



Redwood County

www.co.redwood.mn.us

### Animal Confinement Feedlot Conditional Use Permit Application

**Proposed Location of Feedlot Operation:**

Permit #: 9-21 Date: 5/24/21

Address: 12411 Aspen Ave City: Tracy State: MN Zip: 56175  
House # Street Name

Parcel #: \_\_\_\_\_ Township: Springdale Section: 21 Twp #: 109N Range: 39W

**Information about the Operation:**

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

The site currently contains one 51ftx228ft total confinement swine barn with an 8ft underfloor manure containment pit housing 1,300 (390 animal units AU) finishing swine and a 30ftx 36ft Mortality Compost Area. The proposed project would consist of an additional 102ftx200ft total confinement barn capable of housing 2,400 finishing (720AU) for a total of 3,700 finishing swine(1,110AU) on site after the proposed expansion.

**Legal Description of Proposed Feedlot Location:**

NE1/4 of SE 1/4 of Sec 21 Sprindale Twp Redwoods County or NE 1/4 of SE 1/4 of Sec 21-T109-R39W Redwood County

**Site / Plan Information:**

Zoning District: \_\_\_\_\_

Soil Type 1: \_\_\_\_\_

Soil Type 2: \_\_\_\_\_

Water source for the site: 2 Wells on site

Drainage System: \_\_\_\_\_

**Estimated water use:**

**Animal 1**

Animal Type: Finishing Swine

.830 gallons/day/animal x 3700 number of animals on site x 360 number of days present  
= 1,105,560

**Animal 2**

Animal Type: \_\_\_\_\_

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

**Animal 3**

Animal Type: \_\_\_\_\_

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

Total Gallons: 1,105,560

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

Building 1: Width: 102 Length: 220

Building 3: Width: \_\_\_\_\_ Length: \_\_\_\_\_

Building 2: Width: \_\_\_\_\_ Length: \_\_\_\_\_

Building 4: Width: \_\_\_\_\_ Length: \_\_\_\_\_

Setback from road right-of-way: 105.0 feet

Setback from center line of road: 138.0 feet

Estimated date for beginning construction: 9/1/2021 Estimated completion date: 11/1/2021

**General Contractor:**

Name: PALS City: Willmar State: MN

**Applicant Information:**

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

First Name: Jay Last Name: Fultz

Business Name: Fultz Farms

Address: 12167 Aspen Ave City: Tracy State: MN Zip: 56175

Home Phone: \_\_\_\_\_ Cell Phone: 507-626-0841 Email: jay.fultz@gmail.com

List any additional applicants: David Rialson, Brian Fultz, James Fultz, Eric Fultz

**Land Owner:** Complete only if different from Applicant

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Business Name: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: MN Zip: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_ Email: \_\_\_\_\_

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

**Feedlot Operator:** Complete only if different from Applicant

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

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Business Name: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: MN Zip: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_ Email: \_\_\_\_\_

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

Applicant(s) Signature(s): [Signature] Date: 5/11/2021

Landowner Signature [Signature] Date: 5/11/2021

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

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

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

Permit fee: \$700.00 Receipt #: 573446

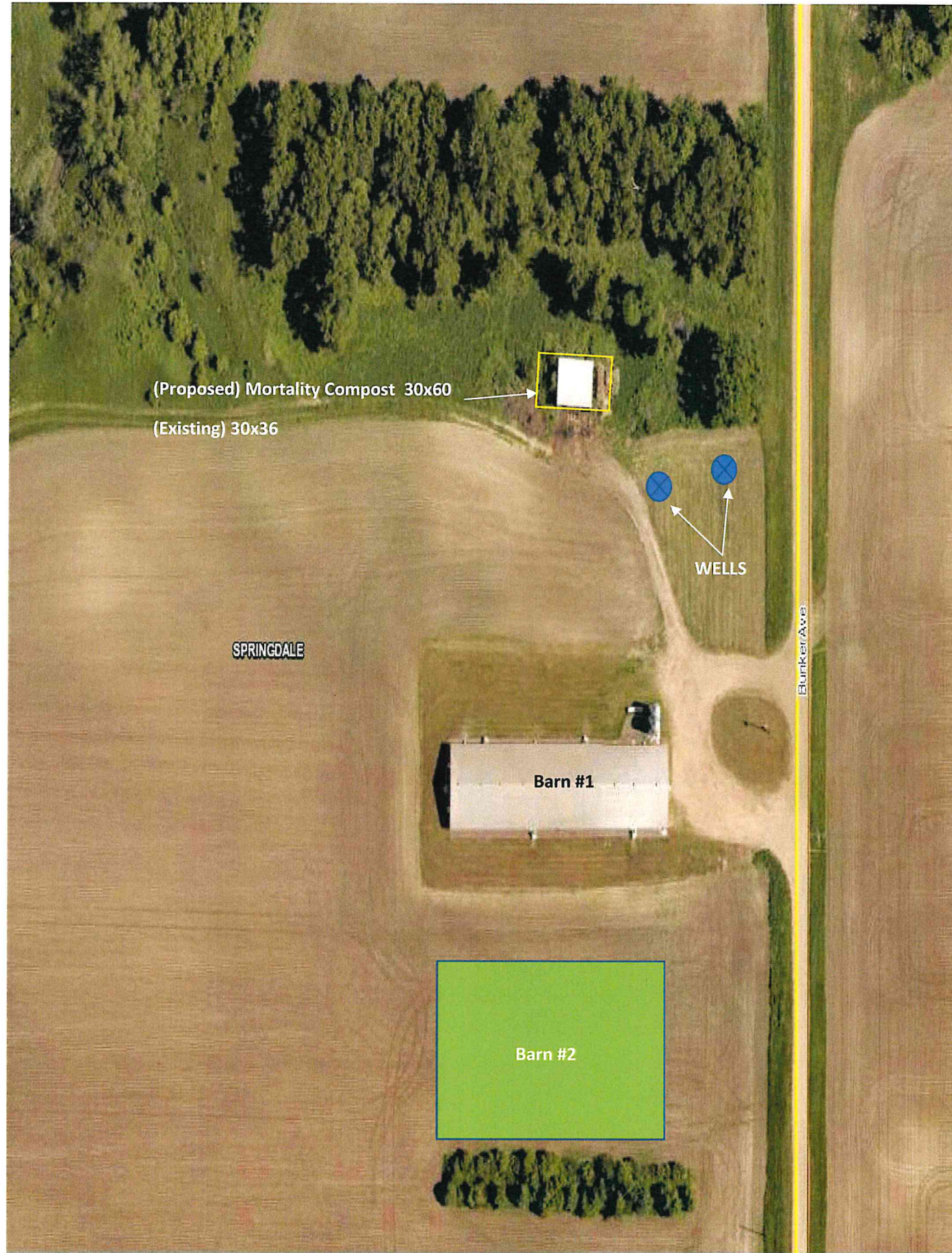
Application Received: 5/26/21

**Commission Action:** Approved: \_\_\_\_\_ Date: \_\_\_\_\_ Disapproved: \_\_\_\_\_ Date: \_\_\_\_\_

**County Board Action:** Approved: \_\_\_\_\_ Date: \_\_\_\_\_ Disapproved: \_\_\_\_\_ Date: \_\_\_\_\_



Fultz East Site



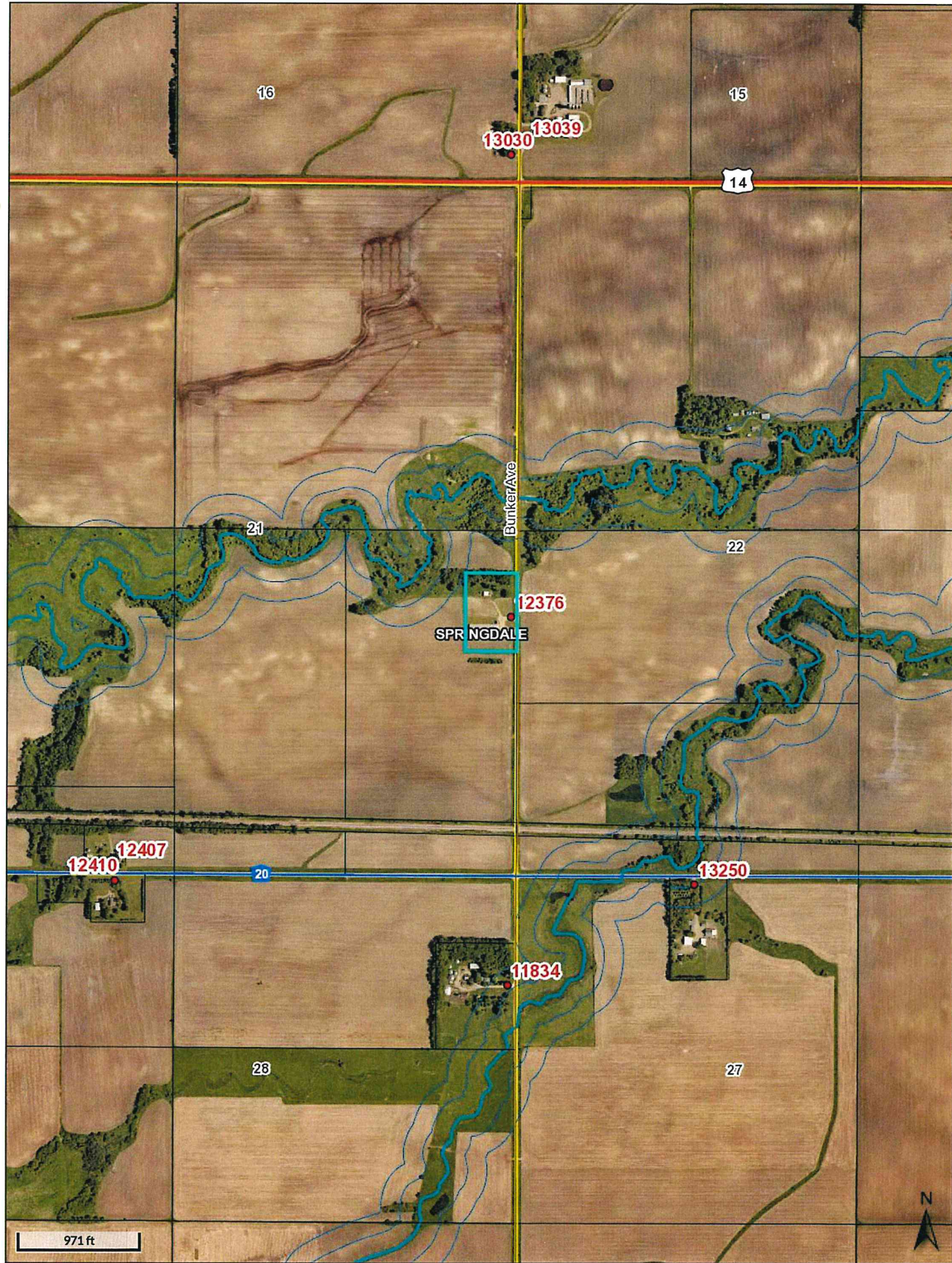


FULTZ MAP





FULTZ OVERVIEW MAP





# FULTZ ELEVATION MAP





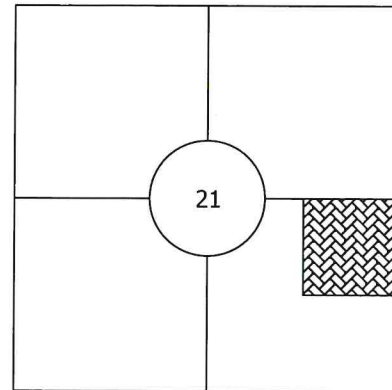
# FULTZ EAST SITE DEEP PIT SWINE BARN



Know what's below.  
Call before you dig.

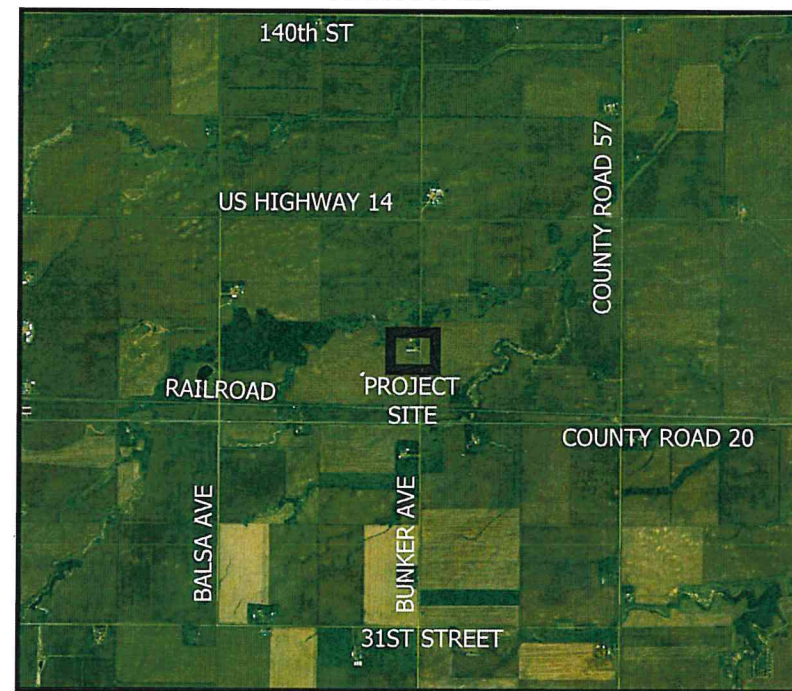
Designed by:	EDJ	5-13-2021
Drawn by:	BL	
Revisions:		

SPRINGDALE TOWNSHIP



REDWOOD COUNTY, MN

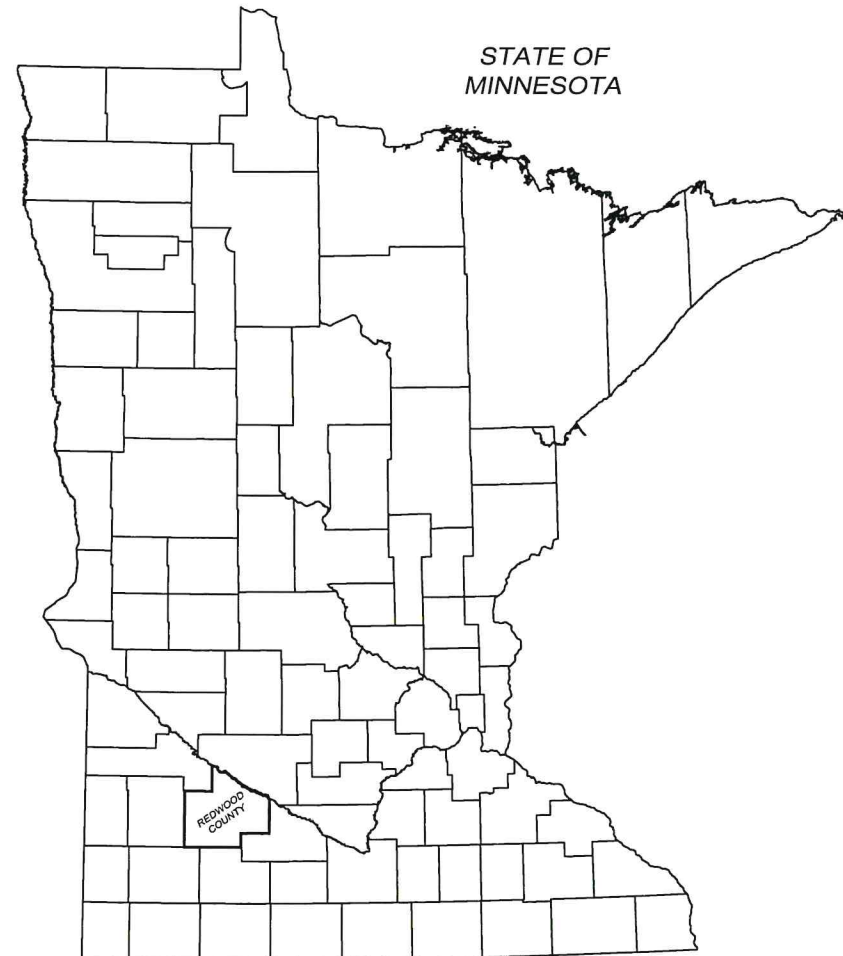
AERIAL MAP



### DRAWING INDEX

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2. EX-1 EXISTING SITE PLAN
3. P-1 PROPOSED SITE PLAN
4. P-2 PROPOSED GRADING PLAN
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6. D-1 CONCRETE DETAILS
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8. D-3 CONCRETE DETAILS & NOTES
9. G-1 GEOTECHNICAL NOTES

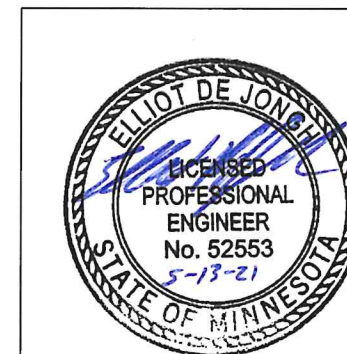
**\*DRAWINGS TO BE USED IN ACCORDANCE WITH THE ASSOCIATED CONSTRUCTION SPECIFICATIONS**



### PROJECT INFORMATION

PROJECT LOCATION:  
FROM TRACY, MN. EAST FOUR MILES ON US HIGHWAY 14. SOUTH 1/2 MILE ON BUNKER AVE. SITE ON WEST SIDE OF BUNKER AVE.

ENGINEER:  
CENTROL CROP CONSULTING  
ATTN: ELLIOT DE JONGH P.E.  
PO BOX 236,  
351 BURLINGTON STREET  
MARSHALL, MN 56164  
970-215-8892



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

*Elliot De Jongh*  
ELLIOT DE JONGH

DATE: 5-13-21

THIS CERTIFICATION COVERS SHEETS #1 - #9

LICENSE NUMBER: 52553  
LICENSE RENEWAL DATE IS JUNE 30, 2022

**CENTROL**  
CROP CONSULTING  
PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
COVER SHEET  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:

**C-1**

1 of 9

File Name:  
FULTZ\_P-1



X:\MN REDWOOD COORD. FULTZ\_P-1



Know what's below.  
Call before you dig.

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Revisions:		

**CENTROL**<sup>®</sup>  
CROP CONSULTING  
PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
EXISTING SITE PLAN

PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:  
**EX-1**  
2 of 9  
File Name:  
FULTZ\_P-1





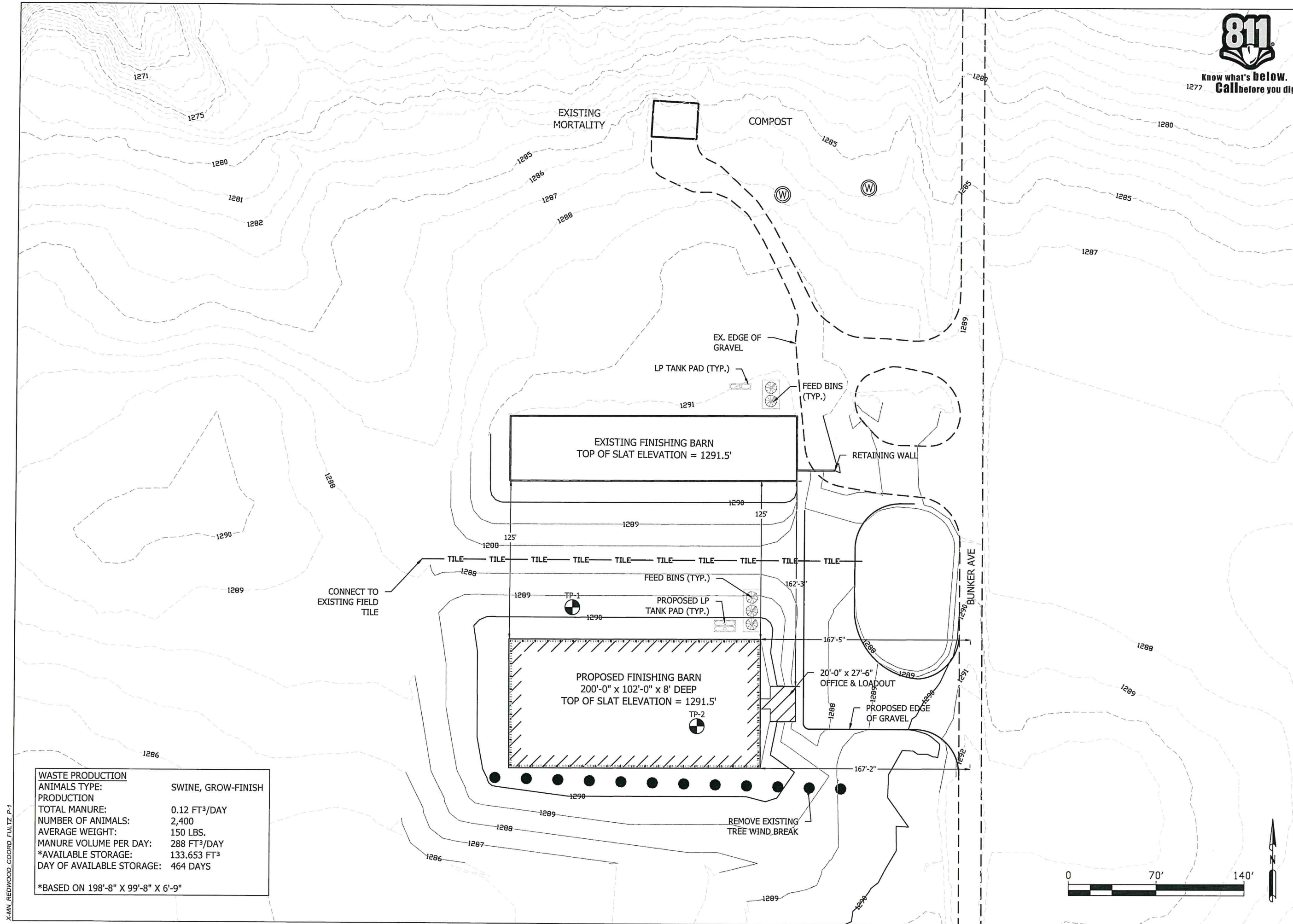
Know what's below.  
1277 Call before you dig.

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**CENTROL**  
CROP CONSULTING  
PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
PROPOSED SITE PLAN  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:  
**P-1**  
3 of 9  
File Name:  
FULTZ\_P-1



WASTE PRODUCTION	
ANIMALS TYPE:	SWINE, GROW-FINISH
PRODUCTION	
TOTAL MANURE:	0.12 FT <sup>3</sup> /DAY
NUMBER OF ANIMALS:	2,400
AVERAGE WEIGHT:	150 LBS.
MANURE VOLUME PER DAY:	288 FT <sup>3</sup> /DAY
*AVAILABLE STORAGE:	133.653 FT <sup>3</sup>
DAY OF AVAILABLE STORAGE:	464 DAYS
*BASED ON 198'-8" X 99'-8" X 6'-9"	



X:\MN\_REDWOOD\_COORD\_FULTZ\_P-1





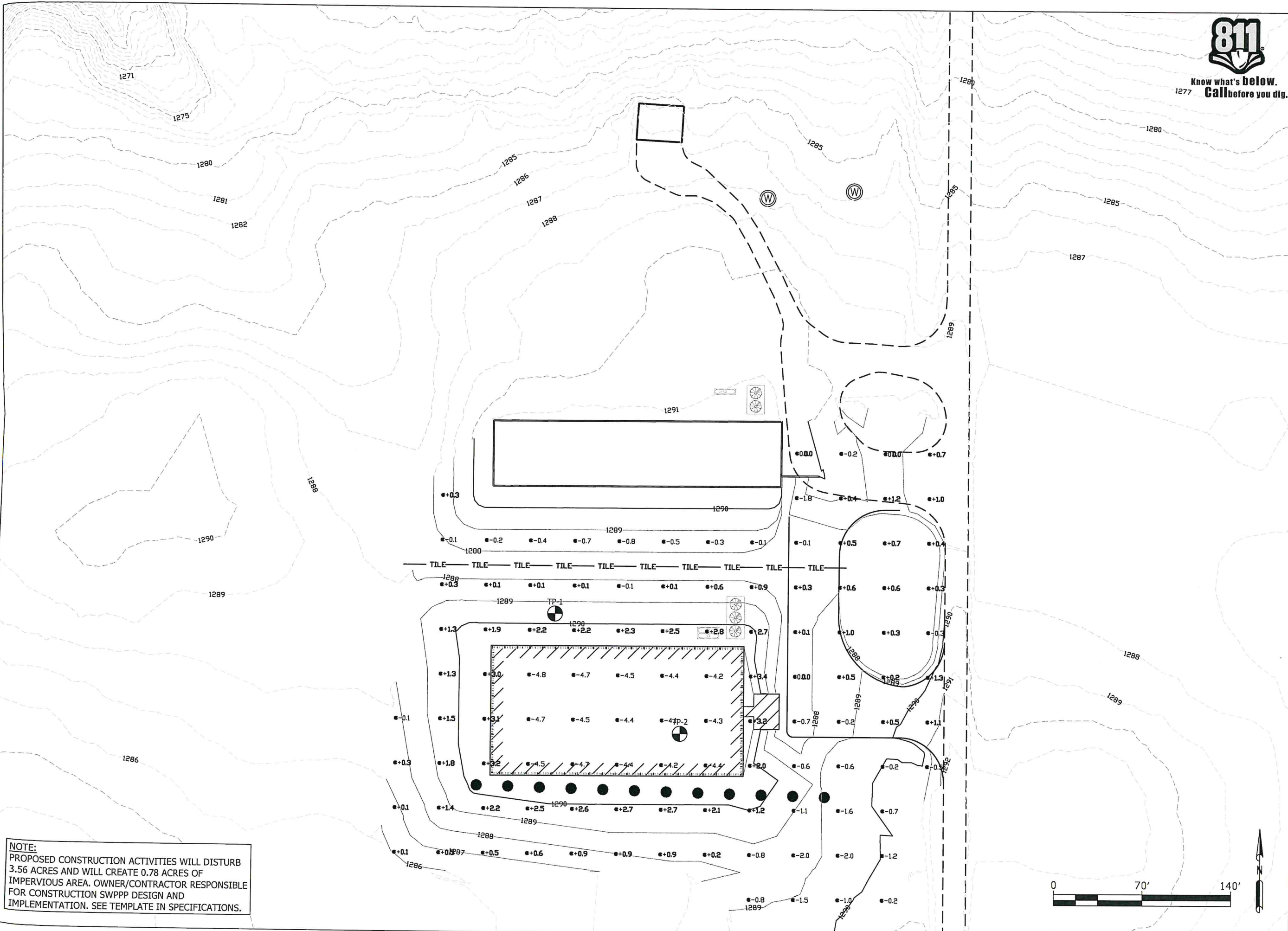
Know what's below.  
1277 Call before you dig.

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Drawn by:	BL
Revisions:	

**CENTROL**  
CROP CONSULTING  
PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
PROPOSED GRADING PLAN - CUT/FILL  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:  
**P-2**  
5 of 9  
File Name:  
FULTZ\_P-1



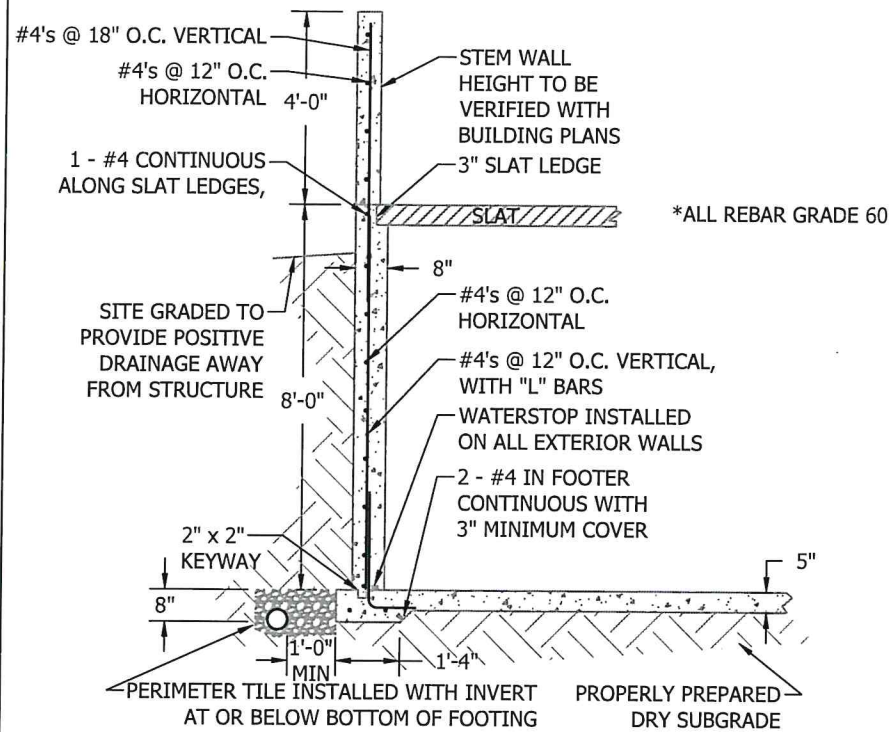
**NOTE:**  
PROPOSED CONSTRUCTION ACTIVITIES WILL DISTURB 3.56 ACRES AND WILL CREATE 0.78 ACRES OF IMPERVIOUS AREA. OWNER/CONTRACTOR RESPONSIBLE FOR CONSTRUCTION SWPPP DESIGN AND IMPLEMENTATION. SEE TEMPLATE IN SPECIFICATIONS.

X-MN REDWOOD\_COORD\_FULTZ\_P-1

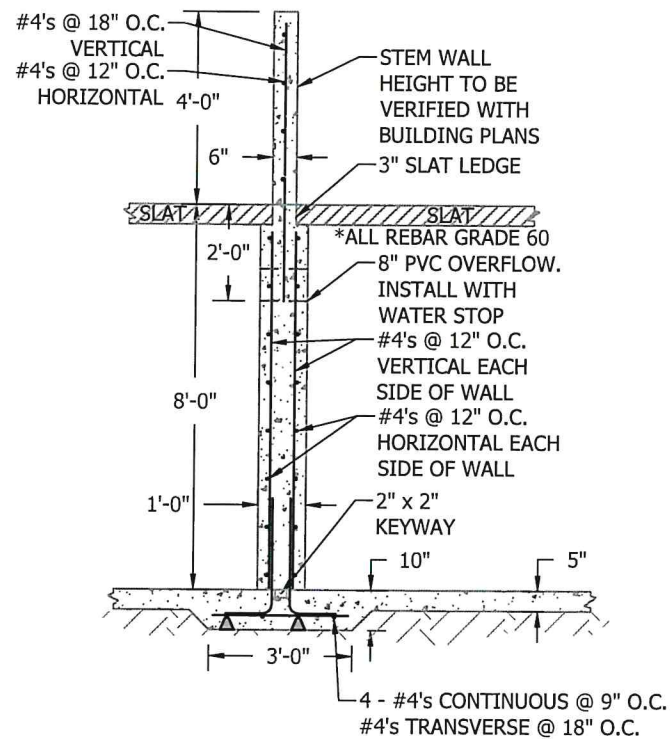




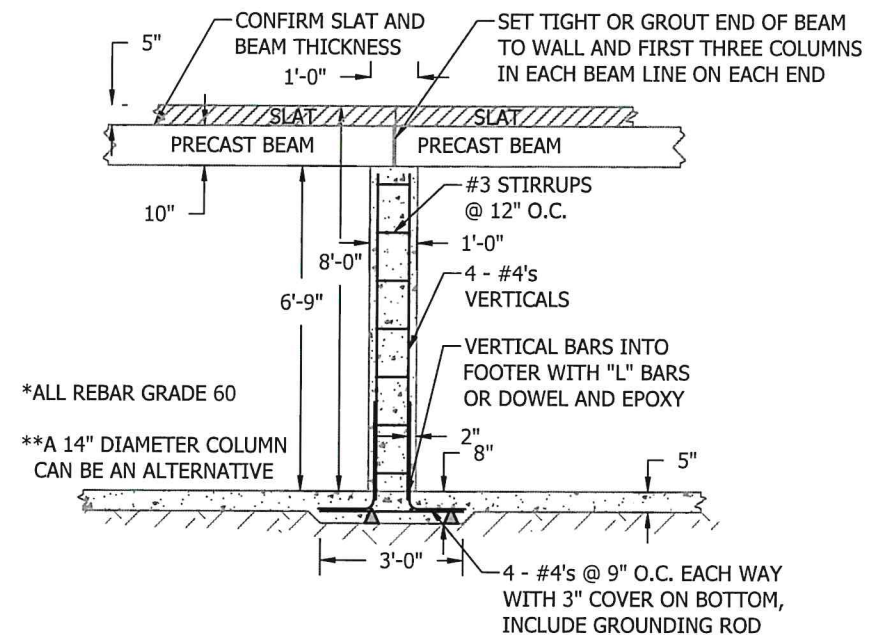




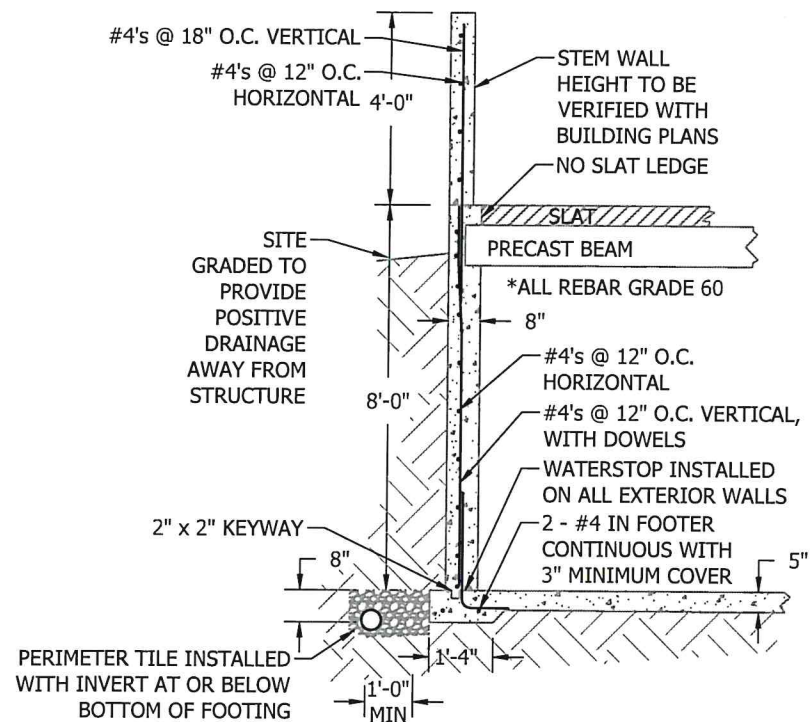
**1** SIDE WALL CROSS SECTION  
Scale: 1/4" = 1'-0"



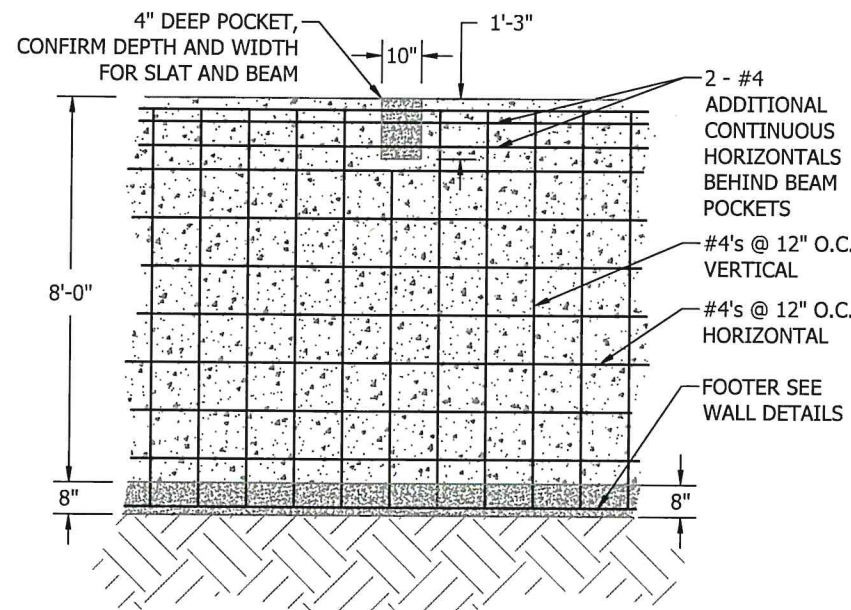
**2** INTERIOR WALL CROSS SECTION  
Scale: 1/4" = 1'-0"



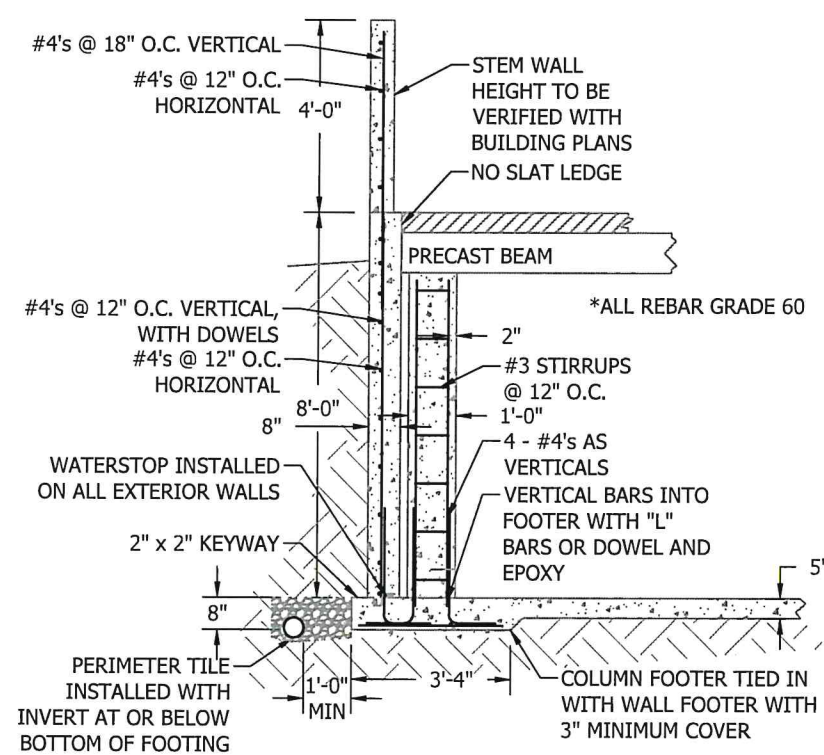
**3** COLUMN CROSS SECTION  
Scale: 1/4" = 1'-0"



**4** ENDWALL CROSS SECTION  
Scale: 1/4" = 1'-0"



**5** BEAM POCKET DETAIL  
Scale: 1/4" = 1'-0"



**6** ALTERNATE ENDWALL DETAIL  
Scale: 1/4" = 1'-0"

Designed by:  
EDJ 5-13-2021  
Drawn by:  
BL  
Revisions:

**CENTROL**  
CROP CONSULTING

PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
CONCRETE DETAILS  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:  
**D-1**  
6 of 9  
File Name:  
FULTZ.DWG

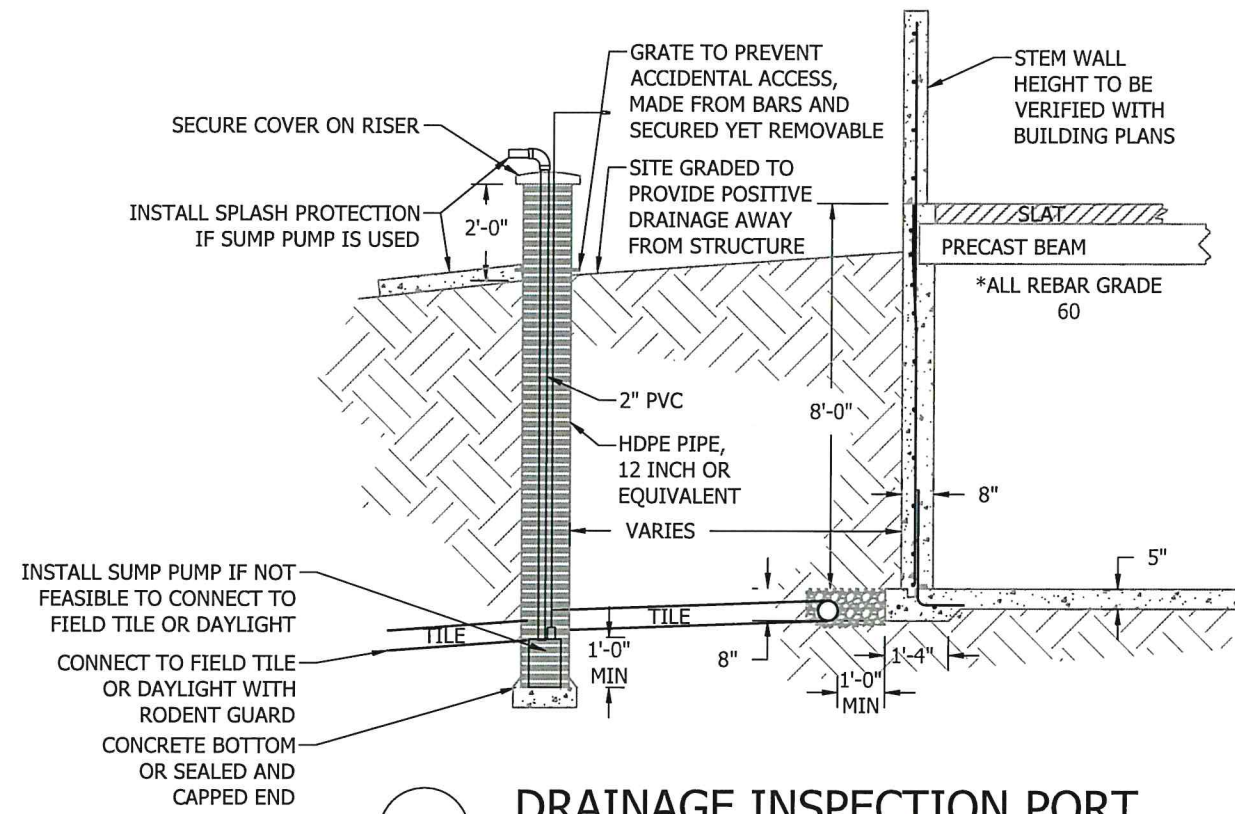


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Revisions:

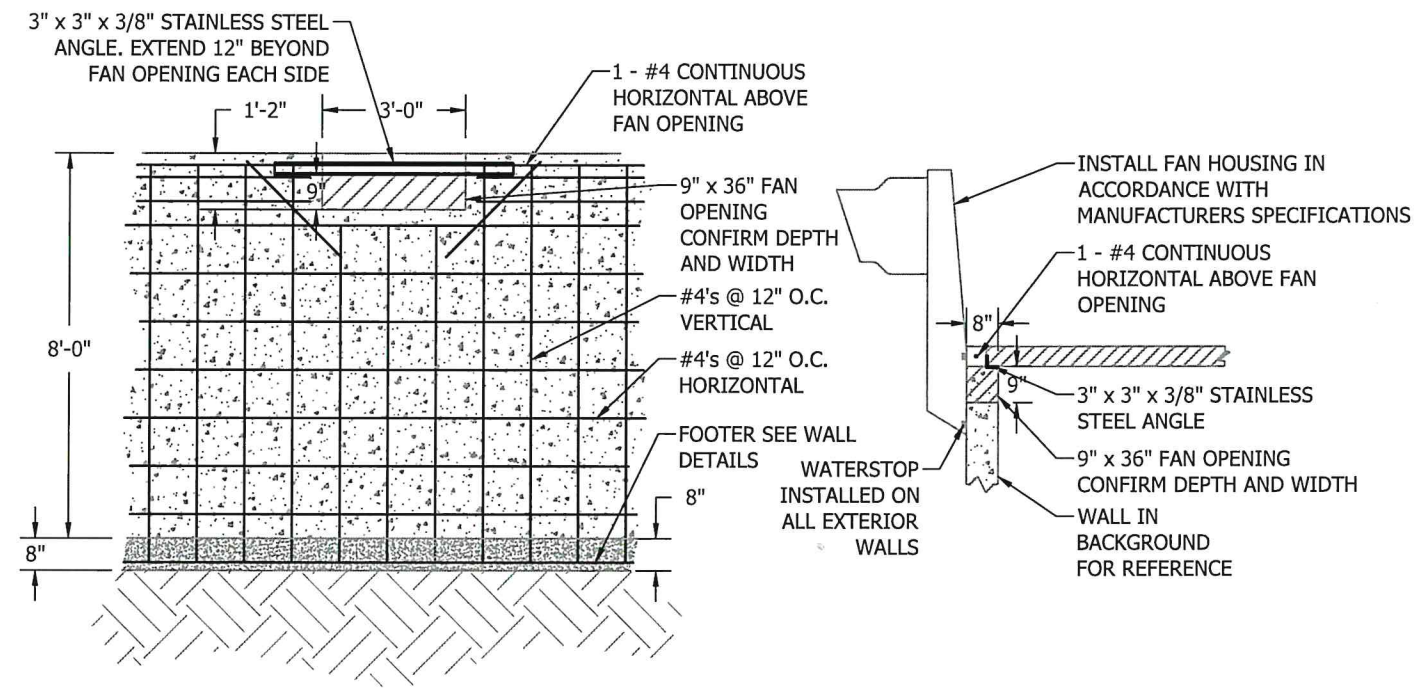
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PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
CONCRETE DETAILS  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

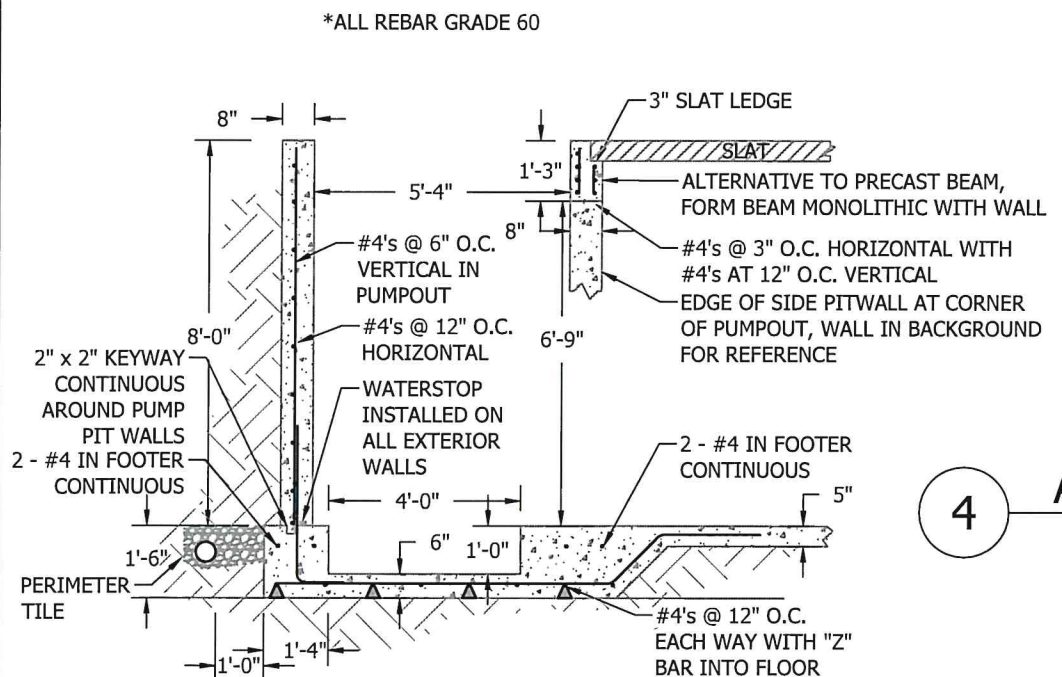
Sheet:  
**D-2**  
7 of 9  
File Name:  
FULTZ.DWG



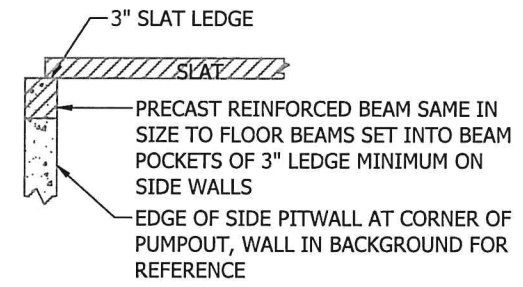
**1 DRAINAGE INSPECTION PORT**  
Scale: 1/4" = 1'-0"



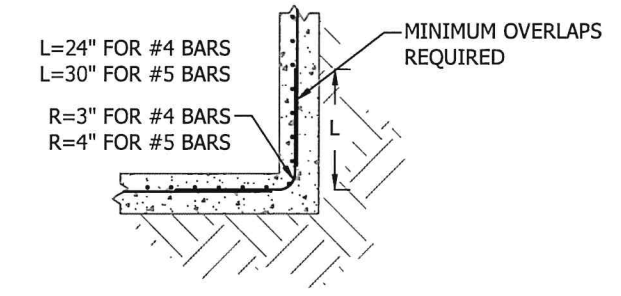
**2 FAN OPENING DETAIL**  
Scale: 1/4" = 1'-0"



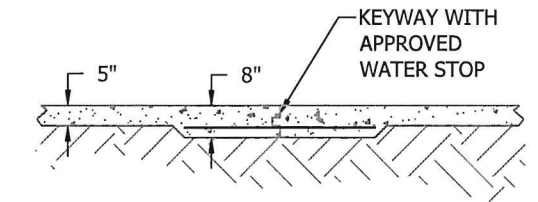
**3 PUMP PIT CROSS SECTION**  
Scale: 1/4" = 1'-0"



**4 ALTERNATIVE PUMP PIT BEAM**  
PRE-CAST OPTION TO MONOLITHIC BEAM IN SAME LOCATION OF PIT PUMPOUT  
Scale: 1/4" = 1'-0"



**5 SINGLE MAT CORNER DETAIL**  
Scale: 1/4" = 1'-0"



**6 CONSTRUCTION JOINT DETAIL**  
Scale: 1/4" = 1'-0"

FULTZ P-1\_BARN

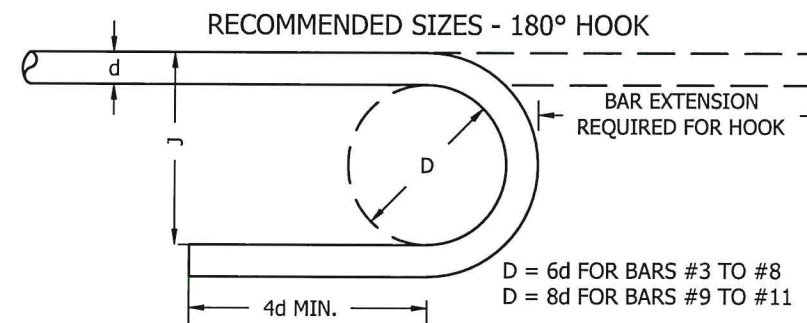


**NOTES**

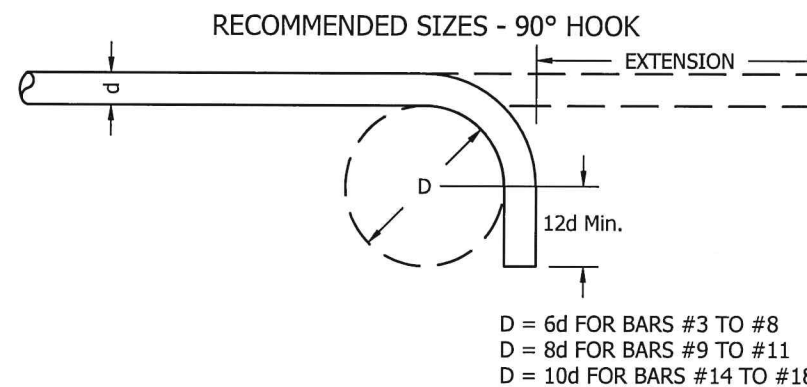
1. QUALITY CONTROL AND TOLERANCES
  - a. COLUMN FINISH ELEVATIONS SHALL BE ± 1/4" FROM DESIGN ELEVATION.
  - b. WALL ALIGNMENT (HORIZONTAL) SHALL DEVIATE NO MORE THAN 1/4" IN 10 FEET AND NOR MORE THAN 3/4" OVER THE FULL LENGTH OF THE WALL.
  - c. WALL BEARING LEDGE ELEVATIONS SHALL BE ± 1/4" FROM DESIGN ELEVATIONS IN 10 FEET AND NO MORE THAN 1/2" OVER THE FULL LENGTH OF WALL.
  - d. OVERALL FOUNDATION LENGTH AND WIDTH DIMENSIONS AND DIAGONAL DIMENSIONS SHOULD BE WITHIN 1/2" OF PLAN DIMENSIONS.
  - e. MINOR HONEYCOMBING SHALL BE REPAIRED ON THE SAME DAY THAT THE FORMS ARE REMOVED. MAJOR HONEYCOMBING (GREATER THAN 1-1/2" DEEP) SHALL BE INSPECTED BY THE ENGINEER AND REPAIRED OR REMOVED AT THEIR DIRECTION.
  - f. TEST CYLINDERS: TO BE TAKEN WHENEVER A NEW MIX OR CONCRETE SUPPLIER IS USED AND AT A MINIMUM OF EVERY 150 CUBIC YARDS FOR STRENGTH.
  - g. SEE CONSTRUCTION SPECIFICATIONS FOR ALL DETAILS AND REQUIREMENTS IN SECTION 03 00 00.
2. INFORMATION
  - a. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STRUCTURAL NOTES.
  - b. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY CHANGES.
  - c. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.
  - d. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
    - i. AMERICAN CONCRETE INSTITUTE (ACI)
    - ii. CONCRETE REINFORCING STEEL INSTITUTES (CRSI) MANUAL OF STANDARD PRACTICE
  - e. PUMPOUT PIT LOCATIONS ARE SUBJECT TO OWNER APPROVAL
  - f. ANY CHANGES TO THE APPROVED SET OF PLANS WITHOUT NOTIFYING THE ENGINEER PRIOR TO SUCH CHANGES ABSOLVES SAID ENGINEER FROM ANY AND ALL RESPONSIBILITY WITH RESPECT TO THE LIABILITY, DAMAGE, OR EXTRA WORK RESULTING FROM SAID CHANGES.
3. WATERSTOP
  - a. WATERSTOP CAN BE BENTONITE/BUTYL RUBBER, EQUAL TO WATERSTOP - RX, EXPAND-TITE EXP 200 OR PROVEN EQUAL YET SUITABLE FOR USE WITH LIQUID MANURE WASTES. WATERSTOP SHALL BE PLACED IN ALL CONSTRUCTION JOINTS ON THE FLOOR AND IN THE PERIMETER WALLS. LOCATION AND NUMBER OF CONSTRUCTION JOINTS ARE TO BE DETERMINED BY THE CONTRACTOR.
  - b. IF REQUIRED, WATERSTOP SPLICES TO BE MADE USING A SPLICING IRON.
  - c. ALL SLABS ON GRADE THAT HAVE A VERTICAL WALL ON TOP SHALL HAVE A KEYWAY AND WATERSTOP AT THE SLAB/WALL INTERFACE.
4. FIBERMESH
  - a. FIBERMESH FIBERS MUST BE ADDED TO THE CONCRETE MIX AT A MINIMUM OF 2.0 LBS OF FIBRILLATED POLYPROPYLENE FIBERS, 3/4 INCH IN LENGTH PER CUBIC YARD FOR THE FLOOR ONLY.
5. COLD WEATHER CONCRETING
  - a. WHEN FOR MORE THAN 3 SUCCESSIVE DAYS, THE MEAN DAILY TEMPERATURE DROPS BELOW 40 DEG F, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH ACI 306.
6. HOT WEATHER CONCRETING
  - a. WHEN IT IS LIKELY THAT TEMPERATURES BETWEEN 75 DEG F AND 100 DEG F WILL BE APPROACHED OR EXCEEDED; THAT LOW RELATIVE HUMIDITY IS PRESENT; OR WIND VELOCITY WILL EXCEED 10 MPH, THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH CHAPTERS 4 & 5 OF ACI 305.
7. ELECTRICAL
  - a. INSTALL REINFORCING BARS AS PER ELECTRICAL CODE AND GROUND AT A MINIMUM NUMBER OF LOCATIONS AS PER ELECTRIC CODE. NOTIFY THE ELECTRICAL INSPECTOR FOR INSPECTION PRIOR TO PLACING CONCRETE.
8. TEMPORARY BRACING AND BACKFILL
  - a. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL THE PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.
  - b. BACKFILL ONLY AFTER THE FLOOR SLATS OR SOLID FLOOR HAS BEEN INSTALLED AND ALL ITEMS THOROUGHLY GROUTED AND CURED.
9. SUBGRADE
  - a. EXISTING DISTURBED SUBGRADE SHALL BE RECOMPACTED TO 95% OF STANDARD PROCTOR DENSITY
  - b. ALL FILL UNDER FOOTINGS AND SLAB SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF MAXIMUM DRY DENSITY.
  - c. SAND FILL AS REQUIRED FOR LEVELING SUBGRADES SHALL BE PROVIDED AT ALL SLAB ON GRADE AREAS.
10. FOOTINGS AND FOUNDATIONS
  - a. SOIL BEARING DESIGN VALUE: 2,000 PSF (ASSUMED) ON VIRGIN SOIL OR COMPACTED FILL FOR FOOTINGS.
  - b. PROTECT FOUNDATION EXCAVATIONS FROM FROST AND DO NOT PLACE CONCRETE ON FROZEN GROUND.
  - c. FOUNDATION EXCAVATION SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER.
  - d. FOOTINGS AND FLOOR SHALL BE ON NATIVE CLAY SOIL, OVER EXCAVATION AND PLACEMENT MAY BE NECESSARY ALONG BARN.
11. PERIMETER DRAINAGE
  - a. INSTALL THE DRAINAGE TILE AT A MINIMUM DEPTH OF THE BOTTOM OF WALL FOOTER.
  - b. THE DRAIN TILE SHALL BE HEAVY DUTY PERFORATED POLYETHYLENE TUBING 4" DIAMETER AS A MINIMUM.
  - c. CONNECT THE DRAIN TILE TO A SUMP FOR INSPECTION AND POTENTIAL DEWATERING INTO PIT ONLY. MONITOR WATER DEPTH PRIOR TO PUMPING PITS.
12. REINFORCED CONCRETE
  - a. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF  $F'c = 4,000$  PSI
  - b. WATER CEMENT RATIO SHALL BE 0.45 MAXIMUM.
  - c. CEMENT SHALL CONFORM TO ASTM C150, TYPE 1.
  - d. COARSE AGGREGATE SHALL BE 3/4" MAX.
  - e. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
  - f. SLUMP SHALL BE MAXIMUM OF 5".
  - g. AIR CONTENT SHALL BE 5% TO 7%.
  - h. ALL EXPOSED CONCRETE SHALL HAVE ENTRAINED AIR ADMIXTURE
  - i. CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF ACI 301
  - j. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER FOR THE PURPOSED OF INCREASING THE WORKABILITY BUT NOT TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. CALCIUM CHLORIDE SHALL NOT BE USED.
  - k. CONCRETE SHALL BE CURED WITH CURING COMPOUND OR OTHER ACCEPTABLE METHODS
  - l. CONCRETE IN ALL WALLS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 14 DAYS BEFORE BACKFILL IS PLACED AGAINST WALLS.

- EXERCISE CAUTION WHEN BACKFILLING TO BRING UP THE LEVEL UNIFORMLY ON ALL SIDES OF TANKS AND PITS.
- m. NO CONSTRUCTION JOINTS SHALL BE LOCATED IN THE END WALLS. IF REQUIRED, CONSTRUCTION JOINTS IN WALLS SHALL NOT BE LOCATED WITH IN 3 FEET OF PUMPOUT PITS.
13. REINFORCING STEEL
    - a. BAR REINFORCEMENT SHALL BE ASTM A615,  $F_y = \text{GRADE 60 (60,000 PSI)}$  DEFORMED STEEL
    - b. MINIMUM LAP SPLICE OF REINFORCING BAR, BASED ON ACI 318, CLASS B, SHALL BE AS FOLLOWED, UNLESS NOTED OTHERWISE:
      - #3 BARS = 15"
      - #4 BARS = 20"
      - #5 BARS = 24"
      - #6 BARS = 30"
      - #7 BARS = 36"
      - #8 BARS = 42"
    - c. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER UNLESS NOTED OTHERWISE:
      - i. CONCRETE PLACED AGAINST EARTH = 3"
      - ii. FORMED CONCRETE EXPOSED TO WEATHER OR EARTH:
        1. #6 THROUGH #8 BARS = 2"
        2. #5 BARS AND SMALLER = 1 1/2"
        3. STIRRUPS AND TIES = 1 1/2"
    - d. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE.
    - e. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE SIZE AND SPACING AS VERTICAL WALL REINFORCEMENT.
    - f. ALL LAP SPLICES SHALL BE TIED AT 3 LOCATIONS.

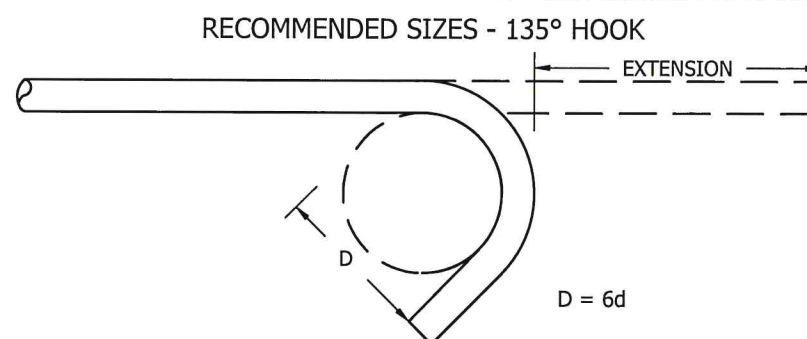
ALSO SEE ASSOCIATED CONSTRUCTION SPECIFICATIONS INCLUDED WITH PROJECT DOCUMENTS



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



BAR SIZE (d) (inches)	BAR EXTENSION (inches)	
#2	1/4"	3 1/2"
#3	3/8"	6"
#4	1/2"	8"
#5	5/8"	10"
#6	3/4"	1'-0"
#7	7/8"	1'-2"
#8	1"	1'-4"
#9	1-1/8"	1'-7"
#10	1-1/4"	1'-10"
#11	1-3/8"	2'-0"



BAR SIZE (d) (inches)	BAR EXTENSION (inches)	
#2	1/4"	3-1/2"
#3	3/8"	4"
#4	1/2"	4-1/2"
#5	5/8"	5-1/2"

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

**1 STANDARD HOOK DETAILS**

Designed by:  
EDJ 5-13-2021  
Drawn by:  
BL  
Revisions:

**CENTROL**  
CROP CONSULTING  
PO BOX 236, 351 Burlington Circle Marshall, MN 56258 \* (507) 337-3021

FULTZ EAST SITE  
CONCRETE DETAILS & NOTES  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:  
**D-3**  
8 of 9  
File Name:  
FULTZ.DWG



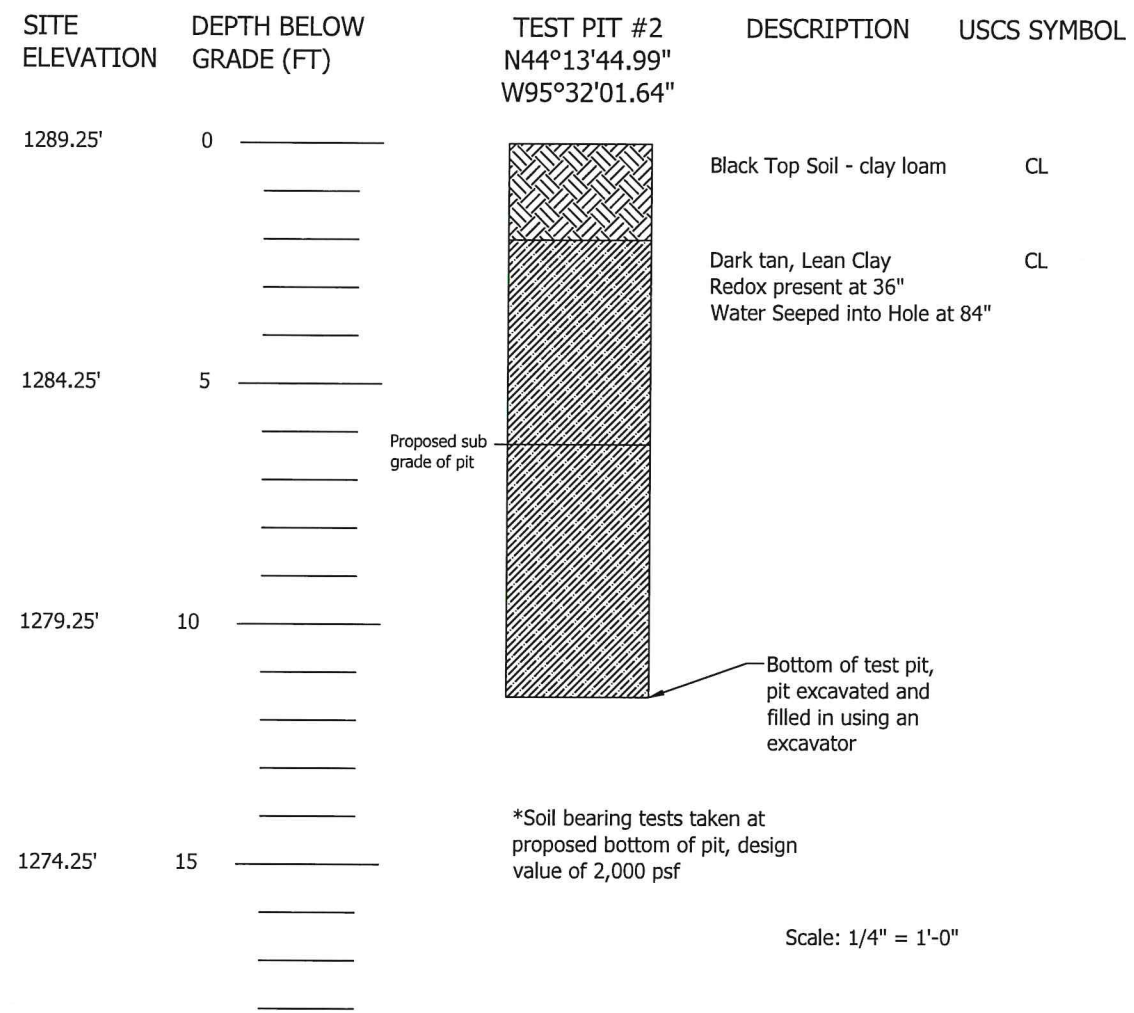
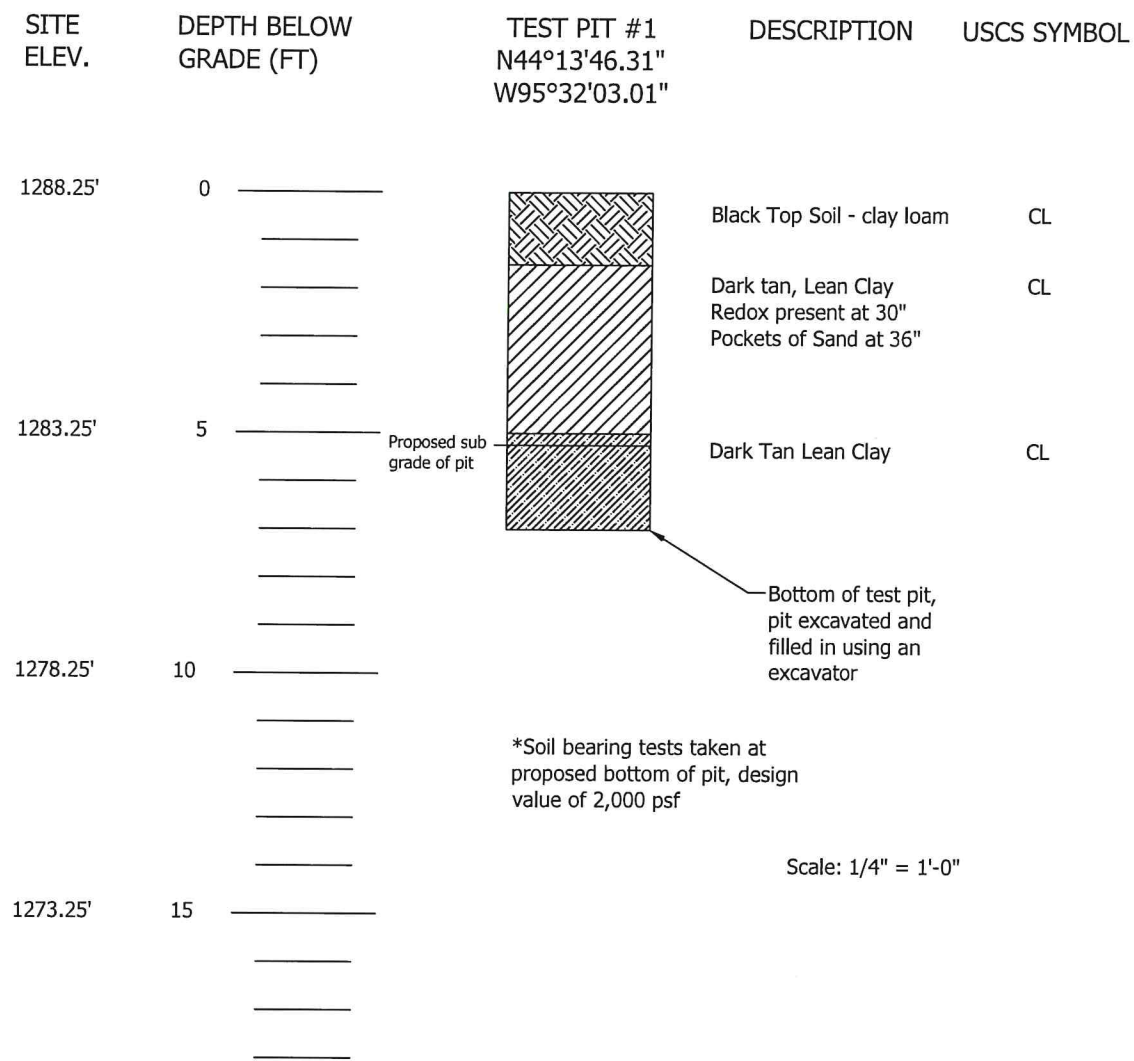
# TEST PITS EXCAVATED ON THE PROPOSED SITE FOR SUBSURFACE GEOTECHNICAL EVALUATION

PROJECT: FULTZ EAST SITE - PROPOSED DEEP PITTED SWINE BARN

DATE: 4-23-2021

BY: CENTROL CROP CONSULTING, EDJ

Designed by:	EDJ 5-13-2021
Drawn by:	BL
Revisions:	



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FULTZ EAST SITE  
GEOTECHNICAL NOTES  
PART OF THE NE 1/4 OF THE SW 1/4 OF SEC 21,  
T 109N, R 39W OF THE 5th P.M.  
REDWOOD COUNTY, STATE OF MINNESOTA

Sheet:

**G-1**

9 of 9

File Name:

FULTZ.DWG



# Construction Specifications

## FULTZ EAST SITE

### DEEP PIT SWINE BARN

Prepared by:



351 Burlington Circle

Marshall, MN 56258

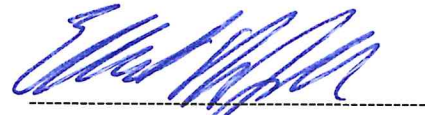
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**CERTIFICATION**

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

  
 Elliot De Jongh Lic No: 52553

Date: 5-13-21

**SECTION 01 10 00 SUMMARY OF WORK****SCOPE:**

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

**SECTION 01 40 00 QUALITY REQUIREMENTS****QUALITY ASSURANCE/QUALITY CONTROL PLAN:**

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



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

## SECTION 01 50 00 TEMPORARY FACILITIES

### Utilities:

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

## SECTION 02 21 00 SURVEYS

### Survey:

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

## SECTION 02 32 00 GEOTECHNICAL INVESTIGATIONS

### Test pits:

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

## SECTION 03 00 00 CONCRETE

### SCOPE OF WORK

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

### FORMS

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

### REINFORCING MATERIALS

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

### CONCRETE MATERIALS

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

### RELATED MATERIALS

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



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

#### DESIGN OF MIXES

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

#### CONCRETE MIXING

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

#### FORMS

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

#### PLACING REINFORCEMENT AND JOINTS

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

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

#### PREPARATION OF FORM SURFACES

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

#### CONCRETE PLACEMENT

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



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

#### CONCRETE CURING AND PROTECTION

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

#### REMOVAL OF FORMS

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

#### CONCRETE SURFACE REPAIRS

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

#### FREEZE THAW PROTECTION

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



### SECTION 03 40 00 PRECAST CONCRETE

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

### SECTION 10 14 00 SIGNAGE

#### SCOPE:

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

### SECTION 31 01 00 EARTHWORK/GRADING

#### SCOPE:

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

#### WORK NOT INCLUDED:

Subsurface geotechnical investigation excavations to be completed by the owner.

#### DEFINITIONS:

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

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

#### REFERENCES:

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

#### SURVEY

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

#### STOCKPILE AREAS:

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

#### OFF-SITE DISPOSAL:

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

#### IMPORTED FILL:

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

#### SOIL REPORTS

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

#### MATERIALS

#### FILL SOIL:

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



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

**REJECTED FILL SOIL:**

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

**TOPSOIL:**

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

**IMPORTED SOIL:**

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

**ROCK EXCAVATION:**

Material that cannot be dislodged with heavy duty excavator shall be classified as rock excavation. Typical materials classified as rock excavation are boulders larger than 1/2 cy, bedrock strata, rock ledges.

**WATER:**

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

**EXECUTION****UTILITIES:**

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

**GRADING - GENERAL:**

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

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

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

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

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

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

## 2. Placement

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

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

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

## 3. Control of moisture content

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

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



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

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

4. Compaction

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

- a. Class A Compaction
  - i. Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in soil report or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size used in the compaction test method specified.
- b. Class B compaction
  - i. Each layer of earthfill shall be compacted to a mass density not less than the minimum density specified.
- c. Class C compaction
  - i. Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

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

The passage of heavy equipment will not be allowed:

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

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

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

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

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

ALL OTHER EARTHFILL AREAS:

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

**SECTION 31 23 00 - DRAINAGE**

SCOPE:

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



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

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

### OVERVIEW

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

### OPERATION CHECKLIST

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

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



# SWPPP template for small construction sites

## Construction Stormwater Program Stormwater Pollution Prevention Plan (SWPPP)

Doc Type: Stormwater Pollution Prevention Plan

**Instructions:** This Stormwater Pollution Prevention Plan (SWPPP) template is intended to provide a means for small (three acres or less) construction sites to comply with the General Stormwater Permit for Construction Activity. Before completing this SWPPP, you must read and understand the requirements in the Minnesota General Stormwater Permit for Construction Activity (MN R100001) available from Minnesota Pollution Control Agency (MPCA) website at <https://www.pca.state.mn.us/water/construction-stormwater>. A list of the SWPPP requirements can be found at <http://www.pca.state.mn.us/index.php/view-document.html?qid=7423>. This template will help you complete the SWPPP components required in Section 5 of the permit. **Persons preparing SWPPPs are required to have had training in preparation of SWPPPs (Section 21).**

### I. General construction activity information

- a. **Project name:** FULTZ EAST SITE - DEEP PIT SWINE BARN
- b. **Describe the construction project location (address/city or township/county/latitude/longitude):**  
Address or describe area: \_\_\_\_\_  
City or Township: \_\_\_\_\_ State: MN Zip code: \_\_\_\_\_  
Latitude/Longitude of approximate centroid of project: 44°13'47" N, 95°32'1" W
- c. **Describe the construction activity (type of construction, phases, timelines, potential for discharge of sediment and other pollutants, etc.):**

**Project type:**

- Residential  Commercial/Industrial  Road construction  
 Residential and road construction  Other (describe): Agricultural

- d. **Number total of acres to be disturbed:** 3.56 (tenths of an acre)
- e. **Pre-construction acres of impervious surface:** 0.65 (tenths of an acre)
- f. **Post-construction acres of impervious surface:** 1.43 (tenths of an acre)
- g. **Total new impervious surface acres:** 0.78 (tenths of an acre)

*(Examples of impervious surface include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.)*

### II. Receiving waters

- a. **List all waters within one mile (nearest straight line distance) that are likely to receive stormwater runoff from the project site both during or after construction:**

Receiving waters **within one mile of project property edge:**

Water body ID*	Name of water body	Type (ditch, pond, wetland, calcareous fen, lake, stream, river)	Special water? (See Section 23)	Impaired Water?*** (See Section 23)
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

\* Water Body identification (ID) might not be available for all water bodies. Use the Special and Impaired Waters Search Tool at: <https://pca-gis02.pca.state.mn.us/CSW/index.html>

\*\* Impaired water for the following pollutant(s) or stressor(s): phosphorus, turbidity, dissolved oxygen, or biotic impairment.

- b. Use the Special and Impaired Waters Search Tool to locate special and impaired waters found on the MPCA website at <https://pca-gis02.pca.state.mn.us/CSW/index.html>).
- c. Identify adjacent public waters where the Minnesota Department of Natural Resources (DNR) has declared "work in water restrictions" during fish spawning timeframes:
- d. Attach maps (U.S. Geologic Survey 7.5 minute quadrangle, National Wetland Inventory maps or equivalent) showing the location and type of all receiving waters, including wetlands, drainage ditches, stormwater ponds or basins, etc. that will receive runoff from the project. Use arrows showing the direction of flow and distance to the water body.
- e. Identify wetland impacts:
- Will construction result in any potential adverse impacts to wetlands, including excavation, degradation of water quality, draining, filling, permanent inundation or flooding, conversion to a stormwater pond?  Yes  No
  - If yes, describe impacts and mitigation measures that were taken to address the impacts (Section 22 of the permit) and attach to this SWPPP, copies of permits or approvals from an official state wide wetland program issued specifically for this project or site:
- f. Describe any stormwater mitigation measures that will be implemented, as a result of an environmental review, endangered or threatened species review or archeological site review:

### III. Project plans and specifications

- a. Attach to this SWPPP site maps and/or plan sheets that depict the following features:
- The project location and construction limits.
  - Existing and final grades, including dividing lines and direction of flow for all pre and post-construction stormwater runoff drainage areas located within the project limits.
  - Soil types at the site.
  - Locations of impervious surfaces.
  - Locations of areas not to be disturbed (e.g., buffer zones, wetlands, etc.).
  - Steep slope locations.
  - Locations of areas where construction will be phased to minimize duration of exposed soils.
  - Portions of the site that drain to a public water with DNR work in water restrictions for fish spawning timeframes.
  - Locations of all temporary and permanent erosion and sediment control best management practices (BMPs).
  - Buffer zones as required in item 9.17 and 23.11 of the permit.
  - Locations of potential pollution-generating activities identified in Section 12 of the permit.
  - Standard details for erosion and sediment control BMPs to be installed at the site.
- b. List all anticipated erosion prevention and sediment control BMP quantities needed for the life of the project (e.g., linear ft. silt fence, square feet erosion blanket, tons mulch, etc.):

### IV. Temporary erosion prevention practices

- a. Describe the types of temporary erosion prevention BMPs expected to be implemented on this site during construction:
- Methods of temporarily stabilizing soils and soil stockpiles (e.g., mulches, hydraulic tackifiers, erosion blankets, etc.):
  - Methods to be used for stabilization of ditch and swale wetted perimeters (Note that mulch, hydraulic soil tackifiers, hydromulches, etc. are not acceptable soil stabilization methods for any part of a drainage ditch or swale with a continuous slope of greater than 2%):



3. Methods to be used for energy dissipation at pipe outlets (e.g., rip rap, splash pads, gabions, etc.):
4. Methods to be used to promote infiltration and sediment removal on the site prior to offsite discharge, unless infeasible (e.g., direct stormwater flow to vegetated areas):
- b. Describe timelines to be implemented at this site for completing the installation of the erosion prevention BMPs listed in i, ii, iii, and iv. (see Section 8 of the permit for minimum requirements). If applicable, include the timeline for completing soil stabilization for areas within 200 feet of a public water with work in water restrictions due to fish spawning time frames (item 8.4) and soil stabilization timelines for portions of the site that drain to special or impaired waters as required in item 23.9:
- c. Describe additional erosion prevention measures that will be implemented at the site during construction (e.g., construction phasing, minimizing soil disturbance, vegetative buffers, horizontal slope grading, slope draining/terracing, etc.):
- d. For those projects (or portions of projects) that drain to special waters an undisturbed buffer zone of not less than 100 linear feet from a special water (not including tributaries) must be maintained both during construction and as a permanent feature post construction, except where a water crossing or other encroachment is necessary to complete the project. Permittees must fully document the circumstance and reasons the buffer encroachment is necessary in the SWPPP and include restoration activities:
- e. If applicable, describe additional erosion prevention BMPs to be implemented at the site to protect planned infiltration or filtration areas:

## V. Temporary sediment control practices

- a. Describe the methods of sediment control BMPs to be implemented at this site during construction to minimize sediment impacts to surface waters, including curb and gutter systems:
  1. Methods to be used for down gradient perimeter control:
  2. Methods to be used to contain soil stockpiles:
  3. Methods to be used for storm drain inlet protection:
  4. Methods to minimize vehicle tracking at construction exits and street sweeping activities:
  5. If applicable, additional sediment controls (e.g., diversion berms) to be installed to keep runoff away from planned infiltration or filtration areas when excavated prior to final stabilization of the contributing drainage area:
  6. Describe methods to be used to minimize soil compaction and preserve top soil (unless infeasible) at this site:
  7. Describe plans to preserve a 50-foot natural buffer between the project's soil disturbance and a surface water or plans for redundant sediment controls if a buffer is infeasible:
  8. Describe plans for use of sedimentation treatment chemicals (e.g., polymers, flocculants, etc.):

- b. Is the project required to install a temporary sediment basin due to 10 or more acres draining to a common location or 5 acres or more if the site is within 1 mile of a special or impaired water?  Yes  No  
If yes, describe (or attach plans ) showing how the basin will be designed and constructed in accordance with Section 14.
- c. Will the project include dewatering, basin draining?  Yes  No  
If yes, describe measures to be used to treat/dispose of turbid or sediment-laden water and method to prevent erosion or scour of discharge points (see Section 10 of the permit):
- d. Will the project include use of filters for backwash water?  Yes  No  
If yes, describe how filter backwash water will be managed on the site or properly disposed:

## VI. Permanent Stormwater Management System

- a. Will the project result in one acre or more of new impervious surfaces or result in one acre or more of new impervious in total if the project is part of a larger plan of development?  Yes  No
- b. If yes, a water quality volume of one inch of runoff from the cumulative new impervious surfaces must be retained on site (see Section 15 the permit) through infiltration unless prohibited due to one of the reasons in item 16.14 through item 16.21. If infiltration is prohibited, identify other methods of stormwater treatment used (e.g., filtration system, wet sedimentation basin, regional ponding or equivalent method):  
N/A
- c. Attach design parameters for the planned permanent stormwater management system, including volume calculations, discharge rate calculation, construction details including basin depth, outlet configurations, location, design of pre-treatment devices and timing for installation. For more design information consult the *Minnesota Stormwater Manual* on the MPCA website at [http://stormwater.pca.state.mn.us/index.php/Main\\_Page](http://stormwater.pca.state.mn.us/index.php/Main_Page).  
N/A
- d. For infiltration systems, provide at least one soil boring, test pit or infiltrometer test in the location of the infiltration practice for determining infiltration rates. For design purposes, divide field measured infiltration rates by two as a safety factor or use soil-boring results with the infiltration rate chart in the *Minnesota Stormwater Manual* to determine design infiltration rates. When soil borings indicate type A soils, permittees should perform field measurements to verify the rate is not above 8.3 inches per hour. This permit prohibits infiltration if the field measured infiltration rate is above 8.3 inches per hour. Attach on site soil testing results:  
N/A
- e. For linear projects with lack of right of way to install treatment systems capable of treating the entire water quality volume, identify other method(s) for providing treatment of runoff prior to discharge to surface waters (e.g., grassed swales, filtration systems, smaller ponds or grit chambers, etc.):  
N/A
- f. Attach to this SWPPP documentation of reasonable attempts made to obtain right of way for stormwater treatment systems.  
N/A
- g. For projects that discharge to trout streams, including tributaries to trout streams, identify method of incorporating temperature controls into the permanent stormwater management system:  
N/A

## VII. Inspection and maintenance activities

- a. Identify the trained individual(s) responsible for installing, supervising, repairing, inspecting, and maintaining erosion prevention and sediment control BMPs at the site:



- b. Attach training documentation for each individual:
- c. Describe procedures to routinely inspect the construction site, including:
  - 1. A description of record-keeping requirements and content (see item 11.11):
  - 2. Frequency of inspections (see item 11.2 and item 11.10 of the permit):
  - 3. Areas to be inspected and maintained (see item 11.3 through 11.6 of the permit):

## **VIII. Pollution prevention management measures**

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- a. Describe practices for storage of building products and landscape materials with a potential to leach pollutants to minimize exposure to stormwater:
- b. Describe practices for storage of pesticides, fertilizers, and treatment chemicals:
- c. Describe practices for storage and disposal of hazardous materials or toxic waste (e.g., oil, fuel, hydraulic fluids, paint solvents, petroleum-based products, wood preservative, additives, curing compounds, and acids) according to Minn. R. ch. 7045, including secondary containment if applicable:
- d. Describe collection, storage and disposal of solid waste in compliance with Minn. R. ch. 7035:
- e. Describe management of portable toilets to prevent tipping and disposal of sanitary wastes in accordance with Minn. R. ch. 7041:
- f. Describe storage and disposal of concrete and other washout wastes so that wastes do not contact the ground:

## **IX. Permit termination conditions**

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- a. Describe method of final stabilization (permanent cover) of all disturbed areas:
- b. Describe methods used to clean all stormwater treatment systems and stormwater conveyance systems of accumulated sediment:
- c. Describe methods for removing all temporary synthetic erosion prevention and sediment control BMP's:



# OFFSET Summary and Results

OFFSET Ver 2.0  
University of Minnesota  
1/21/2017

Farm Name: Fultz  
County: Itasca  
Evaluator: NWB  
Date: 6/14/21

## Source Characteristics Summary

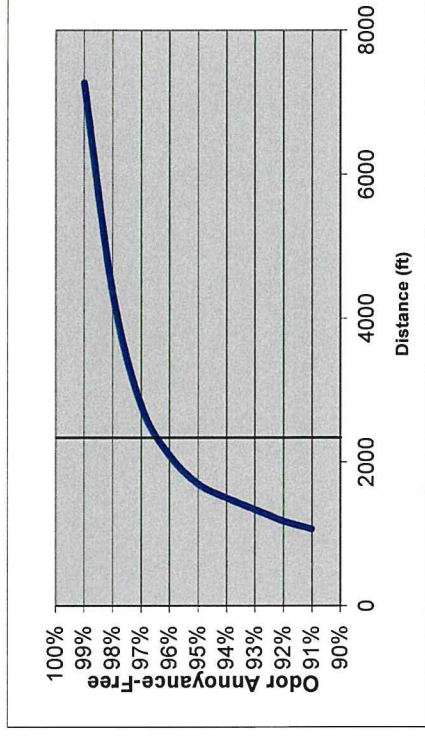
	Similar Sources	Emit Area sq ft	Control Technology Type	Percent Treated	Flux Rates (with control technology)				Source Emission Rates*			
					Odor ouls/m2	OFFSET OER	H2S ug/s/m2	Ammonia ug/s/m2	Odor ou/s	H2S ug/s	Ammonia ug/s	
<b>Buildings</b>												
Swine Wean to Finish - deep pit	1	14688	None	0%	10.5	34.2	4.5	92.0	14335	6144	125604	
Swine Wean to Finish - deep pit	1	20400	None	0%	10.5	34	4.5	92.0	19910	8533	174450	
<b>Area Sources</b>												
Earthen manure storage		0	None		14.0	13	25.3	107.0	0	0	0	
User added		0	None		0.0	0.0	0.0	0.0	0	0	0	

\*includes control technologies

## Site Emissions

Total Site Area (ft2)	35,088
Total Odor Emission Factor (TOEF)	120
Total Site H2S Emissions (mg/s)	15
Total Site H2S Emission AVERAGE (lbs/day)	3
Total Site H2S Emission MAX (lbs/day)	6
Total Site H2S Emissions (tons/yr)	1
Total Site Ammonia Emissions (mg/s)	300
Total Site Ammonia Emission AVERAGE (lbs/day)	57
Total Site Ammonia Emissions MAX (lbs/day)	114
Total Site Ammonia Emissions (tons/yr)	10

Source Edge to Nearest Neighbor (ft)	2340
OFFSET Annoyance-free frequency	96%





# OFFSET Summary and Results

OFFSET Ver 2.0  
University of Minnesota  
1/21/2017

Farm Name: Fultz  
County: 13250 Co Hwy 20  
Evaluator: NWB  
Date: 6/14/21

## Source Characteristics Summary

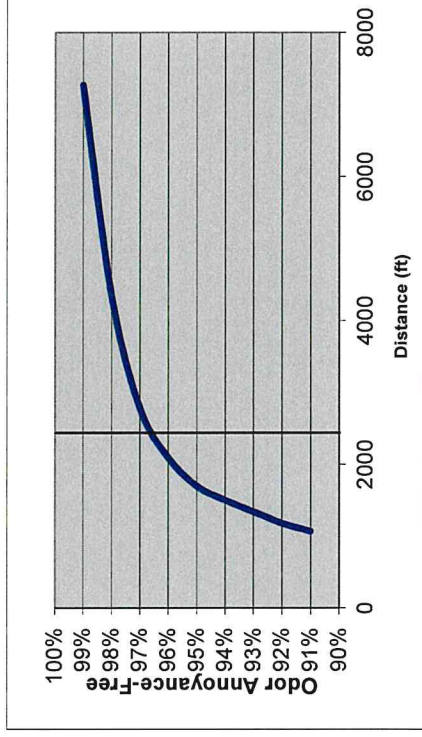
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					Odor ou/s/m2	OFFSET OER	H2S ug/s/m2	Ammonia ug/s/m2	Odor ou/s	H2S ug/s	Ammonia ug/s	
<b>Buildings</b>												
Swine Wean to Finish - deep pit	1	14688	None	0%	10.5	34.2	4.5	92.0	14335	6144	125604	
Swine Wean to Finish - deep pit	1	20400	None	0%	10.5	34	4.5	92.0	19910	8533	174450	
<b>Area Sources</b>												
Earthen manure storage		0	None		14.0	13	25.3	107.0	0	0	0	
User added		0	None		0.0	0.0	0.0	0.0	0	0	0	

\*includes control technologies

## Site Emissions

Total Site Area (ft2)	35,088
Total Odor Emission Factor (TOEF)	120
Total Site H2S Emissions (mg/s)	15
Total Site H2S Emission AVERAGE (lbs/day)	3
Total Site H2S Emission MAX (lbs/day)	6
Total Site H2S Emissions (tons/yr)	1
Total Site Ammonia Emissions (mg/s)	300
Total Site Ammonia Emission AVERAGE (lbs/day)	57
Total Site Ammonia Emissions MAX (lbs/day)	114
Total Site Ammonia Emissions (tons/yr)	10

Source Edge to Nearest Neighbor (ft)	2440
OFFSET Annoyance-free frequency	96%





# OFFSET Summary and Results

OFFSET Ver 2.0  
University of Minnesota  
1/21/2017

Farm Name Fuliz  
County to 12410 Co Hwy 20  
Evaluator NWB  
Date 6/14/21

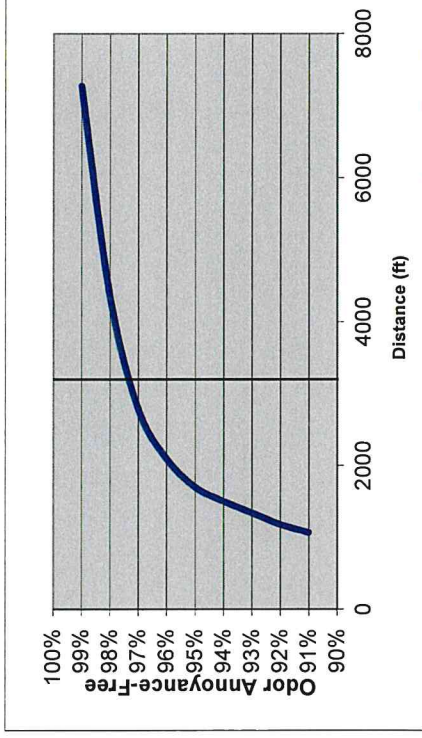
## Source Characteristics Summary

	Similar Sources	Emit Area sq ft	Control Technology Type	Percent Treated	Flux Rates (with control technology)			Source Emission Rates*				
					Odor ou/s/m <sup>2</sup>	OFFSET OER	H2S ug/s/m <sup>2</sup>	Ammonia ug/s/m <sup>2</sup>	Odor ou/s	H2S ug/s	Ammonia ug/s	
<b>Buildings</b>												
Swine Wean to Finish - deep pit	1	14688	None	0%	10.5	34.2	4.5	92.0	14335	6144	125604	
Swine Wean to Finish - deep pit	1	20400	None	0%	10.5	34	4.5	92.0	19910	8533	174450	
<b>Area Sources</b>												
Earthen manure storage		0	None		14.0	13	25.3	107.0	0	0	0	
User added		0	None		0.0	0.0	0.0	0.0	0	0	0	

\*includes control technologies

## Site Emissions

Total Site Area (ft <sup>2</sup> )	35,088
Total Odor Emission Factor (TOEF)	120
Total Site H2S Emissions (mg/s)	15
Total Site H2S Emission AVERAGE (lbs/day)	3
Total Site H2S Emission MAX (lbs/day)	6
Total Site H2S Emissions (tons/yr)	1
Total Site Ammonia Emissions (mg/s)	300
Total Site Ammonia Emission AVERAGE (lbs/day)	57
Total Site Ammonia Emissions MAX (lbs/day)	114
Total Site Ammonia Emissions (tons/yr)	10
Source Edge to Nearest Neighbor (ft)	3200
OFFSET Annoyance-free frequency	97%





# OFFSET Summary and Results

OFFSET Ver 2.0  
University of Minnesota  
1/2/12/2017

Farm Name	Fultz
County	to no address site
Evaluator	NWB
Date	6/14/21

## Source Characteristics Summary

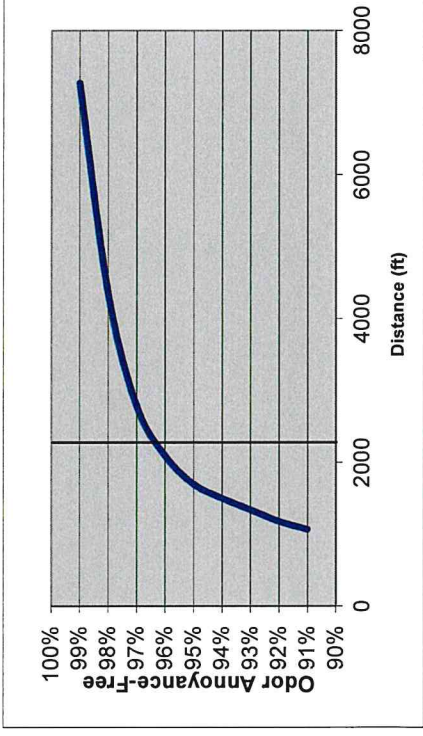
	Similar Sources	Emit Area sq ft	Control Technology Type	Percent Treated	Flux Rates (with control technology)				Source Emission Rates*			
					Odor ou/s/m2	OFFSET OER	H2S ug/s/m2	Ammonia ug/s/m2	Odor ou/s	H2S ug/s	Ammonia ug/s	
<b>Buildings</b>												
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Swine Wean to Finish - deep pit	1	20400	None	0%	10.5	34	4.5	92.0	19910	8533	174450	
<b>Area Sources</b>												
Earthen manure storage		0	None		14.0	13	25.3	107.0	0	0	0	
User added		0	None		0.0	0.0	0.0	0.0	0	0	0	

\*includes control technologies

## Site Emissions

Total Site Area (ft2)	35,088
Total Odor Emission Factor (TOEF)	120
Total Site H2S Emissions (mg/s)	15
Total Site H2S Emission AVERAGE (lbs/day)	3
Total Site H2S Emission MAX (lbs/day)	6
Total Site H2S Emissions (tons/yr)	1
Total Site Ammonia Emissions (mg/s)	300
Total Site Ammonia Emission AVERAGE (lbs/day)	57
Total Site Ammonia Emissions MAX (lbs/day)	114
Total Site Ammonia Emissions (tons/yr)	10

Source Edge to Nearest Neighbor (ft)	2280
OFFSET Annoyance-free frequency	96%





# OFFSET Summary and Results

OFFSET Ver 2.0  
University of Minnesota  
1/21/2017

Farm Name: Fuliz  
County: to Jay Fuliz  
Evaluator: NWB  
Date: 6/14/21

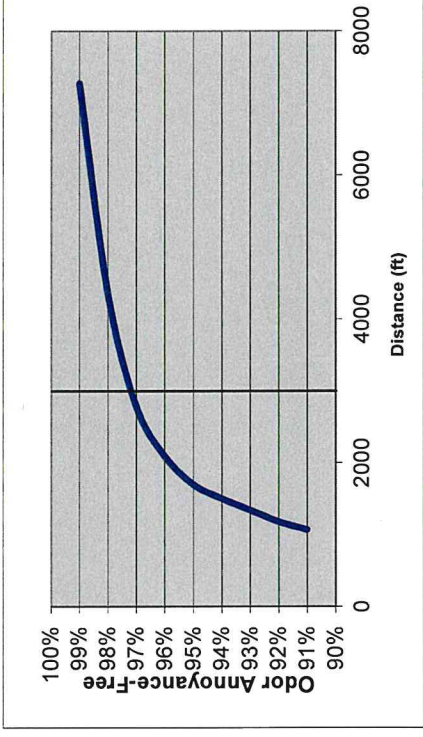
## Source Characteristics Summary

	Similar Sources	Emit Area sq ft	Control Technology Type	Percent Treated	Flux Rates (with control technology)				Source Emission Rates*			
					Odor ou/s/m2	OFFSET	H2S ug/s/m2	Ammonia ug/s/m2	Odor ou/s	H2S ug/s	Ammonia ug/s	
<b>Buildings</b>												
Swine Wean to Finish - deep pit	1	14688	None	0%	10.5	34.2	4.5	92.0	14335	6144	125604	
Swine Wean to Finish - deep pit	1	20400	None	0%	10.5	34	4.5	92.0	19910	8533	174450	
<b>Area Sources</b>												
Earthen manure storage	0	0	None		14.0	13	25.3	107.0	0	0	0	
User added	0	0	None		0.0	0.0	0.0	0.0	0	0	0	

\*includes control technologies

## Site Emissions

Total Site Area (ft2)	35,088
Total Odor Emission Factor (TOEF)	120
Total Site H2S Emissions (mg/s)	15
Total Site H2S Emission AVERAGE (lbs/day)	3
Total Site H2S Emission MAX (lbs/day)	6
Total Site H2S Emissions (tons/yr)	1
Total Site Ammonia Emissions (mg/s)	300
Total Site Ammonia Emission AVERAGE (lbs/day)	57
Total Site Ammonia Emissions MAX (lbs/day)	114
Total Site Ammonia Emissions (tons/yr)	10
Source Edge to Nearest Neighbor (ft)	3000
OFFSET Annoyance-free frequency	97%





Redwood County Swine Composting Protocol:

- I. Purpose and scope: To allow hog producers to compost their dead livestock (carcasses) in lieu of rendering. These guidelines are based upon Minnesota Rules 1719 (Board of Animal Health), which are incorporated herein by reference. In any instance where these guidelines diverge from Minnesota Rules 1719, the stricter rule shall control.
- II. Site selection – must take into account:
  - a. Prevailing winds – reasonable attempts must be made to avoid sites where the prevailing winds will carry odors onto neighboring land uses (excepting agricultural fields and feedlots).
  - b. Public view – the compost facility must be shielded from public view, so that the composting material is not visible from public roadways or neighboring land uses.
- III. Facility – requirements for construction:
  - a. Overall design: Compost facility must consist of at least three (3) compost bays each with 20 cubic feet of area for every one (1) pound daily normal mortality. Each bay must have poured concrete walls on three sides and be gated on the front so that wild and domestic animals cannot access the compost. The entire structure must sit on a concrete pad and have a roof to deflect rainwater from the compost.
  - b. Floor: Floor must be constructed of 5” thick impervious concrete. Floor must be sloped toward the rear of the facility to keep liquid from running out of the composting area onto the ground.
  - c. Walls: Walls must be constructed of 6” thick impervious concrete. Cement walls must be no more than 5’ high. If lower than 5’, the walls must include fencing up to 5’ to prevent wild or domestic animals from accessing the compost. Cement walls must be high enough to contain the compost material.
  - d. Roof: Roof must be supported by treated wood or metal supports and rafters. Roof must completely cover the composting bays so as to deflect rainwater.
- IV. Process – the following practices must be observed:
  - a. Dead pigs must be added within 24 hours of death.
  - b. Each composting bay shall begin with a 1’ layer of litter. Thereafter, carcasses shall be stacked up to 1’ and covered by 1’ of litter. Add additional layers as needed.
  - c. Litter can be finely chopped vegetable matter (such as corn stalks), sawdust, or finished compost. The carbon to nitrogen ratio must in the range of 15:1 to 35:1.
  - d. Carcasses must be kept at least 6” from the edge of the compost bay.
  - e. The 3 compost bays allow for a three stage composting process. When the first bay is full, start a new pile in the second bay. When the second bay is full, start a new pile in the third bay. When the third bay is full, empty the first bay and start over. Turn each bay every 7 to 10 days. Add water as necessary to keep up the heat.
  - f. Temperature:
    - i. Must be taken and recorded in each bay daily.
    - ii. Must be at least 130 degrees Fahrenheit.
    - iii. Temperature records must be kept on hand for 2 years.
- V. Protocol:
  - a. Must keep a written composting protocol describing the composting steps on-site.
  - b. Must instruct all employees on-site about the protocol.
- VI. Pests, such as flies and rodents, must be controlled
- VII. Transportation of Carcasses on public roads:
  - a. An owner who transports the owner’s own carcasses does not need a permit to do so.
  - b. Carcasses transported on public roads must be in leak-proof, covered containers.
- VIII. Finished compost:
  - a. Must contain no visible soft tissue pieces.
  - b. May be handled and stored according to PCA and Dept. of Agriculture rules.



**Conditions for Permit No. 9-21 (Fultz Feedlot)**

1. The permit holder shall comply with all applicable laws, rules, and regulations, including but not limited to Redwood County Ordinance, as hereafter amended from time to time. If a permit and/or license is required by the local, state, or federal authorities/entities, the permit holder shall apply for and obtain any and all required permits and/or licenses. A copy of all such permits and/or licenses shall be provided to the Redwood County Environmental Office within thirty (30) days of the date the permit holder received the same.
2. The permit holder shall allow the Redwood County Environmental Office to inspect the site for all purposes permitted by law whenever deemed necessary by the Redwood County Environmental Office.
3. All waste, refuse, and the like generated by or from the conditional use must be disposed of in the manner provided by the applicable local, state, and federal statutes, rules, and regulations.
4. The permit holder shall take appropriate and reasonable measures to assure that all surface water runoff satisfies all applicable local, state, and federal discharge standards.
5. The permit holder shall not allow the conditional use to be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted. The permit holder shall not allow the conditional use to impede the normal and orderly development and improvement of surrounding vacant property for uses predominant to the area. Adequate measures shall be taken to prevent or control offensive odor, fumes, dust, and vibration, so that none of the foregoing will constitute a nuisance now or in the future.
6. Adequate utilities, access roads, drainage, and other necessary facilities shall be provided and continue to be provided by the permit holder now and in the future.
7. The manner in which manure is stored and disposed of shall comply with all applicable local, state, and federal laws, rules, and regulations. If manure is applied to land, it shall be applied to land at agronomic rates. Applied manure shall be injected or incorporated within 24 hours. The permit holder shall retain a record of all locations where manure is applied to land. Such records shall be maintained for a period of no less than five (5) years, measured from the date the manure is applied to land. Such records shall be submitted to the Redwood County Environmental Office upon request. The permit holder shall report any changes in spread agreements or spread areas to the Redwood County Environmental Office within thirty (30) days subsequent to any such change.
8. The permit holder shall abide by the Odor Management Plan attached to the application, or by any amended plan approved by the Zoning Administrator.
9. The County Board of Commissioners may at any time impose additional conditions as necessary and appropriate including but not limited to: the planting of trees and shrubs for use as a windbreak for the feedlot operation; the furnishing and placing in a dedicated account, to be administered by the County, an annual payment for reclamation purposes based upon the number of Animal Units involved; and restrictions on the days on which a manure storage structure may be disturbed or manure may be transferred, applied, incorporated, or injected.



10. Dead livestock shall be stored in such a manner as to not create a nuisance. Disposal of dead livestock by burial is strictly prohibited. Dead hogs may be composted according to the Redwood County Swine Composting Protocol, which is attached hereto and incorporated into Conditional Use Permit #9-21.
11. The permit holder shall construct the manure storage structure/concrete pit(s) to meet or exceed the minimum requirements set forth in the plans and specifications prepared by Elliot De Jongh, P.E. and signed by him on May 13, 2021, attached to the permit holder's application.
12. A perimeter tile line shall be maintained around the outside of the base of the pit wall and an inspection manhole shall be provided where the perimeter tile branches out into the local drain tile system.
13. The permit holder shall install a warning sign at all entrances to the concrete pits. These signs shall warn the reader of the dangers of entering the pit.
14. No construction on the pit shall be done between October 15<sup>th</sup> and April 15<sup>th</sup>, except by approval of the Zoning Administrator. The Environmental Office shall be contacted for inspection prior to pouring the pit floor and pit walls.
15. The Redwood County Planning Commission shall review the conditional use permit and shall be authorized to take any and all necessary action(s), including but not limited to revoking the conditional use permit and/or requiring the permit holder to reapply for a conditional use permit, if: 1) The Redwood County Environmental Office acquires information previously unavailable that indicates the terms and conditions of the permit do not accurately represent the actual circumstances of the permitted facility or the conditional use; 2) It is discovered subsequent to the issuance of the permit the permit holder failed to disclose all facts relevant to the issuance of the permit or submitted false or misleading information to the Redwood County Environmental Office, the Redwood County Planning Commission, or the Redwood County Board of Commissioners; 3) The Redwood County Environmental Office determines the permitted facility or conditional use endangers human health or the environment; and/or (4) The permit holder violates any of the herein described conditions.





**REDWOOD COUNTY ENVIRONMENTAL OFFICE**

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

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

**REDWOOD COUNTY PLANNING COMMISSION**

**Jayson Fultz feedlot  
Conditional Use Permit Application #9-21  
June 29, 2021**

**FINDINGS OF FACT**

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

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

- 1) What potential health safety and welfare impacts were raised at the hearing and why will they, or why won't they, impact the neighboring residents?

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- 2) What potential impacts on area property uses were raised at the hearing and why will they, or why won't they, impact the property uses in the area?

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3) What potential impacts on property values or future development were raised at the hearing, and why will they, or why won't they, impact the neighboring properties?

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4) What infrastructure is needed to support the proposed use and how will it be provided?

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5) How do the goals, purpose and policies of the Zoning Ordinance and Comprehensive Plan apply to the proposed project?

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

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



**TO:** Whom It May Concern  
**FROM:** Nick Brozek  
Land Use and Zoning Supervisor  
Redwood County Environmental Office

**COPY**



**DATE:** June 16, 2021

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

Please find enclosed a *Notice of Public Hearing* regarding an *Animal Confinement Feedlot Conditional Use Permit Application* filed by Jay Fultz, pursuant to Minnesota Statute 116 and Redwood County Code of Ordinances, Title XV, Sections 153.290 and 153.142, for the expansion of an existing swine feedlot. Said expansion will consist of the construction of a total confinement barn, including 8' deep, poured-concrete, under-floor manure storage pit, capable of housing 2400 head of finishing swine weighing between 55-300 pounds (720 animal units). After the expansion, the feedlot will have a total animal unit count of 1,110 animal units, on the following described real property, situated in the County of Redwood, State of Minnesota, to wit:

The East Half of the Southeast Quarter (E1/2 SE1/4) of Section 21, Township 109 North, Range 39 West, Springdale Township.

A public hearing thereon will be held before the Redwood County Planning Commission at the Planning Commission meeting starting at 1:00 o'clock p.m. on Tuesday, the 29<sup>th</sup> day of June, 2021, at the Board Room in the Redwood County Government Center located at 403 South Mill Street, Redwood Falls, MN 56283.

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

If you have any comments or questions regarding this matter, please contact the Redwood County Environmental Office by telephone at (507) 637-4023, via email at [Environmental@co.redwood.mn.us](mailto:Environmental@co.redwood.mn.us), or in writing at *Redwood County Environmental Office, P.O. Box 130, Redwood Falls, MN 56283*.

Enclosure

Cc: Jay Fultz (w/ encl)  
Brian Fultz (w/ encl)  
James Fultz (w/ encl)  
Eric Fultz (w/ encl)  
Jay Murphy, Centrol Crop Consulting (w/ encl)

Redwood County Government Center - Environmental Department  
P.O Box 130 Redwood Falls, MN 56283  
(507) 637-4023 [redwoodcounty-mn.us](http://redwoodcounty-mn.us) [Environmental@co.redwood.mn.us](mailto:Environmental@co.redwood.mn.us)



**COPY**



### NOTICE OF PUBLIC HEARING

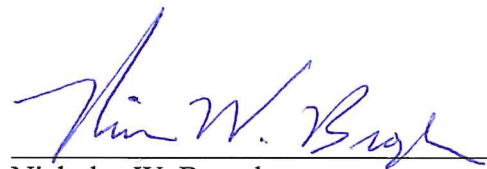
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DATED: June 16, 2021

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







AFFIDAVIT OF SERVICE VIA U.S. MAIL

STATE OF MINNESOTA )  
                                  ) ss  
COUNTY OF REDWOOD )

**RE: *Animal Confinement Feedlot Conditional Use Permit Application submitted Jay Fultz, Permit Application No. 9-21***

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

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

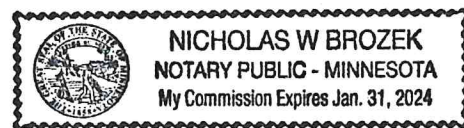
were duly served upon:


**-See Attached-**

by enclosing a copy of the same in an envelope, with postage prepaid, and depositing said envelope in a United States Postal Service mailbox located at Redwood Falls, Minnesota on or about the 17<sup>th</sup> day of June, 2021.

  
\_\_\_\_\_  
Lali Ortega  
Environmental Administrative Assistant

Subscribed and sworn to before me, a Notary Public, on this 17<sup>th</sup> day of June 2021, by Lali Ortega.



  
\_\_\_\_\_  
Notary Public



NAME	C/O	ADDRESS	ADDRESS 2	CITY	STATE	ZIP
MALMBERG/DALE S & MERNA S		11834 BUNKER AVE		WALNUT GROVE	MN	56180
ZEUG/MICHAEL R		13250 CO HWY 20		WALNUT GROVE	MN	56180
HAENSEL/PAUL D & PHYLLIS/ETAL		1647 NE CROSSTOWN BLVD		HAM LAKE	MN	55304
GOLTZ/LLOYD J & BARBARA		12410 CO HWY 20		WALNUT GROVE	MN	56180
FOSTER/ROBERT E		2284 PINEWOOD DR		SHAKOPEE	MN	55379
FULTZ/DENNIS O/RLT ETAL		2 OWANKA LN		TRACY	MN	56175
EDWARDS/GORDON H & MARLYS A		19235 CO HWY 5		WALNUT GROVE	MN	56180
BUYSS/LAWRENCE G & BONNIE J		237 TEPEECOTAH RD		TRACY	MN	56175
DAKOTA MINNESOTA & EASTERN		601 E HOLLETT ST		TRACY	MN	56175-2037
SPRINGDALE TOWNSHIP BOARD OF SUPERVISORS		120 S 6TH ST		MINNEAPOLIS	MN	55402
MINNESOTA DNR - ECOLOGICAL AND WATER RESOURCES		11834 BUNKER AVE		WALNUT GROVE	MN	56180
BRIAN FULTZ		20596 HIGHWAY 7		HUTCHINSON	MN	55350
JAMES FULTZ		3454 150 ST		TRACY	MN	56175
ERIC FULTZ		12411 ASPEN AVE		TRACY	MN	56175
CENTROL CROP CONSULTING		2736 211 ST		WALNUT GROVE	MN	56180
JAY FULTZ		351 BURLINGTON CIRCLE		MARSHALL	MN	56258
DAVID RIALSON		12167 ASPEN AVE		TRACY	MN	56175
		3230 CO RD 14		TRACY	MN	56175

FultzCUP



# AFFIDAVIT OF PUBLICATION

## Gannett Newspaper Publications

State of Minnesota  
Counties of Brown, Chippewa, Lyon,  
Redwood, Watonwan, Yellow Medicine

Lisa Drafall, being first duly sworn, on oath states as follows:

1. I am the Vice President of Sales of the Gannett Newspaper Publications. I have personal knowledge of the facts stated in this Affidavit, which is made pursuant to Minnesota Statutes §331A.07.
2. The newspaper has complied with all of the requirements to constitute a qualified newspaper under Minnesota law, including those requirements found in Minnesota Statutes §331A.02.
3. The dates of the month and the year and day of the week upon which the public notice attached/copied below was published in the newspaper are as follows: - THURSDAY -, the 17th day of JUNE, 2021.
4. The lowest classified rate paid by commercial users for comparable space, as determined pursuant to §331A.06 and §331A.07 is 9.5 column inch.
5. Mortgage Foreclosure Notices. Pursuant to Minnesota Statutes §580.033 relating to the publication of mortgage foreclosure notices: The newspapers' known office of issue is located in Brown, Chippewa, Lyon, Redwood, Watonwan & Yellow Medicine counties. The newspapers comply with the conditions in §580.033, subd. 1, clause (1) or (2). If the newspaper known office of issue is located in a county adjoining the county where the mortgaged premises or some part of the mortgaged premises described in the notice are located, a substantial portion of the newspaper's circulation is in the latter county.

FURTHER YOUR AFFIANT SAITH NOT.

By:   
Vice President of Sales

Subscribed and sworn before me  
on the 17th day of JUNE, 2021.

By:   
Notary Public



### OFFICIAL PUBLICATION NOTICE OF PUBLIC HEARING

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DATED: June 14, 2021  
Nicholas W. Brozek  
Land Use & Zoning Supervisor  
Redwood County Environmental Office  
Published in the Redwood Gazette June 17, 2021.