GALLONS
							2,051,871	CU FT
							9.9	%

## Ex 6-3

## WASTE STORAGE FACILITY DESIGN - 313 STANDARD

Ver. March 2015

CLIENT: Ledgeview Farm, LLC COUNTY: BROWN DATE: 1/10/19  
 DSN BY: JMR CHK BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 COMMENTS 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. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
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

Total Manure and Wastewater	2,859,483	GALLONS
Expected % solids in waste (Includes runoff and precip.)	382,284	CU FT
	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*		Area ft <sup>2</sup>
	Length	Width	
Existing FSA	varies	varies	93,253
			-
			-
			-
Total Area With Apron			93,253 ft <sup>2</sup>
Total Area With Apron			2.1 Acres
Total Feed Storage Area Less Apron			93,253 ft <sup>2</sup>

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (default)	60	lbs/ft <sup>3</sup>
Silage Volume	33,571	tons

Calculated Annual Leachate Volume

Silage Stored	33,571	tons
Leachate Volume Generated per Ton	0.5	ft <sup>3</sup> /ton
Annual Leachate Generated	16,786	ft <sup>3</sup>
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 <sup>3</sup> /day

Calculated First Flush Runoff Generation

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

Total Annual Leachate & First Flush Volume

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 <sup>3</sup> /day
1st Flush Volume	-	ft <sup>3</sup> /event
Total Design Volume	560	ft <sup>3</sup>

20.72

Summary		
Annual Leachate Generated	16,786	ft <sup>3</sup>
Annual First Flush Runoff Generated	-	ft <sup>3</sup>
Total Annual Volume to Store	16,786	ft <sup>3</sup>
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
Initial Abstraction, Ia	in	0.00	0	0	0	0	0
Ia/P ratio		0.00	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
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60
Peak Discharge, qp	ac-ft	0.19	0.54	0.70	0.81	0.95	1.07
	cfs	<b>3.97</b>	<b>11.1</b>	<b>14.4</b>	<b>16.8</b>	<b>19.6</b>	<b>23.4</b>

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 Runoff - FSA Heifer Farm

Ledgeview Farm, LLC

Month	* Runoff				
	RCN-98	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(gallons)
Jan**	0.70640	7,136	53,380	0	0
Feb**	0.6404	6,470	48,393	0	0
March	1.4856	15,008	112,262	15,008	112,262
April	2.6104	26,372	197,259	26,372	197,259
May	3.3417	33,760	252,521	33,760	252,521
June	4.3165	43,607	326,184	43,607	326,184
July	4.0736	41,154	307,829	41,154	307,829
Aug	4.1995	42,425	317,342	42,425	317,342
Sept	3.8389	38,782	290,093	38,782	290,093
Oct	2.6817	27,092	202,647	27,092	202,647
Nov***	1.9252	19,449	145,481	9,725	72,741
Dec***	1.0319	10,425	77,977	5,212	38,989

311,680 2,331,369 283,137 2,117,866

Winter Months (Nov-April) 56,317 421,250

121,230 sq ft FSA, RCN 98

\* From 313 Design Worksheet

\*\* 100% Snow Removal

\*\*\* 50% Snow Removal

	ft3	Gallons
25 year, 24 hour rainfall runoff	41,427	309,873

Enter Data Cells



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	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	2.31	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.17	0.22	0.26	0.30	0.34	0.36
	cfs	<b>1.27</b>	<b>3.5</b>	<b>5.4</b>	<b>6.3</b>	<b>7.0</b>	<b>7.5</b>

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 Runoff - Y2 Yard Heifer Farm

Ledgeview Farm, LLC

Month	* Runoff				
	RCN-98	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(gallons)
Jan**	0.70640	2,291	17,140	2,291	17,140
Feb**	0.6404	2,077	15,538	2,077	15,538
March	1.4856	4,819	36,045	4,819	36,045
April	2.6104	8,467	63,337	8,467	63,337
May	3.3417	10,840	81,081	10,840	81,081
June	4.3165	14,002	104,732	14,002	104,732
July	4.0736	13,214	98,839	13,214	98,839
Aug	4.1995	13,622	101,894	13,622	101,894
Sept	3.8389	12,452	93,144	12,452	93,144
Oct	2.6817	8,699	65,067	8,699	65,067
Nov***	1.9252	6,245	46,712	6,245	46,712
Dec***	1.0319	3,347	25,037	3,347	25,037
		100,076	748,565	100,076	748,565
Winter Months (Nov-April)				27,247	203,809

38,925 sq ft FSA, RCN 98

\* From 313 Design Worksheet

\*\* 100% Snow Removal

\*\*\* 50% Snow Removal

	ft <sup>3</sup>	Gallons
25 year, 24 hour rainfall runoff	13,263	309,873

Enter Data Cells

**Exhibit 6-9**

# **Leachate and First Flush Volume Calculation Worksheet** **Ledgeview Farm, LLC - Headquarters Farm**

Prepared By: Roach

Date: 2017

Input Data	Dimensions*		Area ft <sup>2</sup>
	Length	Width	
FSA Home Farm	170	55	9,350
			-
			-
			-
			-
Total Area With Apron			9,350 ft <sup>2</sup>
Total Area With Apron			0.2 Acres
Total Feed Storage Area Less Apron			9,350 ft <sup>2</sup>

**Volume of Feed Stored in the Facility**

Silage Height	12	ft
Silage Density (default)	60	lbs/ft <sup>3</sup>
Silage Volume	3,366	tons

**Calculated Annual Leachate Volume**

Silage Stored	3,366	tons
Leachate Volume Generated per Ton	0.5	ft <sup>3</sup> /ton
Annual Leachate Generated	1,683	ft <sup>3</sup>
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 <sup>3</sup> /day

**Calculated First Flush Runoff Generation**

Total Feed Storage Area Less Apron	9,350	ft <sup>2</sup>
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft <sup>3</sup> /event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft <sup>3</sup>
Total Annual First Flush Volume Generated	-	gal

<b>Total Annual Leachate &amp; First Flush Volume</b>	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 <sup>3</sup> /day
1st Flush Volume	-	ft <sup>3</sup> /event
<b>Total Design Volume</b>	<b>56</b>	<b>ft<sup>3</sup></b>

2.08

Summary		
Annual Leachate Generated	1,683	ft <sup>3</sup>
Annual First Flush Runoff Generated	-	ft <sup>3</sup>
Total Annual Volume to Store	1,683	ft <sup>3</sup>
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 Headquarters Farm**

Drainage Area  
 Runoff Curve Number

0.21	Acres
98.00	

Time of Concentration 0.07 Hours

Frequency	yr	2	5	10	25	50	100
Rainfall, P (24 hour)	in	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	2.31	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.04	0.05	0.06	0.07	0.08	0.09
	cfs	0.31	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

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(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***	<u>1,075</u>	<u>8,041</u>	<u>538</u>	<u>4,021</u>
	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: Y1 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	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	2.31	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.03	0.03	0.04	0.05	0.05	0.06
	cfs	<b>0.20</b>	<b>0.6</b>	<b>0.8</b>	<b>1.0</b>	<b>1.1</b>	<b>1.2</b>

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 - Y1 Lot Headquarters Farm  
Ledgeview Farm, LLC

Month	* Runoff				
	RCN-98	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(gallons)
Jan	0.70640	352	2,631	352	2,631
Feb	0.6404	319	2,386	319	2,386
March	1.4856	740	5,534	740	5,534
April	2.6104	1,300	9,724	1,300	9,724
May	3.3417	1,664	12,448	1,664	12,448
June	4.3165	2,150	16,079	2,150	16,079
July	4.0736	2,029	15,174	2,029	15,174
Aug	4.1995	2,091	15,643	2,091	15,643
Sept	3.8389	1,912	14,300	1,912	14,300
Oct	2.6817	1,335	9,989	1,335	9,989
Nov	1.9252	959	7,171	959	7,171
Dec	1.0319	514	3,844	514	3,844
		15,364	114,924	15,364	114,924
Winter Months (Nov-April)				4,183	31,290

5,976 sq ft FSA, RCN 98

\* From 313 Design Worksheet

\*\* 100% Snow Removal

\*\*\* 50% Snow Removal

25 year, 24 hour rainfall runoff 2,044 15,292

Enter Data Cells

Exhibit 6-14

Roach & Associates, LLC - Waste Storage Volumes Model

Exhibit :	6-14
Title:	WSF1 Volume
Client:	Ledgeview
By:	Roach/BLS
Date:	1/7/2019
County	BROWN
Type:	Outdoor storage
EL <sub>TOB</sub> (ft):	806
EL <sub>BASE</sub> (ft):	781

Depth (ft)	Elevation	Acres	Area ft <sup>2</sup> (from AutoCAD)	Volume ft <sup>3</sup>	Volume gallons	ac-ft
Top of Berm	806.00	1	59,928	763,705	5,712,911	18
Highest topo = HT	806.00	1	59,928	763,705	5,712,911	18
H1-1	805.00	1	57,139	705,172	5,275,051	16
H1-2	804.00	1	54,429	649,388	4,857,761	15
H1-3	803.00	1	51,817	596,266	4,460,377	14
H1-4	802.00	1	49,341	545,687	4,082,021	13
H1-5	801.00	1	46,938	497,547	3,721,911	11
H1-6	800.00	1	44,610	451,773	3,379,497	10
H1-7	799.00	1	42,366	408,285	3,054,185	9
H1-8	798.00	1	40,230	366,987	2,745,255	8
H1-9	797.00	1	38,126	327,810	2,452,186	8
H1-10	796.00	1	36,080	290,707	2,174,637	7
H1-11	795.00	1	34,204	255,564	1,911,754	6
H1-12	794.00	1	32,400	222,262	1,662,638	5
H1-13	793.00	1	30,641	190,742	1,426,848	4
H1-14	792.00	1	28,916	160,963	1,204,089	4
H1-15	791.00	1	25,333	133,839	1,001,183	3
H1-16	790.00	1	22,915	109,715	820,722	3
H1-17	789.00	0	20,562	87,976	658,107	2
H1-18	788.00	0	18,200	68,595	513,128	2
H1-19	787.00	0	15,889	51,551	385,627	1
H1-20	786.00	0	13,660	36,776	275,106	1
H1-21	785.00	0	11,494	24,199	181,024	1
H1-22	784.00	0	9,314	13,795	103,197	0
H1-23	783.00	0	5,918	6,180	46,227	0
H1-24	782.00	0	2,819	1,811	13,550	0
H1-25	781.00	0	804	0	0	0
H1-26	781.00	#VALUE!	Leave Blank	0	0	0
H1-27	781.00	#VALUE!	Leave Blank	0	0	0

Volume Description	IN	Cu. Ft	Gallons	Elevation
Total Settled Volume	TOB	763,705	5,712,911	806.00
Volume at Margin of Safety (MOS)	12	705,172	5,275,051	805.00
MOS Volume	12	58,533	437,859	NA
Maximum Operating Level (MOL)	NA	684,097	5,117,402	804.62
25yr-24hr Storm Precip	4.22	21,075	157,649	NA
Average Net Precipitation	20.3	101,378	758,361	NA

<sup>1</sup> 25yr-24hr Storm Depth for "the County indicated above", NR243 Table 1

<sup>2</sup> The difference between precipitation and evaporation, State Average, NRCS WI Waste Storage Design spreadsheet 3/4/2016

<sup>3</sup> 25year storm 4.22 Inches



**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 Equipment \(https://valmetal.valmetal.com/\)](https://valmetal.valmetal.com/)

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- [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.

Fast, accurate, the Agri-Chopper allows you to save time, energy as well as materials. Indeed, it has been proven that it takes twice as much compressed straw in comparison to chopped straw to make decent bedding, resulting in lower bedding cost and less manure handling.

[Download the Brochure \(https://valmetal.valmetal.com/wp-content/uploads/2013/11/VM-74\\_brochure\\_agrichopper\\_v3\\_pll\\_en.pdf\)](https://valmetal.valmetal.com/wp-content/uploads/2013/11/VM-74_brochure_agrichopper_v3_pll_en.pdf)



## Adjustable deflector

To direct the flow, the deep sided chute has an adjustable deflector and can be pivoted 360° either manually or from the tractor (optional).





## Large tub

The large diameter tub features two (2) large doors to facilitate the loading of big bales when used inside farm buildings.

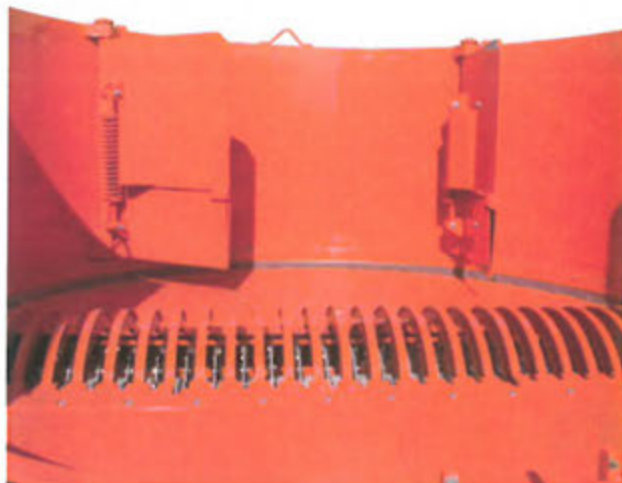
## Available models



### **AGRI-CHOPPER STATIONARY**

A stationary model, with an electric motor, is also available.

## Features



### Retractable baffles

Inside the tub, two (2) sturdy retractable baffles ensure the bale pivots over the knives and completely empty the tub.



### High quality knives

The high quality knives of the Agri-Chopper have an incredible lifespan !



## Drive chain system

A positive drive chain system rotates the tub and delivers materials into the path of the rotor knives.

Agri-Chopper – Big bale chopper: Adjustable grate

## Adjustable grate

The system is equipped with a grate hydraulically adjustable from the tractor seat, to control the penetration of the bale on the rotating knives.

Agri-Chopper – Big bale chopper: Also available

## Also available

Hydraulic motor with a Flow control to manage the speed of the tub independantly of the PTO.

Agri-Chopper – Big bale chopper: Rotor

## Rotor

The biggest on the market !

Agri-Chopper – Big bale chopper: Hydraulic motor

## Hydraulic motor

Hydraulic motor (in option) with a Flow control to manage the speed of the tub independantly of the PTO .

Agri-Chopper – Big bale chopper: Conical extension

## Conical extension

A conical extension (in option) to avoid spillage when filling big, long rectangular bales.

Agri-Chopper – Big bale chopper: Electric Agri-Chopper

## Electric Agri-Chopper

A fully electric Agri-Chopper is also available.

Agri-Chopper – Big bale chopper: Stationary

## Stationary

A stationary model (fully Electric) is also available.

Previous

Next

## Benefits

Facilitates handling and distribution of large bales

Significantly reduces the cost of feed and bedding

Produces a more appetizing feed and ideal fiber length (as recommended by nutritionists)

Aids in the addition of hay in the ration for a more homogeneous mixture (TMR)

Produces a more effective litter using less material

Allows you to blow litter over a long distance or height (40 feet/12 m)

Saves you time and energy!



## Improved feed quality

Designed to process big bales of hay, round or square, dry or wet (baleage), the Agri-Chopper:

- helps to reduce the time spent on feeding,
- aids in the addition of fiber in the diet
- allows full utilization of forage bales (while significantly reducing losses on leftovers).

For producers who feed TMR, the Agri-Chopper:

- allows the addition of the exact quantity of chopped hay into every recipe,
- ensures a more thorough mix
- lessens the stress on the mixer and extends its life

## Accurate, fast and Durable

Under the rotor, a 16" (40 cm) diameter auger carries the chopped product into a powerful blower capable of projecting the ration over a distance of more than 40' (12 m) (depending on density, moisture content, etc).

PTO driven, the sturdy rotor features rigid knives. Special blades are used to chop cardboard or paper. The weight of the rotor acts like a flywheel and minimizes stress on the tractor PTO. The large central tube reduces the possibility of twine wrapping.



[\(https://valmetal.valmetal.com/produits/agri-chopper/dsc\\_0305-2/\)](https://valmetal.valmetal.com/produits/agri-chopper/dsc_0305-2/)  
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[chopper/cuve-rehaussee-double-avec-grapin-2/](https://valmetal.valmetal.com/produits/agri-chopper/cuve-rehaussee-double-avec-grapin-2/)

## Options



Hydraulic Controlled Chute



Manual Controlled Chute



## Tub extension

Agri-Chopper – Big bale chopper: Regular grate

## Regular grate

Agri-Chopper – Big bale chopper: Fine cut grate

## Fine cut grate

Previous

Next

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## Figures

5500

H-5500 model: 90" diameter for 60 HP

5600

H-5600 model: 102" diameter for 70 HP

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## **Y1 Yard Operation and Maintenance Plan**

### **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.

### **System**

The Headquarters Site, Y1 Yard and the L5 Barn provide housing for 300 cattle weighing approximately 250 pounds. The Y1 Yard is an unroofed concrete yard on the south side of the L5 Barn. There is a feeding curb along the south side, drivable curbs on the east and west sides, and the L5 barn along the north side. Together these structures provide containment for manure and runoff within the Y1 Yard. The Y1 Yard provides containment for one full days manure, the runoff from a 25-year 24-hour rain and  $\geq 6$  inches of extra depth for safety.

### **Safety and Emergency Response**

- In the event the Y1 Yard was to overflow, sand bedding would be used to create a dike to contain the spill. A vacuum tanker would be used to remove the spilled manure from the emergency containment structure.

### **Operating Procedures**

- Manure is removed from the Y1 Yard daily, and applied onto cropland, headland stacked or transported to waste storage.
- Manure/bedding pack is removed from the L5 Barn as needed and applied onto cropland, headland stacked or transported to waste storage.
- Following all rain events, bedding from the L5 Barn will be mixed with runoff and the mixture loaded onto watertight spreader for transfer to cropland or waste storage.



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# **Waste Storage Facility Closure Plan – Pits 1 & 2**

for

**Ledgeview Farm, LLC  
3875 Dickinson Road  
DePere, WI 54115**

**Submitted January 29, 2018  
Amended January 7, 2019**

Prepared by

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



## Ledgeview Farm, LLC Table of Contents

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Heavy Use Area Protection .....	2
Closure of Waste Impoundments .....	3

## **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:

#### General Requirements

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.
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. Inspect the erosion control measures to insure that they are adequate.
5. The seeding and mulching.
6. 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.



# Ledgeview Farm, LLC

Main Farm



## Legend

- FSA: Feed Storage Area
- L1: Freestall Barn & Expansion
- L3-L4: Freestall Barns to be removed
- L2 & L5: Heifer's Bedded Pack Barn
- L6: Calf Barn
- L7: Proposed Freestall Barn
- SWP: Storm Water Pond
- T1: Piston Pump Station
- WSE1: Waste Storage Facility
- W: Wells



**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 suction 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, Part 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

<sup>1</sup>Guidance can be found in EFH Chapter 4 and Figure 4-14 for information regarding bearing capacity and foundation properties.

<sup>2</sup>Crushed Stone: 100% passing 3/4" sieve and 10% maximum passing the #200 sieve.

<sup>3</sup>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.

<sup>4</sup>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.

<sup>5</sup>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.



# 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.

## Exhibit 19 - ATCP 51 Appendix A Worksheet 5 – Runoff Management

### Feed Storage

Ledgeview Farms is only required to meet the criteria found in; **1. General.** *The operator agrees to manage feed storage to prevent significant discharge of leachate or polluted runoff to waters of the state.* In addition, Ledgeview operates under a WPDES Permit and is required to meet the production site discharge limits found in NR 243.13.

**Worksheet 5 – Runoff Management; Feed Storage, Number 2 Existing Feed Storage (High Moisture Feed) and Number 3 New or Substantially Altered Feed Storage Structures (High Moisture)** apply only to Feed Storage Structures that store High Moisture Feed. High Moisture Feed is defined as feed with 70% or higher moisture content.

Ledgeview Farms, LLC harvests and stores feed with a moisture content that is substantially lower than 70%. We reviewed the moisture content from nineteen (19) forage tests that include entries beginning in 2017 to 2019. The average moisture content of the 19 samples is 54.58%. A summary Table as well as the forage test reports are included in the attachment.

Based upon the documented moisture content of the forages harvest by Ledgeview Farms, LLC we believe that Ledgeview Farms, LLC, Feed Storage Structures are required to meet the criteria found in #1. General and are exempt from the criteria found in #2 and #3.

## Ledgeview Farms, LLC

### Historical Feed Moisture Content

No.	Date	Feed Type	Moisture Content
			(%)
1	1/3/2019	Corn Silage	48.64
2	1/3/2019	Haylage	31.19
3	11/16/2018	Haylage	41.46
4	9/26/2018	Corn Silage	67.68
5	9/26/2018	Haylage	58.94
6	8/15/2018	Haylage	53.08
7	8/1/2018	Haylage	59.68
8	6/25/2018	Haylage	48.78
9	5/1/2018	Haylage	60.44
10	4/4/2018	Corn Silage	61.58
11	4/4/2018	Haylage	49.58
12	3/9/2018	Ryelage	52.29
13	3/9/2018	Haylage	42.68
14	3/9/2018	Corn Silage	59.59
15	2/14/2018	Haylage	51.89
16	1/17/2018	Haylage	56.63
17	1/17/2018	Corn Silage	64.96
18	1/17/2018	Corn Silage	61.71
19	12/27/2017	Corn Silage	66.3
Average			54.58

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 9/26/2018  
Sample number: 006-1809-005699

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: C SILAGE BUNKER (2 - N8 )

Moisture % 67.68%  
Dry Matter % 32.32%  
pH 3.90

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.38%	7.82	5.72 - 9.92
ADF	%DM	21.73%	24.66	17.06 - 32.26
aNDF	%DM	35.85%	41.00	30.08 - 51.92
aNDFom	%DM	34.99%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	3.07%	3.67	2.23 - 5.11
Lignin	%NDF	8.77%	8.01	5.30 - 10.72
NDFD 30	%NDF	52.96%	53.87	43.57 - 64.17
NDFD 240	%NDF	74.31%	73.90	65.70 - 83.20
uNDFom30	%DM	16.46%	18.20	13.30 - 23.30
uNDFom240	%DM	8.99%	10.50	6.00 - 14.90
AD-ICP	%DM	0.57%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	1.09%	0.96	0.55 - 1.97
Protein Sol.	%CP	35.91%	37.50	16.33 - 58.68
Starch	%DM	40.66%	31.84	18.46 - 45.22
Fat (EE)	%DM	2.81%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.14%	2.26	1.50 - 2.81
Ash	%DM	5.12%	3.80	1.42 - 6.18
Calcium	%DM	0.22%	0.24	0.12 - 0.36
Phosphorus	%DM	0.22%	0.24	0.18 - 0.30
Magnesium	%DM	0.18%	0.20	0.12 - 0.28
Potassium	%DM	0.88%	1.05	0.63 - 1.47
Sulfur	%DM	0.11%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	1.49%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	1.89%	3.76	2.18 - 6.51

Adjusted Crude Protein % 7.38%  
NFC % 50.46%  
NDF kd rate Van Amb %/hr 3.41%

		ADF	OARDC	MLK06 NonProc	MLK06 Proc	ISU BEEF
TDN 1x	%DM	72.63	72.31	73.77	73.77	66.09
Nel 3x	Mcal/cwt	75.51	75.07	73.75	73.75	
Neg	Mcal/cwt	47.49	47.83	50.84	50.84	44.28
Nem	Mcal/cwt	75.11	75.50	78.92	78.92	71.11
Milk per ton	lb/ton DM			3515	3515	
Beef per ton	lb/ton DM					253.8



FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 9/26/2018  
Sample number: 006-1809-005699

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: C SILAGE BUNKER (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: C SILAGE BUNKER

Reference: 0605454  
Date: 9/26/2018  
Sample: 006-1809-005699

\$ 24.50 PACKAGE N8  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001452

ACCOUNT # 138 ( 17)

TO: James Downey

SAMPLED BY: James Downey

16322 W Washington St.

Valders

, WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: CORN SILAGE N BUNKER (2 - N8 )

Moisture	%	61.71%
Dry Matter	%	38.29%
pH		3.64

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.36%	7.82	5.72 - 9.92
ADF	%DM	20.63%	24.66	17.06 - 32.26
aNDF	%DM	34.31%	41.00	30.08 - 51.92
aNDFom	%DM	33.50%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	2.43%	3.67	2.23 - 5.11
Lignin	%NDF	7.25%	8.01	5.30 - 10.72
NDFD 30	%NDF	58.93%	53.87	43.57 - 64.17
NDFD 240	%NDF	69.91%	73.90	65.70 - 83.20
uNDFom30	%DM	13.76%	18.20	13.30 - 23.30
uNDFom240	%DM	10.08%	10.50	6.00 - 14.90
AD-ICP	%DM	0.30%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.76%	0.96	0.55 - 1.97
Protein Sol.	%CP	66.30%	37.50	16.33 - 58.68
Starch	%DM	41.13%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.38%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.19%	2.26	1.50 - 2.81
Ash	%DM	4.44%	3.80	1.42 - 6.18
Calcium	%DM	0.17%	0.24	0.12 - 0.36
Phosphorus	%DM	0.22%	0.24	0.18 - 0.30
Magnesium	%DM	0.13%	0.20	0.12 - 0.28
Potassium	%DM	0.92%	1.05	0.63 - 1.47
Sulfur	%DM	0.10%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	1.49%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	1.89%	3.76	2.18 - 6.51

Adjusted Crude Protein	%	7.36%
NFC	%	52.27%
NDF kd rate Van Amb	%/hr	3.82%

		ADF	OARDC	MLK06 NonProc	MLK06 Proc
TDN 1x	%DM	73.40	74.73	72.49	75.70
Nel 3x	Mcal/cwt	76.37	77.77	70.87	74.90
Neg	Mcal/cwt	48.03	50.83	54.50	54.50
Nem	Mcal/cwt	75.73	78.90	83.11	83.11
Milk per ton	lb/ton DM			3368	3628

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001452

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: CORN SILAGE N BUNKER (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: CORN SILAGE N BUNKER

Reference: 0632357

Date: 1/17/2018

Sample: 006-1801-001452

\$ 24.50 PACKAGE N8

\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001453

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: CORN SILAGE BIG BNKR (2 - N8 )

Moisture	%	64.96%
Dry Matter	%	35.04%
pH		3.57

		Dry Basis	Average	Normal Range
Crude Protein	%DM	8.04%	7.82	5.72 - 9.92
ADF	%DM	21.34%	24.66	17.06 - 32.26
aNDF	%DM	35.30%	41.00	30.08 - 51.92
aNDFom	%DM	34.46%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	2.85%	3.67	2.23 - 5.11
Lignin	%NDF	8.27%	8.01	5.30 - 10.72
NDFD 30	%NDF	57.52%	53.87	43.57 - 64.17
NDFD 240	%NDF	73.30%	73.90	65.70 - 83.20
uNDFom30	%DM	14.64%	18.20	13.30 - 23.30
uNDFom240	%DM	9.20%	10.50	6.00 - 14.90
AD-ICP	%DM	0.39%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.82%	0.96	0.55 - 1.97
Protein Sol.	%CP	62.19%	37.50	16.33 - 58.68
Starch	%DM	39.89%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.73%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.48%	2.26	1.50 - 2.81
Ash	%DM	4.94%	3.80	1.42 - 6.18
Calcium	%DM	0.18%	0.24	0.12 - 0.36
Phosphorus	%DM	0.23%	0.24	0.18 - 0.30
Magnesium	%DM	0.16%	0.20	0.12 - 0.28
Potassium	%DM	0.88%	1.05	0.63 - 1.47
Sulfur	%DM	0.11%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	1.34%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	2.14%	3.76	2.18 - 6.51

Adjusted Crude Protein	%	8.04%
NFC	%	49.90%
NDF kd rate Van Amb	%/hr	3.85%

		ADF	OARDC	MLK06 NonProc	MLK06 Proc
TDN 1x	%DM	72.90	73.54	73.84	75.77
Nel 3x	Mcal/cwt	75.81	76.44	72.85	75.27
Neg	Mcal/cwt	47.88	49.66	53.42	53.42
Nem	Mcal/cwt	75.55	77.58	81.86	81.86
Milk per ton	lb/ton DM			3487	3643



FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001453

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: CORN SILAGE BIG BNKR (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

Reference: 0632358

SAMPLED FOR: LEGDEVIEW FARMS

Date: 1/17/2018

PRODUCT: CORN SILAGE BIG BNKR

Sample: 006-1801-001453

\$ 24.50 PACKAGE N8

\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 12/27/2017

Sample number: 006-1712-013633

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW

PRODUCT: CORN SILAGE SM BNKR (2 - N8 )

Moisture	%	66.30%
Dry Matter	%	33.70%
pH		3.65

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.35%	7.82	5.72 - 9.92
ADF	%DM	24.96%	24.66	17.06 - 32.26
aNDF	%DM	40.99%	41.00	30.08 - 51.92
aNDFom	%DM	39.98%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	3.11%	3.67	2.23 - 5.11
Lignin	%NDF	7.78%	8.01	5.30 - 10.72
NDFD 30	%NDF	56.68%	53.87	43.57 - 64.17
NDFD 240	%NDF	72.66%	73.90	65.70 - 83.20
uNDFom30	%DM	17.32%	18.20	13.30 - 23.30
uNDFom240	%DM	10.93%	10.50	6.00 - 14.90
AD-ICP	%DM	0.43%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.92%	0.96	0.55 - 1.97
Protein Sol.	%CP	56.05%	37.50	16.33 - 58.68
Starch	%DM	31.16%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.65%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.66%	2.22	1.18 - 3.26
Ash	%DM	4.97%	3.80	1.42 - 6.18
Calcium	%DM	0.21%	0.24	0.12 - 0.36
Phosphorus	%DM	0.23%	0.24	0.18 - 0.30
Magnesium	%DM	0.16%	0.20	0.12 - 0.28
Potassium	%DM	1.08%	1.05	0.63 - 1.47
Sulfur	%DM	0.11%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	1.15%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	1.44%	3.76	2.18 - 6.51
Adjusted Crude Protein	%	7.35%		
NFC	%	44.96%		
NDF kd rate Van Amb	%/hr	3.66%		

		ADF	OARDC	MLK06 NonProc	MLK06 Proc
TDN 1x	%DM	70.37	71.69	73.08	73.83
Nel 3x	Mcal/cwt	72.99	74.38	72.02	72.96
Neg	Mcal/cwt	45.66	47.17	50.80	50.80
Nem	Mcal/cwt	73.04	74.76	78.87	78.87
Milk per ton	lb/ton DM			3428	3489

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 12/27/2017

Sample number: 006-1712-013633

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW

PRODUCT: CORN SILAGE SM BNKR (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

Reference: 0631049

SAMPLED FOR: LEDGEVIEW

Date: 12/27/2017

PRODUCT: CORN SILAGE SM BNKR

Sample: 006-1712-013633

\$ 24.50 PACKAGE N8

\$ 24.50 TOTAL

## FEED AND FORAGE REPORT

## DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004326

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: CORN SILAGE (2 - N8 )

Moisture	%	59.59%
Dry Matter	%	40.41%
pH		3.68

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.50%	7.82	5.72 - 9.92
ADF	%DM	22.88%	24.66	17.06 - 32.26
aNDF	%DM	37.48%	41.00	30.08 - 51.92
aNDFom	%DM	36.57%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	2.89%	3.67	2.23 - 5.11
Lignin	%NDF	7.90%	8.01	5.30 - 10.72
NDFD 30	%NDF	57.01%	53.87	43.57 - 64.17
NDFD 240	%NDF	74.92%	73.90	65.70 - 83.20
uNDFom30	%DM	15.72%	18.20	13.30 - 23.30
uNDFom240	%DM	9.17%	10.50	6.00 - 14.90
AD-ICP	%DM	0.43%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.77%	0.96	0.55 - 1.97
Protein Sol.	%CP	65.20%	37.50	16.33 - 58.68
Starch	%DM	37.38%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.38%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.30%	2.26	1.50 - 2.81
Ash	%DM	4.93%	3.80	1.42 - 6.18
Calcium	%DM	0.18%	0.24	0.12 - 0.36
Phosphorus	%DM	0.22%	0.24	0.18 - 0.30
Magnesium	%DM	0.16%	0.20	0.12 - 0.28
Potassium	%DM	0.90%	1.05	0.63 - 1.47
Sulfur	%DM	0.10%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	1.18%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	1.47%	3.76	2.18 - 6.51
Adjusted Crude Protein	%	7.50%		
NFC	%	48.47%		
NDF kd rate Van Amb	%/hr	3.72%		

		ADF	OARDC	MLK06 NonProc	MLK06 Proc
TDN 1x	%DM	71.82	72.59	69.40	73.00
Nel 3x	Mcal/cwt	74.61	75.38	67.35	71.88
Neg	Mcal/cwt	46.93	48.29	52.09	52.09
Nem	Mcal/cwt	74.48	76.02	80.34	80.34
Milk per ton	lb/ton DM			3129	3421



FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004326

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: CORN SILAGE (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: CORN SILAGE

Reference: 0635519  
Date: 3/ 9/2018  
Sample: 006-1803-004326

\$ 24.50 PACKAGE N8  
\$ 24.50 TOTAL

## FEED AND FORAGE REPORT

DAIRYLAND LABS  
De Pere, WI 54115-3913  
Telephone 920-336-4521

REGENERATED REPORT  
Report date: 4/ 4/2018  
Sample number: 006-1804-005529

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: CORN SILAGE (2 - N8 )

Moisture % 61.58%  
Dry Matter % 38.42%  
pH 3.72

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.27%	7.82	5.72 - 9.92
ADF	%DM	23.29%	24.66	17.06 - 32.26
aNDF	%DM	38.97%	41.00	30.08 - 51.92
aNDFom	%DM	38.02%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	2.91%	3.67	2.23 - 5.11
Lignin	%NDF	7.65%	8.01	5.30 - 10.72
NDFD 30	%NDF	57.73%	53.87	43.57 - 64.17
NDFD 240	%NDF	65.62%	73.90	65.70 - 83.20
uNDFom30	%DM	16.07%	18.20	13.30 - 23.30
uNDFom240	%DM	13.07%	10.50	6.00 - 14.90
AD-ICP	%DM	0.42%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.92%	0.96	0.55 - 1.97
Protein Sol.	%CP	68.09%	37.50	16.33 - 58.68
Starch	%DM	34.73%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.54%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.05%	2.26	1.50 - 2.81
Ash	%DM	3.90%	3.80	1.42 - 6.18
Calcium	%DM	0.21%	0.24	0.12 - 0.36
Phosphorus	%DM	0.21%	0.24	0.18 - 0.30
Magnesium	%DM	0.15%	0.20	0.12 - 0.28
Potassium	%DM	1.07%	1.05	0.63 - 1.47
Sulfur	%DM	0.10%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	0.81%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	0.98%	3.76	2.18 - 6.51
Adjusted Crude Protein	%	7.27%		
NFC	%	48.68%		
NDF kd rate Van Amb	%/hr	3.75%		

		ADF	OARDC	MLK06 NonProc	MLK06 Proc
TDN 1x	%DM	71.54	72.91	71.01	73.76
Nel 3x	Mcal/cwt	74.30	75.74	69.19	72.64
Neg	Mcal/cwt	46.35	48.57	51.95	51.95
Nem	Mcal/cwt	73.82	76.33	80.19	80.19
Milk per ton	lb/ton DM			3252	3475

FEED AND FORAGE REPORT

DAIRYLAND LABS  
De Pere, WI 54115-3913  
Telephone 920-336-4521

REGENERATED REPORT  
Report date: 4/ 4/2018  
Sample number: 006-1804-005529

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: CORN SILAGE (2 - N8 )

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: CORN SILAGE

Reference: 0636858  
Date: 4/ 4/2018  
Sample: 006-1804-005529

\$ 24.50 PACKAGE N8  
\$ 24.50 TOTAL

\*THIS REPORT WAS REGENERATED ON 4/ 6/2018

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 1/ 3/2019  
Sample number: 006-1901-000642

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey  
TO: James Downey  
16322 W Washington St.

Valders , WI 54245 SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: DRY SILAGE (2 - N8 )

Moisture % 48.64%  
Dry Matter % 51.36%  
pH 3.93

		Dry Basis	Average	Normal Range
Crude Protein	%DM	7.49%	7.82	5.72 - 9.92
ADF	%DM	20.43%	24.66	17.06 - 32.26
aNDF	%DM	33.43%	41.00	30.08 - 51.92
aNDFom	%DM	32.64%	40.10	29.71 - 50.76
Lignin (Sulfuric Acid)	%DM	2.73%	3.67	2.23 - 5.11
Lignin	%NDF	8.36%	8.01	5.30 - 10.72
NDFD 30	%NDF	52.57%	53.87	43.57 - 64.17
NDFD 240	%NDF	71.48%	73.90	65.70 - 83.20
uNDFom30	%DM	15.48%	18.20	13.30 - 23.30
uNDFom240	%DM	9.31%	10.50	6.00 - 14.90
AD-ICP	%DM	0.46%	0.69	0.35 - 1.03
ND-ICP w/ SS	%DM	0.98%	0.96	0.55 - 1.97
Protein Sol.	%CP	52.74%	37.50	16.33 - 58.68
Starch	%DM	40.11%	31.84	18.46 - 45.22
Fat (EE)	%DM	3.11%	3.17	2.15 - 4.19
Total Fatty Acid (TFA)	%DM	2.31%	2.26	1.50 - 2.81
Ash	%DM	4.50%	3.80	1.42 - 6.18
Calcium	%DM	0.21%	0.24	0.12 - 0.36
Phosphorus	%DM	0.22%	0.24	0.18 - 0.30
Magnesium	%DM	0.16%	0.20	0.12 - 0.28
Potassium	%DM	0.81%	1.05	0.63 - 1.47
Sulfur	%DM	0.10%	0.11	0.09 - 0.13
Sugar (ESC)	%DM	2.57%	1.72	0.02 - 4.67
Sugar (WSC)	%DM	3.83%	3.76	2.18 - 6.51



# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 1/ 3/2019  
Sample number: 006-1901-000642

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: DRY SILAGE (2 - N8 )

Adjusted Crude Protein % 7.49%  
NFC % 53.04%  
NDF kd rate Van Amb %/hr 3.31%

		ADF	OARDC	MLK06 NonProc	MLK06 Proc	ISU BEEF
		-----	-----	-----	-----	-----
TDN 1x	%DM	73.54	74.44	66.52	70.53	67.65
Nel 3x	Mcal/cwt	76.52	77.44	64.69	69.73	
Neg	Mcal/cwt	48.39	50.47	52.80	52.80	46.07
Nem	Mcal/cwt	76.13	78.50	81.15	81.15	73.12
Milk per ton	lb/ton DM			2928	3253	
Beef per ton	lb/ton DM					266.7

## -----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: DRY SILAGE

Reference: 0612941  
Date: 1/ 3/2019  
Sample: 006-1901-000642

\$ 24.50 PACKAGE N8  
\$ 24.50 TOTAL

## FEED AND FORAGE REPORT

## DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001454

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: 3RD CROP HAYLAGE (1C - N9 )

Moisture	%	56.63%
Dry Matter	%	43.37%
pH		3.99

		Dry Basis	Average	Normal Range
Crude Protein	%DM	18.12%	20.11	14.79 - 25.43
ADF	%DM	30.30%	32.28	25.22 - 39.34
aNDF	%DM	37.01%	42.72	31.14 - 54.30
aNDFom	%DM	35.67%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.21%	8.28	5.70 - 10.86
Lignin	%NDF	20.21%	19.39	12.45 - 26.32
NDFD 30	%NDF	61.65%	47.10	36.04 - 58.16
NDFD 240	%NDF	69.97%	52.00	37.60 - 66.50
uNDFom30	%DM	13.68%	23.30	14.60 - 32.10
uNDFom240	%DM	10.71%	20.40	12.90 - 27.80
AD-ICP	%DM	2.11%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	2.53%	2.93	1.44 - 4.70
Protein Sol.	%CP	59.55%	48.76	34.82 - 62.70
Fat (EE)	%DM	3.60%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.67%	1.45	0.65 - 2.25
Ash	%DM	8.91%	11.41	7.99 - 14.83
Calcium	%DM	1.09%	1.27	0.85 - 1.69
Phosphorus	%DM	0.32%	0.37	0.29 - 0.45
Magnesium	%DM	0.31%	0.31	0.21 - 0.41
Potassium	%DM	2.53%	2.89	1.97 - 3.81
Sulfur	%DM	0.19%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	4.22%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	5.59%	4.35	1.91 - 6.80

Adjusted Crude Protein	%	17.64%
NFC	%	37.16%
RFV		164.01
RFQ		207.31

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	65.30	61.23	69.43
Nel 3x	Mcal/cwt	67.34	62.73	71.54
Neg	Mcal/cwt	35.52	37.83	48.39
Nem	Mcal/cwt	61.75	64.30	76.14
Milk per ton	lb/ton DM			3496

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 1/17/2018

Sample number: 006-1801-001454

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: 3RD CROP HAYLAGE (1C - N9 )

These NDFD30, uNDFom240... values were outliers.  
Please contact the lab within 2 business days  
if you want the wet chemistry analysis performed  
Wet Chemistry verification will take 5-10 business days.

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

SAMPLED FOR: LEGDEVIEW FARMS

PRODUCT: 3RD CROP HAYLAGE

Reference: 0632359

Date: 1/17/2018

Sample: 006-1801-001454

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 11/16/2018  
Sample number: 006-1811-009767

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey  
TO: James Downey  
16322 W Washington St.

Valders , WI 54245 SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE BUNKER (1C - N9 )

Moisture % 41.46%  
Dry Matter % 58.54%  
pH 4.99

		Dry Basis	Average	Normal Range
Crude Protein	%DM	24.98%	20.11	14.79 - 25.43
ADF	%DM	27.34%	32.28	25.22 - 39.34
aNDF	%DM	32.87%	42.72	31.14 - 54.30
aNDFom	%DM	30.09%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.68%	8.28	5.70 - 10.86
Lignin	%NDF	25.52%	19.39	12.45 - 26.32
NDFD 30	%NDF	45.43%	47.10	36.04 - 58.16
NDFD 240	%NDF	51.28%	52.00	37.60 - 66.50
uNDFom30	%DM	16.42%	23.30	14.60 - 32.10
uNDFom240	%DM	14.66%	20.40	12.90 - 27.80
AD-ICP	%DM	2.09%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	3.31%	2.93	1.44 - 4.70
Protein Sol.	%CP	55.80%	48.76	34.82 - 62.70
Starch	%DM	2.25%	1.68	0.01 - 3.68
Fat (EE)	%DM	3.26%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.58%	1.45	0.65 - 2.25
Ash	%DM	11.21%	11.41	7.99 - 14.83
Calcium	%DM	1.32%	1.27	0.85 - 1.69
Phosphorus	%DM	0.39%	0.37	0.29 - 0.45
Magnesium	%DM	0.43%	0.31	0.21 - 0.41
Potassium	%DM	2.69%	2.89	1.97 - 3.81
Sulfur	%DM	0.31%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	4.25%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	5.44%	4.35	1.91 - 6.80

Adjusted Crude Protein % 24.98%  
NFC % 34.45%  
RFV 191.27  
RFQ 187.76  
NDF kd rate Van Amb %/hr 9.72%

		ADF	OARDC	MLK13
TDN 1x	%DM	67.60	60.90	65.06
Nel 3x	Mcal/cwt	69.91	62.37	70.00
Neg	Mcal/cwt	39.83	40.28	45.69
Nem	Mcal/cwt	66.53	67.03	73.08
Milk per ton	lb/ton DM			3263



FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 11/16/2018  
Sample number: 006-1811-009767

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE BUNKER (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE BUNKER

Reference: 0609978  
Date: 11/16/2018  
Sample: 006-1811-009767

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 11/16/2018  
Sample number: 006-1811-009767

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245 SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE BUNKER (1C - N9 )

Moisture % 41.46%  
Dry Matter % 58.54%  
pH 4.99

		Dry Basis	Average	Normal Range
Crude Protein	%DM	24.98%	20.11	14.79 - 25.43
ADF	%DM	27.34%	32.28	25.22 - 39.34
aNDF	%DM	32.87%	42.72	31.14 - 54.30
aNDFom	%DM	30.09%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.68%	8.28	5.70 - 10.86
Lignin	%NDF	25.52%	19.39	12.45 - 26.32
NDFD 30	%NDF	45.43%	47.10	36.04 - 58.16
NDFD 240	%NDF	51.28%	52.00	37.60 - 66.50
uNDFom30	%DM	16.42%	23.30	14.60 - 32.10
uNDFom240	%DM	14.66%	20.40	12.90 - 27.80
AD-ICP	%DM	2.09%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	3.31%	2.93	1.44 - 4.70
Protein Sol.	%CP	55.80%	48.76	34.82 - 62.70
Starch	%DM	2.25%	1.68	0.01 - 3.68
Fat (EE)	%DM	3.26%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.58%	1.45	0.65 - 2.25
Ash	%DM	11.21%	11.41	7.99 - 14.83
Calcium	%DM	1.32%	1.27	0.85 - 1.69
Phosphorus	%DM	0.39%	0.37	0.29 - 0.45
Magnesium	%DM	0.43%	0.31	0.21 - 0.41
Potassium	%DM	2.69%	2.89	1.97 - 3.81
Sulfur	%DM	0.31%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	4.25%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	5.44%	4.35	1.91 - 6.80

Adjusted Crude Protein % 24.98%  
NFC % 34.45%  
RFV 191.27  
RFQ 187.76  
NDF kd rate Van Amb %/hr 9.72%

		ADF	OARDC	MLK13
TDN 1x	%DM	67.60	60.90	65.06
Nel 3x	Mcal/cwt	69.91	62.37	70.00
Neg	Mcal/cwt	39.83	40.28	45.69
Nem	Mcal/cwt	66.53	67.03	73.08
Milk per ton	lb/ton DM			3263

FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 11/16/2018  
Sample number: 006-1811-009767

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE BUNKER (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE BUNKER

Reference: 0609978  
Date: 11/16/2018  
Sample: 006-1811-009767

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 2/14/2018

Sample number: 006-1802-003035

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE 4TH (1C - N9 )

Moisture	%	51.89%
Dry Matter	%	48.11%
pH		4.53

		Dry Basis	Average	Normal Range
Crude Protein	%DM	18.39%	20.11	14.79 - 25.43
ADF	%DM	28.37%	32.28	25.22 - 39.34
aNDF	%DM	37.35%	42.72	31.14 - 54.30
aNDFom	%DM	35.98%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.90%	8.28	5.70 - 10.86
Lignin	%NDF	21.96%	19.39	12.45 - 26.32
NDFD 30	%NDF	56.84%	47.10	36.04 - 58.16
NDFD 240	%NDF	67.26%	52.00	37.60 - 66.50
uNDFom30	%DM	15.53%	23.30	14.60 - 32.10
uNDFom240	%DM	11.78%	20.40	12.90 - 27.80
AD-ICP	%DM	2.29%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	3.58%	2.93	1.44 - 4.70
Protein Sol.	%CP	40.57%	48.76	34.82 - 62.70
Fat (EE)	%DM	2.98%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.34%	1.45	0.65 - 2.25
Ash	%DM	9.62%	11.41	7.99 - 14.83
Calcium	%DM	1.16%	1.27	0.85 - 1.69
Phosphorus	%DM	0.35%	0.37	0.29 - 0.45
Magnesium	%DM	0.38%	0.31	0.21 - 0.41
Potassium	%DM	2.14%	2.89	1.97 - 3.81
Sulfur	%DM	0.25%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	4.35%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	7.29%	4.35	1.91 - 6.80

Adjusted Crude Protein	%	17.67%
NFC	%	37.25%
RFV		166.22
RFQ		190.64

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	66.80	59.47	67.12
Nel 3x	Mcal/cwt	69.02	60.77	69.86
Neg	Mcal/cwt	35.46	35.58	45.69
Nem	Mcal/cwt	61.68	61.82	73.09
Milk per ton	lb/ton DM			3351



FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 2/14/2018

Sample number: 006-1802-003035

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE 4TH (1C - N9 )

The NDFD240 value was an outlier.

Please contact the lab within 2 business days

if you want the wet chemistry analysis performed.

Wet Chemistry verification will take 5-10 business days.

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE 4TH

Reference: 0634103  
Date: 2/14/2018  
Sample: 006-1802-003035

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

## FEED AND FORAGE REPORT

## DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004327

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE (1C - N9 )

Moisture	%	42.68%
Dry Matter	%	57.32%
pH		4.82

		Dry Basis	Average	Normal Range
Crude Protein	%DM	19.02%	20.11	14.79 - 25.43
ADF	%DM	30.30%	32.28	25.22 - 39.34
aNDF	%DM	38.10%	42.72	31.14 - 54.30
aNDFom	%DM	36.68%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	8.68%	8.28	5.70 - 10.86
Lignin	%NDF	23.66%	19.39	12.45 - 26.32
NDFD 30	%NDF	55.78%	47.10	36.04 - 58.16
NDFD 240	%NDF	67.18%	52.00	37.60 - 66.50
uNDFom30	%DM	16.22%	23.30	14.60 - 32.10
uNDFom240	%DM	12.04%	20.40	12.90 - 27.80
AD-ICP	%DM	2.66%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	3.78%	2.93	1.44 - 4.70
Protein Sol.	%CP	44.74%	48.76	34.82 - 62.70
Fat (EE)	%DM	2.43%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.23%	1.45	0.65 - 2.25
Ash	%DM	10.72%	11.41	7.99 - 14.83
Calcium	%DM	1.35%	1.27	0.85 - 1.69
Phosphorus	%DM	0.34%	0.37	0.29 - 0.45
Magnesium	%DM	0.41%	0.31	0.21 - 0.41
Potassium	%DM	2.46%	2.89	1.97 - 3.81
Sulfur	%DM	0.23%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	4.65%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	7.48%	4.35	1.91 - 6.80

Adjusted Crude Protein	%	17.81%
NFC	%	35.13%
RFV		159.45
RFQ		180.66

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	65.30	56.88	65.33
Nel 3x	Mcal/cwt	67.34	57.89	67.74
Neg	Mcal/cwt	35.31	32.31	43.73
Nem	Mcal/cwt	61.51	58.22	70.88
Milk per ton	lb/ton DM			3206

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004327

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE (1C - N9 )

The NDFD240 value was an outlier.

Please contact the lab within 2 business days

if you want the wet chemistry analysis performed.

Wet Chemistry verification will take 5-10 business days.

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE

Reference: 0635520  
Date: 3/ 9/2018  
Sample: 006-1803-004327

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS  
De Pere, WI 54115-3913  
Telephone 920-336-4521

REGENERATED REPORT  
Report date: 4/ 4/2018  
Sample number: 006-1804-005530

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE 4TH (1C - N9 )

Moisture	%	49.58%
Dry Matter	%	50.42%
pH		4.39

		Dry Basis	Average	Normal Range
Crude Protein	%DM	20.74%	20.11	14.79 - 25.43
ADF	%DM	32.54%	32.28	25.22 - 39.34
aNDF	%DM	39.58%	42.72	31.14 - 54.30
aNDFom	%DM	38.06%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	10.03%	8.28	5.70 - 10.86
Lignin	%NDF	26.35%	19.39	12.45 - 26.32
NDFD 30	%NDF	56.02%	47.10	36.04 - 58.16
NDFD 240	%NDF	65.61%	52.00	37.60 - 66.50
uNDFom30	%DM	16.74%	23.30	14.60 - 32.10
uNDFom240	%DM	13.09%	20.40	12.90 - 27.80
AD-ICP	%DM	3.19%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	3.29%	2.93	1.44 - 4.70
Protein Sol.	%CP	50.72%	48.76	34.82 - 62.70
Fat (EE)	%DM	3.35%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.63%	1.45	0.65 - 2.25
Ash	%DM	10.18%	11.41	7.99 - 14.83
Calcium	%DM	1.26%	1.27	0.85 - 1.69
Phosphorus	%DM	0.37%	0.37	0.29 - 0.45
Magnesium	%DM	0.40%	0.31	0.21 - 0.41
Potassium	%DM	2.43%	2.89	1.97 - 3.81
Sulfur	%DM	0.25%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	2.97%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	4.89%	4.35	1.91 - 6.80

Adjusted Crude Protein	%	18.95%
NFC	%	31.68%
RFV		149.27
RFQ		175.28

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	63.55	55.30	65.50
Nel 3x	Mcal/cwt	65.39	56.13	67.84
Neg	Mcal/cwt	35.20	30.76	44.62
Nem	Mcal/cwt	61.39	56.53	71.88
Milk per ton	lb/ton DM			3215

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

REGENERATED REPORT

Report date: 4/ 4/2018

Sample number: 006-1804-005530

TO: Randy Marx

16322 W Washington St.

ACCOUNT # 138 ( 1)

SAMPLED BY: Randy Marx

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE 4TH

(1C - N9

)

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE 4TH

Reference: 0636859

Date: 4/ 4/2018

Sample: 006-1804-005530

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

\*THIS REPORT WAS REGENERATED ON 4/ 6/2018



# FEED AND FORAGE REPORT

## DAIRYLAND LABS

De Pere, WI 54115-3913  
Telephone 920-336-4521

Report date: 5/ 1/2018  
Sample number: 006-1805-006797

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW DIARY

PRODUCT: HAYLAGE 1ST (1C - N9 )

Moisture % 60.44%  
Dry Matter % 39.56%  
pH 4.60

		Dry Basis	Average	Normal Range
Crude Protein	%DM	20.67%	20.11	14.79 - 25.43
ADF	%DM	35.51%	32.28	25.22 - 39.34
aNDF	%DM	41.10%	42.72	31.14 - 54.30
aNDFom	%DM	39.47%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	9.00%	8.28	5.70 - 10.86
Lignin	%NDF	22.80%	19.39	12.45 - 26.32
NDFD 30	%NDF	48.75%	47.10	36.04 - 58.16
NDFD 240	%NDF	58.15%	52.00	37.60 - 66.50
uNDFom30	%DM	20.23%	23.30	14.60 - 32.10
uNDFom240	%DM	16.52%	20.40	12.90 - 27.80
AD-ICP	%DM	2.44%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	2.55%	2.93	1.44 - 4.70
Protein Sol.	%CP	68.17%	48.76	34.82 - 62.70
Fat (EE)	%DM	2.78%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.11%	1.45	0.65 - 2.25
Ash	%DM	10.11%	11.41	7.99 - 14.83
Calcium	%DM	1.55%	1.27	0.85 - 1.69
Phosphorus	%DM	0.35%	0.37	0.29 - 0.45
Magnesium	%DM	0.37%	0.31	0.21 - 0.41
Potassium	%DM	2.70%	2.89	1.97 - 3.81
Sulfur	%DM	0.23%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	2.54%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	3.61%	4.35	1.91 - 6.80

Adjusted Crude Protein % 20.07%  
NFC % 30.19%  
RFV 138.62  
RFQ 148.33  
NDF kd rate Van Amb %/hr 9.24%

		ADF	OARDC	MLK13
TDN 1x	%DM	61.24	55.72	61.42
Nel 3x	Mcal/cwt	62.82	56.60	64.64
Neg	Mcal/cwt	34.48	31.58	39.50
Nem	Mcal/cwt	60.60	57.42	66.16
Milk per ton	lb/ton DM			2947

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 5/ 1/2018

Sample number: 006-1805-006797

TO: Randy Marx

16322 W Washington St.

ACCOUNT # 138 ( 1)

SAMPLED BY: Randy Marx

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW DIARY

PRODUCT: HAYLAGE 1ST

(1C - N9

)

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx

SAMPLED FOR: LEDGEVIEW DIARY

PRODUCT: HAYLAGE 1ST

Reference: 0638238

Date: 5/ 1/2018

Sample: 006-1805-006797

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 6/25/2018

Sample number: 006-1806-009856

ACCOUNT # 138 ( 17)

TO: James Downey

SAMPLED BY: James Downey

16322 W Washington St.

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 1ST HAYLAGE (1C - N9 )

Moisture	%	48.78%
Dry Matter	%	51.22%
pH		4.96

		Dry Basis	Average	Normal Range
Crude Protein	%DM	20.95%	20.11	14.79 - 25.43
ADF	%DM	33.16%	32.28	25.22 - 39.34
aNDF	%DM	39.25%	42.72	31.14 - 54.30
aNDFom	%DM	37.37%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.73%	8.28	5.70 - 10.86
Lignin	%NDF	20.69%	19.39	12.45 - 26.32
NDFD 30	%NDF	46.88%	47.10	36.04 - 58.16
NDFD 240	%NDF	51.16%	52.00	37.60 - 66.50
uNDFom30	%DM	19.85%	23.30	14.60 - 32.10
uNDFom240	%DM	18.25%	20.40	12.90 - 27.80
AD-ICP	%DM	1.63%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	2.48%	2.93	1.44 - 4.70
Protein Sol.	%CP	56.28%	48.76	34.82 - 62.70
Fat (EE)	%DM	2.91%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.23%	1.45	0.65 - 2.25
Ash	%DM	9.82%	11.41	7.99 - 14.83
Calcium	%DM	1.28%	1.27	0.85 - 1.69
Phosphorus	%DM	0.34%	0.37	0.29 - 0.45
Magnesium	%DM	0.33%	0.31	0.21 - 0.41
Potassium	%DM	2.77%	2.89	1.97 - 3.81
Sulfur	%DM	0.25%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	3.82%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	4.78%	4.35	1.91 - 6.80

Adjusted Crude Protein	%	20.95%
NFC	%	32.11%
RFV		149.61
RFQ		153.81
NDF kd rate Van Amb	%/hr	5.93%

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	63.07	59.15	62.26
Nel 3x	Mcal/cwt	64.86	60.42	66.28
Neg	Mcal/cwt	35.42	36.55	40.67
Nem	Mcal/cwt	61.64	62.89	67.45
Milk per ton	lb/ton DM			3036

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 6/25/2018

Sample number: 006-1806-009856

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 1ST HAYLAGE (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 1ST HAYLAGE

Reference: 0641589

Date: 6/25/2018

Sample: 006-1806-009856

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

## FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 8/15/2018  
Sample number: 006-1808-001604

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 3RD HLG IN CS BUNK (1C - N9 )

Moisture % 53.08%  
Dry Matter % 46.92%  
pH 4.81

		Dry Basis	Average	Normal Range
Crude Protein	%DM	21.52%	20.11	14.79 - 25.43
ADF	%DM	28.89%	32.28	25.22 - 39.34
aNDF	%DM	34.75%	42.72	31.14 - 54.30
aNDFom	%DM	32.31%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	7.21%	8.28	5.70 - 10.86
Lignin	%NDF	22.32%	19.39	12.45 - 26.32
NDFD 30	%NDF	47.76%	47.10	36.04 - 58.16
NDFD 240	%NDF	50.45%	52.00	37.60 - 66.50
uNDFom30	%DM	16.88%	23.30	14.60 - 32.10
uNDFom240	%DM	16.01%	20.40	12.90 - 27.80
AD-ICP	%DM	1.69%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	2.75%	2.93	1.44 - 4.70
Protein Sol.	%CP	54.23%	48.76	34.82 - 62.70
Starch	%DM	2.57%	7.32	.01 - 27.80
Fat (EE)	%DM	3.03%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.28%	1.45	0.65 - 2.25
Ash	%DM	11.85%	11.41	7.99 - 14.83
Calcium	%DM	1.42%	1.27	0.85 - 1.69
Phosphorus	%DM	0.35%	0.37	0.29 - 0.45
Magnesium	%DM	0.46%	0.31	0.21 - 0.41
Potassium	%DM	2.86%	2.89	1.97 - 3.81
Sulfur	%DM	0.29%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	3.48%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	5.11%	4.35	1.91 - 6.80
Adjusted Crude Protein	%	21.52%		
NFC	%	34.79%		
RFV		177.55		
RFQ		177.14		
NDF kd rate Van Amb	%/hr	7.29%		

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	66.39	59.69	63.38
Nel 3x	Mcal/cwt	68.56	61.02	67.30
Neg	Mcal/cwt	37.75	37.47	42.29
Nem	Mcal/cwt	64.21	63.90	69.27
Milk per ton	lb/ton DM			3110



FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 8/15/2018  
Sample number: 006-1808-001604

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 3RD HLG IN CS BUNK (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: 3RD HLG IN CS BUNK

Reference: 0600938  
Date: 8/15/2018  
Sample: 006-1808-001604

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 1/ 3/2019  
Sample number: 006-1901-000641

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245 SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE (1C - N9 )

Moisture % 31.19%  
Dry Matter % 68.81%  
pH 5.11

		Dry Basis	Average	Normal Range
Crude Protein	%DM	23.78%	20.11	14.79 - 25.43
ADF	%DM	27.21%	32.28	25.22 - 39.34
aNDF	%DM	33.18%	42.72	31.14 - 54.30
aNDFom	%DM	30.66%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	8.56%	8.28	5.70 - 10.86
Lignin	%NDF	27.92%	19.39	12.45 - 26.32
NDFD 30	%NDF	41.16%	47.10	36.04 - 58.16
NDFD 240	%NDF	45.21%	52.00	37.60 - 66.50
uNDFom30	%DM	18.04%	23.30	14.60 - 32.10
uNDFom240	%DM	16.80%	20.40	12.90 - 27.80
AD-ICP	%DM	2.44%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	4.09%	2.93	1.44 - 4.70
Protein Sol.	%CP	45.04%	48.76	34.82 - 62.70
Starch	%DM	2.30%	1.68	0.01 - 3.68
Fat (EE)	%DM	2.43%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.24%	1.45	0.65 - 2.25
Ash	%DM	9.61%	11.41	7.99 - 14.83
Calcium	%DM	1.31%	1.27	0.85 - 1.69
Phosphorus	%DM	0.36%	0.37	0.29 - 0.45
Magnesium	%DM	0.42%	0.31	0.21 - 0.41
Potassium	%DM	2.49%	2.89	1.97 - 3.81
Sulfur	%DM	0.28%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	5.30%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	7.67%	4.35	1.91 - 6.80

Adjusted Crude Protein % 23.68%  
NFC % 37.80%  
RFV 189.98  
RFQ 180.55  
NDF kd rate Van Amb %/hr 9.40%

		ADF	OARDC	MLK13
TDN 1x	%DM	67.70	60.93	65.31
Nel 3x	Mcal/cwt	70.02	62.40	71.32
Neg	Mcal/cwt	39.28	39.65	45.52
Nem	Mcal/cwt	65.91	66.32	72.89
Milk per ton	lb/ton DM			3308

FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 1/ 3/2019  
Sample number: 006-1901-000641

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)  
SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: James Downey  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE

Reference: 0612940  
Date: 1/ 3/2019  
Sample: 006-1901-000641

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 9/26/2018  
Sample number: 006-1809-005697

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE UP TOP (1C - N9 )

Moisture % 58.94%  
Dry Matter % 41.06%  
pH 4.85

		Dry Basis	Average	Normal Range
Crude Protein	%DM	16.28%	20.11	14.79 - 25.43
ADF	%DM	40.92%	32.28	25.22 - 39.34
aNDF	%DM	47.32%	42.72	31.14 - 54.30
aNDFom	%DM	44.67%	40.72	30.28 - 50.93
Lignin (Sulfuric Acid)	%DM	9.66%	8.28	5.70 - 10.86
Lignin	%NDF	21.63%	19.39	12.45 - 26.32
NDFD 30	%NDF	43.34%	47.10	36.04 - 58.16
NDFD 240	%NDF	50.06%	52.00	37.60 - 66.50
uNDFom30	%DM	25.31%	23.30	14.60 - 32.10
uNDFom240	%DM	22.31%	20.40	12.90 - 27.80
AD-ICP	%DM	2.30%	1.35	0.43 - 2.27
ND-ICP w/ SS	%DM	2.85%	2.93	1.44 - 4.70
Protein Sol.	%CP	48.16%	48.76	34.82 - 62.70
Starch	%DM	1.55%	7.32	.01 - 27.80
Fat (EE)	%DM	2.67%	3.30	2.16 - 4.44
Total Fatty Acid (TFA)	%DM	1.04%	1.45	0.65 - 2.25
Ash	%DM	10.15%	11.41	7.99 - 14.83
Calcium	%DM	1.31%	1.27	0.85 - 1.69
Phosphorus	%DM	0.30%	0.37	0.29 - 0.45
Magnesium	%DM	0.35%	0.31	0.21 - 0.41
Potassium	%DM	1.97%	2.89	1.97 - 3.81
Sulfur	%DM	0.20%	0.28	0.20 - 0.36
Sugar (ESC)	%DM	3.34%	2.94	0.66 - 5.23
Sugar (WSC)	%DM	5.41%	4.35	1.91 - 6.80
Adjusted Crude Protein	%	15.20%		
NFC	%	29.71%		
RFV		112.27		
RFQ		111.03		
NDF kd rate Van Amb	%/hr	5.43%		

		ADF	OARDC	MLK13
TDN 1x	%DM	57.02	53.17	56.84
Nel 3x	Mcal/cwt	58.12	53.76	60.61
Neg	Mcal/cwt	30.17	26.27	31.82
Nem	Mcal/cwt	55.88	51.64	57.69
Milk per ton	lb/ton DM			2638

FEED AND FORAGE REPORT

DAIRYLAND LABORATORIES, INC.  
De Pere, WI 54115-3913  
Telephone

Report date: 9/26/2018  
Sample number: 006-1809-005697

TO: Randy Marx  
16322 W Washington St.

ACCOUNT # 138 ( 1)  
SAMPLED BY: Randy Marx

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: HAYLAGE UP TOP (1C - N9 )

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx  
SAMPLED FOR: LEDGEVIEW FARMS  
PRODUCT: HAYLAGE UP TOP

Reference: 0605420  
Date: 9/26/2018  
Sample: 006-1809-005697

\$ 24.50 \*PACKAGE N9  
\$ 24.50 TOTAL



## FEED AND FORAGE REPORT

## DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004328

TO: James Downey  
16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders , WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: RYELAGE/HAYLAGE (7 - N9 )

Moisture	%	52.29%
Dry Matter	%	47.71%
pH		4.56

		Dry Basis	Average	Normal Range
Crude Protein	%DM	11.44%	13.32	6.28 - 20.36
ADF	%DM	36.86%	37.98	28.02 - 47.94
aNDF	%DM	50.77%	53.07	39.75 - 66.39
aNDFom	%DM	48.72%	51.68	39.29 - 63.02
Lignin (Sulfuric Acid)	%DM	6.96%	5.81	3.11 - 8.51
Lignin	%NDF	14.29%		
NDFD 30	%NDF	46.24%	53.00	31.00 - 75.00
NDFD 240	%NDF	55.58%	67.90	47.80 - 87.90
uNDFom30	%DM	26.19%	25.10	11.70 - 38.60
uNDFom240	%DM	21.64%	17.60	7.30 - 28.00
AD-ICP	%DM	1.64%	1.11	0.39 - 1.83
ND-ICP w/ SS	%DM	2.11%	1.79	0.45 - 3.64
Protein Sol.	%CP	53.15%	51.37	25.63 - 77.11
Starch	%DM	0.36%	3.80	0.10 - 15.10
Fat (EE)	%DM	3.02%	3.36	1.76 - 4.96
Total Fatty Acid (TFA)	%DM	0.87%	1.51	0.10 - 2.20
Ash	%DM	7.98%	10.94	4.10 - 17.78
Calcium	%DM	0.60%	0.57	0.11 - 1.03
Phosphorus	%DM	0.27%	0.35	0.21 - 0.49
Magnesium	%DM	0.19%	0.22	0.06 - 0.38
Potassium	%DM	1.50%	2.37	0.91 - 3.83
Sulfur	%DM	0.16%	0.21	0.11 - 0.31
Sugar (ESC)	%DM	2.88%	2.48	0.01 - 5.02
Sugar (WSC)	%DM	11.04%	3.86	1.22 - 6.58
Adjusted Crude Protein	%	10.65%		
NFC	%	32.10%		
RFV		110.12		
RFQ		109.37		
NDF kd rate Van Amb	%/hr	3.62%		

		ADF	OARDC	MLK13
		-----	-----	-----
TDN 1x	%DM	64.77	57.36	57.58
Nel 3x	Mcal/cwt	66.68	58.42	64.68
Neg	Mcal/cwt	31.71	30.06	30.81
Nem	Mcal/cwt	57.57	55.76	56.58
Milk per ton	lb/ton DM			2840

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 3/ 9/2018

Sample number: 006-1803-004328

TO: James Downey

16322 W Washington St.

ACCOUNT # 138 ( 17)

SAMPLED BY: James Downey

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: RYELAGE/HAYLAGE

(7 - N9

)

The Sugar (WSC) value was an outlier.

Please contact the lab within 2 business days

if you want the wet chemistry analysis performed.

Wet Chemistry verification will take 5-10 business days.

-----BILLING INFORMATION-----

SAMPLED BY: James Downey

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: RYELAGE/HAYLAGE

Reference: 0635521

Date: 3/ 9/2018

Sample: 006-1803-004328

\$ 24.50 \*PACKAGE N9

\$ 24.50 TOTAL

# FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 8/ 1/2018

Sample number: 006-1808-000522

TO: Randy Marx

16322 W Washington St.

ACCOUNT # 138 ( 1)

SAMPLED BY: Randy Marx

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 WHEAT STRAW

(1B - N7

)

Moisture	%	19.34%
Dry Matter	%	80.66%

		Dry Basis	Average	Normal Range
Crude Protein	%DM	3.72%	9.91	2.91 - 16.91
ADF	%DM	55.92%	41.70	28.20 - 55.20
aNDF	%DM	82.63%	63.31	46.37 - 80.25
aNDFom	%DM	80.79%	61.92	45.91 - 78.30
Lignin (Sulfuric Acid)	%DM	9.43%	7.08	3.84 - 10.32
Lignin	%NDF	11.67%		
NDFD 240	%NDF	59.39%	67.00	52.00 - 82.00
uNDFom240	%DM	32.81%	20.00	7.00 - 34.50
AD-ICP	%DM	1.02%	1.05	0.33 - 1.77
ND-ICP w/ SS	%DM	2.39%	2.53	0.56 - 6.42
Protein Sol.	%CP	10.48%	20.00	3.50 - 36.50
Starch	%DM	0.44%	2.65	0.20 - 11.65
Fat (EE)	%DM	1.94%	2.43	1.25 - 3.61
Total Fatty Acid (TFA)	%DM	0.31%	1.18	0.10 - 2.26
Ash	%DM	6.45%	9.76	5.44 - 14.08
Calcium	%DM	0.05%	0.61	0.07 - 1.15
Phosphorus	%DM	0.16%	0.24	0.08 - 0.40
Magnesium	%DM	0.09%	0.19	0.05 - 0.33
Potassium	%DM	1.63%	1.68	0.46 - 2.90
Sulfur	%DM	0.09%	0.15	0.03 - 0.27
Sugar (ESC)	%DM	1.69%	6.02	1.05 - 10.99
Sugar (WSC)	%DM	2.17%	7.65	2.33 - 12.97

Adjusted Crude Protein	%	2.68%
NFC	%	10.12%
RFV		50.96

		ADF	OARDC
		-----	-----
TDN 1x	%DM	45.34	45.40
Nel 3x	Mcal/cwt	45.11	45.10
Neg	Mcal/cwt	15.33	9.84
Nem	Mcal/cwt	39.90	34.09

COMMENT: VOM TO FOLLOW

FEED AND FORAGE REPORT

DAIRYLAND LABS

De Pere, WI 54115-3913

Telephone 920-336-4521

Report date: 8/ 1/2018

Sample number: 006-1808-000522

TO: Randy Marx

16322 W Washington St.

ACCOUNT # 138 ( 1)

SAMPLED BY: Randy Marx

Valders

, WI 54245

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 WHEAT STRAW

(1B - N7

)

-----BILLING INFORMATION-----

SAMPLED BY: Randy Marx

SAMPLED FOR: LEDGEVIEW FARMS

PRODUCT: 2018 WHEAT STRAW

Reference: 0645260

Date: 8/ 1/2018

Sample: 006-1808-000522

\$ 19.00 \*N7-NIR SELECT

\$ 19.00 TOTAL

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	
<i>Example – Milking &amp; Dry Cows</i>			1.4 x 800	= 1120 AU
Dairy	Milking and Dry Cows	1.4	1.4 x 1355	= 1897
	Heifers (800 lbs. to 1200 lbs.)	1.1	1.1 x 450	= 495
Cattle	Holsteins (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 (800 lbs. to market)	1.0	1.0 x 525	= 525
	Calves (under 600 lbs.)	0.5	0.5 x 550	= 275
Swine	Birds (each)	1.4	1.4 x	
	Pigs (50 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	
	Layers (each)	0.01	0.01 x	
	Broilers (each)	0.005	0.005 x	
Poultry	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			= 3,408	

*Jason P. Smith*  
Signature of Applicant or Authorized Representative

1/10/19

Date





Ledgeview Farm, LLC

Cluster A

Livestock Siting Distance to Neighbors

Livestock Structures	Nearest Neighbors			
	N1	E1	W1	S1
	(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



### 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,170	Diet manipulation	0.8	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	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,138	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,179	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,239	Diet manipulation	0.8	None	1	3
L7					None				
1H									
1I									
1J									
1K									
1L									

### 2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	73
2C					None		None		
2D									
2E									
2F									

### 3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,976	1,218	Clean frequently (within 3 days)	0.4	None	1	1
					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

Separation Score

Basic Management Score

Advanced Management Score

Odor Score

129

542

80

20

513

## Location: E1 East Neighbor

## 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,163	Diet manipulation	0.8	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	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,273	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,134	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,161	Diet manipulation	0.8	None	1	3
L7					None		None		
1H									
1I									
1J									
1K									
1L									

## 2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	73
2C					None		None		
2D									
2E									
2F									

## 3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,976	1,161	Clean frequently (within 3 days)	0.4	None	1	1
					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



### 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (ft. <sup>2</sup> )	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	736	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	376	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	594	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	465	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	567	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	594	Diet manipulation	0.8	None	1	3
L7					None				
1H									
1I									
1J									
1K									
1L									

### 2. Waste Storage

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

### 3. Animal Lots

ID	Lot type	Generation number	Surface Area (ft. <sup>2</sup> )	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,976	664	Clean frequently (within 3 days)	0.4	None	1	1
					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



Location: S1 South Neighbor

## 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (ft <sup>2</sup> )	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	573	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	492	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	618	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	704	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	398	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	285	Diet manipulation	0.8	None	1	3
L7					None				
1H									
1I									
1J									
1K									
1L									

## 2. Waste Storage

ID	Storage type	Generation number	Surface Area (ft <sup>2</sup> )	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	55,189	1,051	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

## 3. Animal Lots

ID	Lot type	Generation number	Surface Area (ft <sup>2</sup> )	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,976	368	Clean frequently (within 3 days)	0.4	None	1	1
					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

Location: S2 South Neighbor

## 1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	586	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	718	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	826	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	478	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	379	Diet manipulation	0.8	None	1	3
L7					None				
1H									
1I									
1J									
1K									
1L									

## 2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	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	73
2C					None				
2D									
2E									
2F									

## 3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL <sup>2</sup> )	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,976	455	Clean frequently (within 3 days)	0.4	None	1	1
					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



Am-1wr-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). A: Applicants may enter 30 points for compliance required incident response and employee training. (See Box 2 on page A-2). Applicants completing all options odor management plan (described on page A-3) may add an additional 20 points. Applicants determine other credits, 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 <small>(from Step 2)</small>		Box 2 Management Score <small>(from Step 3)</small>		Box 3 Predicted Odor <small>(from Step 1)</small>		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.

*Josée P. Miller*  
Signature of Applicant or Authorized Representative

1/10/19  
Date

## **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 **3,408 (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 – Y2 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.



### **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), with the approved variances.

#### **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<sup>2</sup>. 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.

## Charlotte Nagel

---

**From:** Sarah Burdette <sburdette@ledgeviewwisconsin.com>  
**Sent:** Tuesday, November 6, 2018 2:48 PM  
**To:** 'john@jmroach.com'  
**Cc:** Charlotte Nagel  
**Subject:** Ledgeview Farm, LLC Livestock Facility Siting Application

John,  
The Town is in receipt of a Livestock Facility Siting Application from Ledgeview Farm, LLC. Please note that the Town of Ledgeview requires electronic submittals of any application that it receives for review and consideration. Therefore please provide electronic versions of the application and the related supplementary materials that was provided to the Town yesterday afternoon.  
Thank you,  
Sarah

Sarah K. Burdette  
Administrator  
Town of Ledgeview



3700 Dickinson Road  
De Pere, WI 54115  
Phone: 920.336.3360, ext. 108  
Cell/Text: 920-639-6083  
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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## Charlotte Nagel

---

**From:** Larry Konopacki <LKonopacki@staffordlaw.com>  
**Sent:** Sunday, February 24, 2019 4:37 PM  
**To:** Sarah Burdette; Charlotte Nagel  
**Cc:** Vanessa Wishart  
**Subject:** FW: Ledgeview Farms interim measures site inspections documentation  
**Attachments:** image001.gif; ATT00001.htm; image002.gif; ATT00002.htm; image003.gif; ATT00003.htm; image004.gif; ATT00004.htm; image005.gif; ATT00005.htm; image006.gif; ATT00006.htm; Ledgeview Farms LLC\_2018.11.12\_Interim measures inspection report.pdf; ATT00007.htm; Ledgeview Farms LLC\_2018.11.14\_Ledgeview Farms LLC\_Interim measures letter.pdf; ATT00008.htm

Hi, please be sure to add this email and the attached documents to the "new" Ledgeview Farms record.

Thanks

STAFFORD ROSENBAUM LLP	Larry A. Konopacki <a href="mailto:lkonopacki@staffordlaw.com">lkonopacki@staffordlaw.com</a>   608.259.2607   Fax: 608.259.2600     608.259.2637 Marjorie Irving -- Legal Assistant   222 West Washington Avenue, Suite 900 P.O. Box 1784   Madison, Wisconsin 53701-1784 <a href="http://www.staffordlaw.com">www.staffordlaw.com</a>   <a href="#">profile</a>   <a href="#">vCard</a>   <a href="#">Stafford Blogs</a>
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**From:** Sarah Burdette <[sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com)>  
**Sent:** Wednesday, November 14, 2018 4:54 PM  
**To:** Vanessa Wishart <[VWishart@staffordlaw.com](mailto:VWishart@staffordlaw.com)>; Larry Konopacki <[LKonopacki@staffordlaw.com](mailto:LKonopacki@staffordlaw.com)>; Dustin.Wolff@meadhunt.com; Scott Brosteau <[scott.brosteau@meadhunt.com](mailto:scott.brosteau@meadhunt.com)>; Dave Enigl <[bldginspector@ledgeviewwisconsin.com](mailto:bldginspector@ledgeviewwisconsin.com)>  
**Subject:** Fwd: Ledgeview Farms interim measures site inspections documentation

FYI

Begin forwarded message:

➡ **From:** "Schmitt Marquez, Heidi S - DNR" <[Heidi.SchmittMarquez@wisconsin.gov](mailto:Heidi.SchmittMarquez@wisconsin.gov)>  
**Date:** November 14, 2018 at 4:25:19 PM CST  
**To:** "Sarah Burdette ([sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com))" <[sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com)>  
**Subject:** Ledgeview Farms interim measures site inspections documentation

Hi Sarah,

I completed the inspection report and letter to Ledgeview Farms regarding the two site inspections (September & October 2018) I conducted to verify the status of the interim runoff control measures at the main farm and heifer sites. Let me know if you have any questions about the report, letter, or the site inspections.

Thanks,

Heidi Schmitt Marquez  
Agricultural Runoff Management Specialist  
Bureau of Watershed Management  
Wisconsin Department of Natural Resources  
2984 Shawano Ave, Green Bay, WI 54313  
Phone: (920) 662-5187  
Mobile: (920) 366-3302  
Fax: (920) 662-5498  
[Heidi.SchmittMarquez@Wisconsin.gov](mailto:Heidi.SchmittMarquez@Wisconsin.gov)

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## CASE ACTIVITY REPORT FOR REGULATORS

State of Wisconsin  
Department of Natural Resources

Attachment to E-Mail of 11-14-18 4:25 PM  
to Sarah Burdette forwarded to Town Attys  
1 of 2

Case ID	Case Title
	Ledgeview Farms LLC
Activity	Date of Activity
Site visits to verify status of interim measures	September 21 & October 30, 2018

On September 21, 2018, and October 30, 2018, DNR Agricultural Runoff Management Specialist Heidi Schmitt Marquez evaluated the status of interim runoff control measures required to be installed at the main farm site and heifer site at Ledgeview Farms LLC. The main farm site is located at 3875 Dickinson Rd (SW NW S33 T23N R21E), and the heifer site is located at 3688 Lime Kiln Rd (W SW S28 T23N R21E), both in De Pere, WI.

### September 21, 2018, Observations

- Main farm site:
  - Calf barn area
    - Schmitt Marquez did not observe solid manure/penpack waste from the calf barn stacked outside the east end of the calf barn.
    - Schmitt Marquez observed ponded process wastewater from washing the calf feeding buckets in the vegetated area directly south of the concrete drive lane south of and adjacent to the calf barn.
      - A system to partially collect and pump the wastewater was present in this area. The system consisted of a cutoff plastic drum partially submerged in the ground with a hose and sump pump and a metal tank with an opening at the top. Holes were drilled in the plastic drum to facilitate collection of wastewater ponded on the ground around the drum. Wastewater collects in this area from the concrete near the calf barn as well as from spillage from depositing wastewater directly into the metal tank. The sump pump then pumps the ponded wastewater from the plastic drum into the metal tank with the attached hose. The tank is emptied into the waste storage facility when it is full.
  - Heifer lot area
    - Schmitt Marquez observed concrete walls built in the northeast corner of the heifer lot (north wall and east wall). At the time of the inspection, solid manure from the heifer barn was piled in the interior of the wall and it appeared that solids were also pushed mechanically into the corner from the southeast corner of the lot. Manure and process wastewater were not observed discharging from the northeast corner of the wall. Uncontained solid manure was observed piled along the exteriors of both the east and north walls.
  - Solid manure was not observed stacked directly outside the heifer barn on the east side.
  - Waste storage facility fencing
    - Schmitt Marquez observed that the fencing required to be around all waste storage facilities was not present.
  - Soil stockpiles
    - Schmitt Marquez observed disturbed areas east of the waste storage facility that were not stabilized with vegetation. Severe rill erosion in the disturbed areas has caused discharges of soil-laden storm water to the wooded area immediately north and downslope of the site.

– Heifer site:

- Feed storage area collection basin
  - Schmitt Marquez observed an earthen (clay) collection basin located south of the southeast corner of the feed storage area. The basin was full at the time of the inspection, appeared to have exceeded its capacity, and was overflowing from the northeast and southwest corners. Liquid that appeared to contain leachate was ponded around the northeast corner of the basin (not contained within the basin), where process wastewater from the feed pad would culminate and continue to flow south. The condition of the basin appeared to be unfinished as there were not clearly visible and defined walls on all sides of the basin. Schmitt Marquez observed uneven piles of dirt and wheel ruts from equipment rather than defined walls of the basin. Feed solids were observed around the southeast corner of the feed pad and throughout the area around the collection basin.
  - Schmitt Marquez observed a gravel berm placed along the eastern side of the feed pad, between the steer barn and a grain bin, for containment of leachate and process wastewater. The berm was fairly shallow but appeared to be adequately containing runoff from the feed storage area. Schmitt Marquez observed ponded liquids immediately west of the berm that appeared to be contained by it.

– Precipitation data

- Source: Midwestern Regional Climate Center (MRCC), cli-MATE website
- Station Name: DE PERE 4.3 SW (W De Pere/Lawrence)

Date	Precipitation (inches)
09/18/2018	0.17
09/20/2018	0.22
09/21/2018	0.54
Total	0.93

- Source: Daily Climate Report, National Weather Service (Green Bay, WI)
- Station: GREEN BAY A S INTERNATIONAL AIRPORT, WI US 14898

Date	Precipitation (inches)
09/17/2018	0.73
09/19/2018	0.13
09/20/2018	0.64
09/21/2018	0.21
Total	1.71

October 30, 2018, Observations

– Main farm site:

- Waste storage facility
  - Schmitt Marquez observed the completed installation of the concrete emergency overflow swale on the east side of the waste storage facility to reduce the effects of erosion due to overtopping, should an overtopping event occur. Manure overflow would be directed to an area northeast of the waste storage facility that corresponds to a low elevation in the wooded area north of the storage facility.



- Schmitt Marquez observed that the fencing required to be around all waste storage facilities was not present.
- Calf barn area
  - Schmitt Marquez observed the same conditions in this area that were present and observed during the 09/21/2018 site visit.
    - Observations included ponded process wastewater in the vegetated area directly south of the concrete drive lane south of the calf barn. Wastewater was ponded near the cutoff plastic drum and metal tank as well as approximately 10 feet west of the plastic drum.
- Feed storage area
  - Schmitt Marquez observed feed in the feed bunker with plastic tarp between the bunker walls and the feed. It appeared that the plastic was present from the top of the feed pile to the bottom along the eastern wall. The plastic along the western wall appeared to be present only near the top of the feed pile to approximately midway down the wall from the top.
  - Schmitt Marquez observed a mixture of stones and soil piled along the exterior of the eastern bunker wall, beginning from the approximate middle of the wall and extending northward to the northeast corner of the bunker. Feed solids as well as sparse vegetation was also visible mixed in with the stones. Leachate was observed discharging from the locations of feed present in the stone pile as well as from the northeast corner of the bunker.
  - Schmitt Marquez observed areas of ponded leachate/process wastewater in and near the stones located at the northeast corner of the bunker wall. Schmitt Marquez observed leachate/process wastewater discharging in a path originating from the northeast corner of the feed bunker through the stone pile in a northeasterly direction that followed the border of the vegetated area directly north of the feed storage area. The vegetation in this area was saturated with leachate/process wastewater and appeared very dark brown/black with an oily sheen. Vegetation in the areas of the ponded leachate/process wastewater was dead/not present. Schmitt Marquez observed feed solids mixed throughout the discharge path into the vegetated area where leachate/process wastewater was present. The extent of the leachate/process wastewater discharge into the vegetated area was approximately 50 feet north.
    - Leachate has been observed discharging from the northeast corner of the feed storage area on previous site visits.
- Soil stockpiles
  - Schmitt Marquez observed the same conditions in this area that were present and observed during the 09/21/2018 site visit.
    - The disturbed area east of the waste storage facility appeared to be in the same condition; no attempt at erosion controls or vegetative stabilization was observed. Rill erosion areas noted during the previous site visit appeared more severely eroded.
  - Schmitt Marquez observed an area of spilled/leaked manure in the disturbed area east of the waste storage facility that had discharged into one of the rill erosion pathways and was discharging downslope to the wooded area north of the site.
- Heifer site:
  - Feed storage area collection basin
    - Schmitt Marquez observed that the feed storage area was extremely full, especially the southernmost bunker, closest to the collection basin. Feed was piled beyond the concrete walls, both vertically and horizontally. Feed was also observed spilling outside of the feed storage area from the southeast corner of the feed pad, and was observed

throughout the area around the collection basin.

- The collection basin appeared partially full and the area around the basin inlet was visibly disturbed and had been recently regraded to form a channel to direct flow into the basin.
- The gravel berm placed along the eastern side of the feed pad, between the steer barn and a grain bin, for containment of leachate and process wastewater was still present and appeared to be functioning as intended.

– Precipitation data

- Source: Midwestern Regional Climate Center (MRCC), cli-MATE website
- Station Name: DE PERE 4.3 SW (W De Pere/Lawrence)

Date	Precipitation (inches)
10/28/2018	0.09
10/29/2018	0.18
Total	0.27

- Source: Daily Climate Report, National Weather Service (Green Bay, WI)
- Station: GREEN BAY A S INTERNATIONAL AIRPORT, WI US 14898

Date	Precipitation (inches)
10/28/2018	0.32
Total	0.32

Photo logs for each site visit immediately follow this report.

Regulator(s) Reporting	Date of Report	Exhibit Reference
Heidi Schmitt Marquez	November 12, 2018	

**PHOTO LOG**

**September 21, 2018:  
MAIN FARM SITE**



**Photo 1:** View of a disturbed area without storm water erosion controls vegetative stabilization east of the waste storage facility. Photo direction is east.



**Photo 2:** View of the north side of the disturbed area looking down into a wooded area where ponded turbid water is visible. Severe rill erosion is visible in the foreground. Photo direction is north and down.



**Photo 3:** Close up view of the ponded turbid water in the wooded area north of the disturbed area. Photo direction is north and down.





**Photo 4:** View of the south wall and southeast corner of the concrete heifer lot. Photo direction is west.



**Photo 5:** View of the concrete heifer lot from the east end. Photo direction is west.



**Photo 6:** View of the east end of the concrete heifer lot where the northeast corner was enclosed with concrete walls as part of interim runoff control requirements. Photo direction is north/NW.



**Photo 7:** View of the east end of the concrete heifer lot. The east wall is partially visible. Photo direction is south.



**Photo 8:** View of the exterior of the north wall at the east end of the concrete heifer lot. Photo direction is SW.



**Photo 9:** View of the concrete lane south/in front of the calf barn. Photo direction is west.





**Photo 10:** View of the concrete lane south of the calf barn where discharges of process wastewater were previously observed. Photo direction is down and NW.



**Photo 11:** View of the vegetated area south of the concrete lane south of the calf barn. Process wastewater is visible ponded near a partially submerged plastic drum. Photo direction is down and SE.



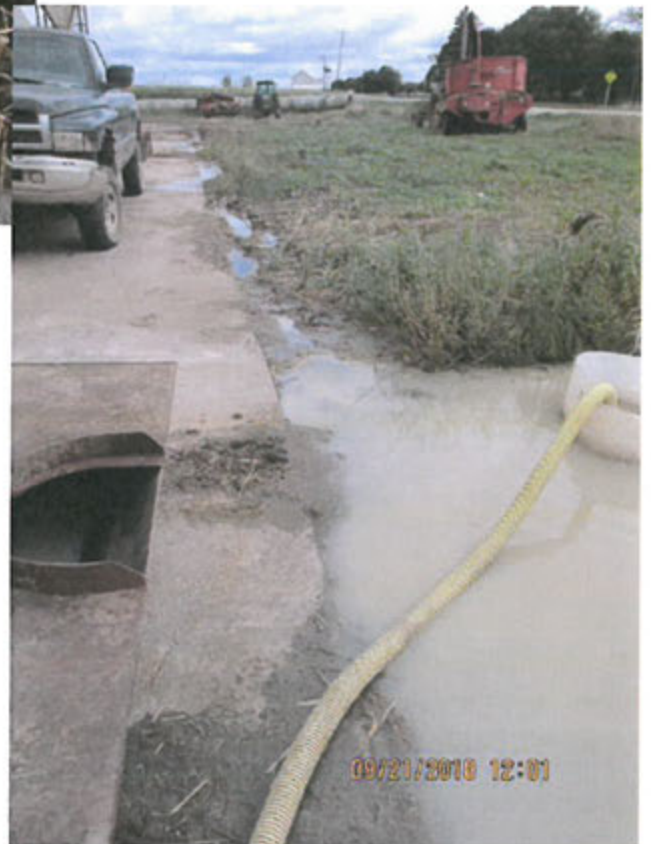
**Photo 12:** View of the inside of a metal tank adjacent to the area of ponded process wastewater south of the calf barn. Process wastewater is visible inside the tank. Photo direction is down.



**Photo 13:** Alternate view of area of ponded process wastewater south of the calf barn. Photo direction is down and SE.



**Photo 14 (left):** Close up view of process wastewater ponded around the partially submerged plastic drum. Photo direction is down.



**Photo 15 (right):** Alternate view of the vegetated area south of the calf barn, showing the area of ponded process wastewater. Photo direction is east.



**HEIFER SITE**

**Photo 16:** View of the leachate/process wastewater collection basin south of the FSA constructed to meet interim runoff control requirements. Photo direction is SW.



**Photo 17:** View of the leachate/process wastewater collection basin south of the FSA showing the south bunker wall. Photo direction is west.



**Photo 18:** Close up view of the southern berm wall of the leachate/process wastewater collection basin south of the FSA. Photo direction is NE.



**Photo 19:** View of the SE corner of the FSA where the flow of leachate/process wastewater flow is directed. The leachate/process wastewater collection basin is partially visible. Photo direction is down and NW.



**Photo 20:** Close up view of the water in the leachate/process wastewater collection basin south of the FSA. Photo direction is down and north.



**Photo 21:** Close up view of the western section of the leachate/process wastewater collection basin south of the FSA. Photo direction is down and north.





**Photo 22:** View of the leachate/process wastewater collection basin south of the FSA from the SW corner. Photo direction is down and NE.



**Photo 23:** Close up view of the construction of the N/NW wall of the leachate/process wastewater collection basin south of the FSA. Photo direction is NW.



**Photo 24:** Alternate view of the construction of the N/NW wall of the leachate/process wastewater collection basin south of the FSA. Photo direction is NW.



**Photo 25:** View of the construction of the S/SW wall of the leachate/process wastewater collection basin south of the FSA. Photo direction is SW.



**Photo 26:** View of process wastewater in a drainage path near the southern berm wall of the leachate/process wastewater collection basin south of the FSA. Photo direction is south and down.



**Photo 27:** View of the S/SE wall section of the leachate/process wastewater collection basin south of the FSA. Photo direction is SE and down.





**Photo 28:** View of the leachate/process wastewater collection basin south of the FSA from the NE corner. Blown feed is visible near the inlet to the basin. Photo direction is SW and down.



**Photo 29:** Close up view of a wooden stake in the leachate/process wastewater collection basin that appeared to be a level /volume indicator. Photo direction is SW and down.



**Photo 30:** View of the feed pad (left) and the yard area (right), which drains to the collection basin south of the FSA. Photo direction is NW.



**Photo 31:** View of the gravel berm placed on the east side of the site between the steer barn and a grain bin to prevent discharges to the ditch at Lime Kiln Rd. Photo direction is north.



**Photo 32:** Alternate view of the gravel berm placed on the east side of the site between the steer barn and a grain bin to prevent discharges to the ditch at Lime Kiln Rd. Photo direction is north.

**October 30, 2018:  
HEIFER SITE**



**Photo 33:** View of the feed pile in the FSA showing ponded leachate/process wastewater. Photo direction is north.





**Photo 34:** Alternate view of the feed pile in the FSA, which is only partially covered with plastic. Photo direction is west.



**Photo 35:** Close up view of the ponded leachate/process wastewater near the feed pile in the FSA. Photo direction is down and NW.



**Photo 36:** View of the leachate/process wastewater collection basin south of the FSA. Photo direction is SW.



**Photo 37:** Alternate view of the leachate/process wastewater collection basin south of the FSA. Photo direction is west.



**Photo 38:** View of the feed pile in the FSA from near the inlet to the leachate/process wastewater collection basin south of the FSA. Photo direction is north.



**Photo 39:** View of the SE corner of the FSA showing feed solids outside the feed pad and near the inlet to the leachate/process wastewater collection basin south of the FSA. Photo direction is north.





**Photo 40:** Alternate view of the SE corner and south wall of the FSA, showing feed solids outside the feed pad and near the inlet to the leachate/process wastewater collection basin south of the FSA. Photo direction is NW.



**Photo 41:** View of the leachate/process wastewater collection basin south of the FSA, showing the regraded inlet area. Photo direction is SW.



**Photo 42:** Closer view of the leachate/process wastewater collection basin south of the FSA, showing the regraded inlet area. Photo direction is SW.



**Photo 43:** Closer view of the leachate/process wastewater collection basin south of the FSA, showing the regraded inlet area. Photo direction is SW.



**Photo 44:** Alternate view of the SE corner and south wall of the FSA, showing feed solids outside the feed pad and near the inlet to the leachate/process wastewater collection basin south of the FSA. Photo direction is NW.



**Photo 45:** Alternate view of the SE corner and south wall of the FSA, showing feed solids outside the feed pad and near the inlet to the leachate/process wastewater collection basin south of the FSA. Photo direction is SW.



**MAIN FARM SITE**

**Photo 46:** View of the concrete overflow weir constructed in the waste storage facility to meet secondary containment requirements. Photo direction is W/NW.



**Photo 47:** Alternate view of the concrete overflow weir constructed in the waste storage facility to meet secondary containment requirements. Photo direction is west.



**Photo 48:** Alternate view of the concrete overflow weir constructed in the waste storage facility to meet secondary containment requirements, showing the direction and location of the overflow. Photo direction is down and NE.



**Photo 49:** View of a wooded area downslope and NE of the waste storage facility where manure will be directed if the storage facility overflows. Photo direction is down and N/NE.



**Photo 50:** View of a disturbed area east of the waste storage facility that does not contain storm water erosion controls or vegetative stabilization. Photo direction is down and east.



**Photo 51:** View of rill erosion in a disturbed area east of the waste storage facility that does not contain storm water erosion controls or vegetative stabilization. Turbid water is visible ponded in the wooded area in the background. Photo direction is down and down and N/NE.





**Photo 52:** View of ponded liquid manure in a disturbed area east of the waste storage facility. Photo direction is down.



**Photo 53:** View of a discharge path of liquid manure from an area of ponded manure in a disturbed area east of the waste storage facility. Photo direction is down and north.



**Photo 54:** View of ponded process wastewater south of the calf barn, near a partially submerged plastic drum and metal tank. Photo direction is down and east.



**Photo 55:** View of ponded process wastewater south of the calf barn, near a partially submerged plastic drum and metal tank. Photo direction is down.



**Photo 56:** View of ponded process wastewater, south of the calf barn and west of the plastic drum and metal tank. Photo direction is down.



**Photo 57:** View of ponded process wastewater, south of the calf barn and farther west of the plastic drum and metal tank. Photo direction is down and west.





**Photo 58:** View of the FSA with plastic covering the top and sides of the feed pile. Photo direction is north.



**Photo 59:** Alternate view of the FSA with plastic covering the top and sides of the feed pile. Photo direction is north/NW.



**Photo 60:** View of the exterior of the east wall of the FSA with plastic showing rocks and other vegetation piled against the concrete wall. Photo direction is NW.



**Photo 61:** View of the area outside the east wall of the FSA, showing rocks and vegetation piled against the wall and sand spread on the ground. Photo direction is north.



**Photo 62:** View of the NE corner of the FSA where leachate has been observed discharging during previous site inspections. Leachate is visible ponded on the ground outside the dirt/stone/sand pile outside the wall. Photo direction is west.



**Photo 63:** Close up view of the NE corner of the FSA where leachate has been observed discharging during previous site inspections. Leachate is visible ponded on the ground outside the dirt/stone/sand pile outside the wall. Photo direction is west.





**Photo 64:** Close up view of the ponded leachate outside the wall of the NE corner of the FSA. Photo direction is down and west.



**Photo 65:** Close up view of leachate and feed solids near the NE corner of the FSA. Sand covering the ground is visible in the foreground. Photo direction is north and down.



**Photo 66:** View of a ponded area of leachate and dead vegetation in the field/vegetated area N/NE of the FSA. Photo direction is north and down.





**Photo 67:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate and dead vegetation are visible. Photo direction is N/NW.



**Photo 68:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate and dead vegetation are visible. Photo direction is N/NW.



**Photo 69:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate, dead vegetation, and feed solids are visible. Photo direction is down and N/NW.





**Photo 70:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate and dead vegetation are visible. Photo direction is down.



**Photo 71:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate and dead vegetation are visible. Photo direction is N/NW.



**Photo 72:** View of the leachate discharge pathway northward into the vegetated area N/NE of the FSA. Ponded leachate and dead vegetation are visible. Photo direction is N/NW.





**Photo 73:** Close up view of the leachate discharge ponded in the vegetated area N/NE of the FSA. Dead vegetation is also visible. Photo direction down.



**Photo 74:** Alternate view of the NE corner of the FSA showing the piled stones, sand, and feed solids. Photo direction is west.



**Photo 75:** View of the sand and feed solids pushed into the vegetated area N/NE of the FSA. Photo direction is west.





**Photo 76:** Close up view of the sand and feed solids pushed into the vegetated area N/NE of the FSA. Photo direction is north.



**Photo 77 (right):** Close up view of the stone, feed solids, and soil mixture piled against the exterior of the east wall of the FSA. Leachate seepage is visible. Photo direction is west and down.



**Photo 78 (left):** View of the west end of the concrete heifer lot. Photo direction is W/NW.



**Photo 79:** View of the middle section of the concrete heifer lot. Photo direction is east.



**Photo 80:** View of the east end of the concrete heifer lot. Photo direction is east.



**Photo 81:** View of the concrete pad and partially walled east end/NE corner of heifer lot. Photo direction is NE.





**Photo 82:** View of the NE corner of the concrete heifer lot. Photo direction is NW.



**Photo 83:** Alternate view of the NE corner of the concrete heifer lot, showing the exterior of the walls. Photo direction is SW.

**Photos 84 & 85 (below):** View of the areas east of the heifer barn previously used to stack solid manure from the heifer barn prior to land application. Photo direction is west.





November 14, 2018

Attachment to E-Mail of 11-14-18 4:25 PM  
to Sarah Burdette forwarded to Town Attys  
2 of 2

Jason Pansier  
Ledgeview Farms LLC  
3870 Dickinson Rd  
De Pere, WI 54115

Brown County

**SUBJECT: Interim Runoff Control Measures – Response Requested by 12/31/2018**

Dear Mr. Pansier:

Ledgeview Farms LLC (Ledgeview Farms) was notified of the requirement to install interim runoff control measures in a compliance inspection summary letter dated 09/21/2017. Interim measures were required to be implemented immediately upon notification in the following areas to prevent pollutant discharges from the production areas until permanent runoff control measures are installed:

1. Calf barn (main farm site)
2. Feed storage areas (both sites)
3. Stacking areas for solid manure/used bedding (both sites)
4. Feedlots (both sites)

The Department requested written documentation to be submitted by October 6 & 31, 2017, demonstrating that interim measures and practices had been installed and implemented and the discharges from the identified areas had ceased. The Department received a report on 10/05/2017, from Roach & Associates on behalf of Ledgeview Farms that provided details about plans for implementation of the required interim measures. The Department advised to proceed with installation as quickly as possible to address runoff concerns.

The Department received confirmation via email on 07/31/2018 from Roach & Associates on behalf of Ledgeview Farms that interim measures were installed in accordance with the plans previously submitted on 10/05/2017. In addition, the email stated that the detention basin planned for leachate collection from the feed storage area at the heifer site was planned for completion on 09/03/2018. The email also included an attached report from Brown County Land and Water Conservation Department (LWCD) staff that was signed and dated 07/12/2018 and included photographs and designs of the following:

- Installation of secondary containment concrete overflow weir on the waste storage facility at the main farm site.
- Installation of concrete walls and ramp areas at the east and west ends of the heifer lot at the main farm site.

- Placement of the gravel berm/diversion on the east side of the feed storage area at the heifer site.

The Department conducted site inspections to verify the status of the interim measures on 09/21/2018 and 10/30/2018. Observations made on these dates are summarized in a case activity report that is enclosed with this letter for your review and reference. Based on observations made during both site visits, several items related to runoff controls remain unaddressed. The following items require attention by Ledgeview Farms:

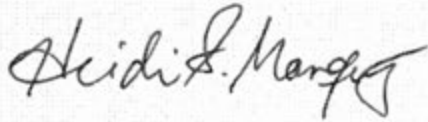
1. Calf barn (main farm site)
  - a. Process wastewater discharges to the environment were observed during both site visits.
  - b. **Changes in management/handling of process wastewater generated by the calf barn and/or installation of a collection system are required to prevent discharges of process wastewater.**
2. Feed storage area (main farm site)
  - a. Leachate was visible discharging from the northeast corner of the bunker wall to the vegetated area north of the feed storage area. Leachate was observed ponded in areas of burnt out/dead vegetation in the vegetated area north of the feed storage area. Materials placed along the exterior of the east bunker wall appeared to require maintenance to continue to function as a method to contain leachate generated by feed. Waste/blown feed appeared to be mixed in with the material placed along the exterior of the bunker walls.
  - b. Clay soil was previously placed along the exterior of the bunker walls to contain leachate and process wastewater from the feed storage area. The material present along the exterior of the bunker walls during the inspection should be removed and replaced with clay soils. This method requires frequent monitoring to ensure that leachate and process wastewater are not seeping through the clay berm.
    - i. The Department received photographic documentation on 11/02/2018 that the material along the exterior of the east wall of the bunker was removed and replaced with clay soils.
    - ii. **The condition of the clay should be monitored at least weekly to ensure that it is functioning properly and leachate and/or process wastewater are not discharging.**
3. Feed storage area (heifer site)
  - a. The walls and inlet areas of the collection were re-graded after the 09/21/2018 site visit. The definition of the walls and inlet/collection channel was improved, but the inlet/collection channel should be leveled better to improve flow into the basin.

- b. The basin appeared to be at capacity and overflowing during the 09/21/2018 site visit. Based on precipitation data obtained from multiple nearby sources, a 25-yr 24-hr rain event did not occur in the days prior to the inspection. An important aspect of the proposed operation and maintenance of the collection basin is monitoring its level and removing the contents for land application to fields in Ledgeview's approved NMP when it reaches maximum capacity so that the basin does not overflow.
    - i. **The frequency of emptying the basin will depend on precipitation and should be monitored daily when it rains to ensure the basin does not overflow.**
    - ii. **Final grading and seeding of disturbed areas around the basin needs to be completed.**
- 4. Heifer feedlot (main farm site)
  - a. The report from Brown County LWCD sent as an attachment to the 07/31/2018 email from Roach & Associates on behalf of Ledgeview Farms states that the original plans for the feedlot runoff controls were changed by Ledgeview Farms prior to installation.
    - i. **The Department will need additional information to determine whether the modified interim runoff control measures installed for the heifer feedlot at the main farm site meet requirements to adequately contain runoff from the feedlot area.**
- 5. Storm water erosion controls (main farm site)
  - a. A disturbed area was observed east of the waste storage facility during both site inspections. Storm water controls and stabilization of this area were not in place, and sediment-laden water was observed ponded in the wooded area north and downslope of the disturbed area.
    - i. NR 151.105, Wis. Adm. Code, lists minimum erosion and sediment control requirements for construction sites with less than one acre of land disturbance.
    - ii. NR 151.105(4), Wis. Adm. Code, requires erosion and sediment control practices to prevent the discharge of sediment eroding from soil stockpiles existing for more than 7 days.
      - 1. **Actions should be taken to comply with the requirements of the applicable sections of ch. NR 151, Wis. Adm. Code, listed above.**
  - b. A ponded area of liquid manure was observed during the 10/30/2018 site inspection that was discharging through rill erosion channels in the disturbed area to the wooded area northeast of the waste storage facility, where sediment-laden water was ponded.
    - i. **Practices to cease discharges of manure from this area and prevent future discharge occurrences should be implemented.**



Each of the items identified in bold in this letter should be addressed and documentation submitted to the Department describing the actions taken to resolve each issue by **December 31, 2018**. If you have any questions regarding this letter, please contact me at (920) 662-5187 or Heidi.SchmittMarquez@wisconsin.gov.

Sincerely,

A handwritten signature in black ink, reading "Heidi S. Marquez". The signature is fluid and cursive, with the first name "Heidi" being more prominent than the last name "Marquez".

Agricultural Runoff Management Specialist

encl: Interim Runoff Controls Inspection Report

ec: John Roach, Roach & Associates, LLC  
Mike Mushinski, Brown County Land and Water Conservation Department  
Dave Wetenkamp, Brown County Land and Water Conservation Department  
Joe Baeten, DNR – Green Bay



## CONDITIONAL USE PERMIT APPLICATION

### Ledgeview Zoning & Planning Commission

Date Submitted:

This application form must be completed online at <https://townofledgeview.zoninghub.com/>  
Hard copy applications will not be accepted.

Completed application must be submitted to the Town Clerk no less than fourteen (14) days prior to the first Monday of the month before 12:00pm (noon) to be included on that month's ZPC agenda Zoning and Planning Commission meets the second Wednesday after the first Monday of the month at 6:00 p.m. at the Ledgeview Municipal Building.  
[Click here for the ZPC meeting calendar.](#)

A Conditional Use Permit application review fee of \$200.00 must be submitted with materials

#### 1) Applicant Information

Name: Jason Pansier

Business Name: Ledgeview Farms

Street Address:

City/State: De Pere/Wi

Zip: 54115

Telephone: 920-655-3875

Fax:

Email: Jasonpansier@gmail.com

Firm Preparing Plans: Roach & Associates, LLC

Contact: John Roach

Street Address: 856 N. Main St

City/State: Seymour/Wi

Zip: 54165

Telephone: 920-833-6340

Fax: 920-833-9851

Email: john@jmroach.com

All correspondence on this application should be sent to:

☐

Property Owner, OR

☒

Agent John Roach

#### 2) Property Owner Information *This section can be left blank if the same as above.*

Name:

Business Name

Street Address:

City/State:

Zip:

Telephone:

Fax:

Email:

#### 3) Information regarding requested Conditional Use Permit

Address/Location: 3499 Lime Kiln Road

Town and Range: T23N R21E

Parcel ID Number: D-168, D-169

Zoning District: Ledgeview

Size of parcel in acres: 137

Sewer: ☐ Municipal ☒ Septic/Mound

Water: ☐ Municipal ☐ Private Water Trust ☒ Private Well

**Briefly describe the Proposed Site Use:**

The intended use is to construct a concrete lined Waste Storage Facility to store livestock waste from dairy cattle, feed pad leachate, and runoff from a Concrete Animal Yard. A Waste Transfer System will be installed from the Feed Storage Area and the Concrete Animal Yard, to facilitate the transfer of runoff to the proposed Waste Storage Facility

**Please provide a Legal Description below:**

Parcel D-168, That PRT OF NW1/4 SW1/4 SEC 28 T23N R21E DESC IN 918 R 241 BCR EX J7892-36 EX RDS  
PARCEL D-169. SW1/4 OF SW1/4 T23N R21E EX RDS

**\*\*Please see Sec 135 - 251 for additional information on Conditional Uses\*\***

**Notes**

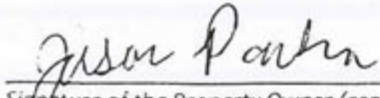
- Attendance by the applicant is strongly encouraged at both Zoning and Planning Commission and Town Board meetings where action/approval is to take place. It is the policy of the Zoning and Planning Commission to give applicants the opportunity to speak at such meetings. Contact the Town Clerk for the meeting schedule.
- The applicant/owner of the above parcel(s) hereby gives permission to the Town of Ledgeview, its staff/employees, agents and/or appointees to enter the property for the purpose of executing their duties associated with this request and following proper notification to applicant/owner.
- Upon approval of request, check with the Ledgeview Town Clerk for any necessary permits.



#### 4) Applicant Declarations

- The signer attests that the application has been completed accurately and all required materials have been submitted.
- Please note that the application will NOT be accepted without the signature of the property owner.

I HEREBY CERTIFY THAT I HAVE READ AND FULLY UNDERSTAND THE CONDITIONAL USE PERMIT PROCEDURE AND FAILURE TO COMPLY WITH TOWN REQUIREMENTS WILL RESULT IN THIS APPLICATION BEING WITHHELD FROM CONSIDERATION.



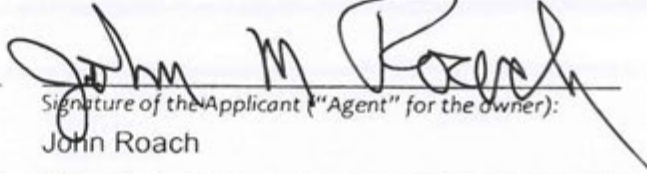
Signature of the Property Owner (required):

Jason Pansier

Print Name:

11-16-2018

Date:



Signature of the Applicant ("Agent" for the owner):

John Roach

Print Name:

11/16/18

Date:

#### 5) Submittal Requirements

Each submittal shall consist of the following materials. Please note that ALL digital files MUST be in PDF format with a minimum 300dpi resolution.

- A detailed statement by the applicant describing the intended use and how the proposed conditional use will conform to standards set forth in the respective zone districts, as per Section 250 of the Zoning code
- One (1) full set of building plans
- 11 x 17 property site plan
- Completed Conditional Use Permit Application

#### 6) Submittal Checklists (completion required for application) See attachments

A. Written Description of the intended use describing in reasonable detail the:

- ☒ Full name and contact information of the petitioner and / or agent, and property owner, if different;
- ☒ Full name and contact information of petitioner's engineers / surveyors / architects, and other design professionals used in conditional use permit application preparation;
- ☒ Existing zoning district(s) and proposed zoning district(s) if different;
- ☒ Current land uses present on the subject property;
- ☒ Proposed land uses for the subject property;
- ☒ Land use designation(s) as depicted on the adopted Comprehensive Plan;
- ☒ Projected number of residents, employees, and / or daily customers;
- ☒ Description of existing environmental features;



- NA ☐ Proposed amount of dwelling units, floor area, Open Space area, and landscape surface area, expressed in square feet and acreage to the nearest one-hundredth of an acre;
- NA ☐ Resulting site density, Floor Area Ratio as calculated using the criteria established in Sec 135 – 8, Open Space Ratio, and Landscape Surface Area Ratio, as defined by Sec 135 – 8;
- ☒ Operational considerations relating to hours of operation, projected normal and peak water usage, sanitary sewer or septic loadings;
- ☒ Operational considerations relating to potential nuisance creation pertaining to the appropriate design of street access, traffic visibility, parking, loading, exterior storage, exterior lighting, vibration, noise, air pollution, odor, electromagnetic radiation, glare and heat, fire and explosion, toxic or noxious materials, waste materials, drainage, and hazardous materials;
- ☒ Traffic generation;
- ☒ Any other information pertinent to adequate understanding by the Plan Commission of the intended use and its relation to nearby properties;
- ☒ Possible future expansion and related implications, and;
- NA ☐ Material Safety Data Sheets (MSDS) for all materials anticipated to be used or stored on site; Exterior building and fencing materials;

B. Property Site Plan drawing which includes:

- ☒ A title block which provides all contact information for the petitioner and / or agent, and property owner if different;
- ☒ Full name and contact information of petitioner's engineers / surveyors / architects, and other design professionals used in conditional use application preparation;
- ☒ The date of the original plan and the latest date of revision to the plan;
- ☒ A north arrow and a graphic scale;
- ☒ All property lines and existing and proposed right-of-way lines with bearings and dimensions clearly labeled;
- NA ☐ All existing and proposed easement lines and dimensions with a key provided and explained on the margins of the plan as to ownership and purpose;
- ☒ All required building setback and offset lines, including dimensions from structures to property lines;
- ☒ All existing and proposed buildings, accessory structures, and paved areas, including building entrances, walks, drives, decks, patios, fences, walls;
- ☒ All existing and proposed utility and drainage systems, connections, and fixtures;
- ☒ The location and dimension of all access points onto public streets including cross-section drawings of the entry throat;
- NA ☐ The location, type, height, size and lighting of all signage on the subject property;
- NA ☐ The location of all outdoor storage and refuse disposal areas and the design of all screening devices;

- NA ☐ The location and dimension of all loading and service areas on the subject property and labels indicating the dimension of such areas;
- NA ☐ The location and dimension of all on-site parking (and off-site parking provisions if they are to be employed), including a summary of the number of parking stalls provided versus required by Sec 135 - 124;
- NA ☐ The location, height, design/type, illumination power and orientation of all exterior lighting on the subject property - including the clear demonstration of compliance with a limit of 0.5 foot candles at all property lines;
- NA ☐ The location and type of any permanently protected green space areas;
- ☒ The location and delineation of all wetlands, escarpments, uplands, or other unique environmental features;
- ☒ The location of existing and proposed drainage facilities;
- NA ☐ In the legend, data for the subject property:
- a) Lot Area measured in square feet and acres to the nearest one-hundredth of an acre;
  - b) Floor Area measured in square feet using the criteria in Sec 135 - 8;
  - c) Open Space Area as defined in Section 8 and as calculated using the criteria of Sec 135 - 8;
  - d) Building Height as defined and calculated using the Sec 135 - 8 of the Zoning Code

Submit all documents to:  
<https://townofledgeview.zoninghub.com/>

Questions:  
 E: [cnelson@ledgeviewwisconsin.com](mailto:cnelson@ledgeviewwisconsin.com)  
 P: (920) 336 - 3360  
 F: (920) 336 - 8517

### For Office Use Only

Submittal Date: \_\_\_ / \_\_\_ / \_\_\_

Staff Signature: \_\_\_\_\_

Fees Paid: Y / N

Written Description of the intended use describing in reasonable detail the:

**1. Full name and contact information of the petitioner and /or agent, and property owner.**

Petitioner: Jason Pansier

Business Name: Ledgeview Farms

Address: 3875 Dickenson Road, De Pere, WI 54115

Telephone: 920-655-3875

Email: jasonpansier@gmail.com

**2. Full name and contact information of petitioner's engineers/surveyors/architects, and other design professionals used in conditional use permit application preparation**

Firm Preparing Plans: Roach & Associates, LLC

Contact: John Roach

Address: 856 North Main St, Seymour, WI 54165

Telephone: 920-833-6340

Fax: 920-833-9851

Email: john@jmroach.com

**3. Existing zoning district(s) and proposed Zoning districts if different:**

3.1. This is a permitted use for the agricultural property that is zoned A-1 Agriculture-Farmland Preservation District (AG-FP) and A-2 Agriculture District. There are not proposed changes to the zoning district.

**4. Current land uses present on the subject property**

4.1. The current land use is as the Heifer Site for Ledgeview Farms, LLC including housing for heifers as well as feed storage.

4.2. Existing Facilities are shown on the Property Site Plan and include:

4.2.1. L1: Bedded Packed Heifer Barn

4.2.2. L2: Freestall Heifer Barn

4.2.3. Feed Storage area

4.2.4. House

4.2.5. Two (2) Wells

4.2.6. Shed

4.2.7. Shop

**5. Proposed land uses for the subject property**

5.1. The intended use is to construct a concrete lined Waste Storage Facility to store livestock waste from dairy cattle, feed pad leachate, and runoff from a Concrete Animal Yard. A Waste Transfer System will be installed from the Feed Storage Area and the Concrete Animal Yard, to facilitate the transfer of runoff to the proposed Waste Storage Facility

**6. Land use designation(s) as depicted on the adopted Comprehensive Plan**

6.1. Agricultural

**7. Projected number of residents, employees, and /or daily customers**

7.1. No change to current number of residents, employees, or daily customers are proposed.

**8. Description of existing environmental features**

8.1. 2017 Waste Storage Facility & Runoff Management System – Site Assessment

**9. Proposed amount of dwelling units, floor area, Open Space area, and landscape surface area expressed in square feet and acreage to the nearest one-hundredth of an acre**

9.1. N/A

**10. Resulting site density, Floor Area Ratio as calculated using the criteria established in Sec 135-8, Open Space Ratio and Landscape Area Ratio as defined by Sec 135-8**

10.1. N/A

**11. Operational considerations relating to hours of operation, projected normal and peak water usage, sanitary sewer or septic loadings**

11.1. Conditional use permit attachment

**12. Operational considerations relating to potential nuisance creation pertaining to the appropriate design of street access, traffic visibility, parking, loading, exterior storage, exterior lighting, vibration, noise, air pollution, odor, electromagnetic radiation, glare and heat, fire and explosion, toxic or noxious materials, waste materials, drainage, and hazardous materials**

12.1. Conditional use permit attachment

**13. Traffic generation**

13.1. Conditional use permit attachment

**14. Any other information pertinent to adequate understanding by the plan commission of the intended use and its relation to nearby properties**

14.1. See information included in all attachments.

**15. Possible future expansion and related implications**

15.1. No Expansion Expected

**16. Material Safety Data Sheets (MSDS) for all materials anticipated to be used or stored on site: Exterior building and fencing materials**

16.1. N/A



## **Ledgeview Farm, LLC Conditional Use Permit Attachment**

### **Incorporated by Reference: Appendix A of the Ledgeview Farm, LLC Livestock Siting Application**

#### **Applicant Statement of Intended use**

The intended use is to construct a concrete lined Waste Storage Facility to store livestock waste from dairy cattle, feed pad leachate and runoff from a Concrete Animal Yard. A Waste Transfer System will be installed from the Feed Storage Area and the Concrete Animal Yard, to facilitate the transfer of runoff to the proposed Waste Storage Facility. This is a permitted use for the agricultural property that is zoned A-1 Agriculture-Farmland Preservation District (AG-FP) and A-2 Agriculture District.

The proposed plans conform to the requirements found in Wis. Adm. Code ch. ATCP 51 Livestock Facility Siting. A Conditional Use Permit is required by the Town of Ledgeview.

#### **Operational considerations related to hours of use, projected normal and peak water usage, sanitary sewer or septic loadings**

Under normal conditions there will be no change to the projected normal and peak water usage, sanitary sewer or septic loadings. Under normal conditions the production side will receive limited traffic from 4:00 a.m. to 10:00 p.m. During these times feeding the livestock and manure deliveries to the proposed waste storage will occur. In addition, current deliveries of feed to the site by local vendors will continue. When the manure is removed from the Waste Storage Facility, primarily in the fall, manure tanker traffic will increase as manure is transported to crop fields. Some of the manure will be applied via drag house and injected directly into the soil.

#### **Operational considerations relating to potential nuisance creation: traffic and odor generation**

##### 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. The proposed facility meets all the requirements for odor control in Wis. Adm. Code ch. ATCP 51.

No change is anticipated in traffic generation

#### **Operational considerations relating to potential nuisance creation: appropriate design of street access, traffic visibility, parking, exterior lighting, vibration, noise, air pollution, electromagnetic radiation, glare, heat, fire, explosion, toxic or noxious materials, drainage, and hazardous materials**

Under normal circumstances no change is anticipated in the above mentioned items.



DATE:	11/22/2017	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION
DRAWN BY:	MTS	11/15/2018	PJR	*	*	*	*
CHECKED BY:	JMR						

Petitioner: LEDGEVIEW FARMS, LLC, Jason Pansier  
3875 Dickenson Road, De Pere WI 54115  
Phone: 920.655.3875

SCALE:  
1"=300'

Property 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.  
667



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# **2017 Waste Storage Facility & Runoff Management Systems**

for

**Ledgeview Farm, LLC  
3875 Dickinson Road  
DePere, WI 54115**

**November 2, 2018**

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 email 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](mailto:jeff.kreider@wisconsin.gov)

-----Original Message-----

**From:** John Roach [[john@jmroach.com](mailto:john@jmroach.com)]  
**Received:** Thursday, 01 Nov 2018, 11:33AM  
**To:** Kreider, Jeff C - DNR [[Jeff.Kreider@wisconsin.gov](mailto:Jeff.Kreider@wisconsin.gov)]  
**CC:** Pat Roach [[Pat@jmroach.com](mailto:Pat@jmroach.com)]; Courtney Roach [[Courtney@jmroach.com](mailto:Courtney@jmroach.com)]; Matthew Schwalenberg [[matt@jmroach.com](mailto: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](mailto: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](mailto: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

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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](mailto:jeff.kreider@wisconsin.gov)

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**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

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Thank you.

Regards,

John Roach

General Manager

Office: 920.833.6340

Cell: 920.858.5868

Email: [john@jmroach.com](mailto: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**

### Leachate Management System

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<sup>3</sup> (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<sup>3</sup> (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<sup>3</sup> (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<sup>3</sup> (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<sup>3</sup> (5,006,618 gallons) (Exhibit 8-1). The MOL volume includes 111,303 ft<sup>3</sup> (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<sup>3</sup> (14,749,062 gallons) (Exhibit 8-1). The MOL volume includes 351,609 ft<sup>3</sup> (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<sup>3</sup> (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<sup>3</sup> (5,006,618 gallons). WSF 2 has a design storage volume, including net precipitation, of 1,971,800 ft<sup>3</sup> (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.

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## 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.

### Well Separation Variance Request for 1949 Well

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  $\geq 2.5$  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  $\geq 40\%$  P200 fines and a Plasticity Index (PI) of  $\geq 12$ . 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  $\geq 40\%$  P200 fines and a PI  $\geq 12$ . 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<sup>2</sup>

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<sup>2</sup> (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.

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## **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**

<b>If:</b> Solids/snow present	<b>Then:</b> Remove solids or snow as necessary to maintain flow equalization capacity and minimize the potential blockage of transfer lines
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### Weekly Maintenance

#### **Waste Storage Facility**

<b>What:</b> Record liquid level in each WSF
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<b>What:</b> Inspect exterior slopes for deterioration	<b>Then:</b> Repair when possible
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<b>If:</b> Rodent damage is present on the earthen slopes	<b>Then:</b> Repair when possible
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<b>If:</b> Solids are accumulated	<b>Then:</b> Remove solids when possible
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<b>If:</b> Transfer Lines or outlets are damaged or obstructed	<b>Then:</b> Repair when possible
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### 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.

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## 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-liner 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**

### Transfer Pipes and Joints

- Pipe and joints shall conform to Wisconsin Construction Specifications 634 (8/16), Table 1 criteria.

### Pipe Installation:

- 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.

### Pipe Connections:

- All piping connections shall be made in accordance with the manufacturer's recommendations and requirements to form a liquid tight joint.

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# **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.

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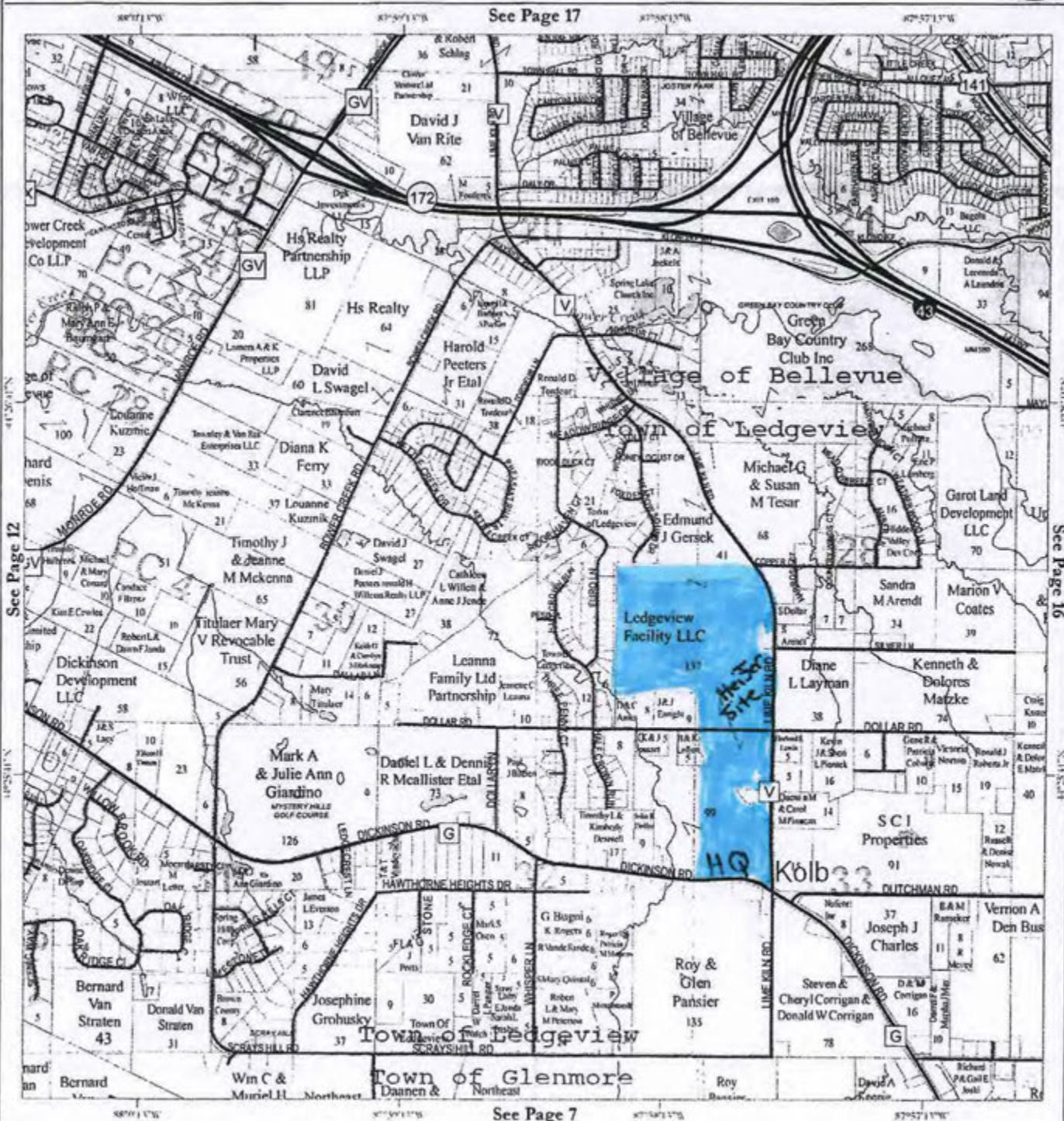
## **Exhibit 1**



# T23N R21E (SW) Ledgeview & Bellevue(SW)



See Page 17



See Page 12

See Page 16

See Page 7

"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](http://www.gis.co.brown.wi.us)

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15

**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



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## Exhibit 2



# Ledgeview Farm, LLC

Main Farm

## Legend

- FSA: Feed Storage Area
- L1 & L3-L4: Freestall Barns
- L2 & L5: Heifers Bedded Pack Barn
- L6: Calf Barn
- SWP: Storm Water Pond
- T1: Piston Pump Station
- WSF1: Waste Storage Facility
- W: Wells







**Ledgeview Farm**  
Heifer Farm



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## **Exhibit 3**



Soil Map—Brown County, Wisconsin  
(Ledgeview Heifer Soils Map)

87° 58' 16" W

87° 57' 36" W

44° 26' 19" N

44° 26' 19" N



44° 25' 42" N

44° 25' 42" N

87° 58' 16" W

87° 57' 36" W



Map Scale: 1:5,450 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

Map projection: Web Mercator Corner coordinates: WGS84



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

11/7/2017  
Page 1 of 3

708





## 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%
<b>Totals for Area of Interest</b>		<b>140.5</b>	<b>100.0%</b>

## 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%
<b>Totals for Area of Interest</b>		<b>140.5</b>	<b>100.0%</b>



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## **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		WTP	WSF	
											NRCS 313	NR 213	NRCS 634	NRCS 313	NR 213
20	713.1	13.5	699.6	706.6	<sup>5</sup>			7.0						x	
21	713.3	12.0	701.3	706.6	<sup>5</sup>			5.3						x	
22	715.4	13.5	701.9	706.6	<sup>5</sup>			4.7						x	
23	711.4	13.0	698.4	706.6	<sup>5</sup>	13		8.2	698.4					x	
6	711.3	11.1	700.2	705.3	<sup>6</sup>			5.1							x
13	714.3	14.5	699.8	705.3	<sup>6</sup>			5.5							x
17	706.8	11.5	695.3	705.3	<sup>6</sup>			10.0							x
18	708.8	12.0	696.8	705.3	<sup>6</sup>			8.5							x
19	708.9	11.0	697.9	705.3	<sup>6</sup>			7.4							x
20	713.1	13.5	699.6	705.3	<sup>6</sup>			5.7							x
23	711.4	13.0	698.4	705.3	<sup>6</sup>	13		6.9	698.4						x

\*Floor of structure or lowest pipe invert elevation

<sup>1</sup> Top of 5" concrete liner, Table 2

<sup>2</sup> 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

<sup>3</sup> Detention Basin -WSF 2 WTP

<sup>4</sup> Collection Basin -WSF 2 WTP

<sup>5</sup> Top of 7" concrete liner, Table 2

<sup>6</sup> 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 elevation 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: NW/4SW/4 Sec 28 T29N R21E  
 Date: 5/14/17  
 Weather: \_\_\_\_\_  
 Land Use: Ag field  
 Coordinate System: Brown Co./USGS

Boring No: 3E2  
 Proposed Practice: 313  
 Logged By: Drew Zella  
 Surface Elevation: 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			MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA: GRANULAR, ANGULAR, BLOCKY, SUBANGULAR, BLOCKY PLATE, WEDGE, FIBROUS, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLOSET	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 75mm (2") Cobbles 3" - 11.8" Boulders 11.8" +	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES					
				COLOR	QUANTITY FEW - 2% COMMON 2-20% MANY - 20% +				
	TP3		(717.8)	CL	16.7				
0 1	CL	CLAY LOAM	Topsoil						
1 16.7	CL	CLAY LOAM	5YR 4.4	—	—	DRY	MASSIVE	—	—
TP2	SURFING CL		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 2-3 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: PANGISA Ledgerview Farms  
 Site Location: NW/4SW/4 Sec 28 T23N R21E  
 Date: 5/14/17  
 Weather: Overcast  
 Land Use: Ag Field  
 Coordinate System: Brown Co. / USGS

Boring No: 584  
 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			MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA - GRANULAR, ANGLULAR, BLOCKY, SUBANGULAR, BLOCKY, PLATE, WEDGE, FIBRILLAR, COLUSIFORM, SINGLE GRAIN, MASSIVE, OR CLAYEY	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 25mm (2") Cobbles 2" - 16" Boulders 16" +	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES					
				COLOR	QUANTITY FEW <2% COMMON 2-20% MANY >20%				
TP 5		713.20							
0 / 1		Top Soil							
1 / 13.3	CL	CLAY LEAM	5YR 4.4	—	—	DRY	MASSIVE	—	
TP 4		714.3							
1 / 13.8	CL	CLAY LEAM	5YR 4.4	—	—	DRY	MASSIVE	—	

ADDITIONAL COMMENTS:

# LOG OF SOIL TEST PIT

Project: Paris, IA (Ledgeview Farms)  
 Site Location: NW 1/4 SW 1/4 Sec 28 T23N R21E  
 Date: 5/14/17  
 Weather: Overcast  
 Land Use: Ag Field  
 Coordinate System: Brown Co. / USGS

Boring No: 736  
 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		MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA: GRAVULAR, ANGULAR, BLOCKY, SUBANGULAR, BLOCKY PLATY, WEDGE PRISMATIC, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLUSTERY	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 75mm (2") Cobbles 75 - 118mm Boulders 118mm +	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES				
				COLOR				
TP #7	SURFACE CL	708.9						
0.7	TOP SOIL							
7.5	CL	CLAY LOAM	5YR 4.4	—	—	MOIST	MASSIVE	—
TP #6	SURFACE CL	711.3		10.3 cm				
1	TOP SOIL					DRY		
11.1	CL	CLAY LOAM	5YR 4.4	—	—	DRY	MASSIVE	—

ADDITIONAL COMMENTS



# LOG OF SOIL TEST PIT

Project: Panther (Lodovico Farms)  
 Site Location: NW 1/4 Sec 28 T23N R27E  
 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		MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY, PLATY, WEDGE FRICTIONAL, COL, OMNI SMALL GRAIN, MASSIVE OR CLUSTERS	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 75mm (2") Cobbles 3" - 11.8" Boulders 11.8" +	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES				
				COLOR	QUANTITY FLY - 2% COMMON 2-29% MANY - 29%			
712.5				C = 11.5				
0 - 0.5'			Surf H. 4	Top Soil				
0.5 - 12.0	CL	CLAY LOAM	Surf 4.4					
710.4				C = 9.4				
0 - 0.7								
0.7 - 9.4	CL	CLAY LOAM	Surf 4.4			moist	massive	

ADDITIONAL COMMENTS:

# LOG OF SOIL TEST PIT

Project: PAN ~~BLVD~~ / Hedgeview Farms  
 Site Location: NW 1/4 SW 1/4 Sec 28 T23N R21E  
 Date: 5/14/17  
 Weather: Overcast  
 Land Use: Ag. Field  
 Coordinate System: Brown Co. / USGS

Boring No: TP10 & 11  
 Proposed Practice: 3/3  
 Logged By: Drew Zelle  
 Surface Elevation: 712.7 (1) 716.5  
 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

CL = 11.6'

DEPTH FEET	USCS	USDA	MUNSELL COLOR		MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA - GRANULAR, ANGULAR, BLOCKY, SUBANGULAR, BLOCKY, PLATY, OR DUE, FIBRATIC, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLUSTERY	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 75mm (2") Cobbles 75 - 118mm Boulders 118mm +	COMMENTS	
			MATRIX COLOR	REDOXOMORPHIC FEATURES					
				COLOR					QUANTITY FEW < 2% COMMON 2-29% MANY > 29%
TP10									
0 1									
1 11.6	CL	CLAY loam	5YR 4.4	—	—	Moist	massive	—	Minimal calcareous CL streaks small seep @ base
TP 11			716.5 GND GL.						
0 .5			minimal seep?						
4.5 12.7	CL	clay loam	5YR 4.4	—	—	moist	massive	—	
12.7 14.7	ML	SILT	7.5YR 3/1	10YR 2.1	10YR 2.1 common				seep @ 10' 12.4
ADDITIONAL COMMENTS									
14.7-16.0	CL	clay loam	7.5YR 4/1	—	—	moist	massive		

# LOG OF SOIL TEST PIT

Project: Pan-Sier (Hedgecroft Farm)  
 Site Location: NW 1/4 SW 1/4 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: 715.05  
 Bench Mark: Caps

## 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			MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA GRANULAR, ANGULAR BLOCKY, SUBANGULAR BLOCKY PLATY, WEDGE, FIBRILLAR, COLUMNAR SINGLE GRAIN, MASSIVE, OR CLODDY	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 2mm (7) Cobbles 3" - 11.8" Boulders 11.8"+	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES					
				COLOR	QUANTITY FEW ~2% COMMON 2-20% MANY ~20%				
TP 12									
0 1		Topsoil							
1 14.5	CL ML	clay loam	5YR 4/4	—	—	moist	Blocky	—	Orange cherting streaks
14.5	ML CL	clay loam	5YR 6.1	—	—	moist	massive	—	—

ADDITIONAL COMMENTS:



# LOG OF SOIL TEST PIT

Project: PARSON (Ledgeview Farms)  
 Site Location: NW1/4SW1/4 Sec 28 T23N R21E  
 Date: 5/14/17  
 Weather: Overcast  
 Land Use: Ag field  
 Coordinate System: Brown Co. / USGS  
713.9

Boring No: 14 F 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		MOISTURE USDA - FROZEN, DRY, MOIST, OR SATURATED	STRUCTURE USDA TABULAR, ANGULAR, BLOCKY, SUBANGULAR, BLOCKY PLATE, WEDGE, FIBROUS, COLUMNAR, SINGLE GRAIN, MASSIVE, OR CLUSTED	% SUBSURFACE COARSE FRAGMENTS USCS - Gravel 4.75mm - 75mm (12%) Cobbles 75-125mm Boulders 125mm +	COMMENTS
			MATRIX COLOR	REDOXOMORPHIC FEATURES				
				COLOR	QUANTITY FEW <2% COMMON 2-29% MANY >29%			
TP 14	SURFACE G.	713.9		CUT	12.8			
0 1'	TOPSOIL							
1 12.9	CL	CLAY LOAM	5YR 4.4	—	—	DRY	MASSIVE	
<hr/>								
TP 13	714.3	13.3cm						
0 1	TOPSOIL							
1 14.5	CL	CLAY LOAM	5YR 4.4					

ADDITIONAL COMMENTS:

# Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGEVIEW  
 Logged by: JR & MP  
 Test Pit Number: 17  
 Test Pit Location: NORTH OF TP 18 WEST OF TP 23

Date: 10/11/17  
 TP Elev. 706.8

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	0	1		TOP SOIL				
	1	5.0	CL	MASTE 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)
	Sand > 50% of coarse fraction passes No. 4 sieve		GC	clayey gravel (gravel-sand-silt mix)
		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)
			ML	silt (silt and fine sand)
Fine grained soils less than 50% retained on No. 200 sieve	silt and clay liquid limit < 50	inorganic	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: LEDGERVIEW  
 Logged by: JR & MP  
 Test Pit Number: 18  
 Test Pit Location: NORTH OF TP 19

Date: 10/11/17  
 TP Elev. 708.8

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	0	1		TOP SOIL				
	1	4.5	CL	RED BROWN MASSIVE MOIST	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 @ 8.1
				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)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	GC	clayey gravel (gravel-sand-silt mix)
			SW	well-graded sand (diverse particle size)
		sand with >12% fines	SP	poorly graded sand (uniform particle size)
			SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
			ML	silt (silt and fine sand)
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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: MPJLR  
 Test Pit Number: 19  
 Test Pit Location: WEST OF TP 21

Date: 10/11/17  
 TP Elev. 708.9

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	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)
			ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	Pt	peat and other highly organic soils

SAMPLE SENT TO LAB  
Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEDGERVIEW  
 Logged by: JR IMP  
 Test Pit Number: 20  
 Test Pit Location: South of TP 19

Date: 10/11/17  
 TP Elev. 713.07

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	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			Sample 107
	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)
			ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	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: JRIMP  
 Test Pit Number: 21  
 Test Pit Location: South of TP 22

Date: 10/11/17  
 TP Elev. 713.3

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	0	1.0		CLAY LOAM TOP SOIL				
	1.0	2.0	CL	Moist Red BROWN MASSIVE clay	2.5 yr 4/4	—	—	
	2.0	12.0	CL	Dry Red BROWN Platy. clay	2.5 yr 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)
			ML	silt (silt and fine sand)
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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: EDGEVIEW  
 Logged by: JMR & MP  
 Test Pit Number: 22  
 Test Pit Location: South of TP 23

Date: 10/10/17

TP Elev. 715.4

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
	0	1.0		CLAY LOAM TOP SOIL				
	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)
			ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
Fine grained soils less than 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	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  
 Logged by: JMR + MJD  
 Test Pit Number: 23  
 Test Pit Location: NETP in Tilled Soil East of Ditch

Date: 10.10.17  
 TP Elev. 711.4

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev
	From	To						
711.4	0	1.0		CL LOAN TOP SOIL				
	1.0	2.0	CL	MOIST SML MOTTELS MASSIVE	2.5YR 4/4			
	2.0	7.0	CL	Dry MASSIVE	5YR 4/4			10. 6.8'
	7.0	11.0	CL	Dry flaky	5YR 4/4			
	11.0	13.0	CL	Dry flaky	2.5YR 3/3			20 12.5
				water @ 13'				
				No Bedrock				

Major Divisions			Group Symbol	Group Name
Coarse grained oils 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)
			ML	silt (silt and fine sand)
Fine grained 0% or more passing the No. 20 sieve	silt and clay liquid limit < 50	inorganic	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: 10/19/17

TP Elev. 715.38

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp ID & E
	From	To						
	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)
			ML	silt (silt and fine sand)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic-	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: TJS, MHP

Test Pit Number: #55

TP Elev. 725.32

Test Pit Location: West of Heifer Lot (Heifer Farm)

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & El
	From	To						
	0	5	SC	10% Gravel	2.5 YR 4/8			#1 e 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 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)
			MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	Pt	peat and other highly organic soils

## Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledseview

Date: 10/19/2017

Logged by: MHP, TJS

Test Pit Number: II5C

TP Elev. 728.53

Test Pit Location: Heifer Farm: West of Bunker

[illegible]

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)
	Sand > 50% of coarse fraction passes No. 4 sieve	gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
		clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
			SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
			Fine grained soils more than 50% passing the No. 200 sieve	silt and clay liquid limit < 50
CL	clay of low plasticity, lean clay			
silt and clay liquid limit > 50	organic	OL		organic silt, organic clay (low plasticity)
	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

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# Roach & Associates, LLC - Log of the Test Pits

Land Owner: EDGEVIEW  
 Logged by: MHP/TJS  
 Test Pit Number: #57  
 Test Pit Location: \_\_\_\_\_

Date: 10/17/17  
 TP Elev. 725.20

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & E
	From	To						
	0	5	CL	Dry, massive, fill Fill	5YR 3/3			#1 C34
				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)
			ML	silt (silt and fine sand)
Fine grained > 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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: 58

TP Elev. 723.42

Test Pit Location: Heifer Farm: South of FSA

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & El
	From	To						
	0	1.5		Topsoil				
	1.5	2.0	CA <sup>Mk</sup> A/4	massive Dry	5YR 4/6			
	2.0	5.0	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)
			ML	silt (silt and fine sand)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	CL	clay of low plasticity, lean clay
			OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	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: #59  
 Test Pit Location: West of TP #60

Date: 10/19/2017  
 TP Elev. 725.79

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sam ID & E
	From	To						
	0	1	ML	Top Soil				
	1	3	CL	Platy, Dry 50% 2.5YR 4/6	2.5YR 4/4			#1 @ 2ft
	3	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)
	Sand > 50% of coarse fraction passes No. 4 sieve	gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
		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)
			ML	silt (silt and fine sand)
Fine grained soils 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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: JJS, MHP  
 Test Pit Number: 60  
 Test Pit Location: South of bunker

Date: 10/17/2017  
 TP Elev. 726.42

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & El
	From	To						
	0	1.5	ML	Topsoil Dry				
	1.5	10	CL	Dry, massive, firm 9ft Seam of CL Platey 2.5YR 4/6	2.5YR 4/6			#1 @ 8ft
	10	13.0	CH	clay, dry massive 7.5YR 5B/2	<del>10YR</del> 4/2			#2 @ 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)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	GC	clayey gravel (gravel-sand-silt mix)
			SW	well-graded sand (diverse particle size)
		sand with >12% fines	SP	poorly graded sand (uniform particle size)
			SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
			ML	silt (silt and fine sand)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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  
 Logged by: TJS, MHP  
 Test Pit Number: 61  
 Test Pit Location: Heifer Farm: South of FSA

Date: 10/18/2017

TP Elev. 729.56

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & Elev.
	From	To						
	0	1	ML	Topsail Dry				
	1	10	CL	Dry, massive, Firm 5 Ft seam of CL Platey 2.5YR 4/6	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)
	Sand > 50% of coarse fraction passes No. 4 sieve	gravel with > 12% fines	GM	silty gravel (gravel-sand-silt mix)
			GC	clayey gravel (gravel-sand-silt mix)
		clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
			SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
			ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
Fine grained soils more than 50% passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	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 + JJS

Test Pit Number: 62

TP Elev. 810.49

Test Pit Location: North of the Main Farm FSA

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	From	To						
	D	0.15'		TOPSOIL				
	0.15'	1.0'	CI	MASSIVE, MOIST	5YR 5/3			Sample 126
	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)
	Sand > 50% of coarse fraction passes No. 4 sieve		GC	clayey gravel (gravel-sand-silt mix)
		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)
			ML	silt (silt and fine sand)
Fine grained 0% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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 Elev. \_\_\_\_\_

Test Pit Location: North of TP 62

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sample ID & El
	From	To						
	0	0.15"		TOPSOIL				
	0.15	1'	CL	CLAY	5YR 5/3			Sample 6"
	1'	3'	SC	CLAY SAND	7.5YR 5/3			Sample 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)
			ML	silt (silt and fine sand)
Fine grained 30% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	CL	clay of low plasticity, lean clay
		organic	OL	organic silt, organic clay (low plasticity)
			MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	Pt	peat and other highly organic soils



# Roach & Associates, LLC - Log of the Test Pits

Land Owner: LEONVIEW FARMS

Date: 10/25/17

Logged by: MHP

Test Pit Number: 64

TP Elev. 825.75

Test Pit Location: EAST OF HEIFER LOT ON THE MAIN FARM

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp. ID & E
	From	To						
	0	1.5		TOP SOIL				
	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)
			ML	silt (silt and fine sand)
Fine grained soils more than 50% passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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 Elev. 820.1

Test Pit Location: South of L1

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	From	To						
818.1	0	2	ML	Topsoil / F:11	-	-	-	-
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)
			ML	silt (silt and fine sand)
			CL	clay of low plasticity, lean clay
Fine grained soils 50% more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	OL	organic silt, organic clay (low plasticity)
		organic	MH	silt of high plasticity, elastic silt
	silt and clay liquid limit > 50	inorganic	CH	clay of high plasticity, fat clay
			OH	organic clay, organic silt
		organic	Pt	peat and other highly organic soils



# Roach & Associates, LLC - Log of the Test Pits

Land Owner: Ledgeview Main Site

Date: 10/25/19

Logged by: MHP

Test Pit Number: 66

TP Elev. 819.0

Test Pit Location: North of L 1

Elev.	TP Depth		Unifd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Sampl ID & El
	From	To						
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)
	Sand > 50% of coarse fraction passes No. 4 sieve		GC	clayey gravel (gravel-sand-silt mix)
		clean sand	SW	well-graded sand (diverse particle size)
			SP	poorly graded sand (uniform particle size)
		sand with	SM	silty sand (sand-silt mix)
		>12% fines	SC	clayey sand (sand clay mix)
			ML	silt (silt and fine sand)
Fine grained > 50% more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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  
 Logged by: RE  
 Test Pit Number: 4060  
 Test Pit Location: West of FSA - Heifer Farm

Date: 9/15/17  
 TP Elev. 716.4

Elev.	TP Depth		Unif'd Sys ID	Description of Soils color, structure, stones, moisture	Munsell ID	Water Table	Bedrock	Samp ID & E
	From	To						
716.4	0	16"		Topsail				
	16"	24"	CI	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)
	Sand > 50% of coarse fraction passes No. 4 sieve	clean sand	GC	clayey gravel (gravel-sand-silt mix)
			SW	well-graded sand (diverse particle size)
		sand with >12% fines	SP	poorly graded sand (uniform particle size)
			SM	silty sand (sand-silt mix)
			SC	clayey sand (sand clay mix)
			ML	silt (silt and fine sand)
Fine grained 50% or more passing the No. 200 sieve	silt and clay liquid limit < 50	inorganic	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

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## Exhibit 5

## Soil Analysis Summary Worksheet

Owner: Ledgeview Farm

Project: 2017 Waste Storage Facility 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						



Project: **LEDGEVIEW FARMS  
DE PERE, WISCONSIN**

Copies: Mr. Dave Wetenkamp  
Brown County Land & Water Conservation 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:**

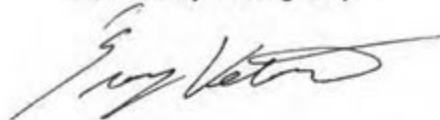
Test Method: ASTM D2487      Classification of Soils for Engineering Purposes  
ASTM D1140      Percent Material Finer than the No 200 Sieve  
ASTM D4318      Liquid Limit, Plastic Limit, and Plasticity Index of Soils

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.



Project: **LEDGEVIEW FARMS  
DE PERE, WISCONSIN**

Copies: Mr. Dave Wetenkamp  
Brown County Land & Water Conservation 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)

Date Delivered: 6/20/17

3904) LEAN CLAY, brown (CL)

3905) LEAN CLAY, brown (CL)

3906) LEAN CLAY, brown (CL)

**RESULTS:**

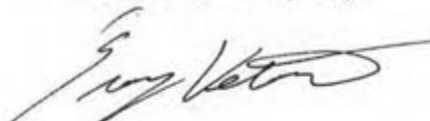
Test Method: ASTM D2487      Classification of Soils for Engineering Purposes  
ASTM D1140      Percent Material Finer than the No 200 Sieve  
ASTM D4318      Liquid Limit, Plastic Limit, and Plasticity Index of Soils

Sample Number	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.



Project: **LEDGEVIEW FARMS  
DE PERE, WISCONSIN**

Copies: Mr. Dave Wetenkamp  
Brown County Land & Water Conservation 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: 3907) LEAN CLAY, brown (CL)  
3908) LEAN CLAY, brown (CL)  
3909) LEAN CLAY, brown (CL)  
3917) LEAN CLAY, brown (CL)

Date Delivered: 6/20/17

**RESULTS:**

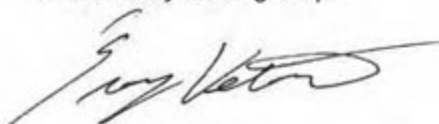
Test Method: ASTM D2487      Classification of Soils for Engineering Purposes  
ASTM D1140      Percent Material Finer than the No 200 Sieve  
ASTM D4318      Liquid Limit, Plastic Limit, and Plasticity Index of Soils

Sample Number	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

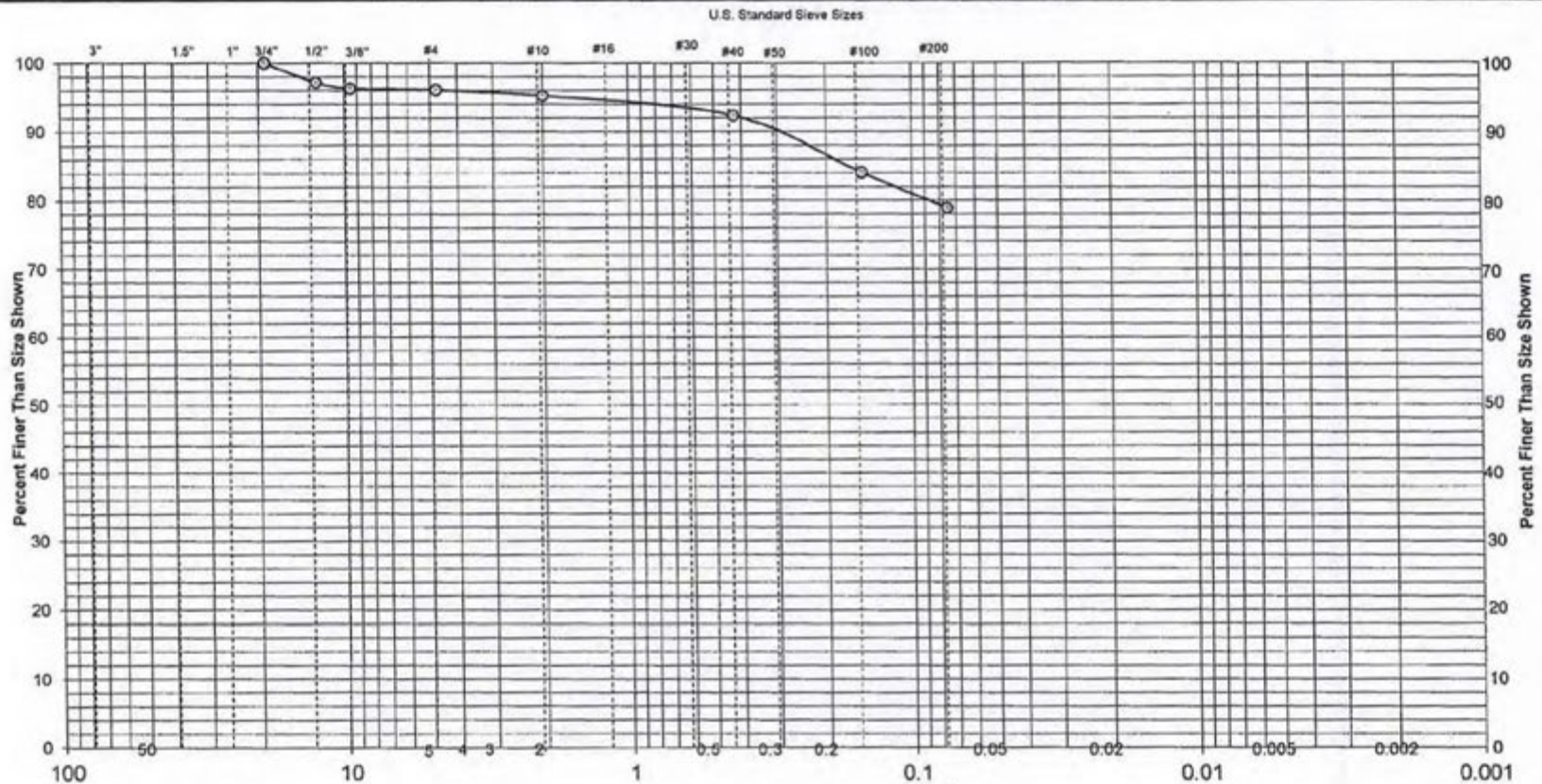
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	506.7

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:	<i>Robert R. Davis</i>
DATE REVIEWED:	10/26/17

Remarks:

# 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: Ledgerview 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		

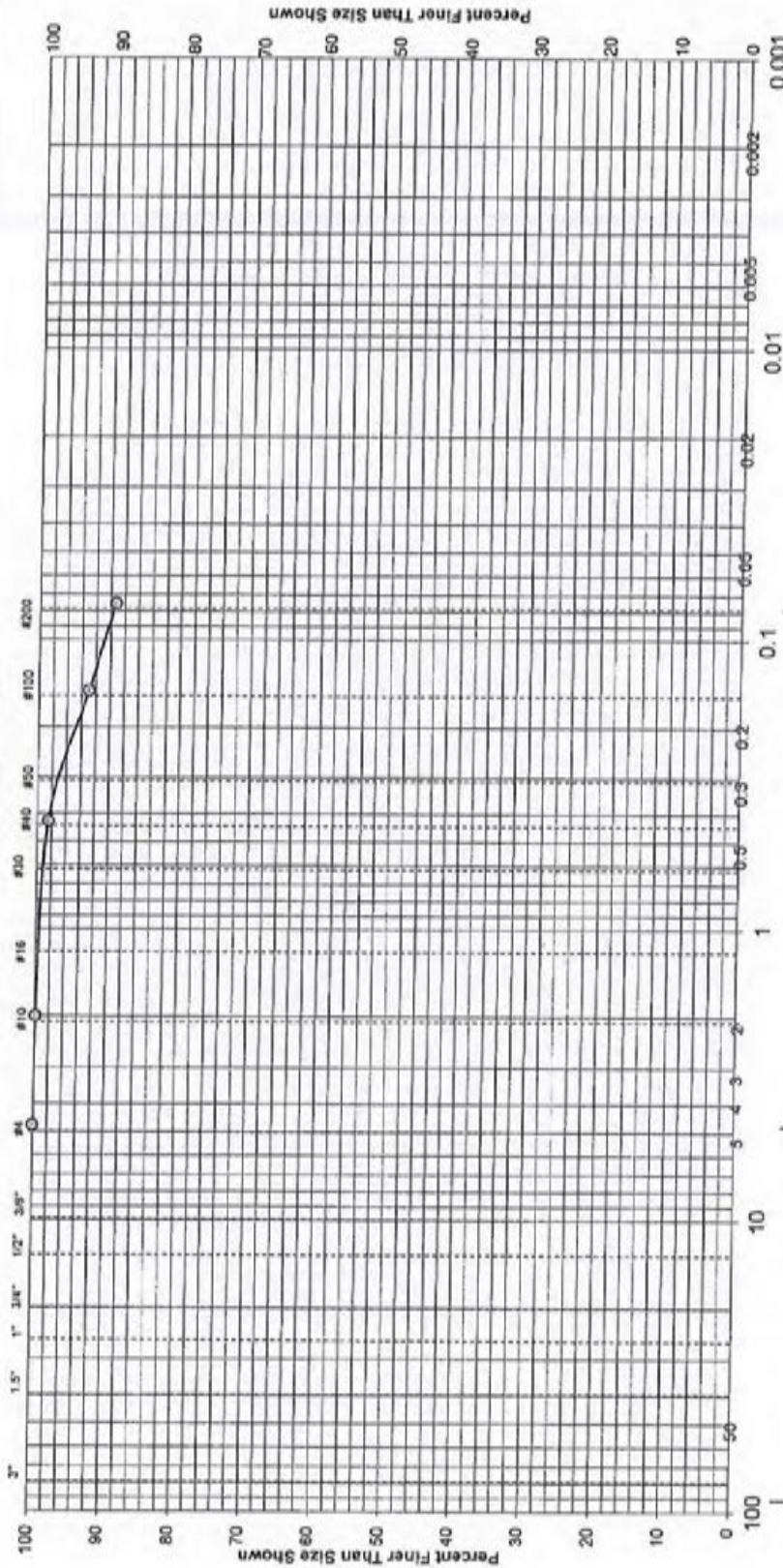
REVIEWED BY:	Robert A. Brown
DATE REVIEWED:	10/26/17

Remarks:



# GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Gravel		Sand		Silt - Clay	
Coarse		Medium			
Fine		Coarse			
		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.: TP-19-S1	
Sample Source: CQM, INC.					
Alterberg Limits: LL= 35.5		Client: Roach & Associates		Page: 2	
Munsell Color Code: 5YR 4/4		Project: Ledgerview Dairy		Date: 10/26/17	
Date Received: 10/13/17		Prepared by: Bob J. Peckers		Date: 10/26/17	
Coefficients: Cc=		Checked by: Robert R. Roach		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

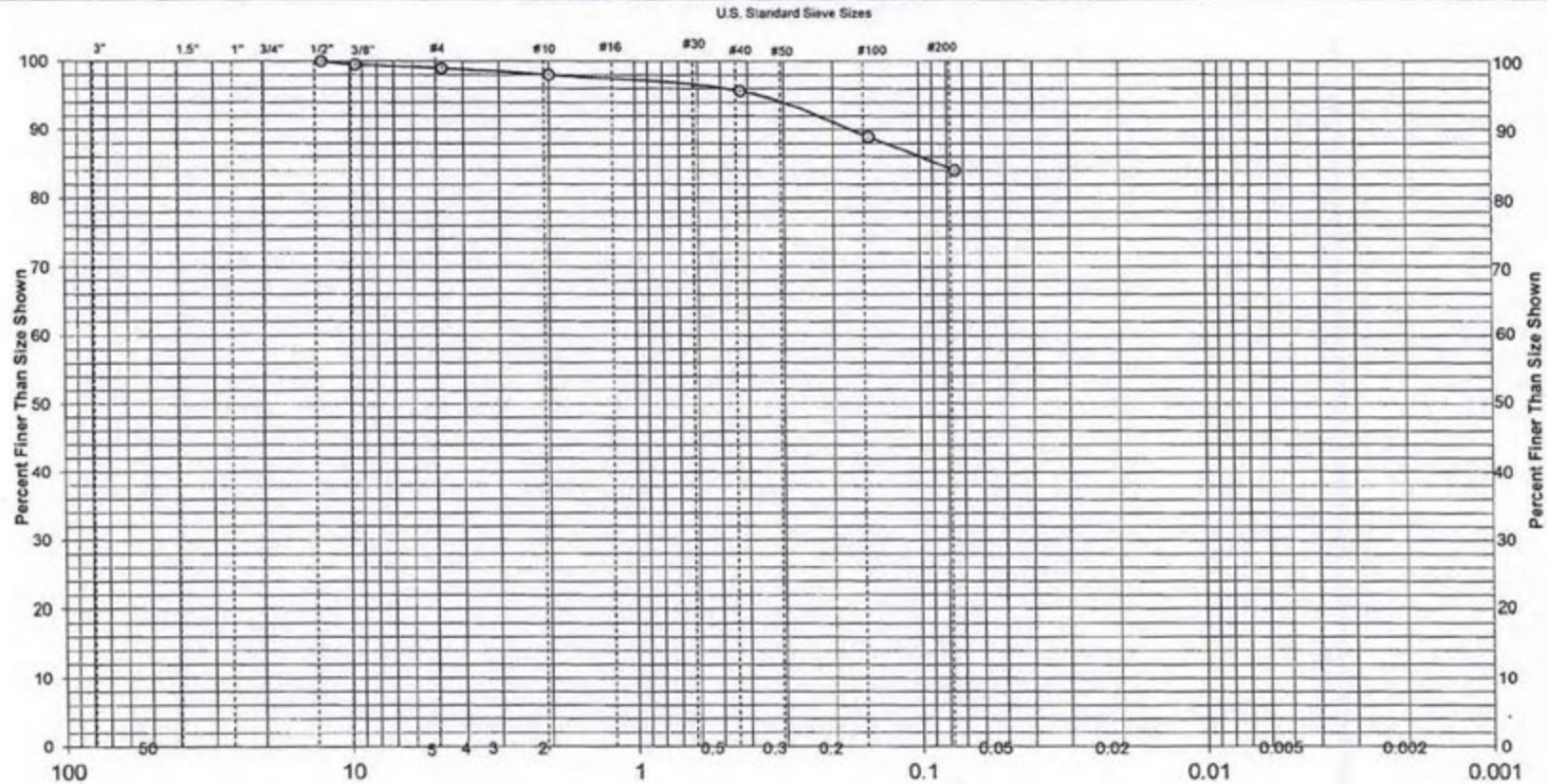
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	2.0	0.5	99.5		
#4	2.4	0.6	98.9		
#10	3.5	0.9	98.0		
#40	9.9	2.4	95.6		
#100	27.3	6.7	88.9		
#200	19.7	4.8	84.1		

REVIEWED BY:	Robert R. House
DATE REVIEWED:	10/26/17

Remarks:



# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt-Clay
Coarse	Fine	Coarse	Medium	Fine	
	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: Ledgerview 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

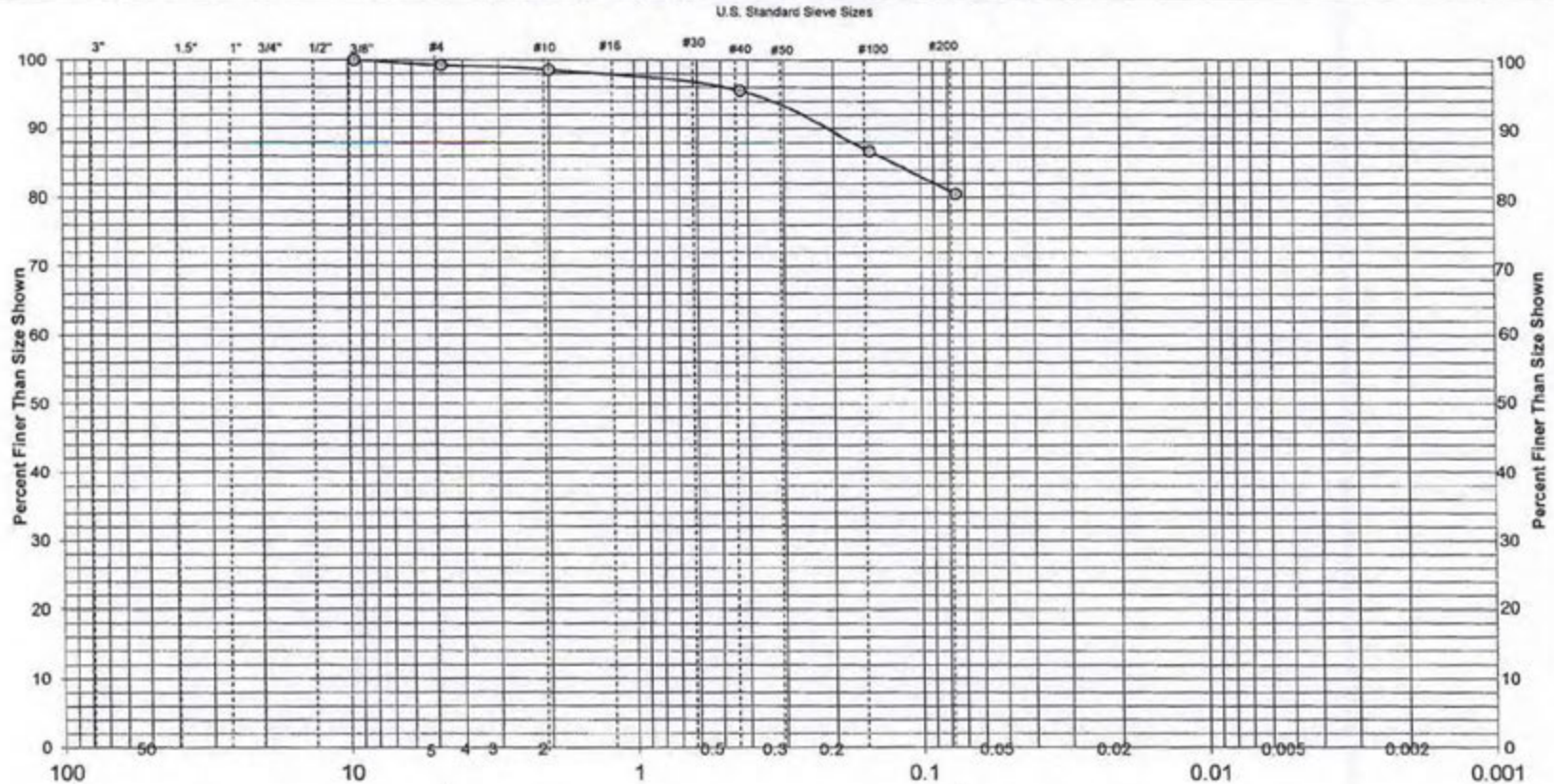
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	470.7

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:	<i>Robert R. Roach</i>
DATE REVIEWED:	10/26/17

Remarks:

# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt
Coarse	Fine	Coarse	Medium	Fine	
	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

Client: Roach & Associates

Munsell Color Code: 5YR 4/4

Project: Ledgerview Dairy

Page: 2

Date Received: 10/13/17

Prepared by: Bob J. Peeters

Date: 10/26/17

Coefficients: Co= Cu=

Checked by: Robert R. Down

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

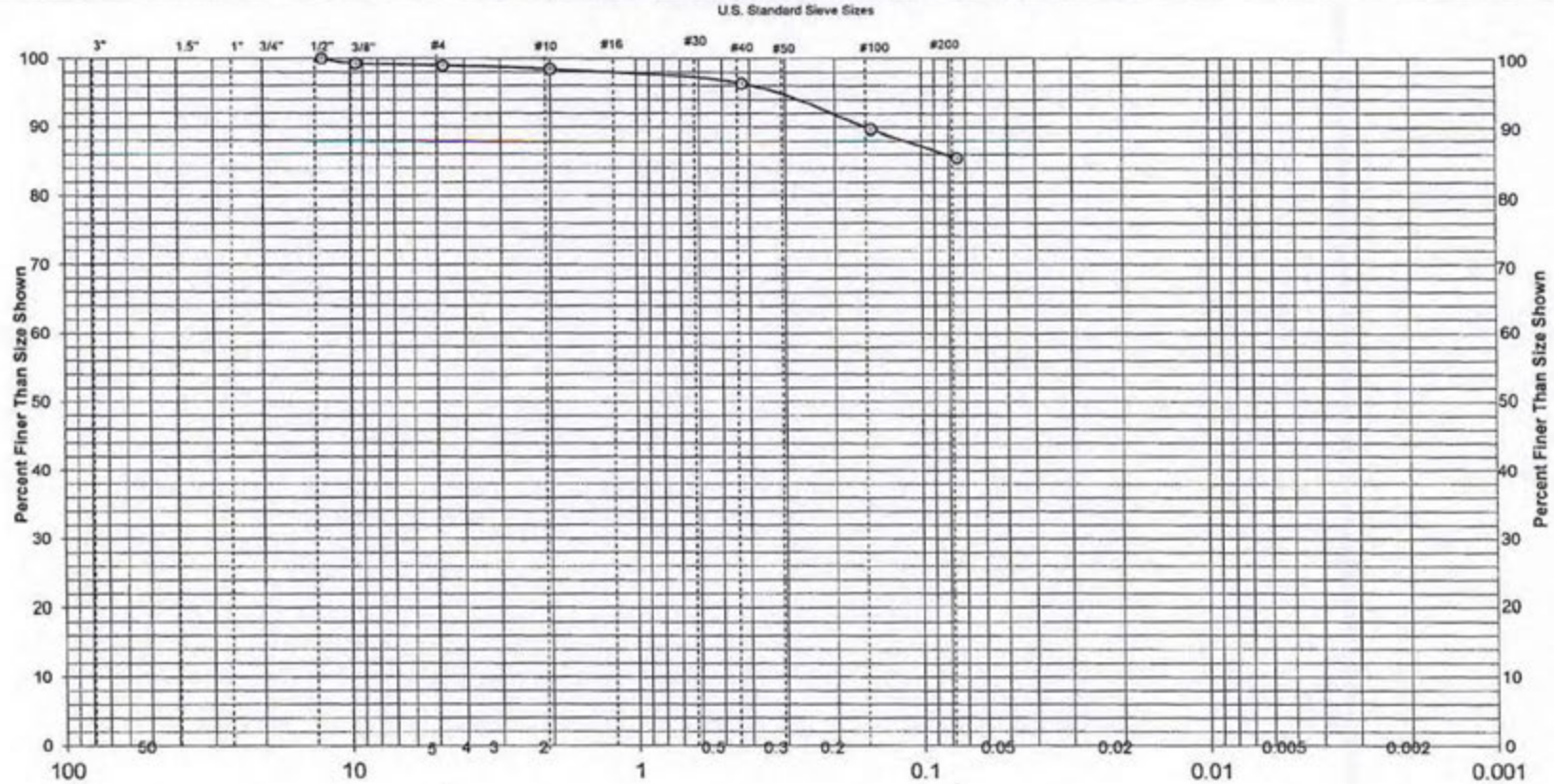
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	3.1	0.8	99.2		
#4	1.3	0.3	98.9		
#10	2.2	0.5	98.4		
#40	8.6	2.1	96.3		
#100	27.2	6.6	89.7		
#200	17.4	4.2	85.5		

REVIEWED BY:	Robert A. Roane
DATE REVIEWED:	10/26/17

Remarks:



# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	1.1%	0.5%	2.1%	10.8%	85.5%

Soil Classification: LEAN CLAY, reddish brown (CL)

Location Sampled: Test Pit 23

Sample Number: TP-23-S1

Sample Source:

Elevation or Depth:

Date Sampled: 10/11/17

Sampled Moisture Content (%): 17.8

Report No.: TP23-S1

**CQM, INC.**

Atterberg Limits:

LL= 41.3

PL= 16.1

PI= 25.2

Client: Roach & Associates

Munsell Color Code: 5YR 4/4

Project: Ledgerview 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

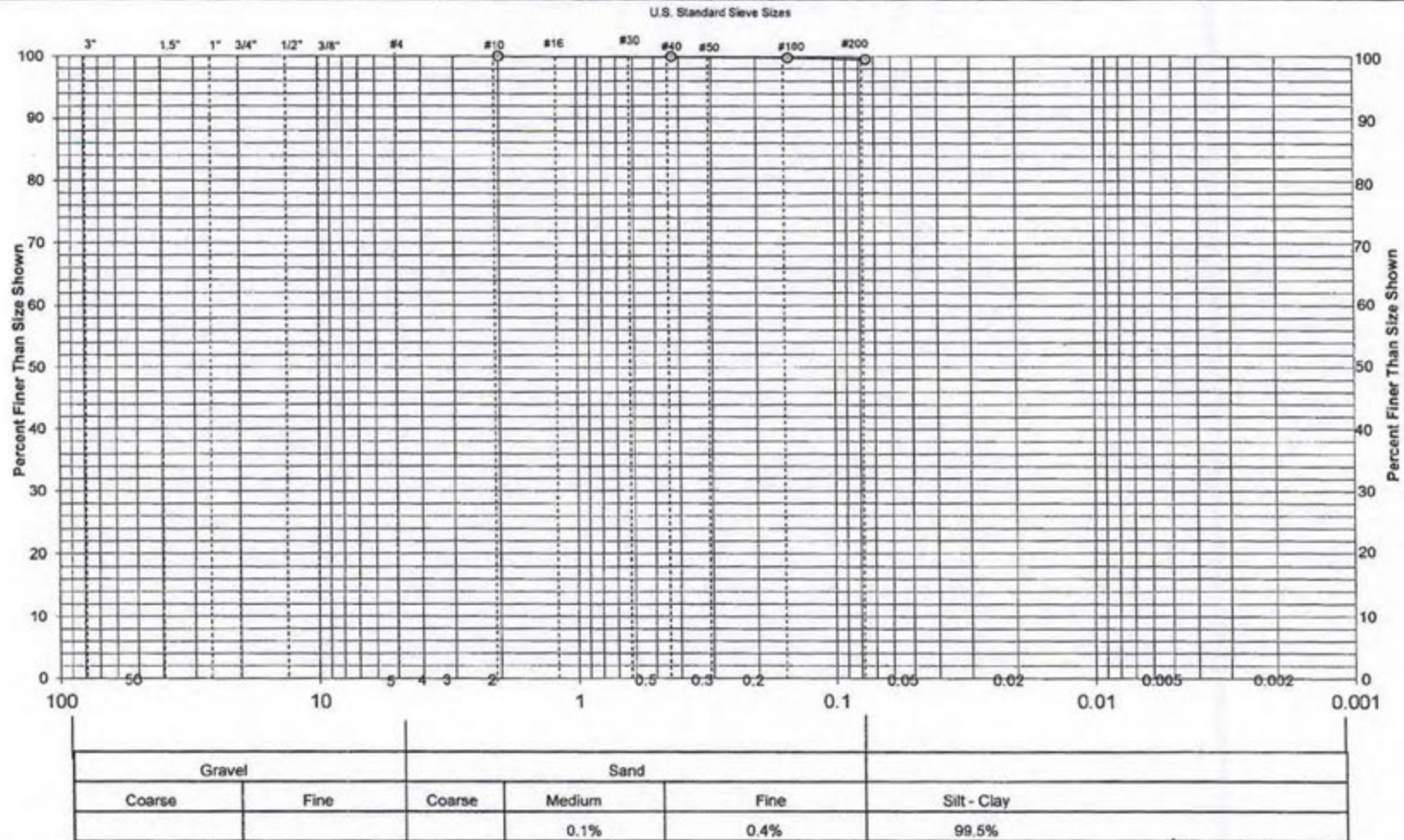
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"					
#4					
#10	0.0	0.0	100.0		
#40	0.3	0.1	99.9		
#100	0.8	0.2	99.7		
#200	0.8	0.2	99.5		

REVIEWED BY:	Robert R. Roach
DATE REVIEWED:	10/26/17

Remarks:



# GRAIN SIZE DISTRIBUTION CURVE



Soil Classification: LEAN CLAY, reddish brown (CL)

Location Sampled: Test Pit 23

Sample Number: TP-23-S2

Sample Source:

Elevation or Depth:

Date Sampled: 10/11/17

Sampled Moisture Content (%): 22.9

Report No.: TP23-S2

**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

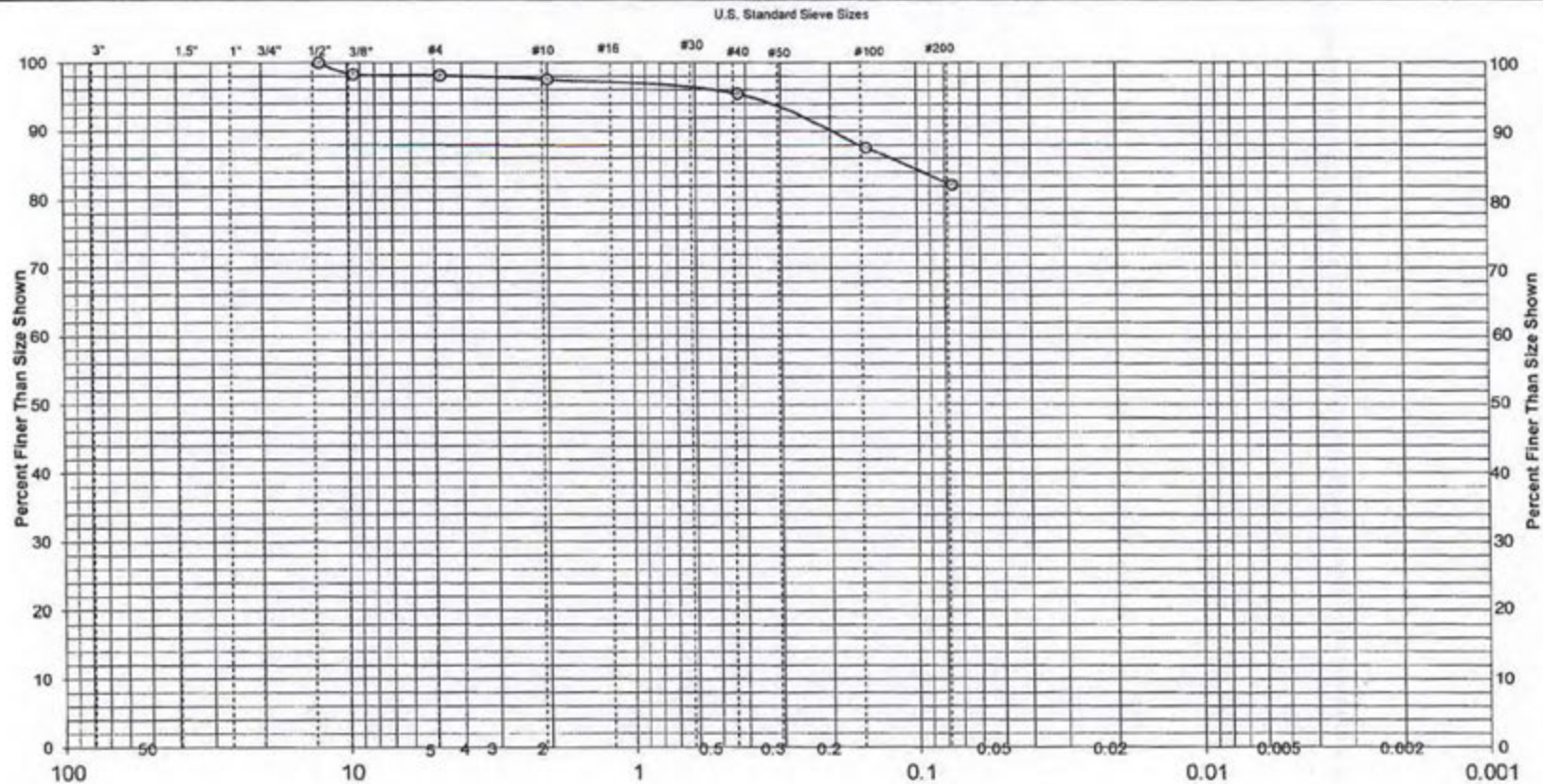
Dry Weight of Soil (gms): 376.3

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 A. Preece
DATE REVIEWED:	10/26/17

Remarks:

# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	1.9%	0.6%	2.1%	13.2%	82.2%

Soil Classification: LEAN CLAY W/SAND, red (CL)

Location Sampled: Test Pit 54

Sample Number: TP-54 S-1

Sample Source:

Elevation or Depth:

Date Sampled: 10/19/17

Sampled Moisture Content (%): 17.2

Report No.: TP54-S1

**CQM, INC.**

Atterberg Limits:

LL= 38.7

PL= 16.9

PI= 21.8

Client: Roach & Associates

Munsell Color Code: 2.5YR 4/8

Project: Ledgerview Dairy

Page: 2

Date Received: 10/20/17

Prepared by: Bob J. Peeters

Date: 10/26/17

Coefficients: Cc=

Cu=

Checked by:

*Robert R. Brown*

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

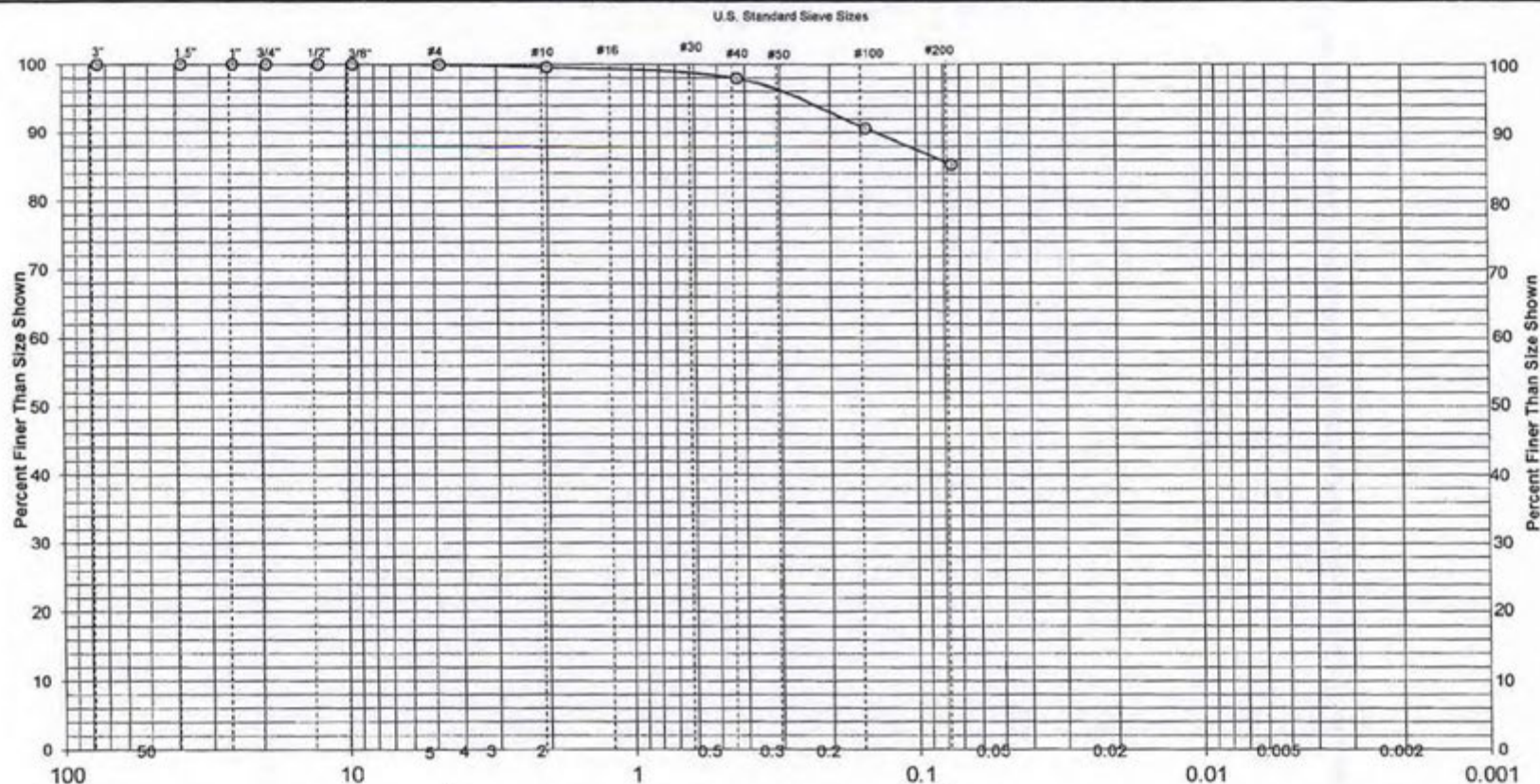
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	0.3	0.1	99.9		
#10	1.5	0.4	99.5		
#40	6.1	1.6	97.9		
#100	28.3	7.3	90.6		
#200	20.7	5.3	85.3		

REVIEWED BY:	Robert R. House
DATE REVIEWED:	10/26/17

Remarks:



# 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. Roach*

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

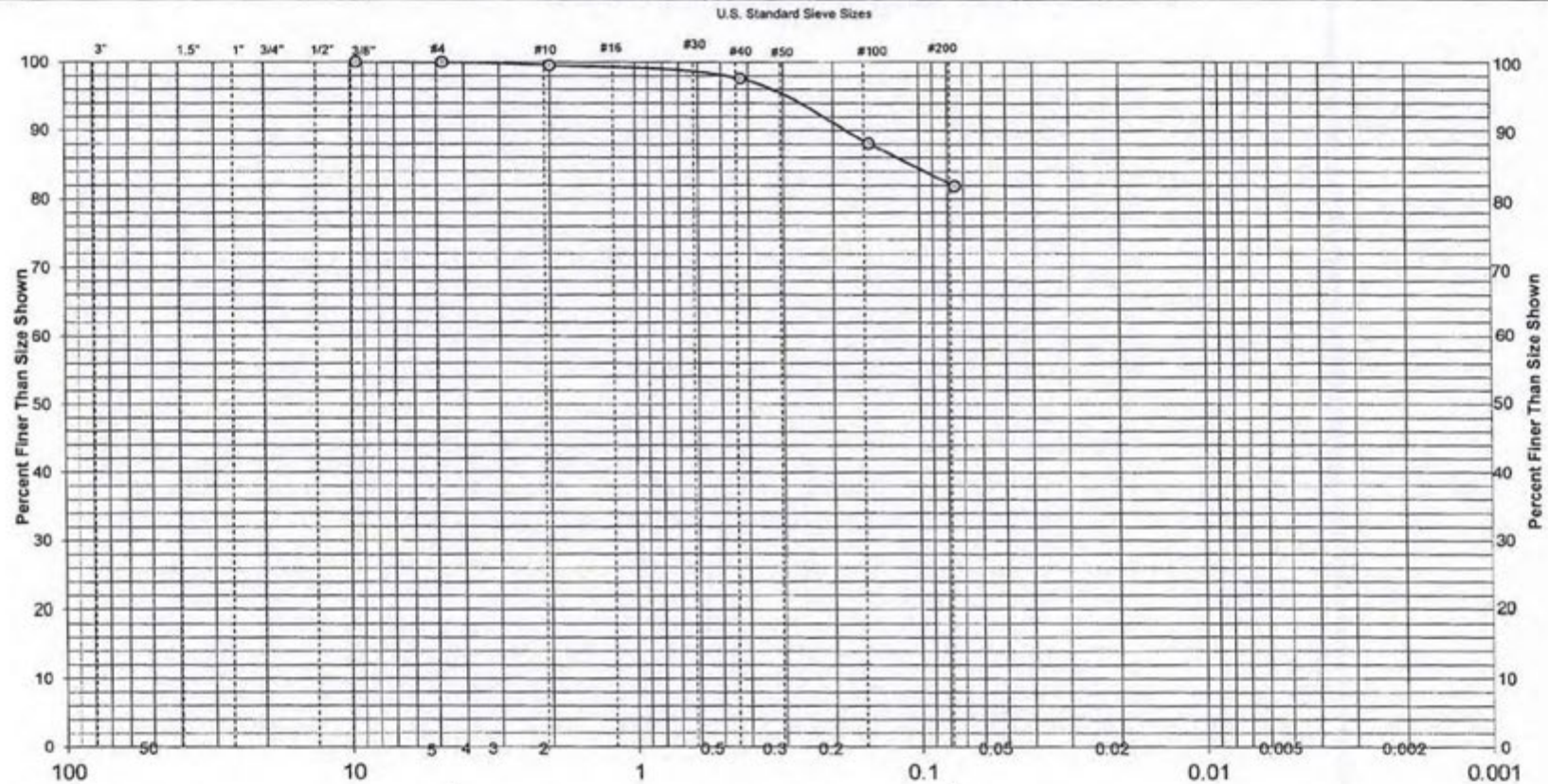
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	0.2	0.1	99.9		
#10	1.6	0.4	99.5		
#40	7.0	1.9	97.6		
#100	34.3	9.5	88.1		
#200	22.3	6.2	81.9		

REVIEWED BY:	Robert R. Pounce
DATE REVIEWED:	10/26/17

Remarks:



# 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 L. 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

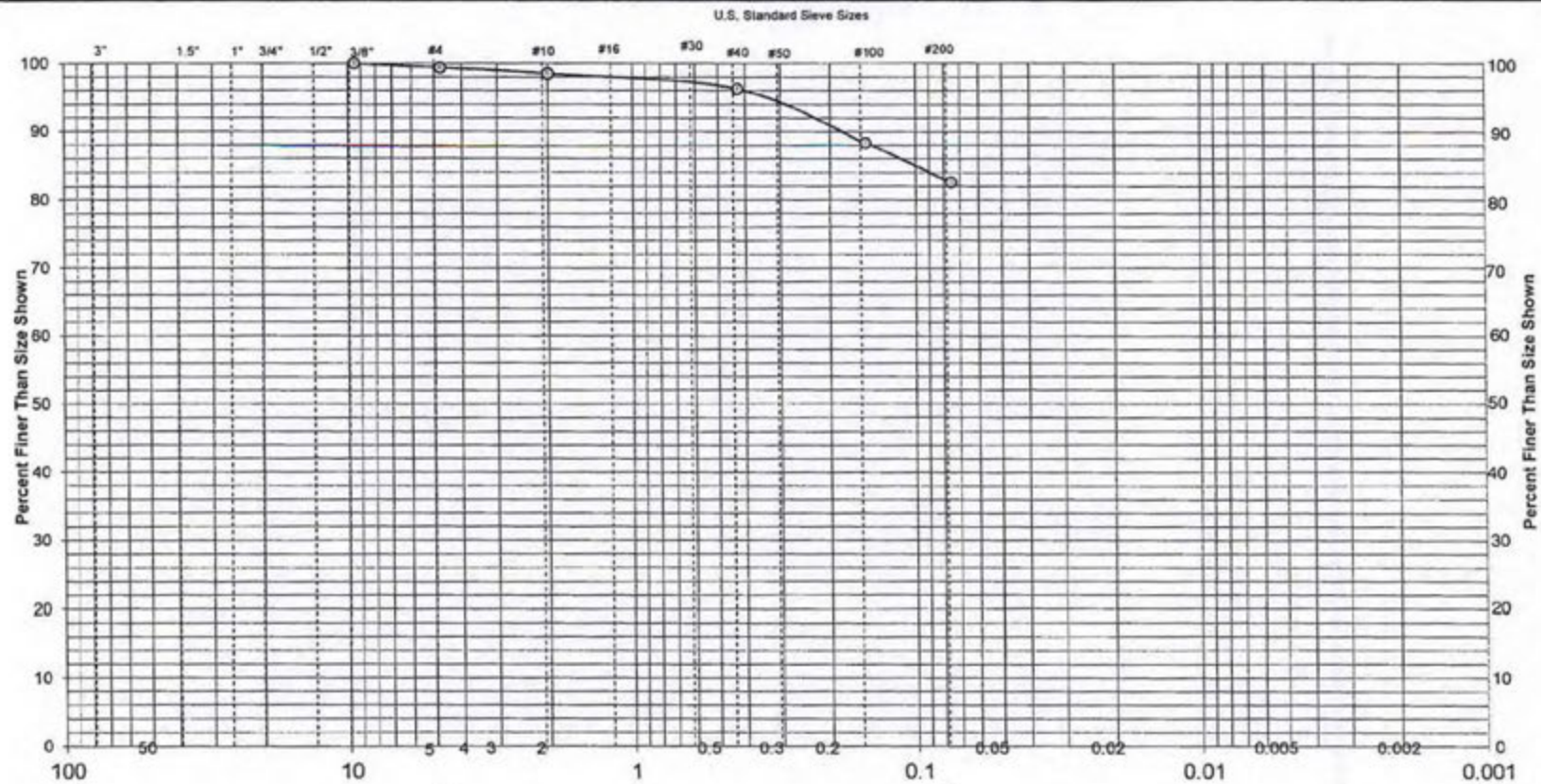
Dry Weight of Soil (gms): 403.1

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. House
DATE REVIEWED:	10/26/17

Remarks:

# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	0.6%	0.9%	2.3%	13.6%	82.6%

Soil Classification: LEAN CLAY, reddish yellow (CL)

Location Sampled: Test Pit 59

Sample Number: TP-59 S-1

Sample Source:

Elevation or Depth:

Date Sampled: 10/19/17

Sampled Moisture Content (%): 15.9

Report No.: TP59-S1

**CQM, INC.**

Atterberg Limits:

LL= 45.2

PL= 16.3

PI= 28.9

Client: Roach & Associates

Munsell Color Code: 5YR 6/6

Project: Ledgerview Dairy

Page: 2

Date Received: 10/20/17

Prepared by: Bob J. Peeters

Date: 10/26/17

Coefficients: Cc=

Cu=

Checked by:

*Robert R. Pouse*

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:	<input type="checkbox"/> NO
Washed Gradation:	<input checked="" type="checkbox"/> YES
Dry Weight of Soil (gms):	368.0

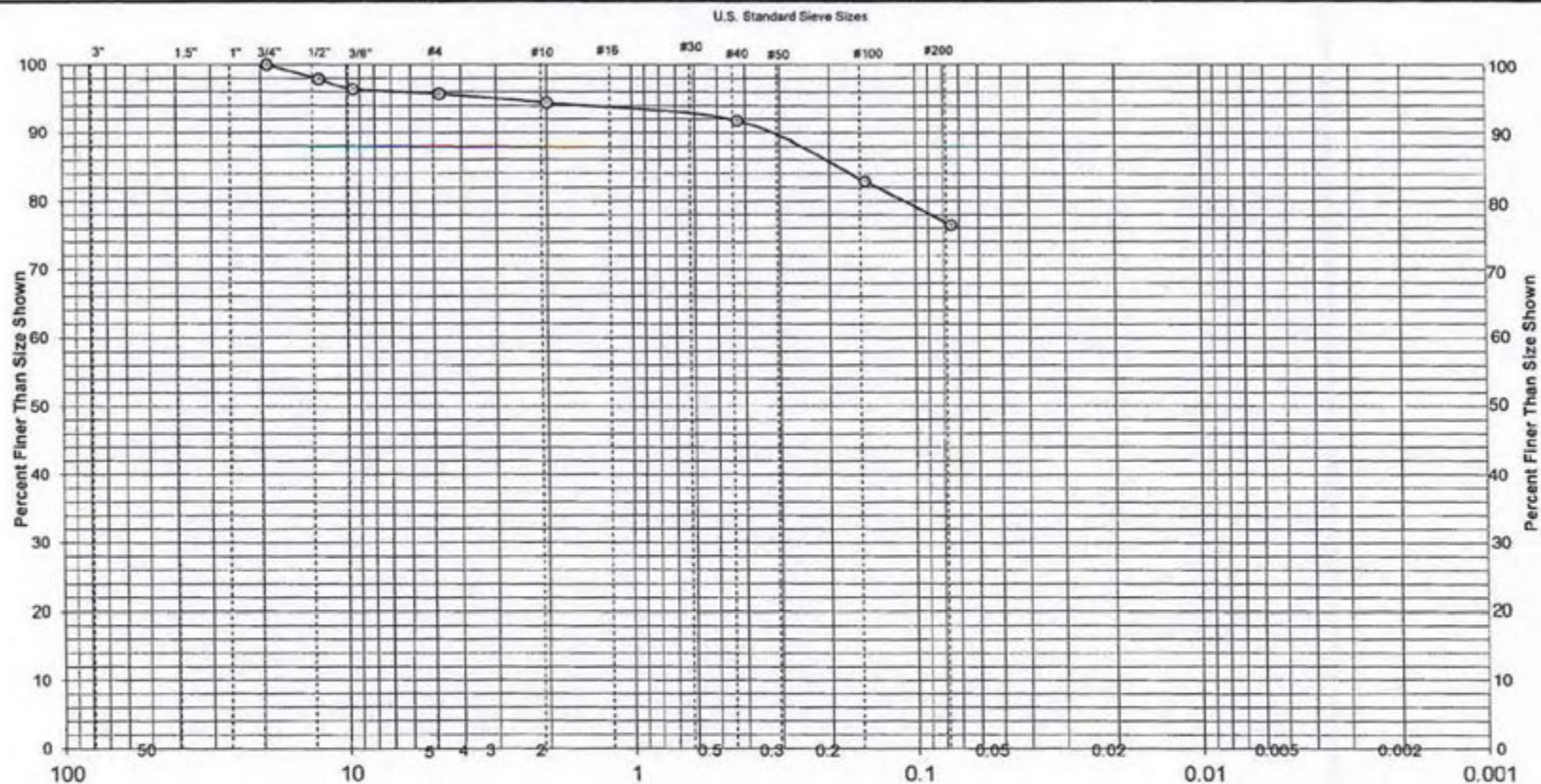
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	7.9	2.1	97.9		
3/8"	5.7	1.5	96.4		
#4	2.5	0.7	95.7		
#10	4.8	1.3	94.4		
#40	10.0	2.7	91.7		
#100	32.3	8.8	82.9		
#200	23.6	6.4	76.5		

REVIEWED BY:	Robert R. Rouse
DATE REVIEWED:	10/26/17

Remarks:



# GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt - Clay
Coarse	Fine	Coarse	Medium	Fine	
	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. Roach*

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

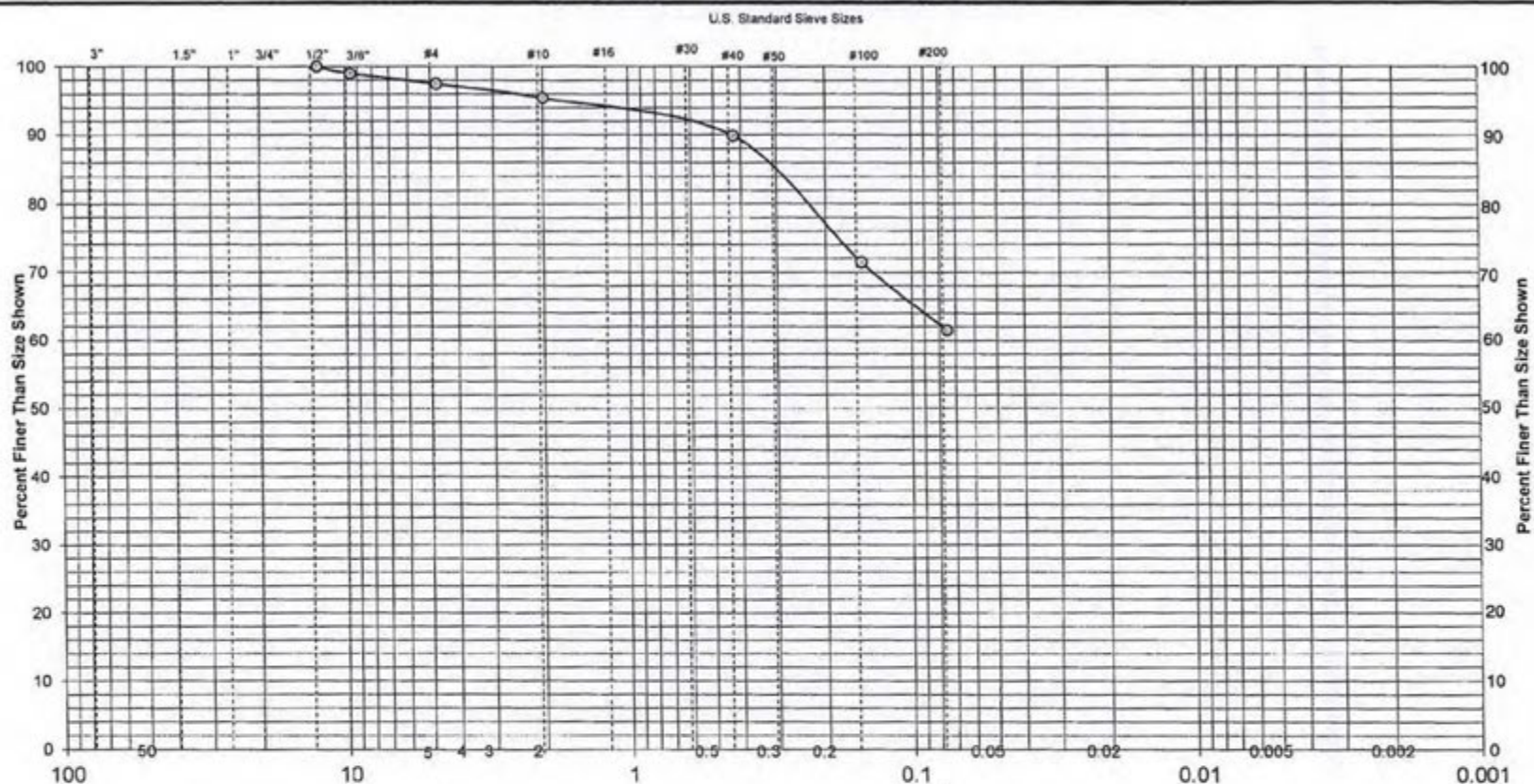
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	4.6	1.1	98.9		
#4	5.9	1.4	97.5		
#10	9.0	2.1	95.4		
#40	24.2	5.6	89.8		
#100	79.1	18.4	71.4		
#200	42.4	9.9	61.5		

REVIEWED BY:	<i>Robert R. Roach</i>
DATE REVIEWED:	10/26/17

Remarks:



# 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

Sample Number: LV-CF-1

Sample Source:

Elevation or Depth:

Date Sampled: 10/11/17

Sampled Moisture Content (%): 15.0

Report No.: CF-1

**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 A. Roach*

Date: 10/26/17



---

## Exhibit 6



## Ledgeview Heifer Farm-Wetlands Map



### Legend

#### Wetland Class Points

- Dammed pond
- Excavated pond
- Filled excavated pond
- Filled/draind 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

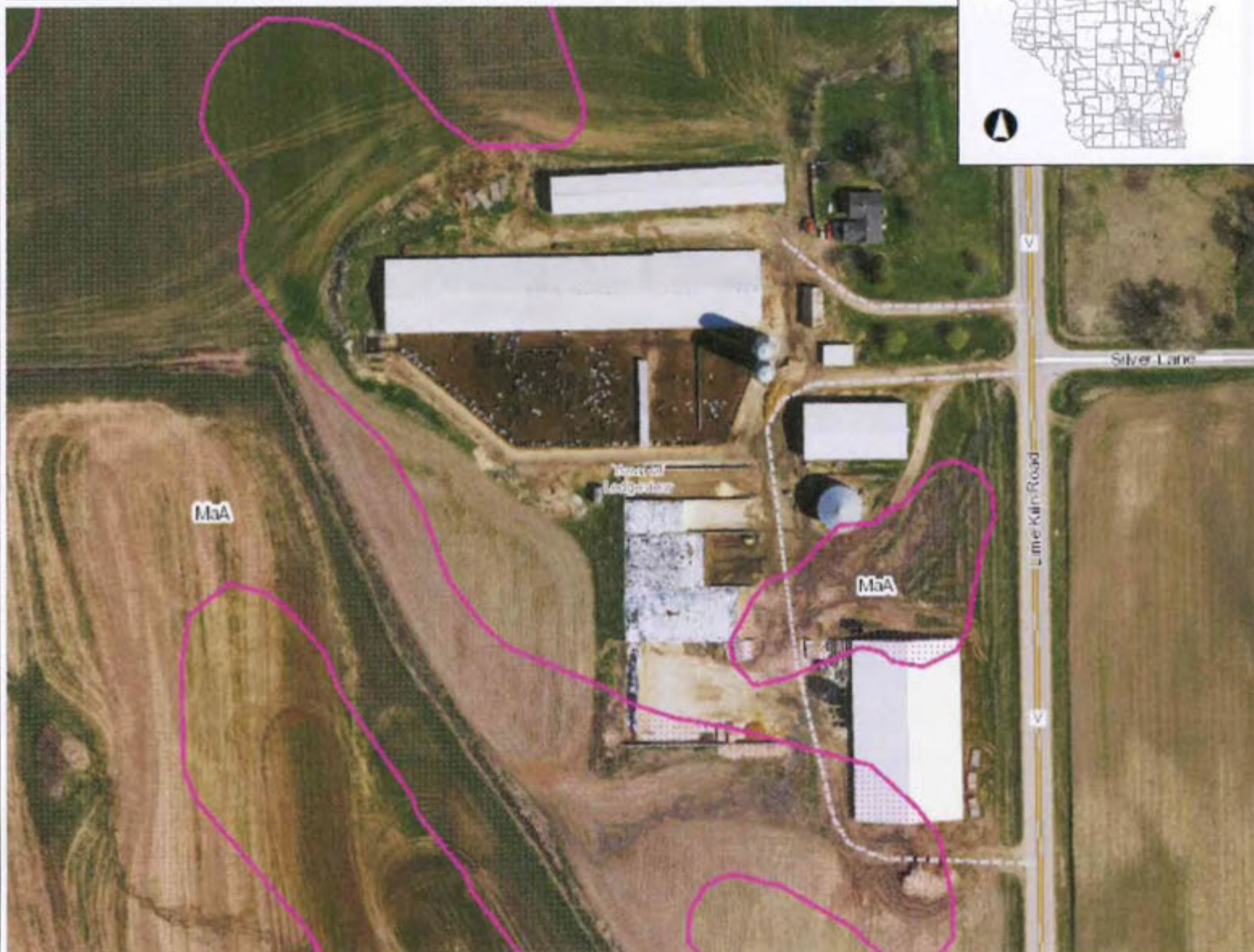
#### Tribal Lands

#### Rivers and Streams

#### Intermittent Streams

#### Lakes and Open water

#### Index to EN\_Image\_Basemap\_Leaf\_ Off



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/>

### Notes





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](mailto: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.

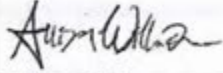
If you are planning development on the property, you are required to avoid take of endangered and threatened species, or obtain an incidental take authorization or permit, to comply with the state's Endangered Species Law. To insure compliance with the law, you should submit an endangered resources review 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](mailto: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







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## Exhibit 7



**WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH**  
See Instructions on Reverse Side

1. County Brown Town ☒ De Pere  
Village ☐ City ☐ T23N Check one and give name
2. Location NE, S.W. 1/4 of the N.W. 1/4 of Sec. 33, T. 23N, 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 50 ft; drain 50 ft; septic tank 50 ft;  
dry well or filter bed 50 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	78 1/2			
6	78 1/2	174			

**8. CASING AND LINER PIPE OR CURBING:**

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	Standard Weight		
	Steel Pipe -- welded joints	0	78 1/2

**9. GROUT:**

Kind	From (ft.)	To (ft.)
Puddled Clay	0	4
Neat Cement	4	78 1/2

**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. on Dec. 15 1949  
City

**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

Signature Gleason Well Drilling Co.  
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 \_\_\_\_\_





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

DEC 30 1975 BN-1051-U  
STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
Box 450  
Madison, Wisconsin 53701

COUNTY <u>Brown</u>		CHECK ONE <input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City		NAME <u>De Pere</u>	
2. LOCATION - 1/4 Section <u>SE, SW, NE</u> Section <u>32</u> Township <u>23N</u> Range <u>21E</u>		3. OWNER AT TIME OF DRILLING <u>Dennis Parzies</u>			
OR - Grid or street no in 1992 = 3701		Street name <u>Hwy G, Dickinson</u>		ADDRESS <u>Rt 1</u>	
AND - If available subdivision name, lot & block no		POST OFFICE <u>De Pere, Wis.</u>			
4. Distance in feet from well to nearest:		BUILDING		SANITARY SEWER	
(Record answer in appropriate block)		C.I. <u>12</u>		TILE <u>-</u>	
		FLOOR DRAIN		FOUNDATION DRAIN	
		C.I. <u>-</u>		SEWER CONNECTED/INDEPENDENT <u>11</u>	
		WASTE WATER DRAIN		C.I. <u>-</u>	
		TILE <u>-</u>			
CLEAR WATER DRAIN		SEPTIC TANK		PRIVY	
C.I. <u>-</u>		TILE <u>-</u>		SEEPAGE PIT	
		<u>40</u>		ABSORPTION FIELD	
				BARN	
				SILO	
				ABANDONED WELL	
				SINK HOLE	

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

5. Well is intended to supply water for:

6. DRILLHOLE

Dia (in)	From (ft)	To (ft)	Dia (in)	From (ft)	To (ft)
10	Surface	61	6	61	130

9. FORMATIONS

Kind	From (ft)	To (ft)
clay	Surface	50
boulders & clay	50	61
shale rock	61	130

7. CASING, LINER, CURBING, AND SCREEN

Dia (in)	Kind and Weight	From (ft)	To (ft)
2	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

10. TYPE OF DRILLING MACHINE USED

<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Direct Rotary	<input type="checkbox"/> Reverse Rotary
<input type="checkbox"/> Rotary - air w/drilling mud	<input checked="" type="checkbox"/> Rotary - hammer with drilling mud & air	<input type="checkbox"/> Jetting with <input type="checkbox"/> Air <input type="checkbox"/> Water

11. MISCELLANEOUS DATA

Yield test: <u>4</u> Hrs. at <u>2</u> GPM	Well construction completed on <u>October 14</u> 19 <u>75</u>
Depth from surface to normal water level <u>23</u> ft.	Well is terminated <u>8</u> inches <input checked="" type="checkbox"/> above <input type="checkbox"/> below final grade
Depth to water level when pumping <u>23</u> ft.	Well disinfected upon completion <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Well sealed watertight upon completion <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Water sample sent to Madison laboratory on: December 2, 19 75

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 <u>Leonard Willens</u>	COMPLETE MAIL ADDRESS <u>Rt 1 De Pere Wis.</u>
Registered Well Driller	

Please do not write in space below

CC	GAS - 24 HRS	GAS - 48 HRS	CONFIRMED	REMARKS
----	--------------	--------------	-----------	---------

RE BN 3 9 3 4

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## Exhibit 8



**Exhibit 8-1****Waste Storage Facility Summary-Annual Storage Period  
Leachate, Runoff Generation and Storage Capacity  
Ledgewood Farm**

Source	Volume		Comments
	(ft <sup>3</sup> )	(gallons)	
<b>Waste Generation</b>			
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
<b>Sub-total</b>	<b>2,850,376</b>	<b>21,320,809</b>	
<b>Net Precipitation**</b>			
WSF 1	111,303	832,546	
WSF 2	351,609	2,630,038	
<b>Sub-total</b>	<b>462,912</b>	<b>3,462,583</b>	
<b>Total Waste Gnerated</b>	<b>3,313,288</b>	<b>24,783,392</b>	
<b>Waste Stored Above the MOL</b>			
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
<b>Total Waste Above MOL</b>	<b>59,958</b>	<b>448,487</b>	
<b>Waste Storage Facilities***</b>			
WSF 1	669,334	5,006,618	
WSF 2	1,971,800	14,749,062	
<b>Total Storage Volume</b>	<b>2,641,134</b>	<b>19,755,680</b>	
<b>Storage Capacity Evaluation</b>			
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	ft <sup>3</sup>	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

Elevation	WSF			
	Area ft <sup>2</sup> (from AutoCAD)	Volume ft <sup>3</sup>	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. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
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)

## MANURE AND WASTEWATER

LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
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

Total Manure and Wastewater  
 Expected % solids in waste (Includes runoff and precip.)

2,859,483	GALLONS
382,284	CU FT
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 <sup>2</sup>
Existing FSA	varies	varies	93,253
			-
			-
			-
Total Area With Apron			93,253 ft <sup>2</sup>
Total Area With Apron			2.1 Acres
Total Feed Storage Area Less Apron			93,253 ft <sup>2</sup>

## Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (default)	60	lbs/ft <sup>3</sup>
Silage Volume	33,571	tons

## Calculated Annual Leachate Volume

Silage Stored	33,571	tons
Leachate Volume Generated per Ton	0.5	ft <sup>3</sup> /ton
Annual Leachate Generated	16,786	ft <sup>3</sup>
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 <sup>3</sup> /day

## Calculated First Flush Runoff Generation

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

## Total Annual Leachate & First Flush Volume

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 <sup>3</sup> /day
1st Flush Volume	-	ft <sup>3</sup> /event
<b>Total Design Volume</b>	<b>560</b>	<b>ft<sup>3</sup></b>

20.72

Summary		
Annual Leachate Generated	16,786	ft <sup>3</sup>
Annual First Flush Runoff Generated	-	ft <sup>3</sup>
Total Annual Volume to Store	16,786	ft <sup>3</sup>
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

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(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  
Ledgerview Dairy

Month	Y1 Runoff Volume*		Runoff Volume to WSF	
	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(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*		Area ft <sup>2</sup>
	Length	Width	
FSA Home Farm	170	55	9,350
			-
			-
			-
			-
Total Area With Apron			9,350 ft <sup>2</sup>
Total Area With Apron			0.2 Acres
Total Feed Storage Area Less Apron			9,350 ft <sup>2</sup>

## Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (default)	60	lbs/ft <sup>3</sup>
Silage Volume	3,366	tons

## Calculated Annual Leachate Volume

Silage Stored	3,366	tons
Leachate Volume Generated per Ton	0.5	ft <sup>3</sup> /ton
Annual Leachate Generated	1,683	ft <sup>3</sup>
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 <sup>3</sup> /day

## Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	9,350	ft <sup>2</sup>
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft <sup>3</sup> /event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft <sup>3</sup>
Total Annual First Flush Volume Generated	-	gal

## Total Annual Leachate & First Flush Volume

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 <sup>3</sup> /day
1st Flush Volume	-	ft <sup>3</sup> /event
<b>Total Design Volume</b>	<b>56</b>	<b>ft<sup>3</sup></b>

2.08

Summary		
Annual Leachate Generated	1,683	ft <sup>3</sup>
Annual First Flush Runoff Generated	-	ft <sup>3</sup>
Total Annual Volume to Store	1,683	ft <sup>3</sup>
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 Headquarters 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

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(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

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft <sup>3</sup> )	(gallons)	(ft <sup>3</sup> )	(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		Discharge Pressure		TDH		TDH	
						Min (ft)	Max (ft)	(ft)	(psi)	Min (ft)	Max (ft)	Min (psi)	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		Discharge Pressure		TDH		TDH	
						Min (ft)	Max (ft)	(ft)	(psi)	Min (ft)	Max (ft)	Min (psi)	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 <sup>2</sup> (from AutoCAD)	Volume ft <sup>3</sup>	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 P

Client: Ledgerview Farm

Date: 11/28/2017

By: TJS

Existing Feed Pad	FSA Existing & Proposed
Subbasin	
Area (mi <sup>2</sup> )	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

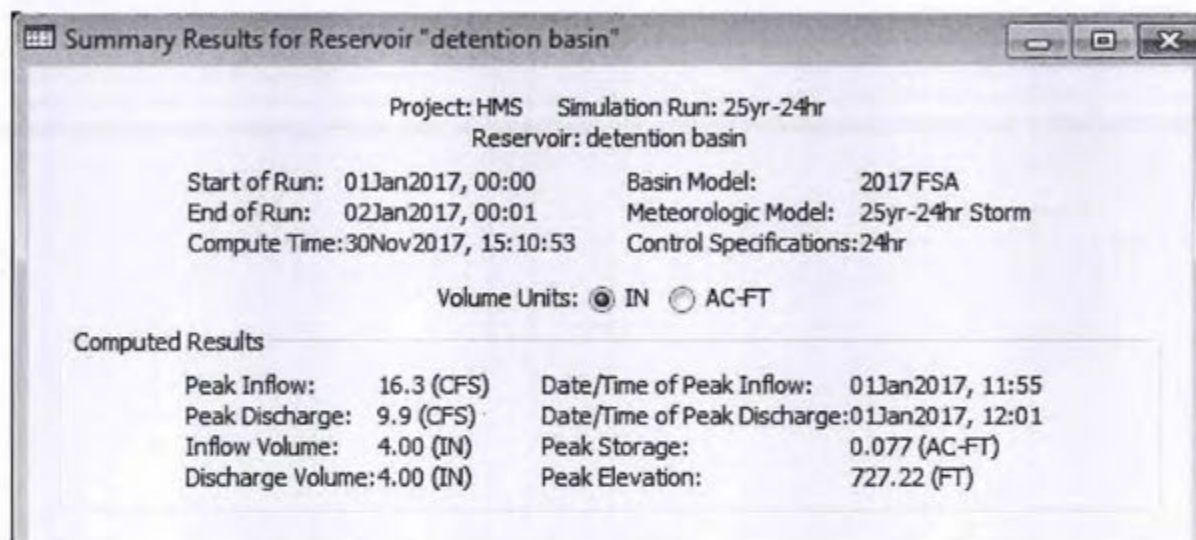


Figure 1. HEC-HMS Results, Equalization Basin, Volume Units - Inches

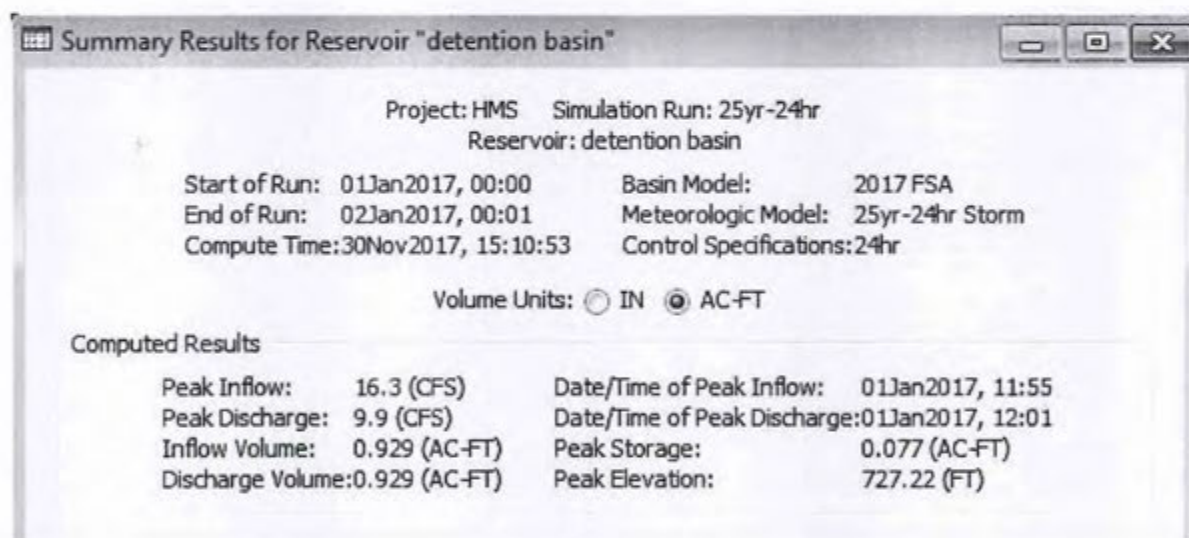


Figure 2. HEC-HMS Results, Equalization Basin, Volume Units - Acre-Feet

## Exhibit 10-2: Feed Pad Runoff, HEC-HMS Results

Client: Ledgeview Farm, LLC

Date: 11/29/2017

By: TJS

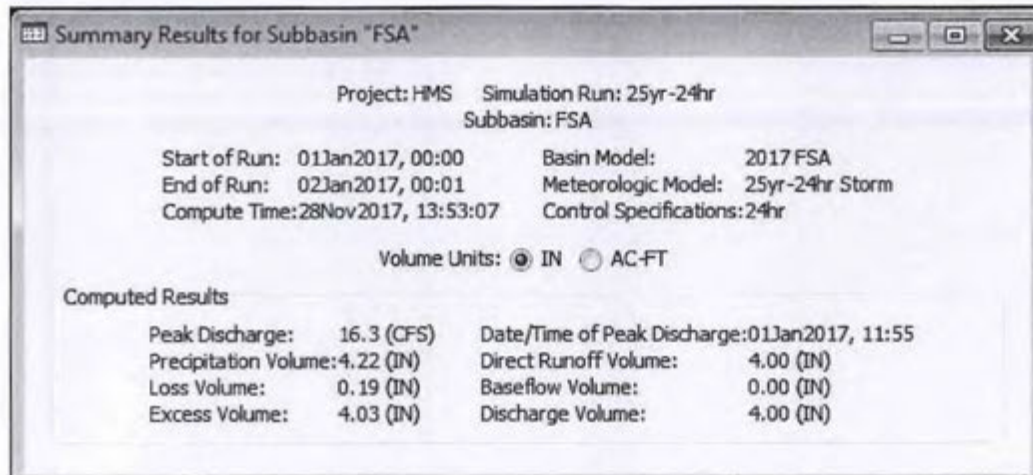


Figure 1. HEC-HMS Results, Peak Discharge from Feed Pad, Volume Units – Inches



Figure 2. HEC-HMS Results, Peak Discharges, Volume Units – acre-feet



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## 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	Phil Danen	920-336-3360
Town of Ledgeview		
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

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## 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.

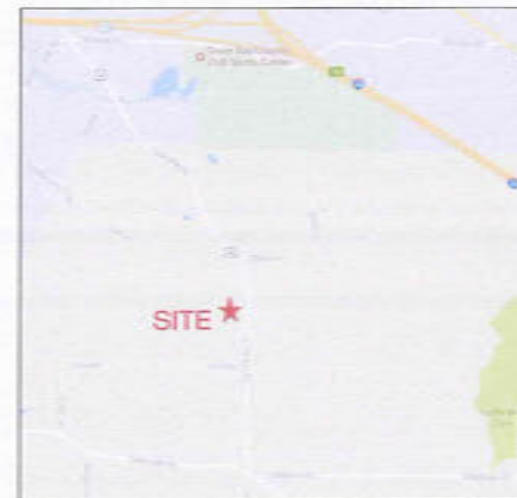
\_\_\_\_\_  
Owner Date

\_\_\_\_\_  
Contractor Date





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
- WETLAND (DELINEATED)
- DITCH CHECK
- TEST PIT
- WELL
- BENCH MARK

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)

LEDGEVIEW FARM, LLC  
2018 WASTE STORAGE FACILITY AND RUNOFF  
MANAGEMENT SYSTEMS

3688 LIME KILN ROAD  
DE PERE, WI  
BROWN COUNTY

PLAN TABLE OF CONTENTS

SHEET #	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	WASTE STORAGE FACILITY PLAN
4	WASTE STORAGE FACILITY PROFILES
	1: PLAN - WASTESTOP 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: WASTESTOP JOINT DETAIL
	2: WASTESTOP INSTALLATION DETAIL
	3: DEPTH GAUGE DETAIL
	4: FENCE DETAIL
	5: PIPE PENETRATION DETAIL



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 J. Fox*

Date 11/2/18

DATE	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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.

811

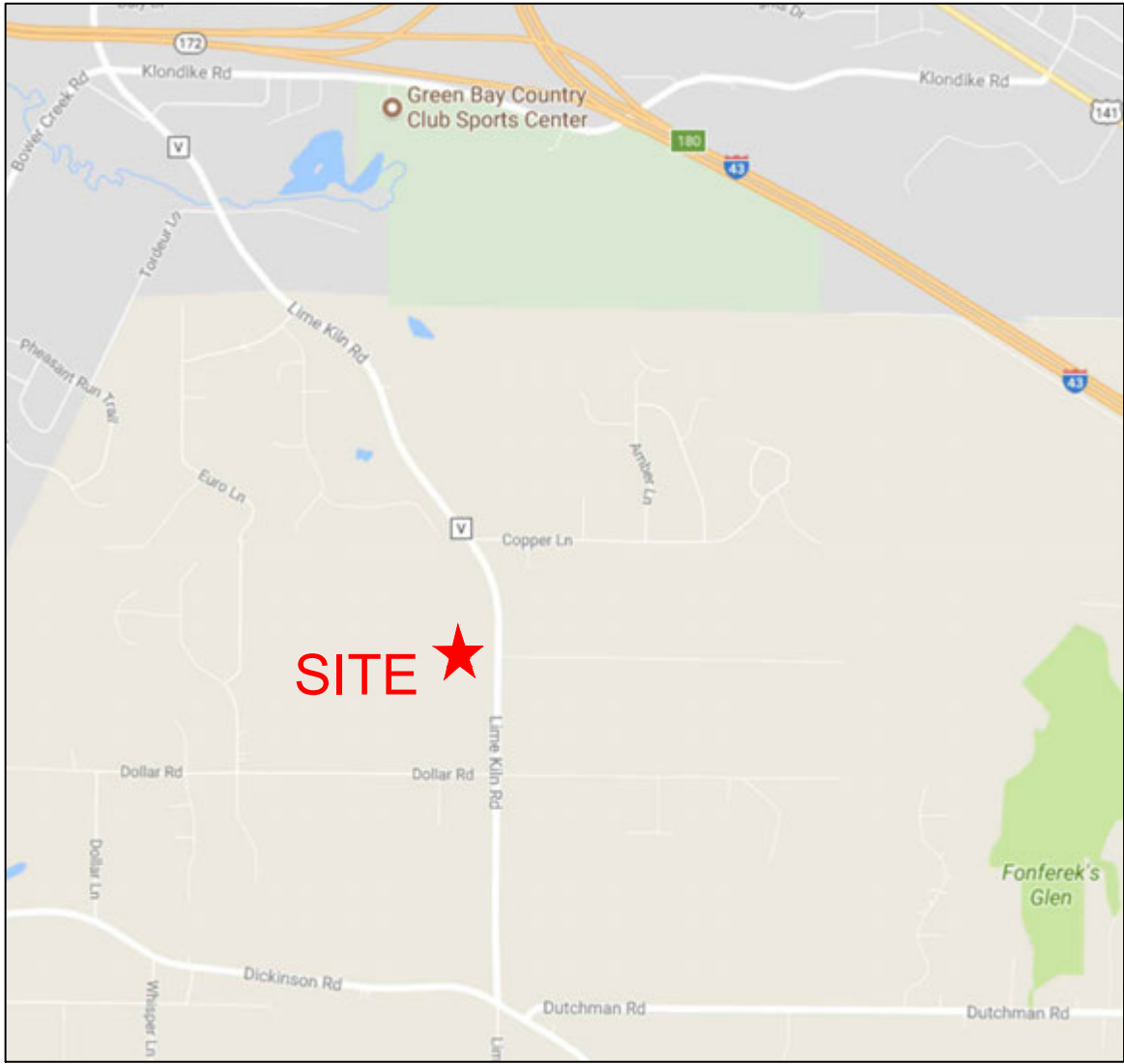
OFFICE USE ONLY

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

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)

LEDGEVIEW FARM, LLC  
2018 WASTE STORAGE FACILITY AND RUNOFF  
MANAGEMENT SYSTEMS

3688 LIME KILN ROAD  
DE PERE, WI  
BROWN COUNTY

PLAN TABLE OF CONTENTS

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	2: PROFILE - WASTE STORAGE FACILITY
	3: PROFILE - WASTE STORAGE FACILITY
	4: 5" CONCRETE DETAIL
	5: 7" CONCRETE DETAIL
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OFFICE USE ONLY

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

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)

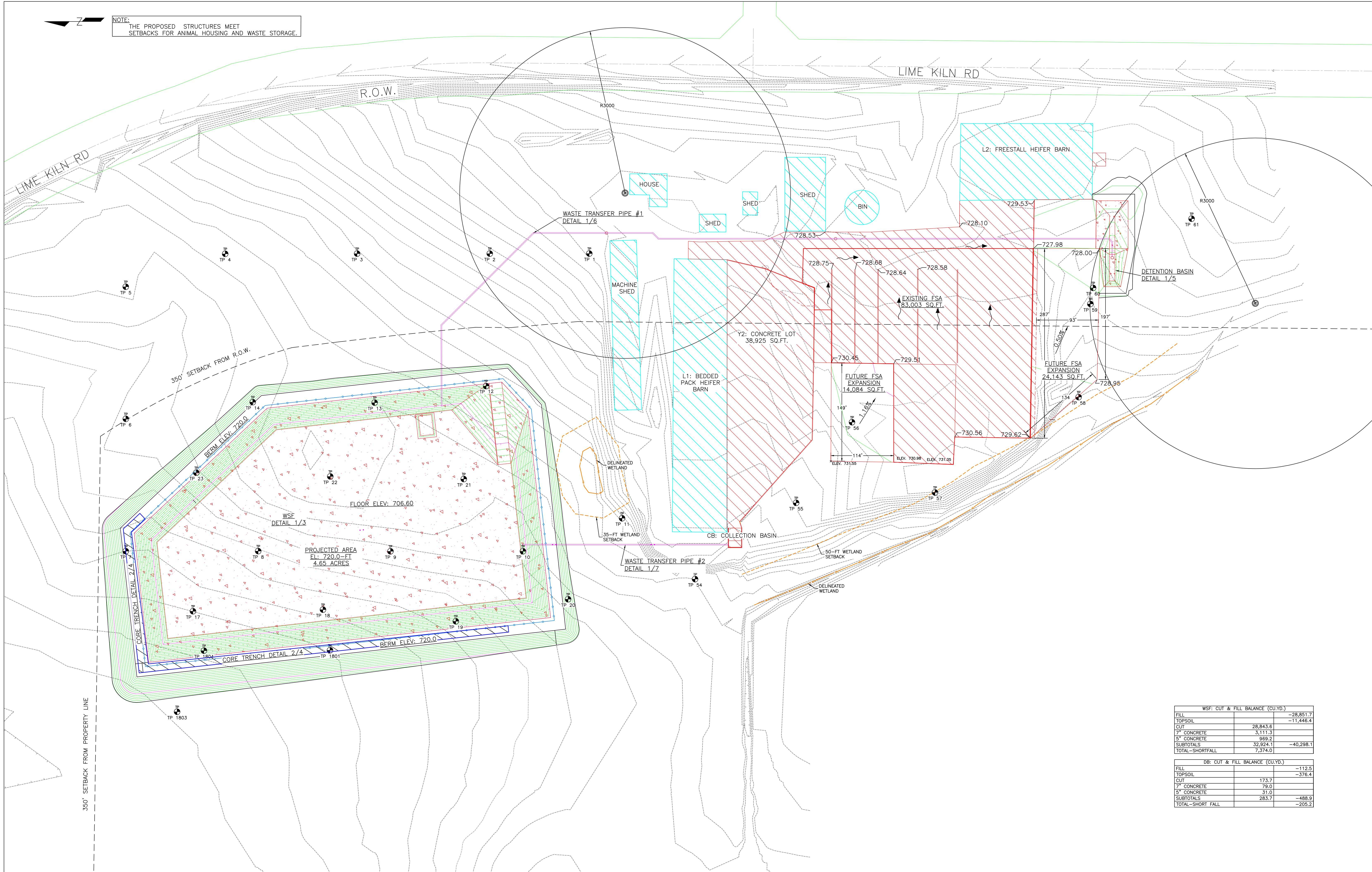
Date

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	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
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*					
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	*	*					
CHECKED BY:	JMR	*	*	*	*	*					





NOTE:  
THE PROPOSED STRUCTURES MEET  
SETBACKS FOR ANIMAL HOUSING AND WASTE STORAGE.

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			
DRAWN BY:	TJS	11-02-18	MTS			
CHECKED BY:	JMR	*	*	*	*	*

LEDGEVIEW FARM, LLC  
2018 WASTE STORAGE FACILITY AND RUNOFF  
MANAGEMENT SYSTEMS  
BROWN COUNTY, WISCONSIN

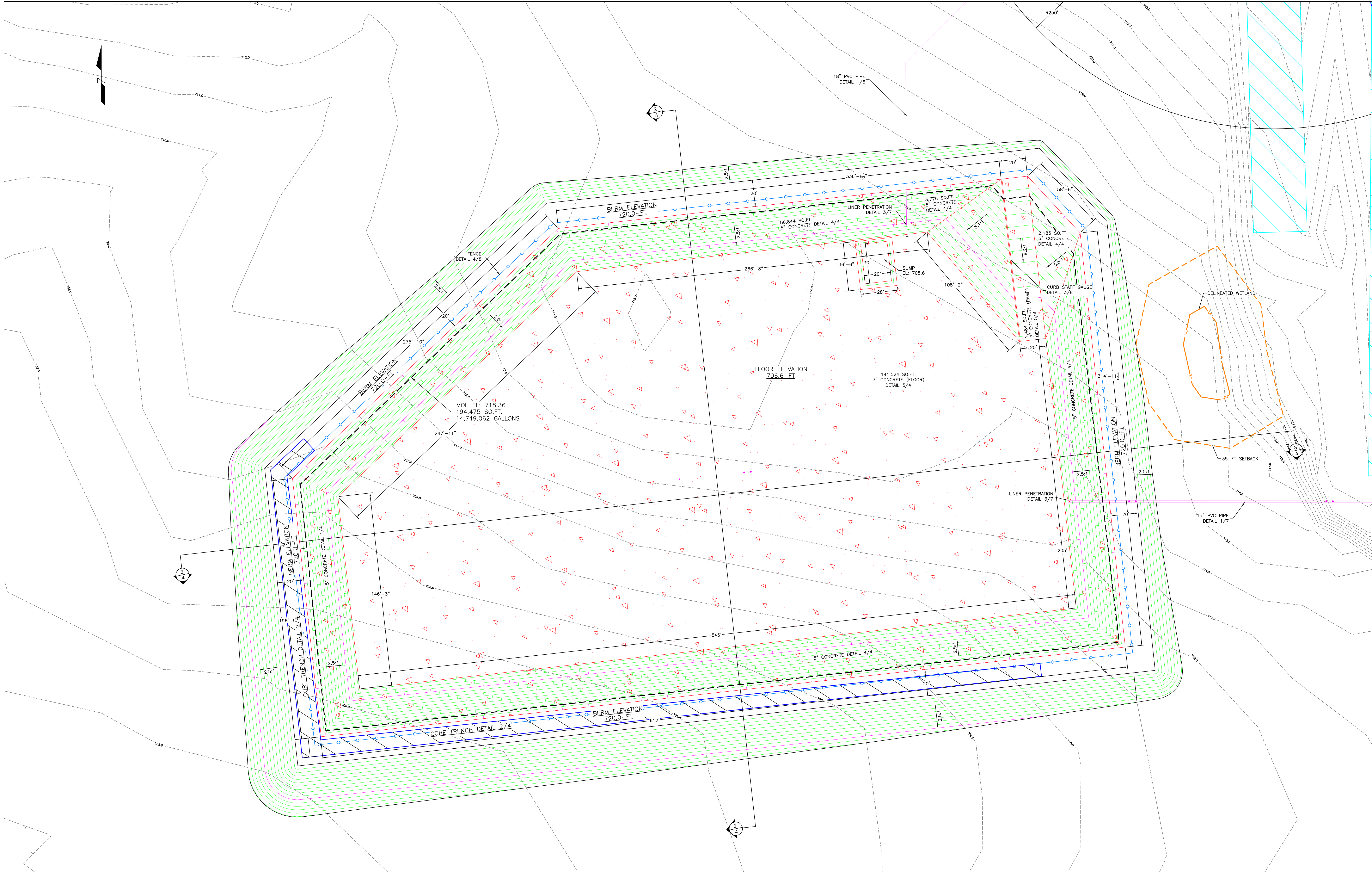
SCALE  
1"=60'

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



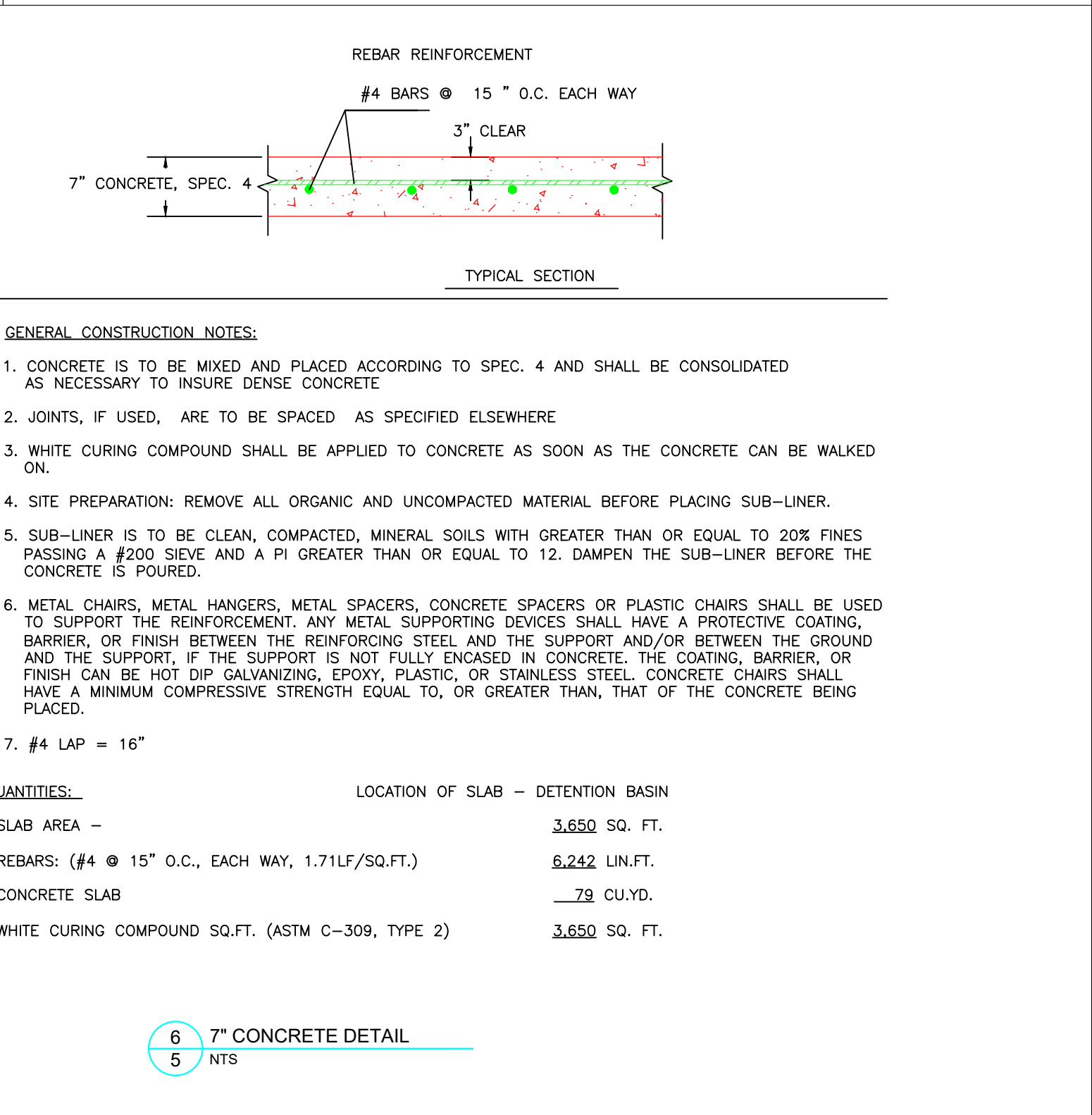
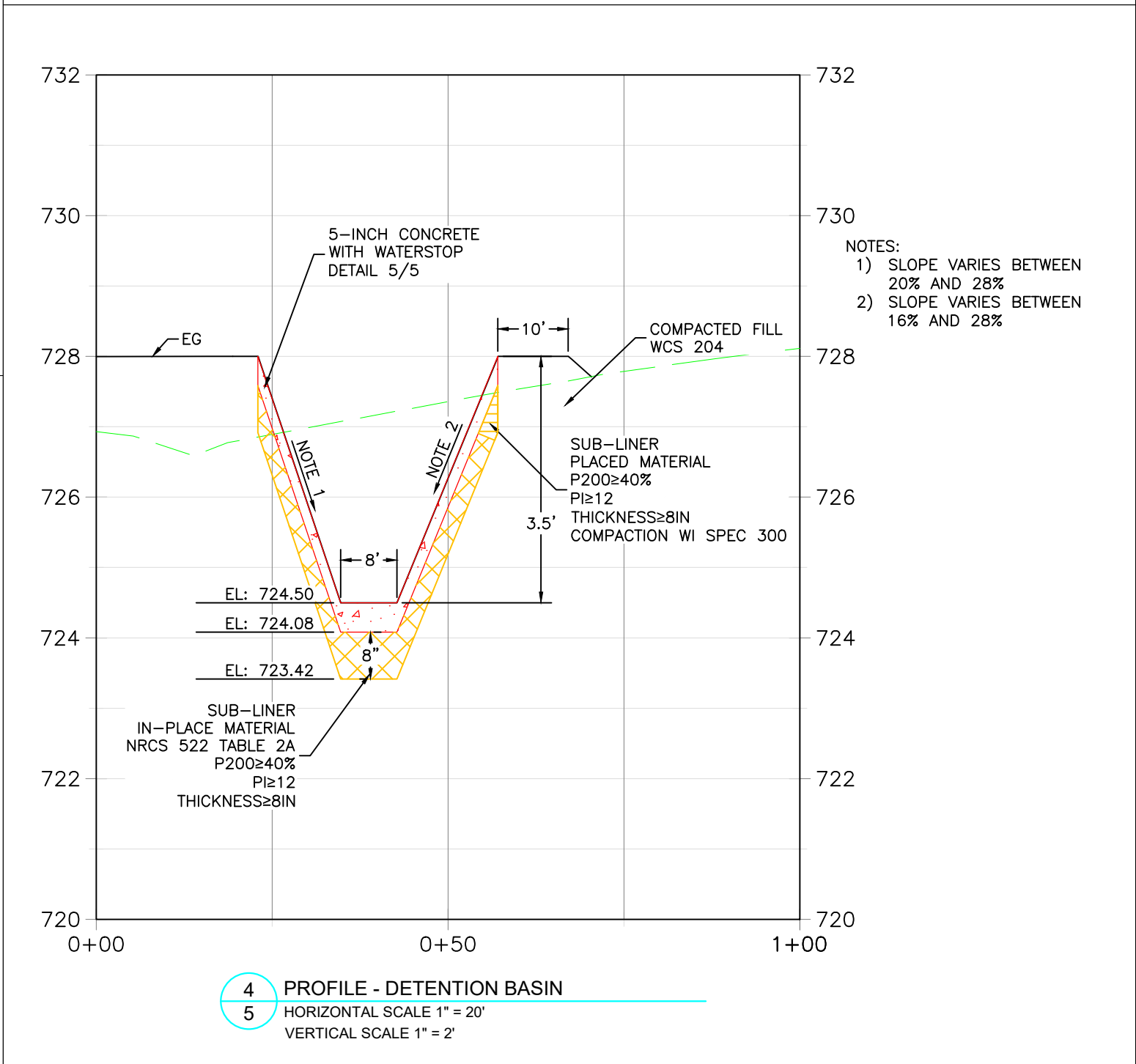
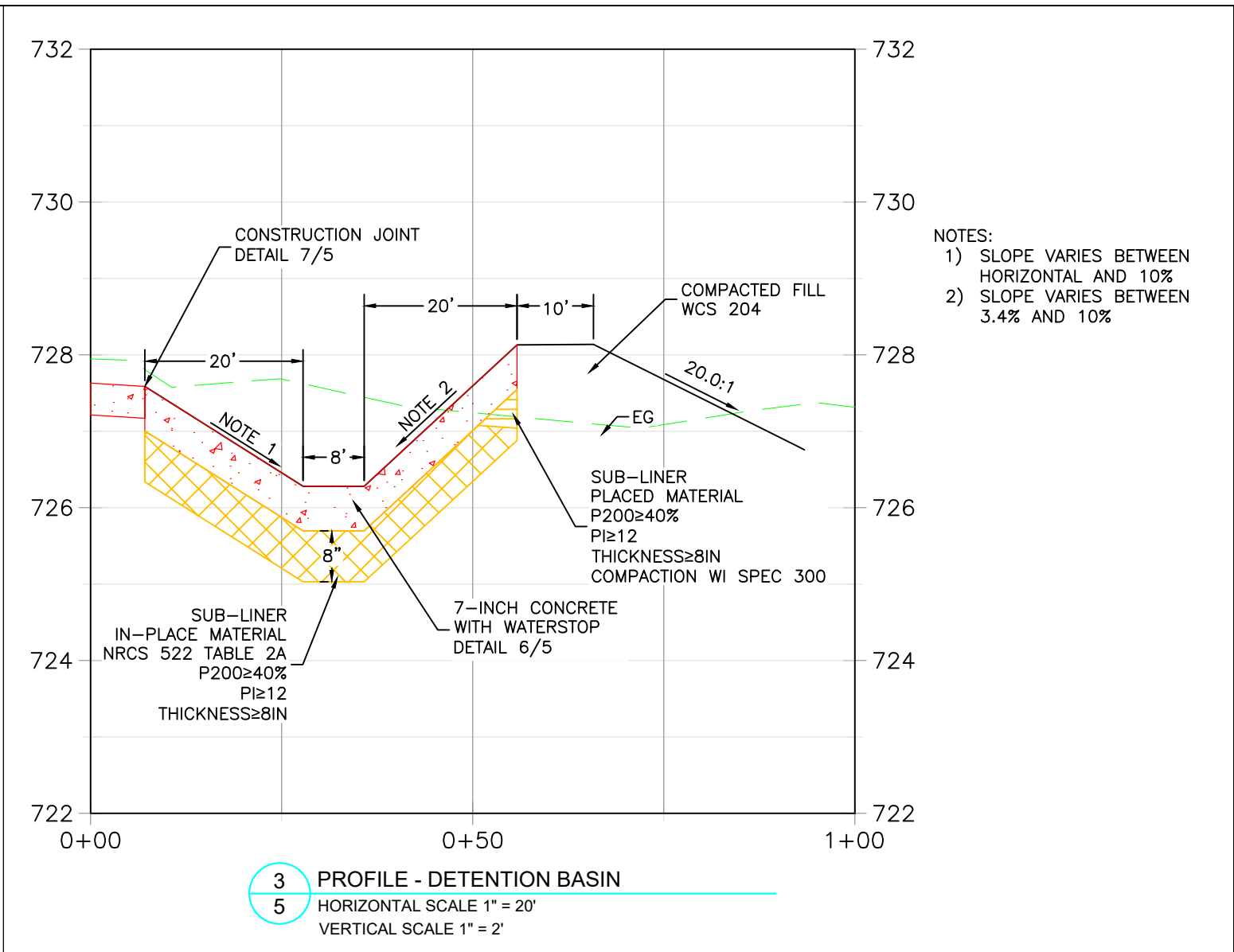
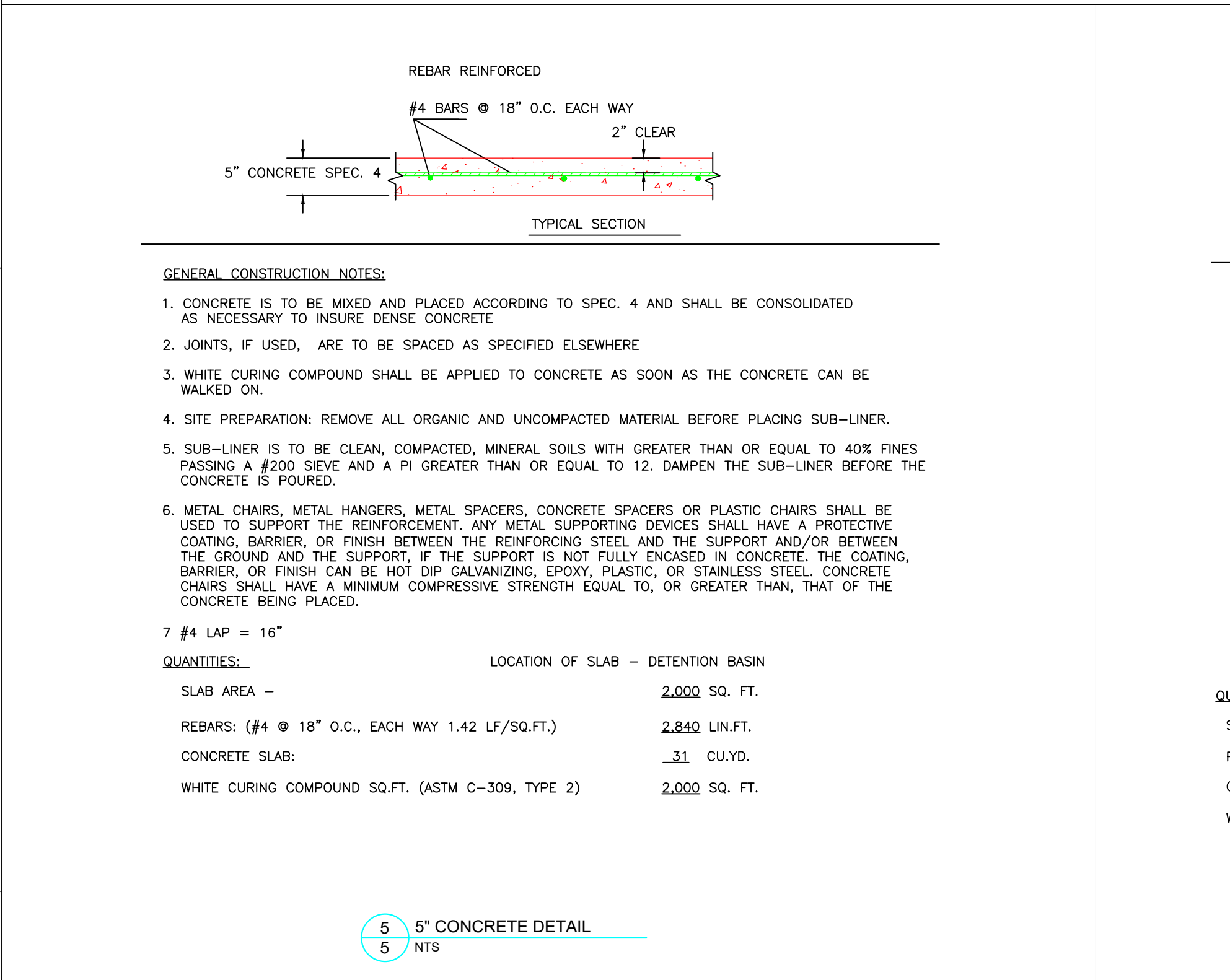
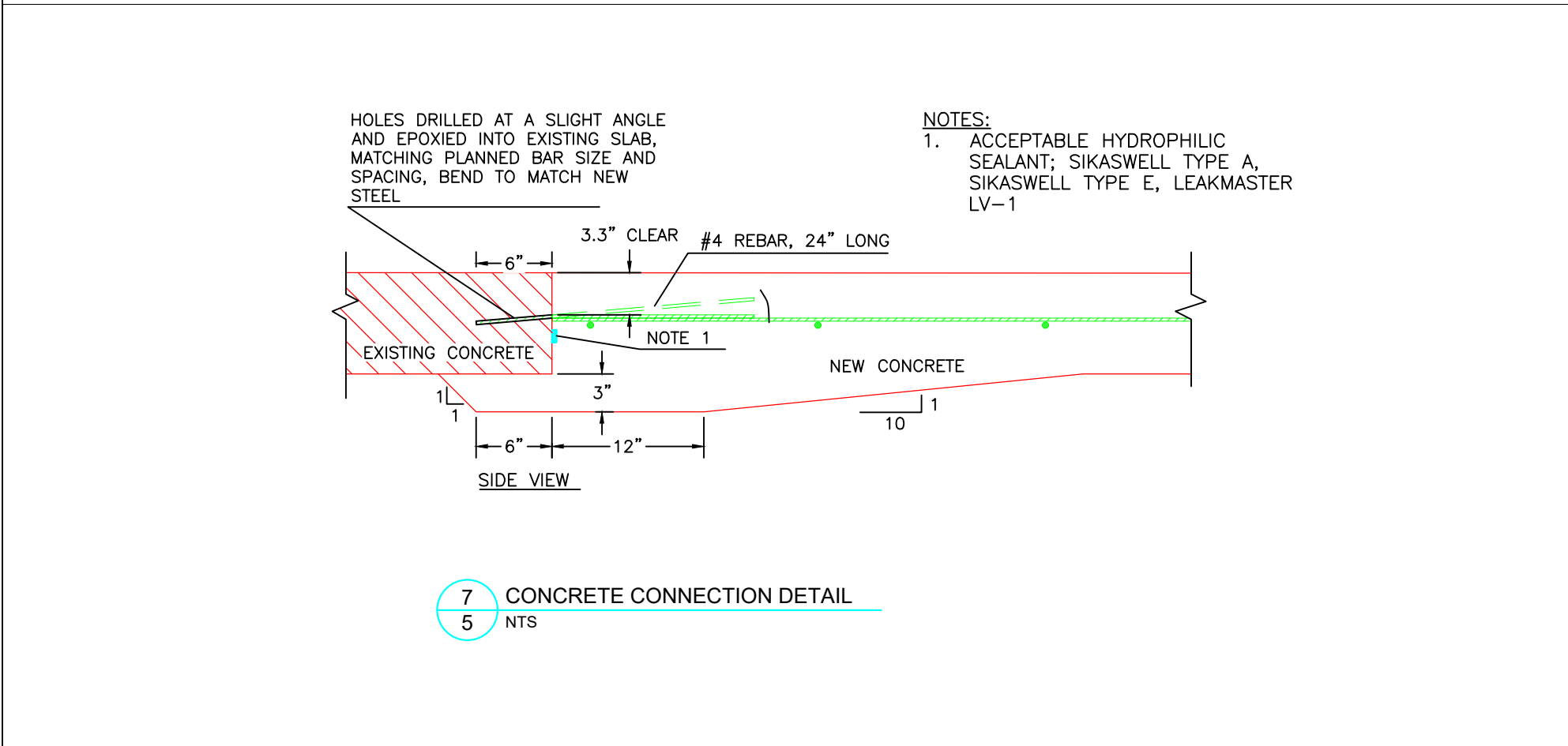
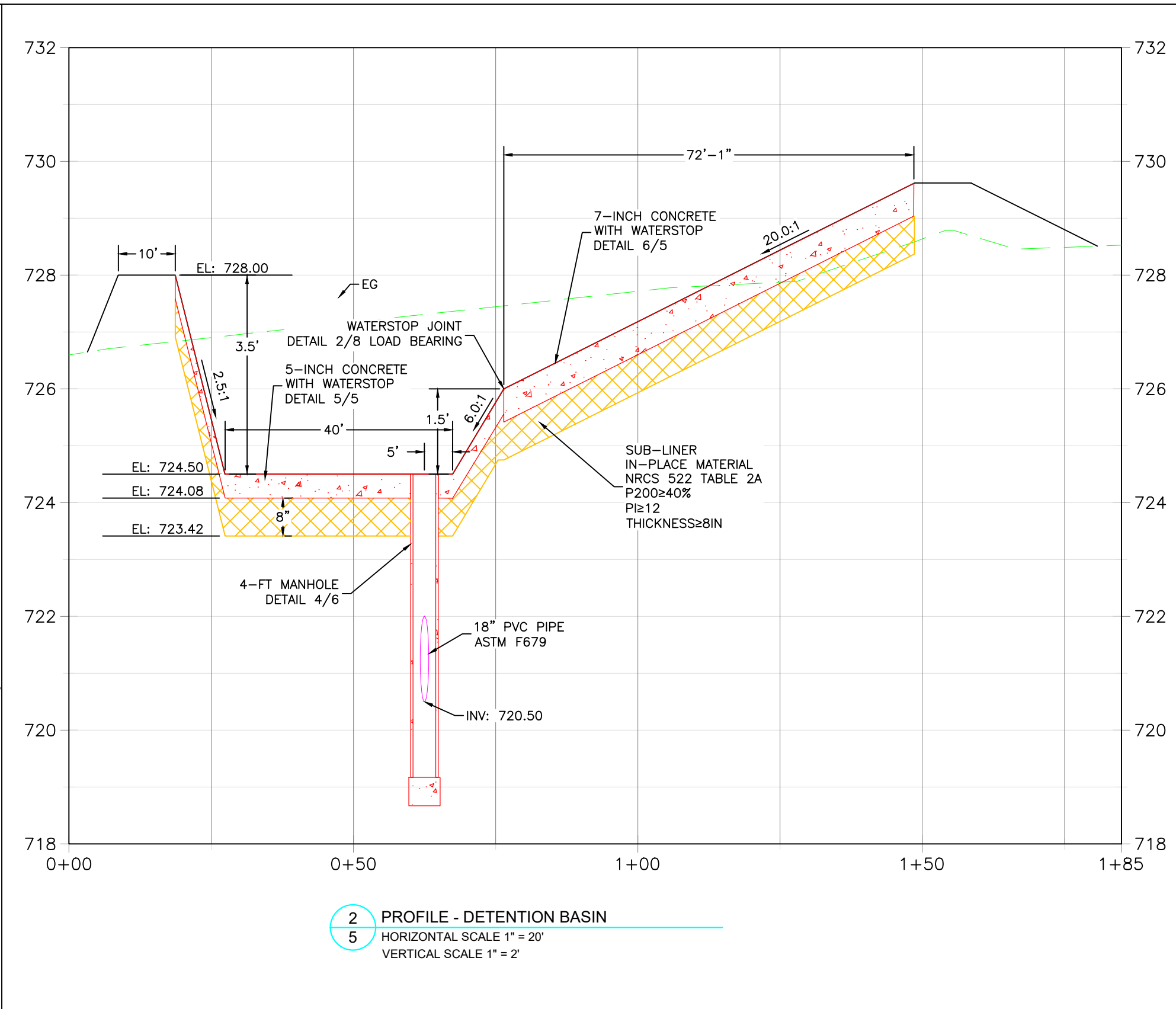
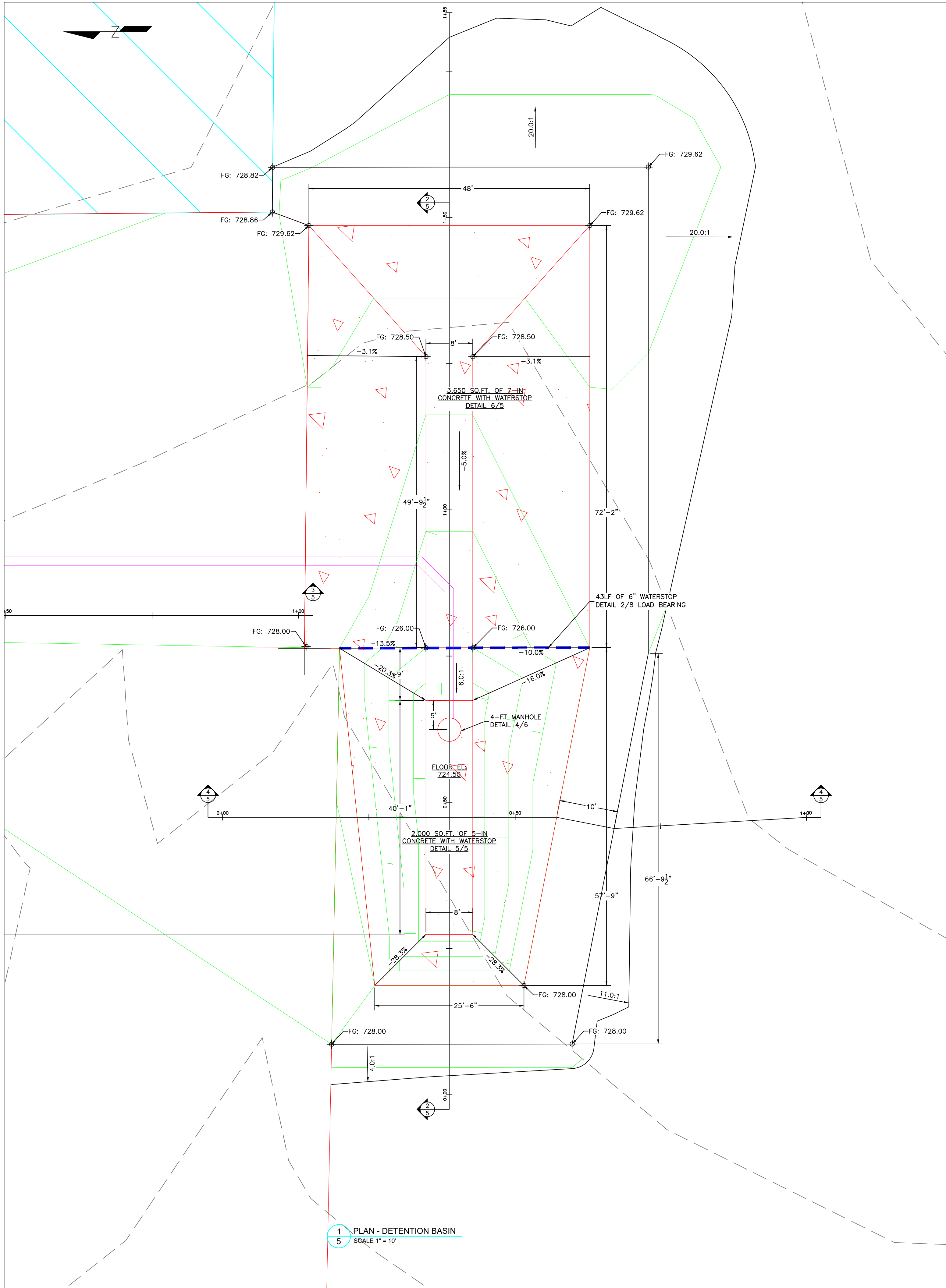


		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM, LLC 2018 WASTE STORAGE FACILITY AND RUNOFF MANAGEMENT SYSTEMS BROWN COUNTY, WISCONSIN	SCALE  1"=30'	WASTE STORAGE FACILITY  PLAN	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO.  3
DATE:	12/06/2017	06-01-18	MTS	MOVED WSF 40FT WEST	*	*	*					
DRAWN BY:	TJS	11-02-18	MTS	ROTATED WSF	*	*	*					
CHECKED BY:	JMR	*	*	*	*	*	*					



15





DATE:	12/06/2017	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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

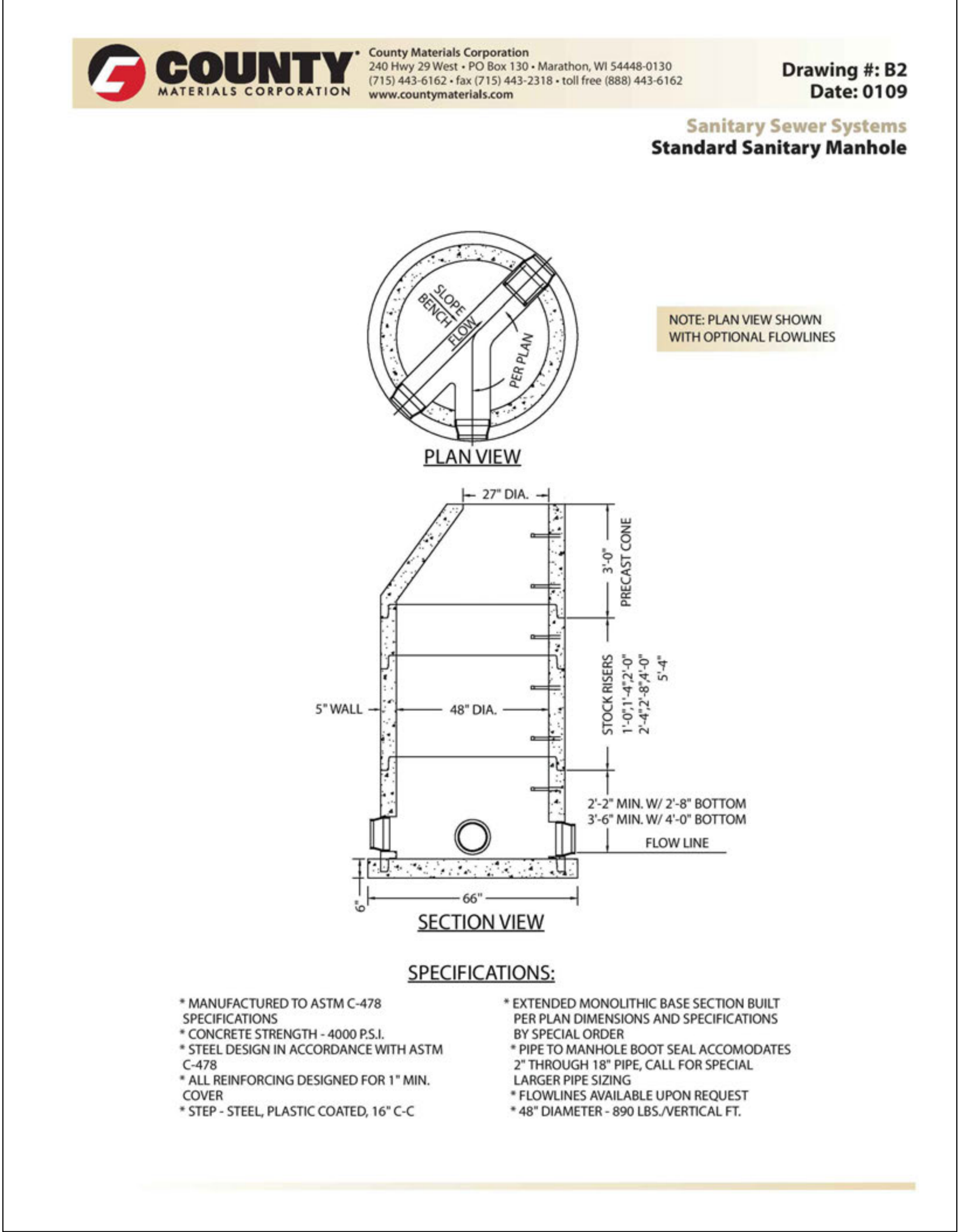
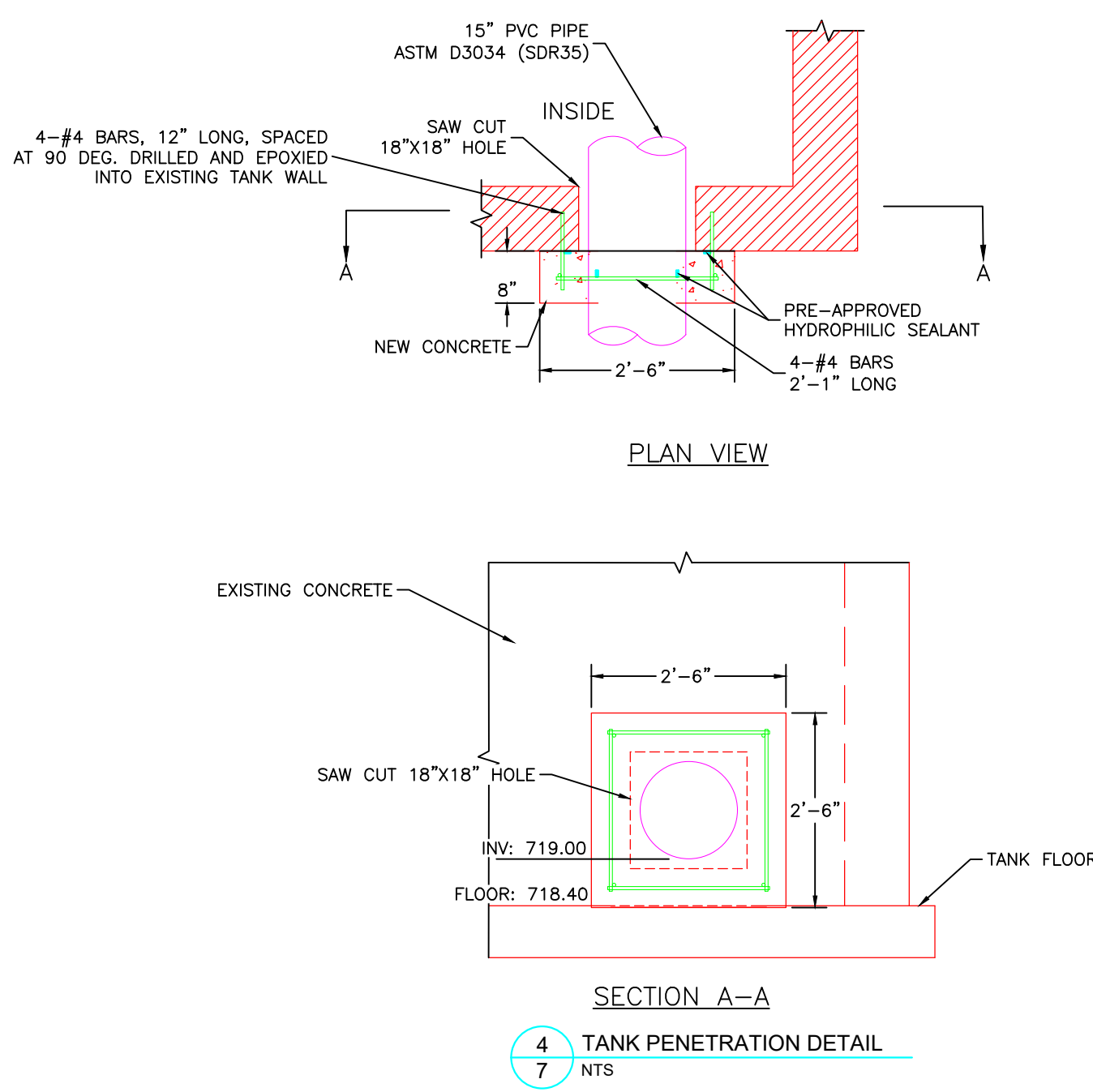
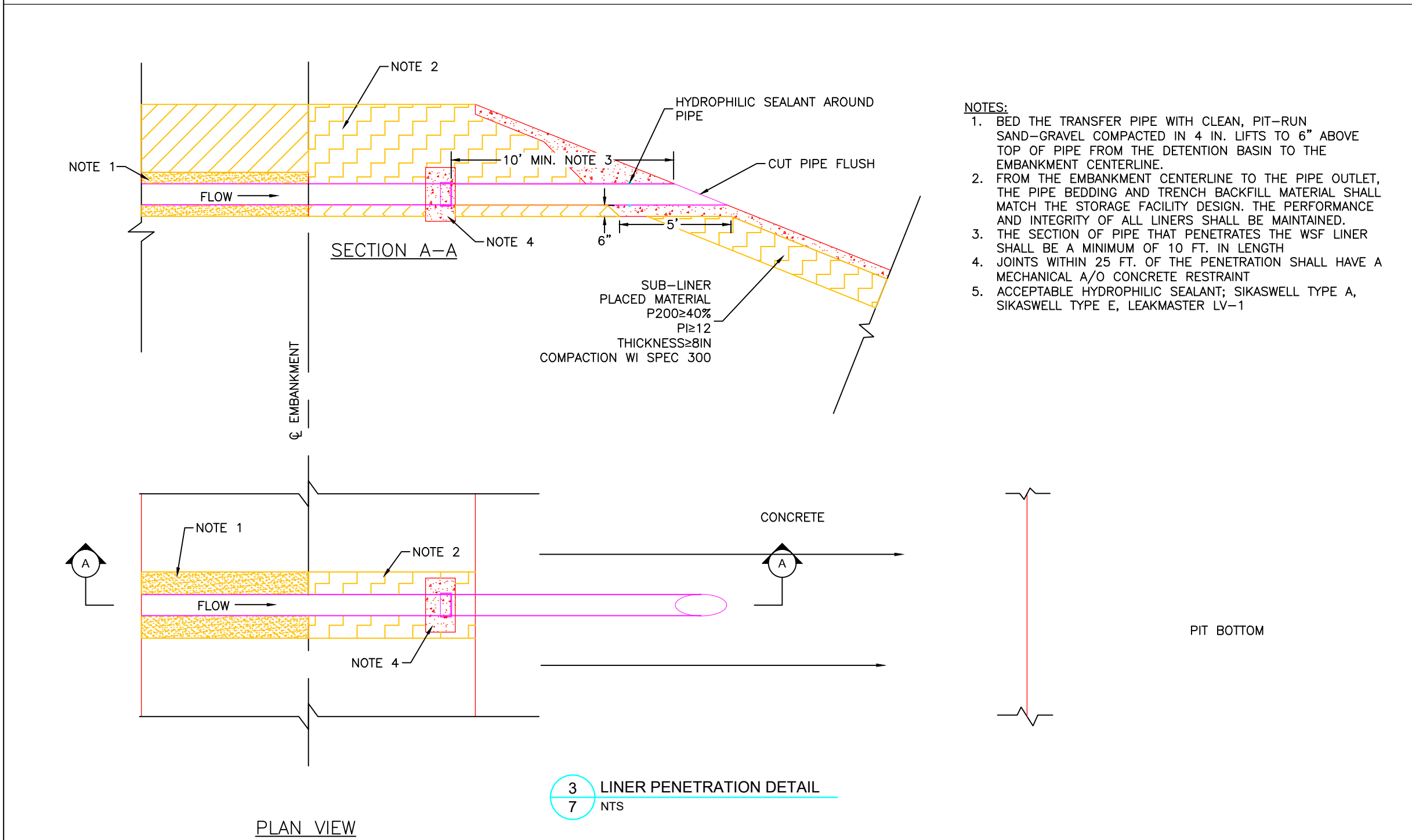
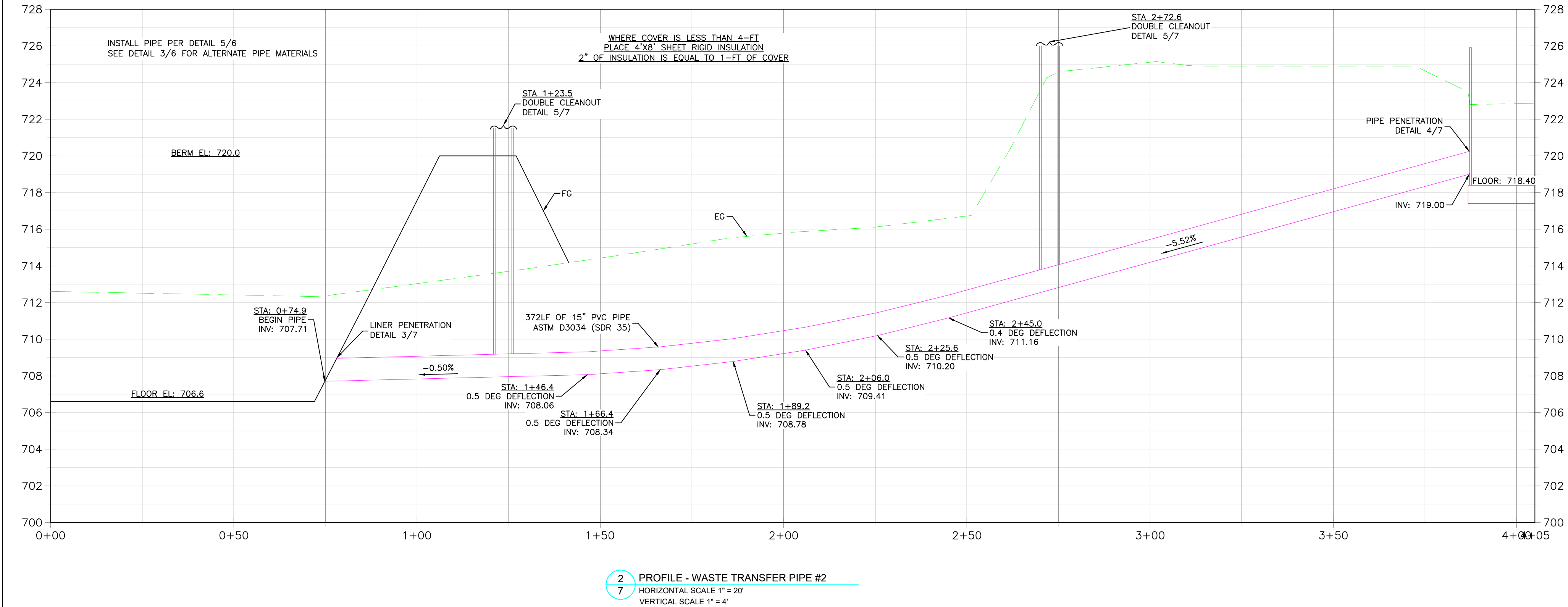
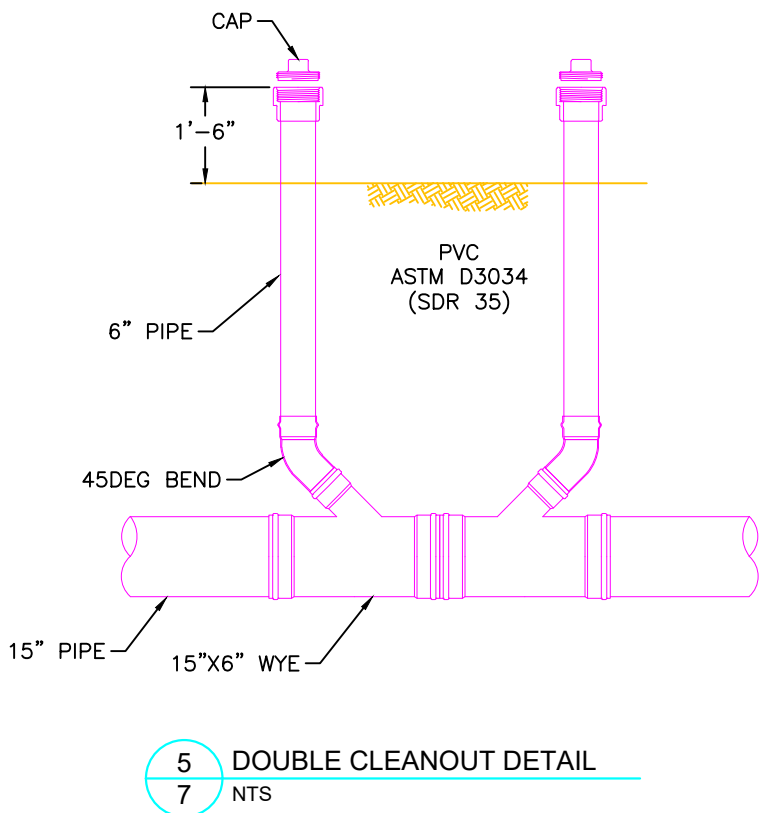
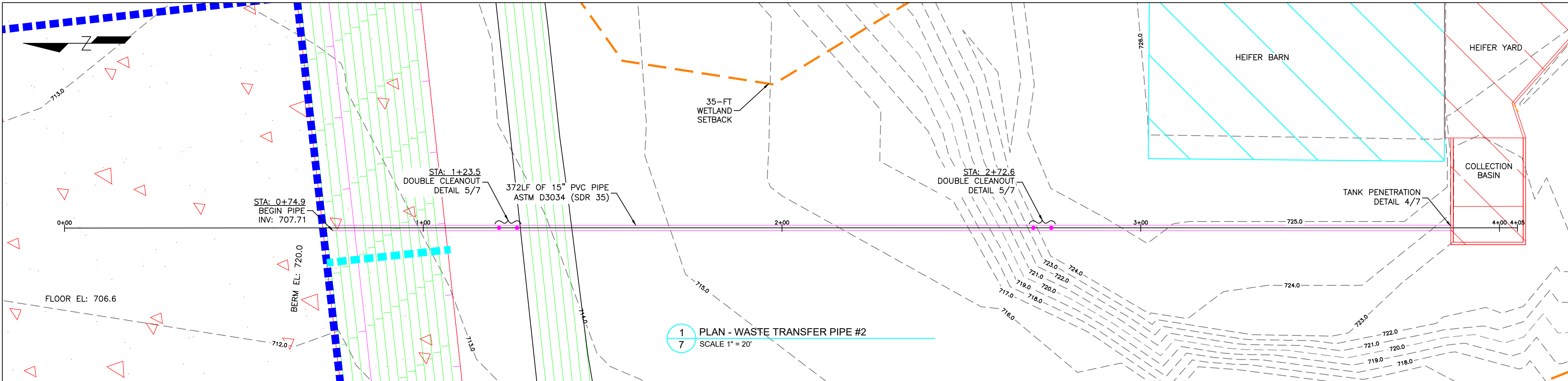
Roach & Associates, LLC  
Dairy Business and Management Consulting  
Environmental Engineering  
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.  
5









DATE:	12/06/2017	REVISION DATE:	06-01-18	BY:	MTS	DESCRIPTION OF REVISION:	REVISION DATE:	BY:	MTS	DESCRIPTION OF REVISION:
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

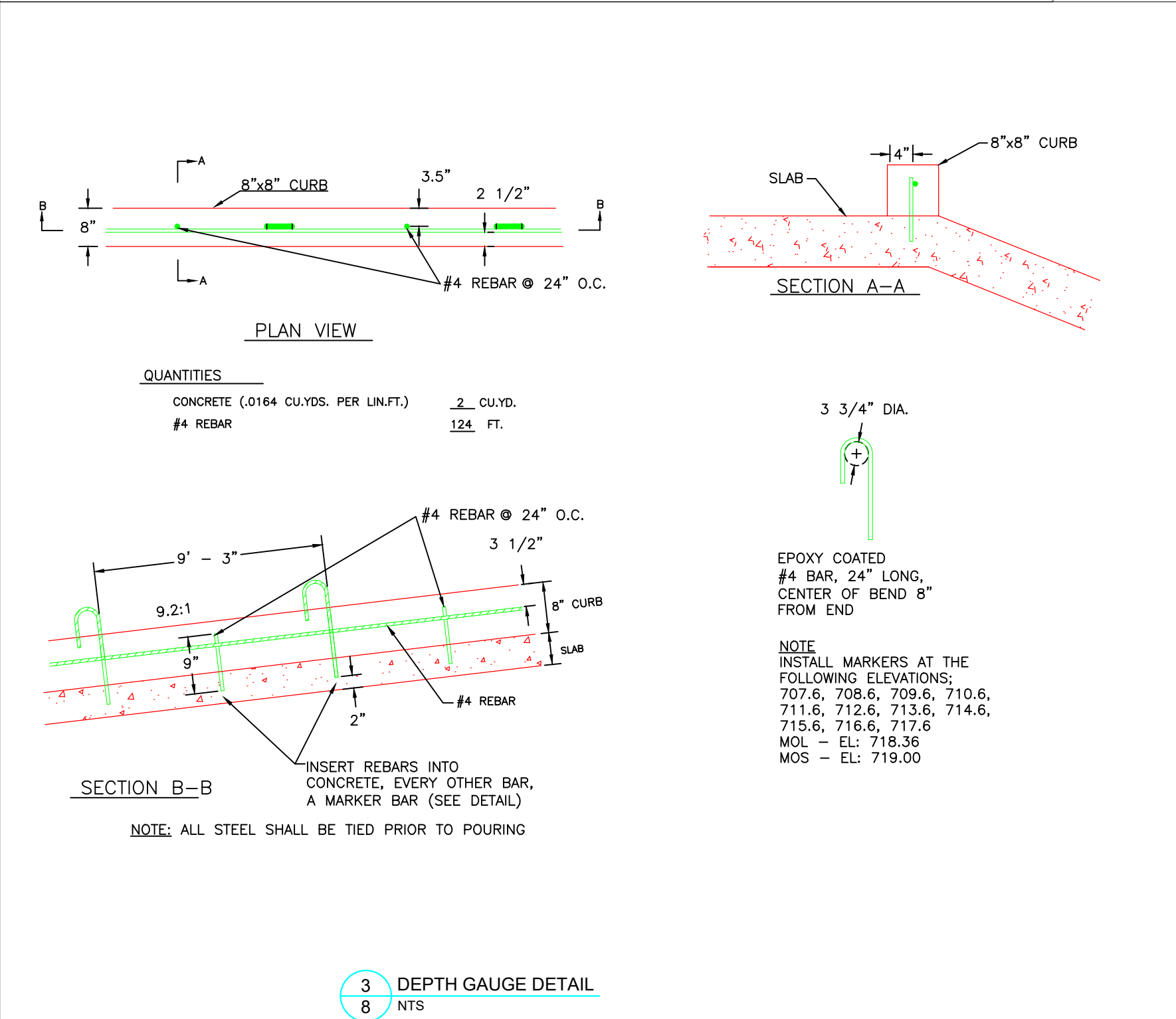
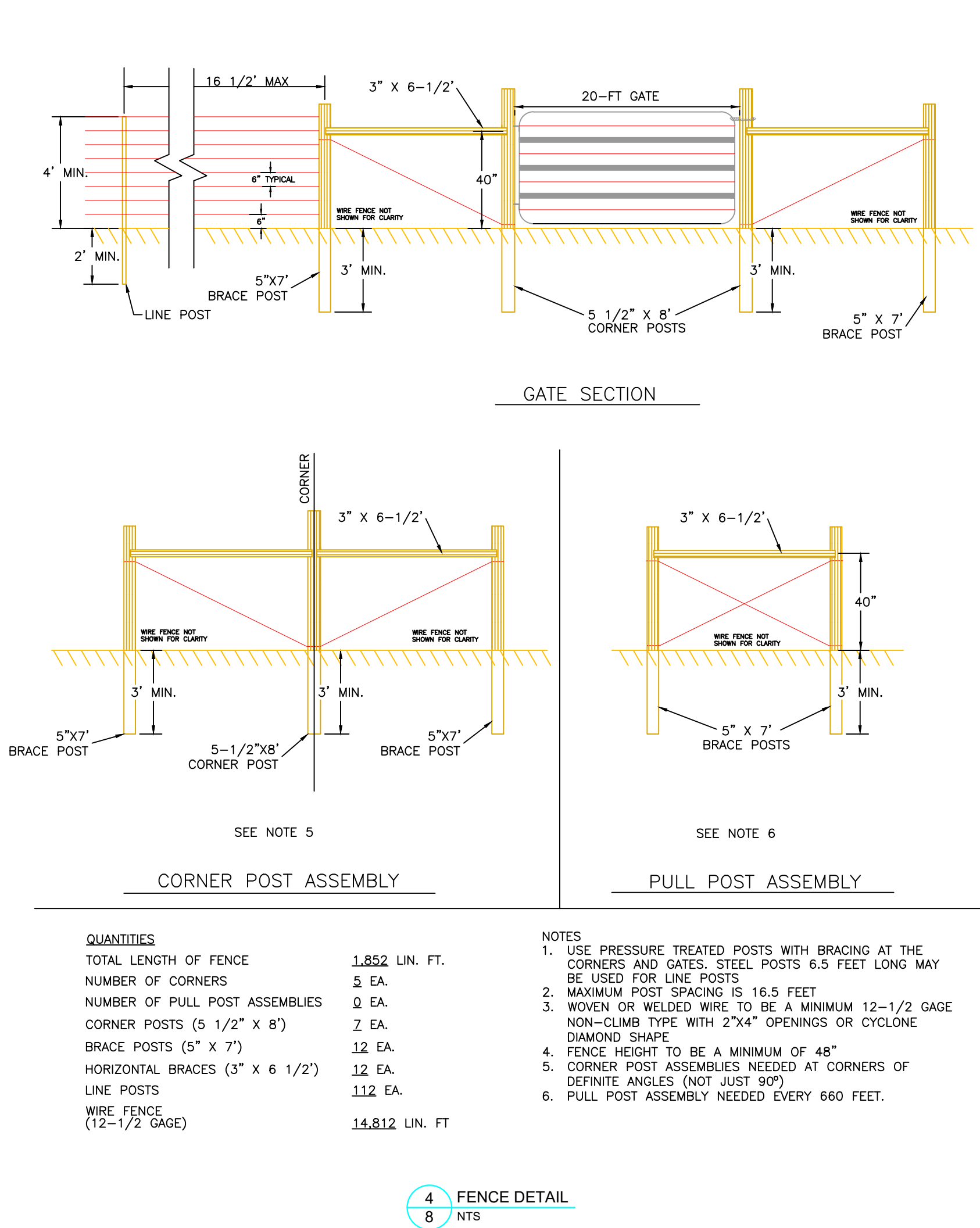
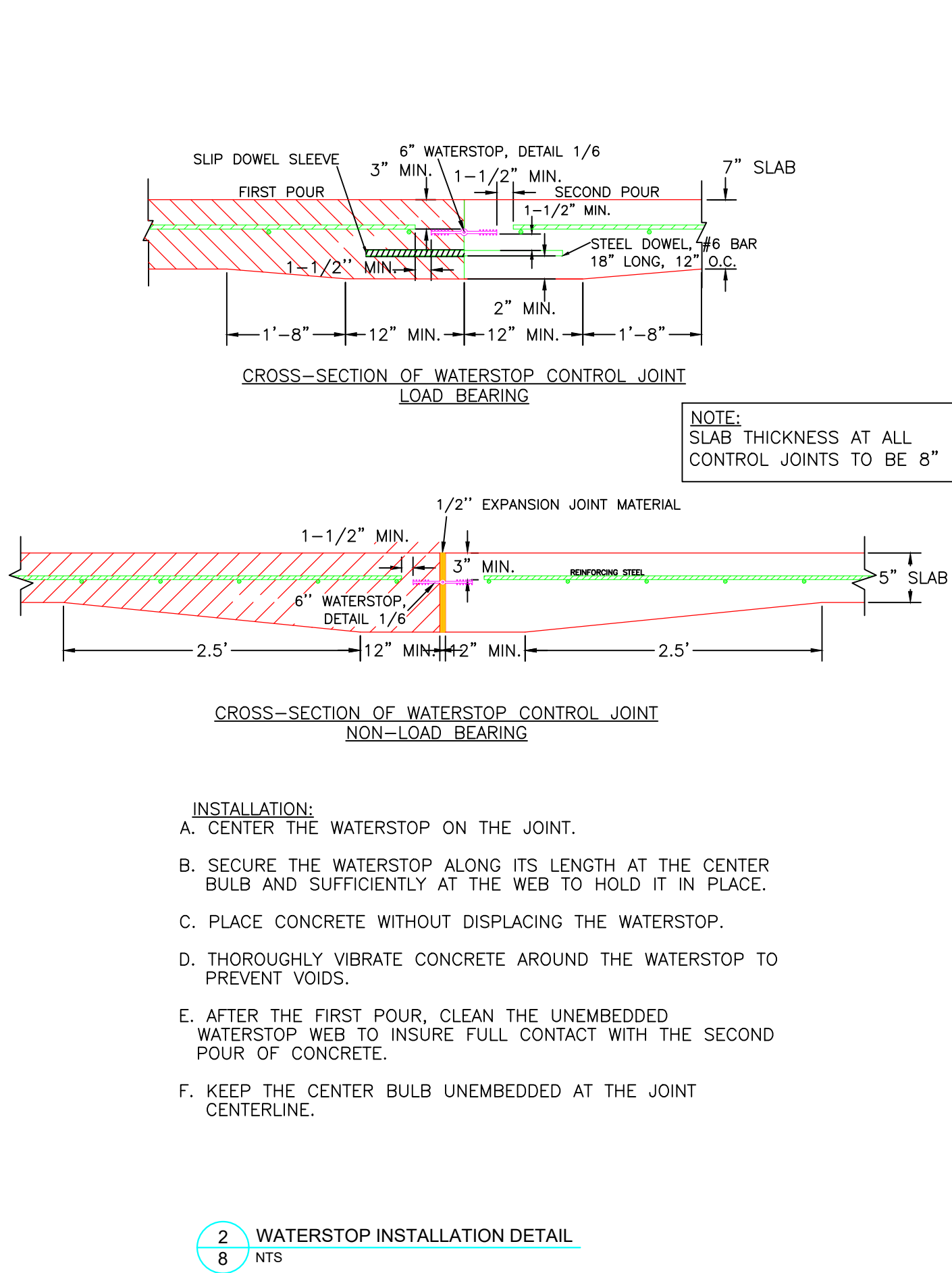
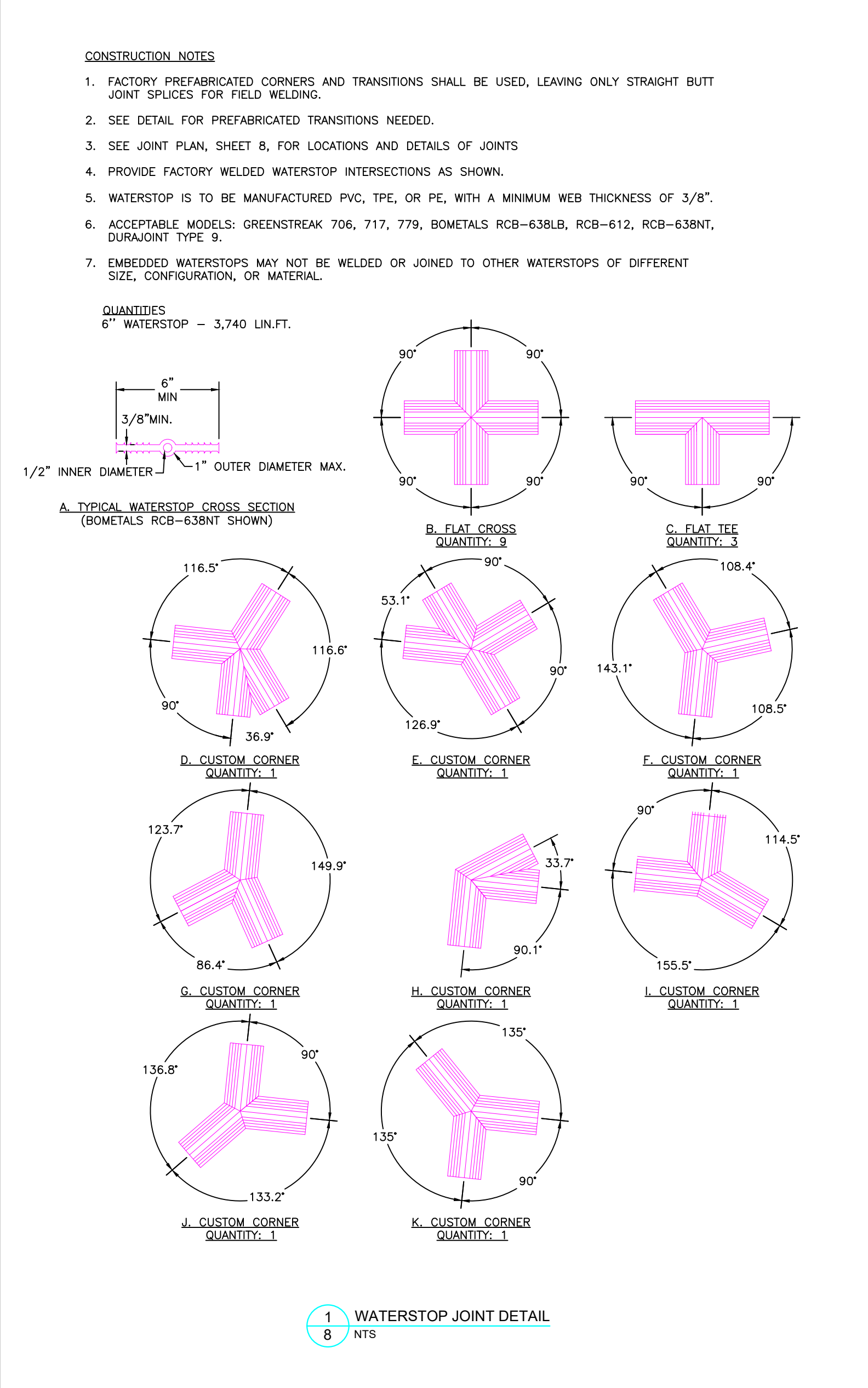
SCALE  
VARIES

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





		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

CONSTRUCTION  
DETAILS

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.

8



## Charlotte Nagel

---

**From:** Courtney Roach <Courtney@jmroach.com>  
**Sent:** Tuesday, November 20, 2018 1:33 PM  
**To:** Sarah Burdette  
**Cc:** Vicki Geiger; John Roach  
**Subject:** RE: Ledgeview Farm, LLC  
**Attachments:** DATC Email Regarding the Y1 & Y2 Yards.pdf

Please include the attachment I sent yesterday (and am including it again here in this email) not the one you just included, I am not sure what that is.

Thanks!

---

**From:** Sarah Burdette [mailto:sburdette@ledgeviewwisconsin.com]  
**Sent:** Tuesday, November 20, 2018 1:24 PM  
**To:** Courtney Roach <Courtney@jmroach.com>  
**Cc:** Vicki Geiger <vicki@jmroach.com>; John Roach <john@jmroach.com>  
**Subject:** RE: Ledgeview Farm, LLC

Yes, I will include the attached email in the hard copy submittal.

Sarah K. Burdette  
Administrator  
Town of Ledgeview



3700 Dickinson Road  
De Pere, WI 54115  
Phone: 920.336.3360, ext. 108  
Cell/Text: 920-639-6083  
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com



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---

**From:** Courtney Roach [mailto:Courtney@jmroach.com]  
**Sent:** Monday, November 19, 2018 12:43 PM  
**To:** Sarah Burdette <sburdette@ledgeviewwisconsin.com>  
**Cc:** Vicki Geiger <vicki@jmroach.com>; John Roach <john@jmroach.com>  
**Subject:** FW: Ledgeview Farm, LLC

Hi Sarah,

Could you also include the attached email in the printed binders, it was already included in the electronic version. It should go in the BARNY section, exhibit 13.

Thanks  
Courtney

---

**From:** John Roach  
**Sent:** Wednesday, November 7, 2018 3:03 PM  
**To:** Sarah Burdette <[sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com)>  
**Cc:** Courtney Roach <[Courtney@jmroach.com](mailto:Courtney@jmroach.com)>; Pat Roach <[Pat@jmroach.com](mailto:Pat@jmroach.com)>; Vicki Geiger <[vicki@jmroach.com](mailto:vicki@jmroach.com)>; 'Jason Pansier' <[jasonpansier@gmail.com](mailto:jasonpansier@gmail.com)>; Charlotte Nagel <[cnagel@ledgeviewwisconsin.com](mailto:cnagel@ledgeviewwisconsin.com)>; Joan Pansier <[joan.pansier@yahoo.com](mailto:joan.pansier@yahoo.com)> <[joan.pansier@yahoo.com](mailto:joan.pansier@yahoo.com)>  
**Subject:** RE: Ledgeview Farm, LLC

Sarah,

Thank you.

John Roach  
General Manager  
Office: 920.833.6340  
Cell: 920.858.5868  
Email: [john@jmroach.com](mailto:john@jmroach.com)

---

**From:** Sarah Burdette [<mailto:sburdette@ledgeviewwisconsin.com>]  
**Sent:** Wednesday, November 07, 2018 1:03 PM  
**To:** John Roach  
**Cc:** Courtney Roach; Pat Roach; Vicki Geiger; 'Jason Pansier'; Charlotte Nagel  
**Subject:** RE: Ledgeview Farm, LLC

John,  
The email below will be printed and included in the Specifications document as you requested.  
Sarah

Sarah K. Burdette  
Administrator  
Town of Ledgeview



3700 Dickinson Road  
De Pere, WI 54115  
Phone: 920.336.3360, ext. 108  
Cell/Text: 920-639-6083  
[sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com) [www.LedgeviewWisconsin.com](http://www.LedgeviewWisconsin.com)





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---

**From:** John Roach [<mailto:john@jmroach.com>]  
**Sent:** Wednesday, November 07, 2018 12:14 PM  
**To:** Sarah Burdette ([sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com)) <[sburdette@ledgeviewwisconsin.com](mailto:sburdette@ledgeviewwisconsin.com)>  
**Cc:** Courtney Roach <[Courtney@jmroach.com](mailto:Courtney@jmroach.com)>; Pat Roach <[Pat@jmroach.com](mailto:Pat@jmroach.com)>; Vicki Geiger <[vicki@jmroach.com](mailto:vicki@jmroach.com)>; Jason Pansier ([jasonpansier@gmail.com](mailto:jasonpansier@gmail.com)) <[jasonpansier@gmail.com](mailto:jasonpansier@gmail.com)>  
**Subject:** FW: Ledgeview Farm, LLC

Sarah,

As I am sure you are aware, Ledgeview Farm submitted a new Livestock Facility Siting License on November 5, 2018. Would you please insert the attached email from Brown County stating that the changed location does not require a new Animal Waste Storage permit from Brown County? I just received confirmation today. Please insert the email in the Specifications document, just before the Table of Contents and after the email from DNR. If you prefer, Roach & Associates would be happy to come to your office and insert the email into the original and copies of the Specifications. Please let me know your preference.  
Thank you.

Regards,

John Roach  
General Manager  
Office: 920.833.6340  
Cell: 920.858.5868  
Email: [john@jmroach.com](mailto:john@jmroach.com)

---

**From:** Wetenkamp, Dave L. [[mailto:Wetenkamp\\_DL@co.brown.wi.us](mailto:Wetenkamp_DL@co.brown.wi.us)]  
**Sent:** Tuesday, November 06, 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](mailto:john@jmroach.com)>  
**Sent:** Monday, November 5, 2018 10:50 AM  
**To:** Wetenkamp, Dave L. <[Wetenkamp\\_DL@co.brown.wi.us](mailto:Wetenkamp_DL@co.brown.wi.us)>  
**Cc:** Courtney Roach <[Courtney@jmroach.com](mailto:Courtney@jmroach.com)>; Pat Roach <[Pat@jmroach.com](mailto:Pat@jmroach.com)>; Vicki Geiger <[vicki@jmroach.com](mailto:vicki@jmroach.com)>; Barb Baranczyk <[Barb@jmroach.com](mailto: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](mailto: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 email 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](mailto:jeff.kreider@wisconsin.gov)

-----Original Message-----

**From:** John Roach [[john@jmroach.com](mailto:john@jmroach.com)]  
**Received:** Thursday, 01 Nov 2018, 11:33AM  
**To:** Kreider, Jeff C - DNR [[Jeff.Kreider@wisconsin.gov](mailto:Jeff.Kreider@wisconsin.gov)]  
**CC:** Pat Roach [[Pat@jmroach.com](mailto:Pat@jmroach.com)]; Courtney Roach [[Courtney@jmroach.com](mailto:Courtney@jmroach.com)]; Matthew Schwalenberg [[matt@jmroach.com](mailto: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](mailto:john@jmroach.com)

**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



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