Conditional Use Permit Application

Kodiak Pork RE, LLC

located in the
SE 1/4 of Section 3, T109N, R48W,
Brookings County, SD

Designed by:

STOCKWELL

February 2016

Project No. Y15163

STOCKWELL

February 17, 2016

Brookings County Zoning Commission
c/o Brookings County Zoning Director
Brookings County City and County Government Center
520 Third Street, Suite 200
Brookings, SD 57006

RE: Conditional Use Permit Application for the Kodiak Pork RE, LLC Project, Brookings County, SD
E/A Project No. Y15163.D01

Dear Commission Members:

This letter and the attached documentation shall serve as the informational submittal for Kodiak Pork RE, LLC's (Kodiak Pork) - Class A Conditional Use Permit for the construction of a swine confinement operation. The proposed operation is located in the SE ¼, Section 3, T109N, R48W, Brookings County, South Dakota.

Kodiak Pork will be a producer/investor owned operation that is managed by PVC Management II, LLC from Pipestone, Minnesota, the "Pipestone System". The operation will produce approximately 140,000 head of iso-wean feeder pigs per year. The iso-wean pigs will be fed to market weight at locations in South Dakota, Iowa and Minnesota. This value-added project will utilize 150,000 bushels of corn, 750 tons of soybean meal, and 2,500 tons of distillers grain per year. The approximate $1,900,000 of feed inputs will be sourced locally. The operation will provide sixteen (16) full benefit jobs to the area with a total annual payroll estimated to be greater than $900,000.

Kodiak Pork plans to construct a confinement building system to house a maximum of 7,224 swine (>55#) and 640 swine (<55#). The confinement building(s) will use deep pits under the buildings to store manure/nutrient. A permit application has been submitted to obtain coverage under the South Dakota Department of Environment and Natural Resources' "SD DENR" General Water Pollution Control Permit for Concentrated Animal Feeding Operations, "CAFO Permit".

The Conditional Use Permit application has followed the requirements set forth in the 2007 Revised Zoning Ordinance of Brookings County, SD, Article 22.00. Concentrated Animal Feeding 0peration, the "CAFO Ordinance". For your ease of review, Section 8. Information Required for Class A and B Concentrated Feeding Operation Permit., has been paraphrased and answered in the respective numerical order. The required permit information is as follows:

A. Owner's name, address, and telephone number: Kodiak Pork RE, LLC, Attn: Chief Manager, Dr. Barry Kerkaert, 1300 S HWY 75, PO Box 188, Pipestone, MN 56164, phone 507-825-4211.

B. Legal description of the site and site plan: SE ¼, Section 3, T109N, R48W, Brookings County, South Dakota. The site plan is attached in Appendix D.

C. Number and type of animals: Permitted maximum capacity for 7,224 swine (>55#) and 640 swine (<55#).

D. Nutrient Management Plan: A copy of the preliminary Nutrient Management Plan is included in Appendix A, the "NMP". The plan is the same format that is accepted by the South Dakota Department of Environment and Natural Resources (SD DENR). The plan includes the location map of the fields in the NMP, detailed views of the individual fields included in the plan, and the field fertilization worksheet. The operator shall maintain setback from certain features as required by SD DENR regulations.

E. Manure Management and Operation Plan

   A. Plan Requirements

      1) Find attached the site location map in Appendix B.
      2) The Waste Management System Operation and Maintenance Guideline statement that will be utilized in the State CAFO permit is attached in Appendix C.
      3) Plans and specifications for the facility were prepared by a licensed engineer and have been submitted to SD DENR for review and approval prior to construction. A copy of the construction plans is found in Appendix D. The inspection reports and construction record drawings will be submitted as required to SD DENR at the completion of the project.
      4) The manure/nutrient storage for the facility is all located under the buildings and is designed to contain a minimum 365 days of storage. The nutrient shall be applied on an annual basis and will not be stored for more than two years.
      5) The reinforced concrete manure/nutrient storage for the facility is designed to store at a minimum 365 days of production. SD DENR requires only 270 days of manure storage.

6) Kodiak Pork shall keep records, for at least 3 years, of manure applications on individual fields which document acceptable manure and nutrient management practices are followed. Such retained records shall include soil test results for two feet of surface soil, actual and projected crop yields, nutrient analysis of manure and information about date, rate and method of manure applications for individual fields. Such records shall be kept at the Kodiak Pork livestock facility and will be available for review by the Brookings County Zoning Board, or its representative upon written request.

B. As a State permitted CAFO, the Applicant must have completed a State sponsored environmental training program and receive certification. Pipestone Systems currently holds the required certifications from the SD DENR.

C. The Applicant understands the their responsibility and liability for the chain of control when transporting and applying nutrient.

D. The NMP has been developed and will be maintained to follow a plan that ensures safe disposal of manure and protection of surface and ground water. The NMP has been submitted to the South Dakota Department of Environmental and Natural Resources for approval. The NMP will be updated annually to reflect the current operation and crops grown on the application sites. Manure will be collected, stored and disposed of according to recognized practices of good agricultural management. Any economic benefits under the NMP are secondary to the proper and safe disposal of the manure. Any violation of the NMP will result in an update to the NMP. Under the NMP the manure will be analyzed and soil samples will be taken on application fields and such results will be provided to the Cooperative Extension Services and/or an appropriate agronomist for application recommendations. Records will be maintained to show proper compliance.

E. The Applicant will not utilize an irrigation system to distributed nutrient.

F. The Applicant will not utilize an irrigation system to distributed nutrient.

G. The Applicant clearly understands that the County may, after notice and hearing, revoke a Conditional Use Permit for violating the conditions set forth in the permit.

F. <u>Management Plan for Fly and Odor Control</u>:

1. As stated above in Section E.A. 6, the facility will be permitted by the State of South Dakota. As a requirement of the State and County, the operator shall keep detailed records of the nutriment management plan (NMP). The NMP shall contain soils test results, actual and projected crop yields, nutrient analysis of manure, and information about date, rate and method of manure applications for individual fields.

2. Losses at the facility will be removed via onsite composting. Animal composting is regulated by the South Dakota Animal Industry Board under the direction of the State Veterinarian. Composting is a clean, odor free disposal process utilized in the majority of new facilities in the Midwest.
3. Kodiak Pork RE, LLC has developed a tree planting plan that will be designed to provide an aesthetic buffer and the migration of potential odor. See Appendix B. The local Conservation District and the South Dakota State University Extension Service will be consulted as need be.
4. All of the animals are in confinement barns. Therefore outside lot runoff is not a concern for odor production.
5. All manure is stored under the buildings in covered reinforced concrete pits. Therefore, drainage is not a concern for potential odor production.
6. The operator is committed to the use of best management practices. The manure/nutrient application will be completed through an injection process to maximize nutrient retention and minimize potential odors. A certified nutrient applicator will be employed to conduct NMP field operations with the direction to minimize any application during weekends, holidays, warm weather evenings, and calm-humid days. .

G. Information on ability to meet design setback requirements: The Brookings County zoning ordinance requires new CAFO operations to have a 2,640 foot setback from residences, churches, businesses, commercially zoned areas and 5,280 feet from municipalities. A Setback Map is provided in Appendix B that illustrates that the minimum setback distances stated in Section 22.01.CAFO Requirements. have been met.

H. State CAFO Permit: A State of South Dakota CAFO permit has been applied for with respect to the proposed facility. Prior to the start of construction, approval must be obtained from SD DENR and shall be a condition of the Conditional Use Permit from Brookings County.

I. Review of Plans and Specifications and NMP by SD DENR: As a condition of obtaining a State CAFO Permit, plans, specifications and NMP are submitted to SD DENR for their review, comment and approval. The plans, specification and NMP must be approved by SD DENR prior to the start of construction and operation.

J. Information on Soils, Shallow Aquifers, Designated Wellhead Protection Areas, and 100-year Flood Plain Designation: Seven soil borings have been completed for the project ranging in depth from 30'-50'. The boring logs are included in Appendix C. The project is not located over a shallow aquifer. The project site is identified on a copy of the South Dakota Geological Survey Program's First Occurrence of Aquifer Materials in Brookings County, South Dakota Map in Appendix B. The project is not in a designated wellhead protection area nor is it in FEMA's 100-year Flood Plain Map. The project is located on a copy of FEMA's 100-year Flood Plain Map in Appendix B.

K. Notification to the Road Access Authority and Rural Water System: A copy of the letter sent to Brookings County Highway Superintendent, Parnell Township and Brookings-Deuel Rural Water District notifying them of the Conditional Use application is included in Appendix C.

L. No other specific information has been requested by the County Zoning Officer.

It is our belief that all of the required information for your review of Kodiak Pork RE, LLC's Conditional Use Permit application has been provided, and that the project meets all of the requirements set forth in the 2007 Revised Zoning Ordinance of Brookings County, SD, Article 22.00. Concentrated Animal Feeding 0peration.

We welcome your favorable review of the information. If you have any questions or need additional information, please do not hesitate to contact us. Thank you.

Sincerely,
STOCKWELL ENGINEERS

Todd Van Maanen, PE
Project Engineer

Enclosures

Appendix A

Prepared By

Eisenbraun & Associates
Professional Engineers Surveyors

Innovative Solutions - Long Term Value

215 Walnut
Yankton, South Dakota 57078

605-665-8092
FAX 605-665-0523
"www.eaweb.com"

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG FILE:	NMP
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
DATE:	Dec. 16th, 2015
COPYRIGHT:	2015 EISENBRAUN & ASSOCIATES

SHEET TITLE

Location Map

SHEET 1 OF 1

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

INITIAL NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

SD-CPA-63A
2/13

1. **Operator:** Kodiak Pork RE, LLC 2. **County:** Brookings 3. **Prepared By:** Stockwell 4. **Date:** 05-Oct-15

Total Nitrogen And Phosphorus Produced From Livestock Operation(s)

5. Animal Type:	6. No. of animals	7. Avg. weight (lbs.)	8. Days of Confinement	9. N Total solid/liquid Manure as Excreted (lbs.)	9. P_2O_5 Total solid/liquid Manure as Excreted (lbs.)	10. N retained Handling/Storage	10. %	11. Total N available for application (lbs.)	12. Time of application	13. N Retained Application Method	13. %	14. Total N retained in field (lbs.)	15. 3-Yr. Mineralization Rate Manure Handling	15. %	16. N Available for the crop (lbs.)	16. P_2O_5 Available for the crop (lbs.)
Gestating sow	5,028	400	365	133,457	106,736	Liquid - anaerobic pit	78	104,097	ALL	Injection	98	102,015	Pits beneath slatted floor	83	84,672	106,736
Replacement Gilt	960	170	365	10,829	8,661	Liquid - anaerobic pit	78	8,447	ALL	Injection	98	8,278	Pits beneath slatted floor	83	6,871	8,661
Sow and litter	936	450	365	73,794	53,286	Liquid - anaerobic pit	78	57,560	ALL	Injection	98	56,408	Pits beneath slatted floor	83	46,819	53,286
Nursery pig	640	40	365	5,339	5,339	Liquid - anaerobic pit	78	4,165	ALL	Injection	98	4,081	Pits beneath slatted floor	83	3,387	5,339
Other Animals																

Total Manure as Excreted: 86,486 **OR** 31,567,390 **lbs/year** **Total lbs. of N and P2O5 available for the crop:** 141,749 174,022

Developed by SD-DENR, SD-NRCS, and SDSU.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

SD-CPA-63B
2/13

Field Information

Operator: Kodiak Pork RE, LLC **County:** Brookings **Date:** 10/05/15

Line #	17. Field ID (Include maps to illustrate location) Name or Tract	Field #	18. Date added to Plan	19. Beginning acres in field	20. County	21. Soil map unit symbol	22. Field Location: (1/4 Section, Township, Range)				23. Predicted soil loss - RUSLE2 (T/ac/yr)	24. Control of Land	25. 100' Vegetated Buffer	Excluded acres	26. Irrigated	27. Winter Application	28. No-Till	29. Current Soil Test Levels: N lb/ac 0-2'	N lb/ac 2-4'	Phosphorus (ppm) 0-6"	Phosphorus (ppm) P Test	K (ppm)	Organic Matter	Soil PH	Electric Conductivity (EC) Surface	Electric Conductivity (EC) Sub-surface	Soil Sample Date
1		1	10/2/15	90.4	Brookings	BbB	NE 1/4	18	109N	48W	1.6	Leased								13	Olsen	130	4.0%	5.6			11/05/14
2		2	10/2/15	105.7	Brookings	KrA	E 1/2	18	109N	48W	1.0	Leased		17.6				51		11	Olsen	167	4.2%	6.2			11/05/14
3		4	10/2/15	261.8	Brookings	KrB	E 1/2	3	109N	48W	1.5	Leased		13.3				158		20	Olsen	248	3.9%	6.5			04/13/15
4		6	10/2/15	153.6	Brookings	KrA	NW 1/4	20	109N	47W	1.0	Leased								13	Olsen	206	5.4%	6.6			12/30/13
5		7	10/2/15	110.5	Brookings	VbB	SW 1/4	8	109N	48W	1.5	Leased								18	Olsen			5.5			09/16/15
6		8A	10/2/15	144.1	Brookings	VbB	NE 1/4	20	109N	48W	1.5	Leased								20	Olsen			5.7			09/16/15
7		8B	10/2/15	140.9	Brookings	VbB	SE 1/4	20	109N	48W	1.5	Leased								35	Olsen			4.7			09/16/15
8		9	10/2/15	177.6	Brookings	Dn	S 1/2	34	110N	48W	0.9	Leased		5.3						11	Olsen	151	4.9%	7.8			11/12/14
9		11	10/2/15	149.3	Brookings	VbB	SE 1/4	17	109N	48W	1.5	Leased		15.6						17	Olsen			6.4			09/16/15
10		12	10/2/15	125.9	Brookings	KrA	NE 1/4	13	109N	48W	1.0	Leased		1.8						17	Olsen						04/08/15
11		13	10/2/15	126.3	Brookings	EsA	NW 1/4	17	109N	47W	1.0	Leased								29.9	Olsen						04/14/14
12		15	10/2/15	157.8	Brookings	KrA	N 1/2	1	109N	48W	1.0	Leased								17	Olsen						10/17/12
13		18	10/2/15	180.5	Brookings	EsA	N 1/2	18	109N	47W	1.0	Leased		1.6						18.8	Olsen						04/14/14
14		19	10/2/15	145.7	Brookings	KrA	SW 1/4	14	109N	48W	1.0	Leased		6.5						24	Olsen			6.5			09/16/15
15		20	10/2/15	225.3	Brookings	VbB	W 1/2	22	109N	48W	1.5	Leased		8.5						32	Olsen			5.0			09/30/15
16		23	10/2/15	19.3	Brookings	SvA	NW 1/4	21	109N	48W	0.9	Leased								38	Olsen			5.1			09/30/15
17																											
18																											
19																											
20																											
21																											
22																											
23																											
24																											
25																											
26																											
27																											

Total: 2,314.7

Comments:

Developed by SD-DENR, SD-NRCS, and SDSU.

NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Estimated Nutrient Requirement

17. 30.

Field ID (Include maps to illustrate location)

- ○ Actual or Yield Goal
- ◉ Yields indexed by soil productivity (Productivity Index)
- ○ County Average Yields (SD Agricultural Statistics Service)

Line #	Name or Tract	Field #	Previous Year Crop	Previous Year PI Yield	Previous Year Actual Yield	Year 1 Crop	Year 1 PI Yield	Year 1 Yield Goal	Year 2 Crop	Year 2 PI Yield	Year 2 Yield Goal	Year 3 Crop	Year 3 PI Yield	Year 3 Yield Goal	Year 4 Crop	Year 4 PI Yield	Year 4 Yield Goal	Year 5 Crop	Year 5 PI Yield	Year 5 Yield Goal
1		1	Corn (bu)	185		Soybean (bu)	52		Corn (bu)	185		Soybean (bu)	52		Corn (bu)	185		Soybean (bu)	52	
2		2	Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206	
3		4	Corn (bu)	197		Soybean (bu)	55		Corn (bu)	197		Soybean (bu)	55		Corn (bu)	197		Soybean (bu)	55	
4		6	Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57	
5		7	Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192	
6		8A	Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54	
7		8B	Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192	
8		9	Soybean (bu)	35		Corn (bu)	124		Soybean (bu)	35		Corn (bu)	124		Soybean (bu)	35		Corn (bu)	124	
9		11	Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192	
10		12	Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57	
11		13	Corn (bu)	151		Soybean (bu)	42		Corn (bu)	151		Soybean (bu)	42		Corn (bu)	151		Soybean (bu)	42	
12		15	Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206	
13		18	Soybean (bu)	42		Corn (bu)	151		Soybean (bu)	42		Corn (bu)	151		Soybean (bu)	42		Corn (bu)	151	
14		19	Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57		Corn (bu)	206		Soybean (bu)	57	
15		20	Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54		Corn (bu)	192		Soybean (bu)	54	
16		23	Soybean (bu)	59		Corn (bu)	213		Soybean (bu)	59		Corn (bu)	213		Soybean (bu)	59		Corn (bu)	213	
17																				
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NUTRIENT MANAGEMENT PLAN
FOR
SOUTH DAKOTA ANIMAL FEEDING OPERATIONS

Part 3: Planned Nutrient Application

Date: 10/05/15 **Operator:** **County:** Brookings **Date:** 10/05/15

Line #	17. Field ID (Include maps to illustrate location) Name or Tract	Field #	Alternative crops for years 1 through 5	31. Initial Nutrient Mgt. Plan - N based fields (acres)	32. Nutrient Recommendation - *SDSU Extension Service EC-750* N	P_2O_5	K_2O	33. Manure application based on:	34. Phosporus Risk Assessment	35. Nitrogen Risk Assessment	36. Nutrients Applied: Commercial lbs/acre N	P_2O_5	K_2O	Manure lbs/acre N	P_2O_5	K_2O	Total lbs/acre N	P_2O_5	K_2O	37. Estimated years to reapplication based on P_2O_5 rate
1		1		90.4		0	0	Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
2		2		88.1	156	44	0	Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
3		4		248.5	0	0	0	Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
4		6		153.6		0	0	Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
5		7		110.5		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
6		8A		144.1		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
7		8B		140.9		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
8		9		172.3		27	60	Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
9		11		133.7		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
10		12		124.1		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
11		13		126.3		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
12		15		157.8		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
13		18		178.9		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
14		19		139.2		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
15		20		216.8		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
16		23		19.3		0		Nitrogen need	Low	Low	0	0	0	0	0	0	0	0	0	N/A
17											0	0	0	0	0	0	0	0	0	
18											0	0	0	0	0	0	0	0	0	
19											0	0	0	0	0	0	0	0	0	
20											0	0	0	0	0	0	0	0	0	
21											0	0	0	0	0	0	0	0	0	
22											0	0	0	0	0	0	0	0	0	
23											0	0	0	0	0	0	0	0	0	
24											0	0	0	0	0	0	0	0	0	
25											0	0	0	0	0	0	0	0	0	
26											0	0	0	0	0	0	0	0	0	
27											0	0	0	0	0	0	0	0	0	

	2,244.5	N	P_2O_5
Total lbs of N and P2O5 available for crops:		141,749	174,022
Total lbs of N and P2O5 required by fields:		465,241	108,916

Comments:

Adequate acres are available based on Nitrogen analysis

However, P2O5 is in excess of removal. At this rate, it will take approximately 20 year(s) to build all listed fields up to 50 ppm P (Olsen).

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 18 **day of** August, **20** 15
between X Larry Diedrich **hereinafter described as Landowner, and** Kodiak Pork RE, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use	
N 94 acres of E1/2 18-109-48	94		Field #1
S 109 acres of E1/2 18-109-48	109		#2
X			
Total Acres (more or less)	203		

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

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

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

5. This agreement shall commence Jan 1, 2015 and terminate in 15 years on Jan 1, 2031. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before Jan 1 of any given year of an election not to renew this Lease.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER X Larry Diedrich
Printed X Larry Diedrich
Address: X 1990 Country Club Dr.
City State Zip: X Brookings, SD 57006
Phone: X 605-690-3297

TENANT [signature]
Kodiak Pork RE, LLC
Printed Barry Kerkaert
Address: 1300 S. Hwy 75
City State Zip: Pipestone MN 56164
Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 18 **day of** Aug **, 20** 15
between David Diedrich **hereinafter described as Landowner, and** Kodiak Pork RE, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use	
E 1/2 3 - 109 - 48	260		Field #4
NW 1/4 20 - 109 - 47	154		#6

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 2016 and terminate in 15 years on Jan, 2031. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before Jan 1 of any given year of an election not to renew this Lease.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER _____

Printed David Diedrich

Address: 7345 Valley View Rd
City State Zip: Brookings, SD
Phone: 605 690 3296

TENANT _____
Kodiak Pork RE, LLC

Printed Barry Kes Kaert

Address: 1300 S. Hwy 75
City State Zip: Pipestone, MN 56164
Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 18 **day of** August **, 20** 15
between X LC OLSON LLP **hereinafter**
described as Landowner, and Kodiak Pork RE, LLC **hereinafter**
described as Tenant, agree as follows:

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use
SW 1/4 excluding SW 40 8-109-48	~112	

Field #7

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 2016 and terminate in 15 years on Jan 1, 2031. Upon expiration this lease shall automatically renew from year-to-year, upon the same terms and conditions, unless either party gives written notice to the other on or before Jan 1 of any given year of an election not to renew this Lease.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER X LC OLSON LLP

Printed X

Address: X 2315 E. St. George Dr.
City State Zip: X Sioux Falls, S.D. 57103
Phone: X

TENANT Kodiak Pork RE, LLC

Printed Barry Kerkaert

Address: 1300 S. Hwy 75
City State Zip: Pipestone, MN 56164
Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 18 **day of** August, **20** 15
between X Must Land Trust NKA ELKTON FARM, LLC **hereinafter described as Landowner, and** Kodiak Park RE, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use
E 1/2 20 - 109 - 48	238	

Field # 8A + 8B

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 20 16 and terminate in 15 years on Jan 1, 20 31. Upon expiration, this lease shall automatically renew from year-to-year, with the same terms and conditions. Either party can give written notice to the other, on or before Jan 1 of any given year of an election not to renew this agreement.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER X David W. King
As President of Elkton Farm, LLC
Printed X DAVID W. KING

Address: X 515 S. MINNESOTA AVE
City State Zip: X SIOUX FALLS, SD 57104
Phone: X 605. 361. 1010

TENANT [signature]
Kodiak Park RE, LLC
Printed Barry Kerkaert

Address: 1300 S Hwy 75
City State Zip: Pipestone, MN 56164
Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 28 **day of** Aug, **20** 15
between Thielen Farms Inc **hereinafter**
described as Landowner, and Kodiak Pork RE, LLC **hereinafter**
described as Tenant, agree as follows:

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use
S 1/2 34-110-48	210	

Field #9

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 2016 and terminate in 15 years on Jan 1, 2031. Upon expiration, this lease shall automatically renew from year-to-year, with the same terms and conditions. Either party can give written notice to the other, on or before Jan 1 of any given year of an election not to renew this agreement.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER Thielen Farms

Printed Thielen Farms

Address: 21717 SD Hwy 13
City State Zip: Elkton S.D. 57026
Phone: 605-690-8383

TENANT [signature]
Kodiak Pork RE, LLC

Printed Barry Kerkaert

Address: 1300 S. Hwy 75
City State Zip: Pipestone MN 56164
Phone: 507 825 4211

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Manure Agreement.pdf | Download 1 of 1
Search Search Mail Search Web Home R.
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Inbox
Drafts (3)
Sent
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Trash
Smart Views
Unread
Starred
Important
People
Social
Travel
Shopping
Finance
Folders
AOL_Mail
Incoming_
Recent

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 18 **day of** August, **20** 15
between Robert Smith **hereinafter described as Landowner, and** Kodiak Park, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use
SE 1/4 17-109-48	~175	

Total Acres (more or less) _____

Bell #11

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

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

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

5. This agreement shall commence Jan 1, 20 16 and terminate in 15 years on Jan 1, 20 31. Upon expiration, this lease shall automatically renew from year-to-year, with the same terms and conditions. Either party can give written notice to the other, on or before Jan. 1 of any given year of an election not to renew this agreement.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER X Robert J. Smith

Printed X Robert J. Smith

Address: X 1220 Big Pine Dr.
City State Zip: X Tahoe City, CA
Phone: X 530-583-7042

TENANT Kodiak Park RE, LLC

Printed Barry Kerkvliet

Address: 1200 S Hwy 75
City State Zip: Pipestone MN 56164
Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this _1st__ day of ___Sept._____, 2015_ between _Vaske Farms, LLC_____ hereinafter described as Landowner, and _Kodiak Pork RE, LLC_____ hereinafter described as Tenant, agree as follows:

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in __Brookings_____County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use	Field #
NE ¼ 13-109N-48W	~126	Crops	12
NW ¼ 17-109N-47W	~127	Crops	13
SE ¼ 17-109N-47W	~121	Crops	14
N ½ 1-109N-48W	~277	Crops	15
W ½ NE ¼ 20-109N-47W	~80	Crops	16
W ½ SE ¼ 20-109N-47W	~78	Crops	17
E ½ NW ¼ & N ½ NE ¼ 18-109N-47W	~178	Crops	18
Total Acres (more or less)	Apx. 987		

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

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

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

5. This agreement shall commence___Jan 1___, 2016__ and terminate in _3____years on ___Jan 1_____, 2019____.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): Manure will be billed to Landowner at 60% Commercial fertilizer value determined by Control Crop Consulting representative. Tenant will work with landowner to apply manure approximately every other year. Manure application is not guaranteed, but an effort will be made by tenant to supply landowner with manure to meet his cropping needs.

LANDOWNER Vaske Farms, LLC by Jim Vaske

Printed Vaske Farms, LLC by Jim Vaske

Address: 21215 485th Ave

City State Zip: Elkton, SD 57026

Phone: (605) 695-1511

TENANT _____

Kodiak Pork RE, LLC

Printed Barry Kiekhaefer

Address: 1300 S. Hwy 75

City State Zip: Pipestone, MN 56164

Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 4 **day of** SEPT, **20** 15 **between** THIELEN FARMS INC **hereinafter described as Landowner, and** Kerkhoff Pork RE, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use
SW 1/4 H-T109 N R 48W	146	CORN SOYBEANS

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 20 16 and terminate in 15 years on Jan 1, 20 31. Upon expiration, this lease shall automatically renew from year-to-year, with the same terms and conditions. Either party can give written notice to the other, on or before Jan 1 of any given year of an election not to renew this agreement.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER Thielen Farms Inc Larry Thielen Pres

Printed THIELEN FARMS INC. LARRY THIELEN PRES

Address: 21732 SD HWY 13

City State Zip: ELKTON, SD 57026

Phone: 605 690 7486

TENANT [signature]

Printed Kerkhoff Pork RE, LLC Gary Kerkhoff

Address: 1300 S Hwy 75

City State Zip: Pipestone MN 56164

Phone: 507 825 4211

MANURE APPLICATION AGREEMENT

This Agreement, made and entered into this 23 **day of** SEPTEMBER **, 20** 15
between THIELEN FARMS INC **hereinafter described as Landowner, and** Kodiak Pork RE, LLC **hereinafter described as Tenant, agree as follows:**

1. Landowner allows the Tenant the right to spread solid and/or liquid animal manure on the following described real property situated in Brookings County, South Dakota.

Field Location (1/4 Section, Township, Range)	Acres Available	Land Use	
W 1/2 SEC 22 109 N 48 W	249	CORN BEANS	#20
LOT 2 E 1/2 NW 1/4 SEC 21 109 N 48 W	20	CORN BEANS	#23

Total Acres (more or less) _____

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

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

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

5. This agreement shall commence Jan 1, 2016 and terminate in 15 years on Jan 1, 2031. Upon expiration, this lease shall automatically renew from year-to-year, with the same terms and conditions. Either party can give written notice to the other, on or before Jan 1 of any given year of an election not to renew this agreement.

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

7. This agreement is transferrable by tenant to another entity if tenant sells or changes company name

8. Other Conditions (Describe): _____

LANDOWNER Thiel Farms Inc Larry Thiel Treas.

Printed THIELEN FARMS INC LARRY THIELEN TREAS.

Address: 21732 SD HWY 13
City State Zip: ELKTON SD 57026
Phone: 605 690 7485

TENANT Kodiak Pork RE, LLC

Printed Barry Kerkaert

Address: 1300 S Hwy 75
City State Zip: Pipestone MN 56164
Phone: 507 825 4211

Lonny Diedrich

CENTROL® CROP CONSULTING

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **LoveJoy N**
SAMPLE ID **Green B**
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP **Soybeans**

NE 18-109-48

N
W E
S

SUBMITTED FOR:
Diedrich Farms

SUBMITTED BY: **BA1510**
KEVIN BANKEN-CENTROL
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1098040** BOX # **2309**
LAB # **BN210571**

Date Sampled Date Received **11/05/2014** Date Reported **9/18/2015**

Nutrient In The Soil			Interpretation			
			VLow	Low	Med	High
Nitrate	0-6"	16 lb/ac	**********			
Phosphorus	Olsen	13 ppm	**********	**********	**********	**
Potassium		130 ppm	**********	**********	**********	*
Chloride						
Sulfur						
Boron						
Zinc		0.79 ppm	**********	**********	***	
Iron						
Manganese						
Copper						
Magnesium						
Calcium						
Sodium						
Org.Matter		4.0 %	**********	**********	****	
Carbonate(CCE)						
Sol. Salts						

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 5.6	6.2						

General Comments: (Reduce Lime by 1/2 for W.MN, W.IOWA and the DAKOTAS).

Field 1

Lucky Diedrich

CENTROL® CROP CONSULTING

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **LoveJoy S**
SAMPLE ID **Green A**
FIELD NAME
COUNTY
TWP SE 18-109-48 RANGE
SECTION QTR ACRES **0**
PREV. CROP **Soybeans**

N
W E
S

SUBMITTED FOR:
Diedrich Farms

SUBMITTED BY: **BA1510**
KEVIN BANKEN-CENTROL
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1098104** BOX # **2306**
LAB # **BN210528**

Date Sampled Date Received **11/05/2014** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 15 lb/ac 6-24" 36 lb/ac 0-24" 51 lb/ac Nitrate		**********			
Olsen Phosphorus	11 ppm	******	******	******	
Potassium	167 ppm	******	******	******	******
Chloride					
Sulfur					
Boron					
Zinc	0.92 ppm	******	******	*****	
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter	4.2 %	******	******	*****	
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **5.6** 6-24" **7.2**	**6.2**						

General Comments: (Reduce Lime by 1/2 for W.MN, W.IOWA and the DAKOTAS).

Field 2

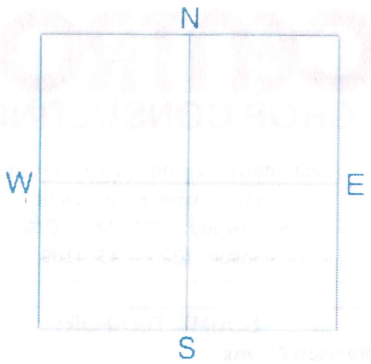
Dave Diedrich

CENTROL® CROP CONSULTING

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Stines**
SAMPLE ID **Red B**
FIELD NAME F - 3-109-48
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Diedrich Farms

SUBMITTED BY: **BA1510**
KEVIN BANKEN-CENTROL
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1174322** BOX # **0**
LAB # **BN18504**

Date Sampled Date Received **04/13/2015** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	59 lb/ac				
6-24"	99 lb/ac				
		******	******	******	******
0-24"	158 lb/ac				
Nitrate					
Olsen Phosphorus	20 ppm	******	******	******	******
Potassium	248 ppm	******	******	******	******
Chloride					
Sulfur					
Boron					
Zinc	0.70 ppm	******	******	******	
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter	3.9 %	******	******	******	
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **5.5** 6-24" **6.8**	**6.5**						

General Comments: (Reduce Lime by 1/2 for W.MN, W.IOWA and the DAKOTAS).

Field 4

service@aglabexpress.com
605-271-9237
Fax 605-271-9238

3600 S. Minnesota Ave.
Suite 200
Sioux Falls, SD 57105
www.aglabexpress.com

SOIL REPORT

Registered: 30-Dec-2013

SUBMITTED FOR:
Diedrich Farms

SUBMITTED BY:
105120001 Kevin Banken Centrol Crop Consulting Inc. 333 Marian Ave.

FIELD ID: Elkton Farm
SAMPLE ID: Blue A
LAB NUMBER: 2013104308

Nutrients	Results	Level	Not selected	Not selected	Not selected
00-06	21 lb/acre		Yield goal 0	Yield goal 0	Yield goal 0
Nitrate 06-24	44 lb/acre	M			
Olsen P	13 ppm	H			
Bray P1					
Bray P2					
Potassium	206 ppm	VH			
00-06 Sulfur 06-24					
Zinc	1.2 ppm	VH			
Calcium					
Magnesium					
Manganese					
Iron					
Copper					
Boron					
Chloride					
Lime					

Soil Test	Results
pH	6.6
buffer pH	6.8
Organic Matter	5.4 %
Soluble Salts	0.6 mmhos/cm
Sodium	
ESP	
CEC	
Base Saturation Ca	
Base Saturation Mg	
Base Saturation K	
Base Saturation Na	
Base Saturation H	
Fizz	
Texture Class	
Previous Crop	
Tillage	Conventional

General Comments: No lime is recommended based on this buffer index test.

Dave Diedrich
NE 20-109-47

Field 6

LC Olson, LLP by Dave Diedrich

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Olson 110**
SAMPLE ID **2**
FIELD NAME
COUNTY SW 8-109-48
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP

N
W E
S

SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1291461** BOX # **0**
LAB # **BN114999**

Date Sampled Date Received **09/16/2015** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	18 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 5.5							

Field 7

Elkton Farm, LLC by Dave Diedrich

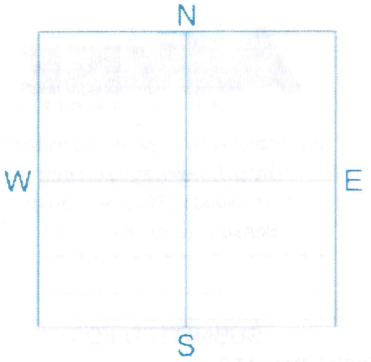
AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Murt N**
SAMPLE ID **1**
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP

NE 20-104-48



SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1291454** BOX # **0**
LAB # **BN114870**

Date Sampled Date Received **09/16/2015** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	20 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **5.7**							

Field 8-A

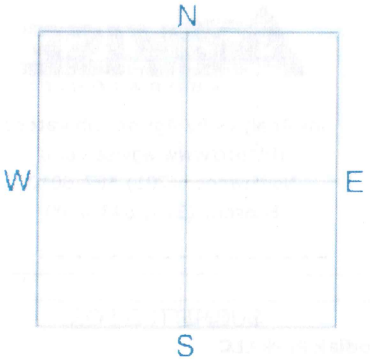
Elkton Farm, LLC
Darin Dreckrich

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Murt S**
SAMPLE ID **1**
FIELD NAME SE 20-109-48
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP



SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1291457** BOX # **0**
LAB # **BN114874**

Date Sampled Date Received **09/16/2015** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	35 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice		
YIELD GOAL		
0		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

2nd Crop Choice		
YIELD GOAL		
0		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

3rd Crop Choice		
YIELD GOAL		
0		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **4.7**							

Field 8-B

Thielen

CENTROL® CROP CONSULTING

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Alton Farm**
SAMPLE ID **NE 4**
FIELD NAME
COUNTY S 34-110-48
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP **Soybeans**

N
W E
S

SUBMITTED FOR:
Thielen Farms

SUBMITTED BY: **BA1510**
KEVIN BANKEN-CENTROL
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1109440** BOX # **2147**
LAB # **BN219169**

Date Sampled Date Received **11/12/2014** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	**11 ppm**	******	******	******	
Potassium	**151 ppm**	******	******	******	******
Chloride					
Sulfur					
Boron					
Zinc	**1.85 ppm**	******	******	******	******
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter	**4.9 %**	******	******	******	*
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.8**							

Field 9

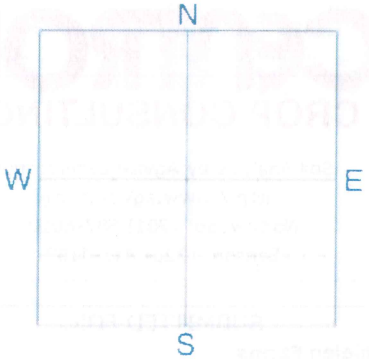
Robert Smith by Dave Diedrich

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Smith N**
SAMPLE ID **3**
FIELD NAME SE 17-109-48
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP



SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1291465** BOX # **0**
LAB # **BN115002**

Date Sampled Date Received **09/16/2015** Date Reported **9/18/2015**

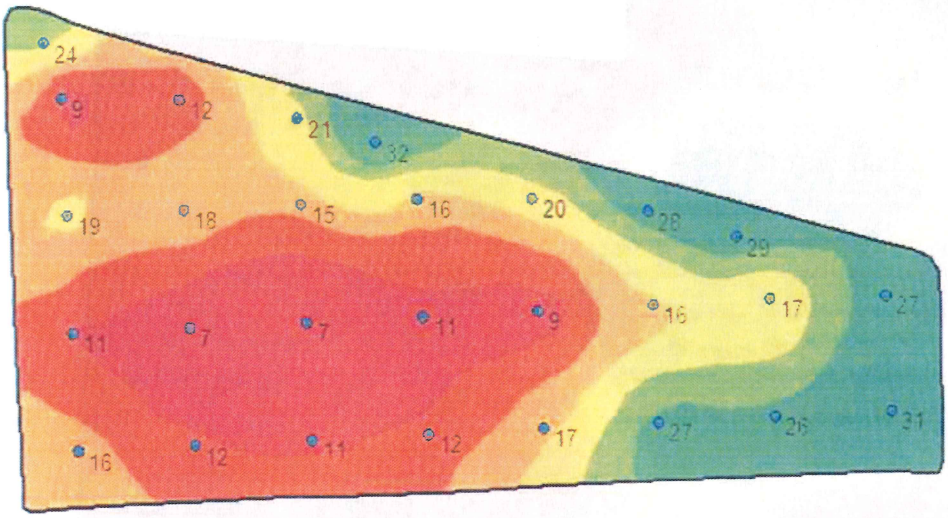
Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus	Olsen 17 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **6.4**							

Field 11

Phosphorus (Olsen)



Grower: Vaske, Jon
Farm: Jon Vaske
Field: P13_S pa13m
Area: 60.34 ac
Lat: 44.24824°N
Lon: 096.53167°W
Event Date(s): 4/8/2015

Season: 2015
Min: 7.10 ppm
Avg: 17.13 ppm
Max: 31.58 ppm

One in = 471 feet
0 213 426 639 852 1065

- Field Boundary

Phosphorus (Olsen) ppm
- 7 - 11 (11.7 ac) (19.3 %)
- 11 - 14 (13.8 ac) (22.9 %)
- 14 - 18 (12.3 ac) (20.3 %)
- 18 - 22 (7.1 ac) (11.8 %)
- 22 - 25 (5.5 ac) (9.1 %)
- 25 - 28 (6.5 ac) (10.8 %)
- 29 - 32 (3.5 ac) (5.7 %)

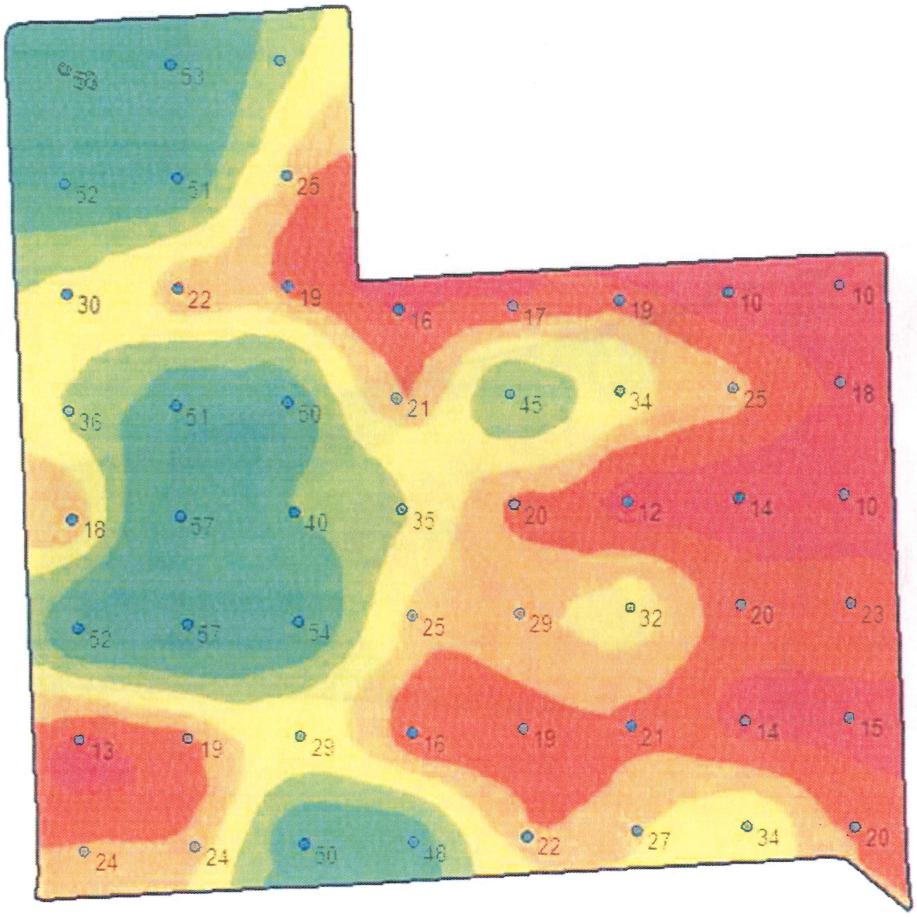
Vaske

NE 13-109-48

CENTROL
CROP CONSULTING

Field 12

Phosphorus (Olsen)



Grower: Vaske, Jon
Farm: Jon Vaske
Field: E17_NW eL17i
Area: 125.72 ac
Lat: 44.25005°N
Lon: 096.50130°W
Event Date(s): 4/14/2014

Season: 2015
Min: 9.24 ppm
Avg: 29.88 ppm
Max: 57.07 ppm

One in = 496 feet
0 224 449 673 897 1121

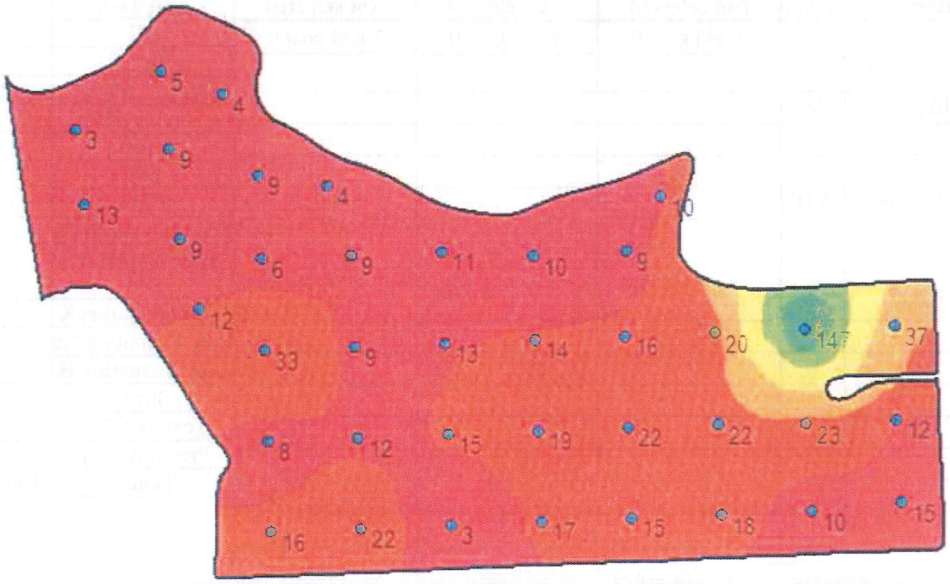
—	Field Boundary
	Phosphorus (Olsen) ppm
	9 - 17 (15.9 ac) (12.7 %)
	17 - 22 (26.0 ac) (20.7 %)
	22 - 28 (24.2 ac) (19.3 %)
	28 - 34 (20.7 ac) (16.4 %)
	34 - 41 (13.7 ac) (10.9 %)
	42 - 49 (11.8 ac) (9.4 %)
	49 - 57 (13.4 ac) (10.6 %)

Vaske
NW 17 109-47

CENTROL
CROP CONSULTING

Field 13

Phosphorus (Olsen)



Grower: Vaske, Jon
Farm: Jon Vaske
Field: P-1-East
Area: 94.33 ac
Lat: 44.27798°N
Lon: 096.53356°W
Event Date(s): 10/17/2012

Season: 2013
Min: 3.09 ppm
Avg: 16.95 ppm
Max: 140.13 ppm

One in = 609 feet
0 275 550 825 1101 1376

- Field Boundary

Phosphorus (Olsen) ppm
- 3 - 14 (51.7 ac) (54.8 %)
- 14 - 30 (35.7 ac) (37.8 %)
- 31 - 58 (3.5 ac) (3.7 %)
- 60 - 89 (1.7 ac) (1.8 %)
- 89 - 110 (1.1 ac) (1.2 %)
- 113 - 128 (0.6 ac) (0.6 %)
- 140 (0.1 ac) (0.1 %)

Vaske
N 1-109-48

CENTROL
CROP CONSULTING

Field 15

service@aglabexpress.com
605-271-9237
Fax 605-271-9238

3600 S. Minnesota Ave.
Suite 200
Sioux Falls, SD 57105
www.aglabexpress.com

SOIL REPORT

Registered: 26-Dec-2013

SUBMITTED FOR:
Vaske

SUBMITTED BY:
105120001 Kevin Banken Centrol Crop Consulting Inc. 333 Marian Ave.

FIELD ID: E20-N
SAMPLE ID: A
LAB NUMBER: 2013104277

Nutrients	Results	Level	Not selected	Not selected	Not selected
00-06 Nitrate			Yield goal 0	Yield goal 0	Yield goal 0
Olsen P	10 ppm	M			
Bray P1					
Bray P2					
Potassium	177 ppm	VH			
00-06 Sulfur					
Zinc	1 ppm	H			
Calcium					
Magnesium					
Manganese					
Iron					
Copper					
Boron					
Chloride					
Lime					

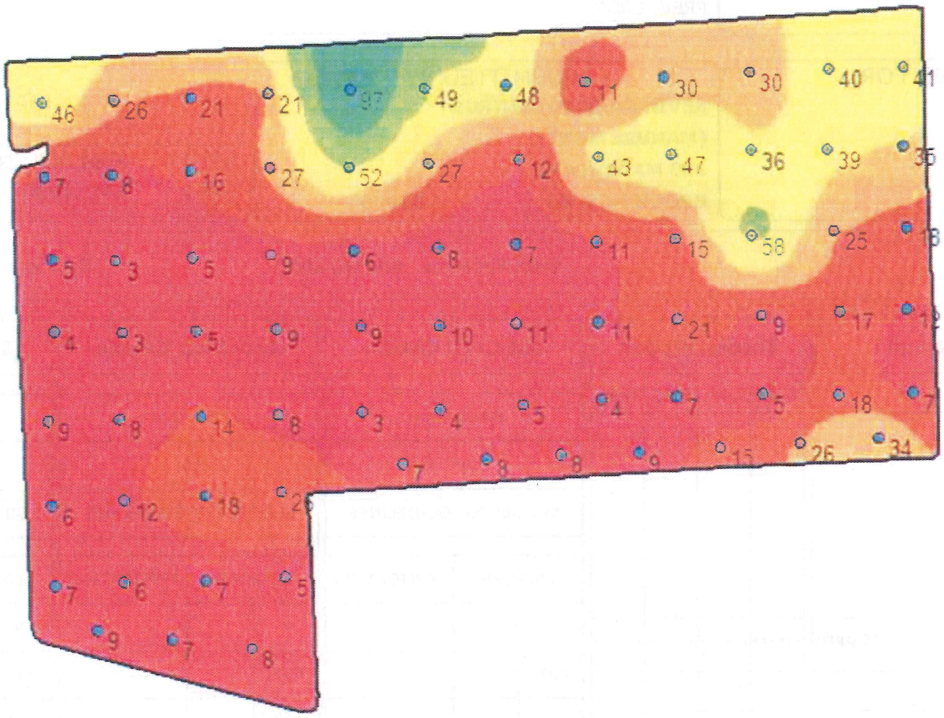
Soil Test	Results
pH	6.9
buffer pH	
Organic Matter	5.3 %
Soluble Salts	
Sodium	
ESP	
CEC	
Base Saturation Ca	
Base Saturation Mg	
Base Saturation K	
Base Saturation Na	
Base Saturation H	
Fizz	
Texture Class	
Previous Crop	
Tillage	Conventional

General Comments:

Vaske
NE 20-109-47

Field 16

Phosphorus (Olsen)



Grower: Vaske, Jon
Farm: Jon Vaske
Field: E18 eL18L
Area: 178.61 ac
Lat: 44.24999°N
Lon: 096.51381°W
Event Date(s): 4/14/2014

Season: 2015
Min: 2.80 ppm
Avg: 18.84 ppm
Max: 91.73 ppm

One in = 689 feet
0 311 623 934 1245 1556

—	Field Boundary
	Phosphorus (Olsen) ppm
	3 - 13 (88.7 ac) (49.7 %)
	13 - 24 (36.7 ac) (20.5 %)
	24 - 36 (24.4 ac) (13.7 %)
	36 - 49 (22.8 ac) (12.7 %)
	50 - 66 (3.6 ac) (2.0 %)
	67 - 81 (2.0 ac) (1.1 %)
	83 - 92 (0.5 ac) (0.3 %)

Vaske
N18-109-47

CENTROL
CROP CONSULTING

Field 18

Thielen

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Joes**
SAMPLE ID **1**
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP

Sec 14-104-48

N
W E
S

SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1291445** BOX # **0**
LAB # **BN114880**

Date Sampled Date Received **09/16/2015** Date Reported **9/18/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	24 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **6.5**							

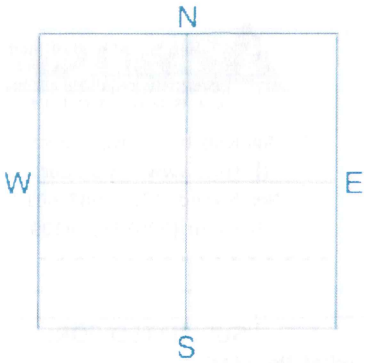
Field 19

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Thielen**
SAMPLE ID **3**
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP



SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1331126** BOX # **0**
LAB # **BN133927**

Date Sampled Date Received **09/30/2015** Date Reported **10/2/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	32 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **5.0**							

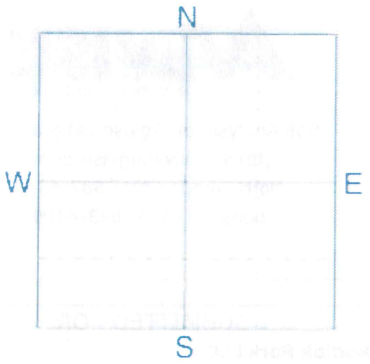
Field 20

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Thielen**
SAMPLE ID **1**
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP



SUBMITTED FOR:
Kodiak Pork LLC

SUBMITTED BY: **BA3987**
KEVIN BANKEN-CENTROL
(MANURE MGNT)
333 MARIAN AVE
BROOKINGS, SD 57006

REF # **1331124** BOX # **0**
LAB # **BN133925**

Date Sampled Date Received **09/30/2015** Date Reported **10/2/2015**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus (Olsen)	38 ppm	******	******	******	******
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
0			0			0		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **5.1**							

Field 23

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Field 1

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\BbB BARNES CLAY LOAM, 2 TO 6 PERCENT SLOPES\BARNES clay loam 80%
T value: 5.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 4.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 1.6 t/ac/yr Sediment delivery: 1.6 t/ac/yr
Net C factor: 0.15
Net K factor: 0.21
Net LS factor: 0.53

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49
10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.345
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: 0.18
SCI FO subfactor: 0.50
SCI ER subfactor: 0.36
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
ield 9

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\Dn DIVIDE LOAM, 0 TO 2 PERCENT SLOPES\DIVIDE loam 80%
T value: 4.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 2.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 0.86 t/ac/yr Sediment delivery: 0.86 t/ac/yr
Net C factor: 0.15
Net K factor: 0.21
Net LS factor: 0.27

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49
10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.311
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: -0.051
SCI FO subfactor: 0.50
SCI ER subfactor: 0.66
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Fields 13, 18

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\EsA ESTELLINE SILT LOAM, 0 TO 2 PERCENT SLOPES\ESTELLINE silt loam 90%
T value: 4.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 2.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 1.0 t/ac/yr Sediment delivery: 1.0 t/ac/yr
Net C factor: 0.15
Net K factor: 0.24
Net LS factor: 0.29

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49
10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.299
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: -0.051
SCI FO subfactor: 0.50
SCI ER subfactor: 0.60
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Fields 2, 6, 12, 15, and 19

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\KrA KRANZBURG-BROOKINGS SILTY CLAY LOAMS, 0 TO 2 PERCENT SLOPES\KRANZBURG silty clay loam 55%
T value: 5.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 2.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 1.00 t/ac/yr Sediment delivery: 1.00 t/ac/yr
Net C factor: 0.15
Net K factor: 0.24
Net LS factor: 0.28

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49

10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.394
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: 0.18
SCI FO subfactor: 0.50
SCI ER subfactor: 0.61
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Field 4

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\KrB KRANZBURG-BROOKINGS SILTY CLAY LOAMS, 1 TO 6 PERCENT SLOPES\KRANZBURG silty clay loam 65%
T value: 5.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 1.5 t/ac/yr Sediment delivery: 1.5 t/ac/yr
Net C factor: 0.14
Net K factor: 0.24
Net LS factor: 0.42

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49

10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.357
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: 0.18
SCI FO subfactor: 0.50
SCI ER subfactor: 0.43
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Field 23

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\SvA SVEA LOAM, 0 TO 2 PERCENT SLOPES\SVEA loam 90%
T value: 5.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 2.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 0.86 t/ac/yr Sediment delivery: 0.86 t/ac/yr
Net C factor: 0.15
Net K factor: 0.21
Net LS factor: 0.27

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49
10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.312
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: -0.051
SCI FO subfactor: 0.50
SCI ER subfactor: 0.66
Avg. annual slope STIR: 50.7

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

USDA NRCS Natural Resources Conservation Service

SD-CPA-29

RUSLE2 Profile Erosion Calculation Record

Info: Kodiak Pork RE, LLC
Fields 7, 8A, 8B, 11, 20

Inputs:File:profiles\default
Location: USA\South Dakota\Brookings County
Soil: South Dakota\Brookings, SD soils\VbB VIENNA-BROOKINGS COMPLEX, 1 TO 6 PERCENT SLOPES\VIENNA silt loam 65%
T value: 5.0 t/ac/yr
Slope length (horiz): 150 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Corn, grain	bushels	112.00
managements\CMZ 04\b.Mullti-year Rotation Templates\CB mulch till\corn grain; Sfcult, soybean, nr, FC, stpt, fcult z4	vegetations\Soybean, mw 7in rows	bu	20.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: Normal res. burial

Outputs:
Soil loss for cons. plan: 1.5 t/ac/yr Sediment delivery: 1.5 t/ac/yr
Net C factor: 0.15
Net K factor: 0.24
Net LS factor: 0.41

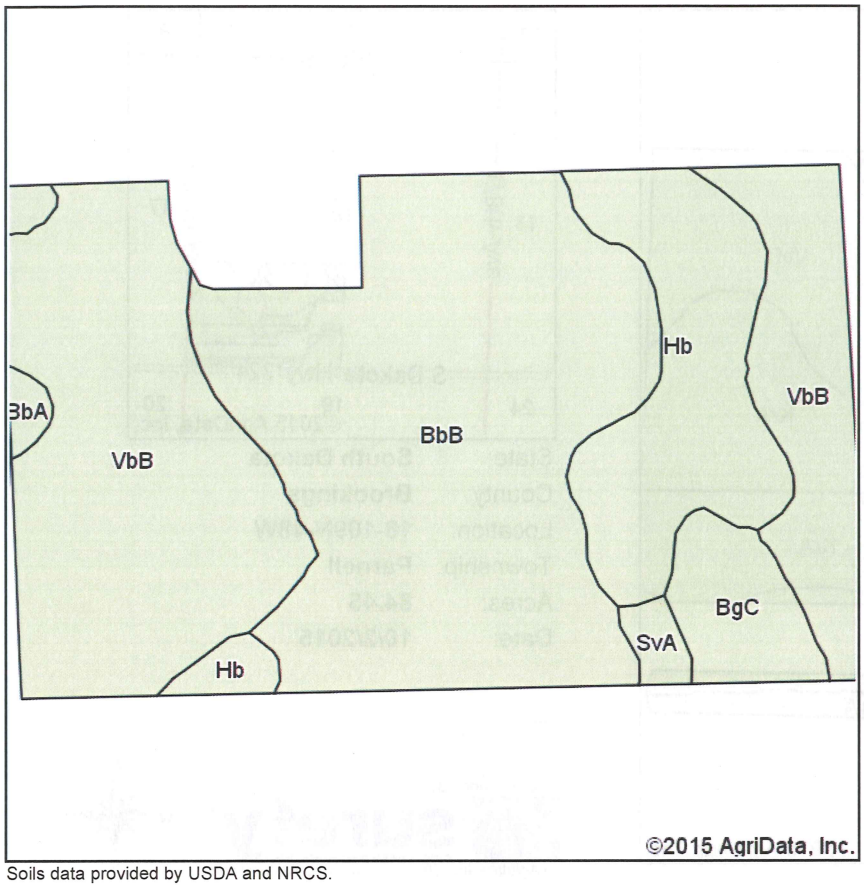
Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
5/10/0	Cultivator, field 6-12 in sweeps		37
5/10/0	planter, double disk opnr	Corn, grain	37
10/20/0	Harvest, killing crop 50pct standing stubble		71
11/1/0	Chisel, st. pt.		47
5/15/1	Cultivator, field 6-12 in sweeps		49
5/15/1	Drill or airseeder, double disk	Soybean, mw 7in rows	49
10/10/1	Harvest, killing crop 20pct standing stubble		65

Soil conditioning index (SCI): 0.264
Wind & irrigation-induced erosion for SCI: 0 t/ac/yr
SCI OM subfactor: -0.051
SCI FO subfactor: 0.50
SCI ER subfactor: 0.43
Avg. annual slope STIR: 50.7

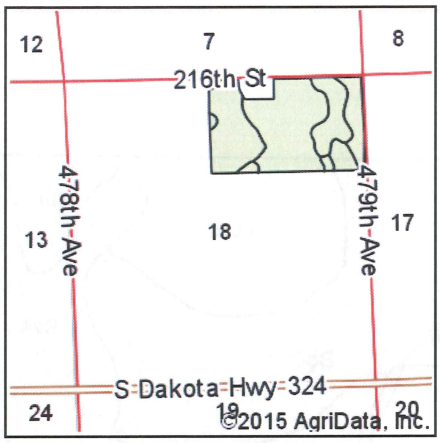
The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems.The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

Field 1



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **18-109N-48W**
Township: **Parnell**
Acres: **90.93**
Date: **10/2/2015**

Maps Provided By:
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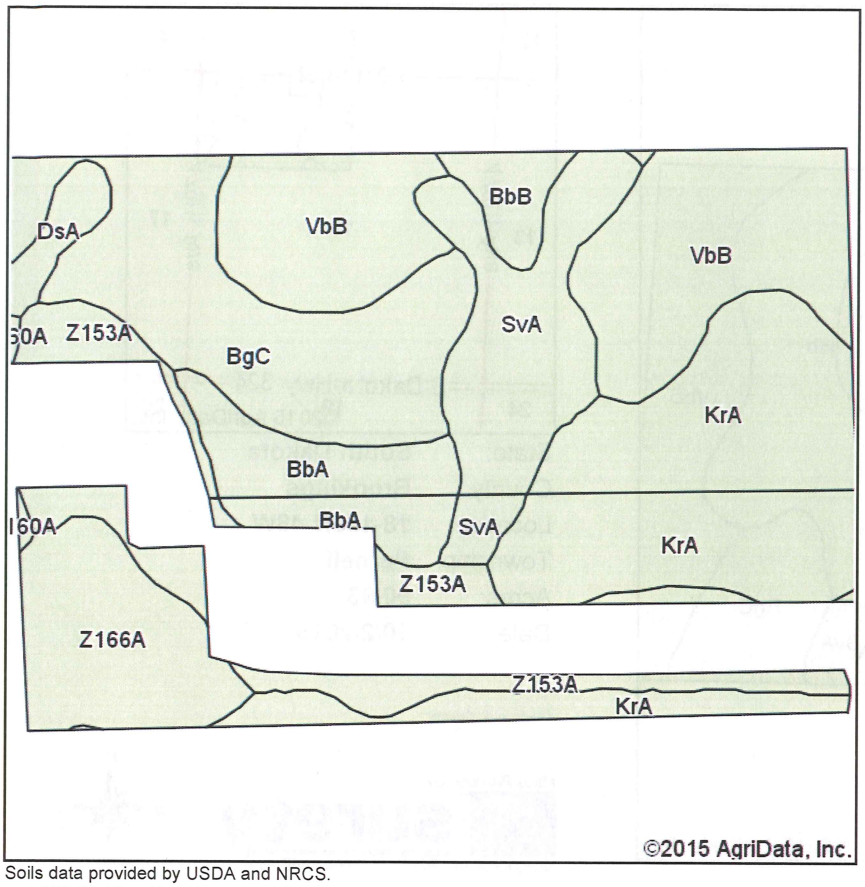
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
BbB	Barnes clay loam, 2 to 6 percent slopes	38.17	42.0%	IIe	82	72	83	30
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	32.71	36.0%	IIe	85	75	90	33
Hb	Hamerly-Badger complex, 0 to 2 percent slopes	13.69	15.1%	IIs	78	69	85	28
BgC	Buse-Barnes loams, 6 to 9 percent slopes	4.27	4.7%	IVe	58	51	60	20
BbA	Barnes clay loam, 0 to 2 percent slopes	1.12	1.2%	Is	88	77	92	33
SvA	Svea loam, 0 to 2 percent slopes	0.97	1.1%	Is	94	83	102	37
				Weighted Average	**81.6**	**71.8**	**85.1**	**30.4**

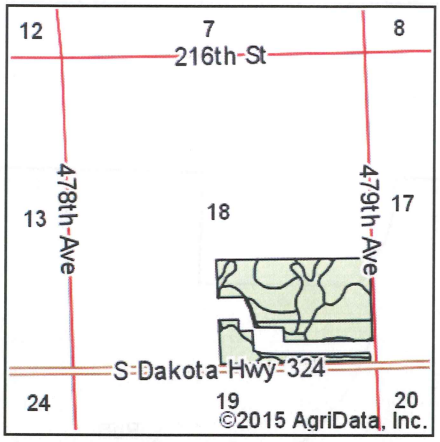
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 2



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **18-109N-48W**
Township: **Parnell**
Acres: **84.45**
Date: **10/2/2015**

Maps Provided By:
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N W E S

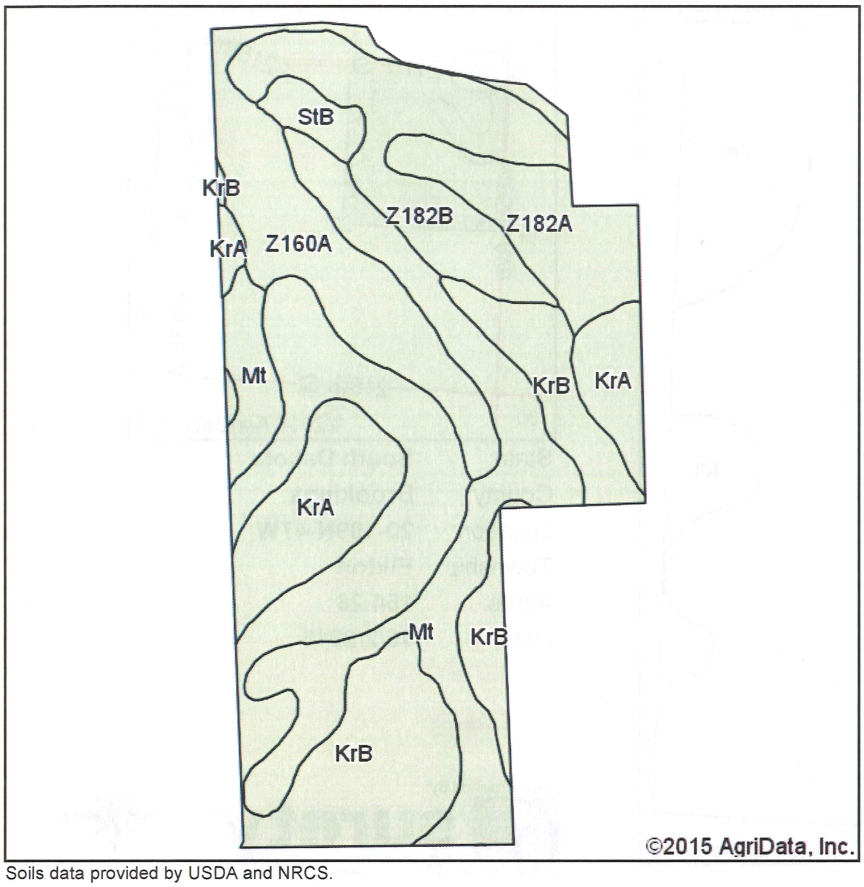
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	20.60	24.4%	Is	91	80	101	36
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	16.75	19.8%	IIe	85	75	90	33
BgC	Buse-Barnes loams, 6 to 9 percent slopes	13.91	16.5%	IVe	58	51	60	20
SvA	Svea loam, 0 to 2 percent slopes	8.97	10.6%	Is	94	83	102	37
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	7.73	9.2%	VIw	13	11		
Z166A	Fordtown loam, 0 to 2 percent slopes, rarely flooded	7.29	8.6%	IIs	60	53		
BbA	Barnes clay loam, 0 to 2 percent slopes	5.69	6.7%	Is	88	77	92	33
BbB	Barnes clay loam, 2 to 6 percent slopes	1.89	2.2%	IIe	82	72	83	30
DsA	Doland-Svea loams, 0 to 2 percent slopes	1.42	1.7%	Is	88	77	98	35
Z160A	Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 percent slopes	0.20	0.2%	IIIs	65	57		
				Weighted Average	**74.4**	**65.4**	**72.9**	**26**

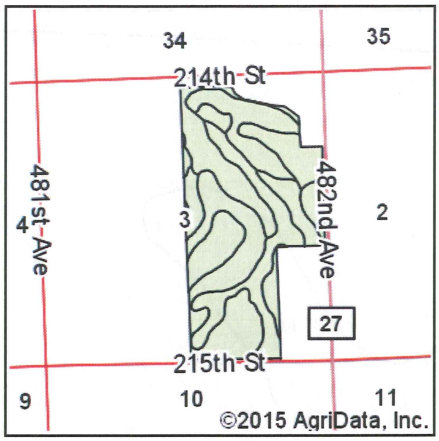
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 4



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **3-109N-48W**
Township: **Parnell**
Acres: **233.83**
Date: **10/2/2015**

Maps Provided By:

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N W E S

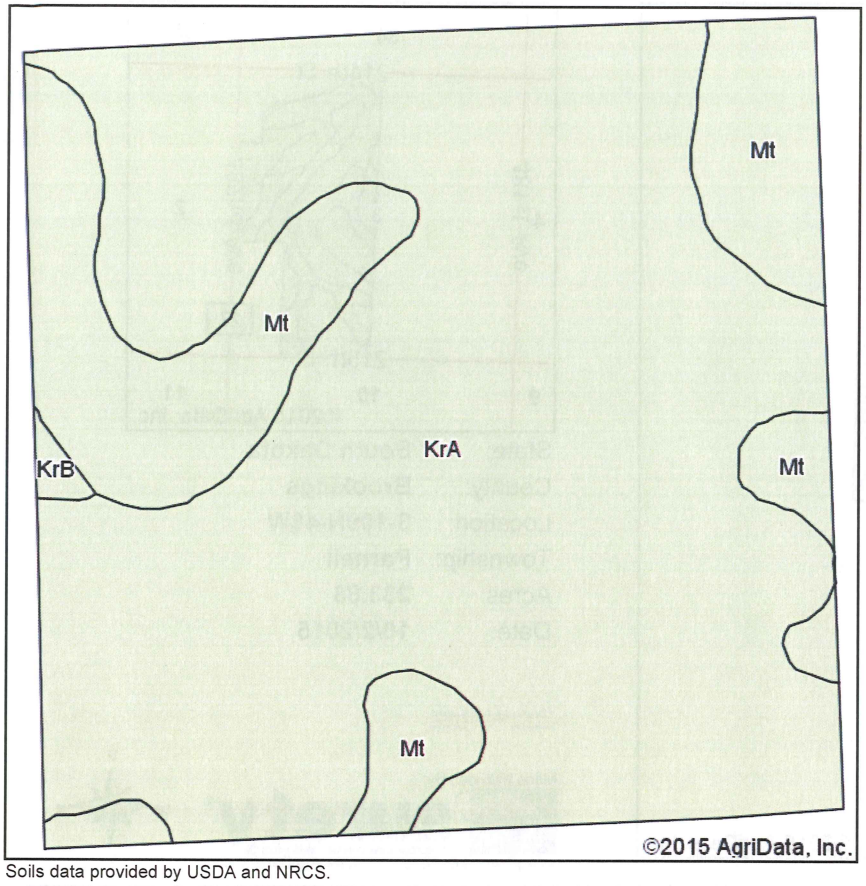
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrB	Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	78.17	33.4%	IIe	87	77	95	34
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	48.71	20.8%	IIs	81	71	87	28
Z182B	Estelline silt loam, coteau, 2 to 6 percent slopes	29.45	12.6%	IIe	58	51		
Z160A	Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 percent slopes	29.21	12.5%	IIIs	65	57		
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	26.36	11.3%	Is	91	80	101	36
Z182A	Estelline silt loam, coteau, 0 to 2 percent slopes	17.73	7.6%	IIs	65	57		
StB	Strayhoss-Maddock complex, 2 to 6 percent slopes	4.20	1.8%	IIe	60	53	68	25
				Weighted Average	**77.6**	**68.4**	**62.5**	**21.7**

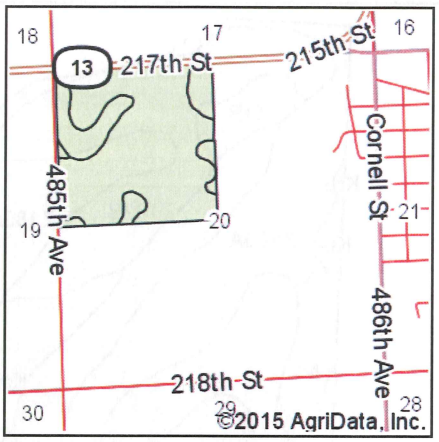
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 6



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **20-109N-47W**
Township: **Elkton**
Acres: **154.26**
Date: **10/2/2015**

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N W E S

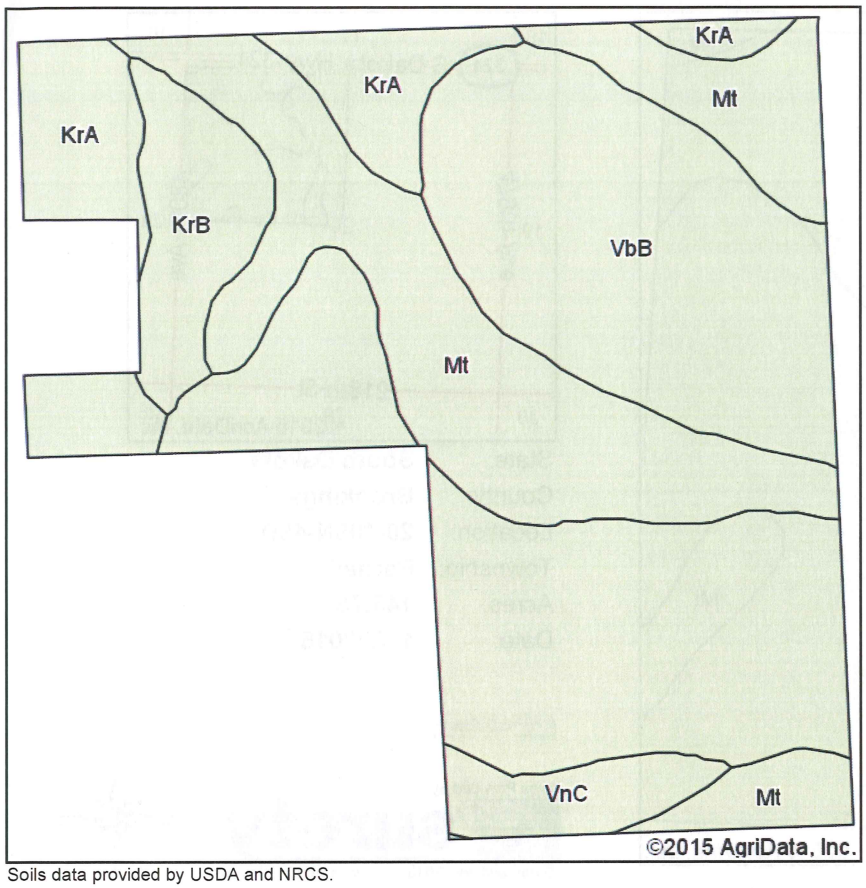
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	121.82	79.0%	Is	91	80	101	36
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	31.78	20.6%	IIs	81	71	87	28
KrB	Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	0.66	0.4%	IIe	87	77	95	34
				Weighted Average	**88.9**	**78.1**	**98.1**	**34.3**

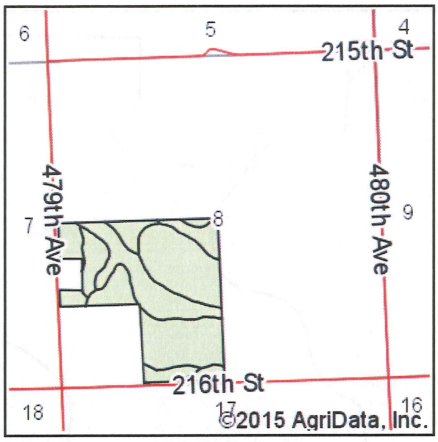
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 7



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **8-109N-48W**
Township: **Parnell**
Acres: **113.88**
Date: **10/2/2015**

Eisenbraun & Associates
Professional Engineers & Surveyors
Innovative Solutions Long Term Value

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N W E S

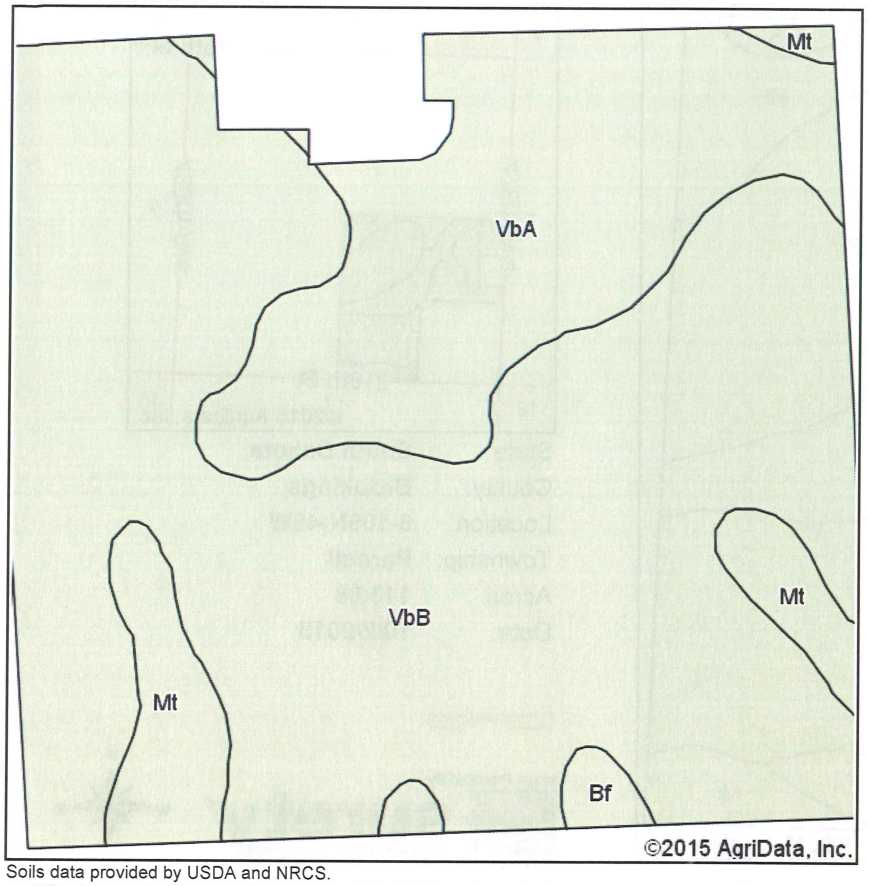
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	57.79	50.7%	IIe	85	75	90	33
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	31.63	27.8%	IIs	81	71	87	28
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	13.07	11.5%	Is	91	80	101	36
KrB	Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	7.19	6.3%	IIe	87	77	95	34
VnC	Vienna-Buse complex, 6 to 9 percent slopes	4.20	3.7%	IIIe	65	57	66	23
				Weighted Average	**84**	**73.9**	**89.9**	**31.6**

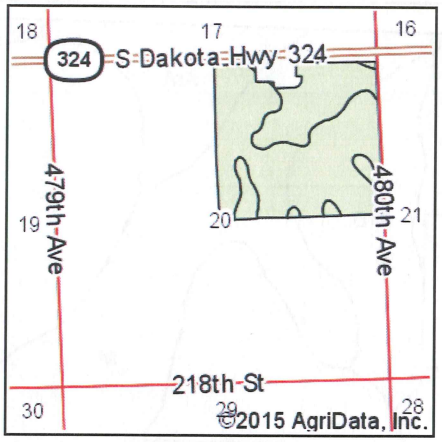
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 8A



Soils data provided by USDA and NRCS.



State:	**South Dakota**
County:	**Brookings**
Location:	**20-109N-48W**
Township:	**Parnell**
Acres:	**143.75**
Date:	**10/5/2015**

Maps Provided By:

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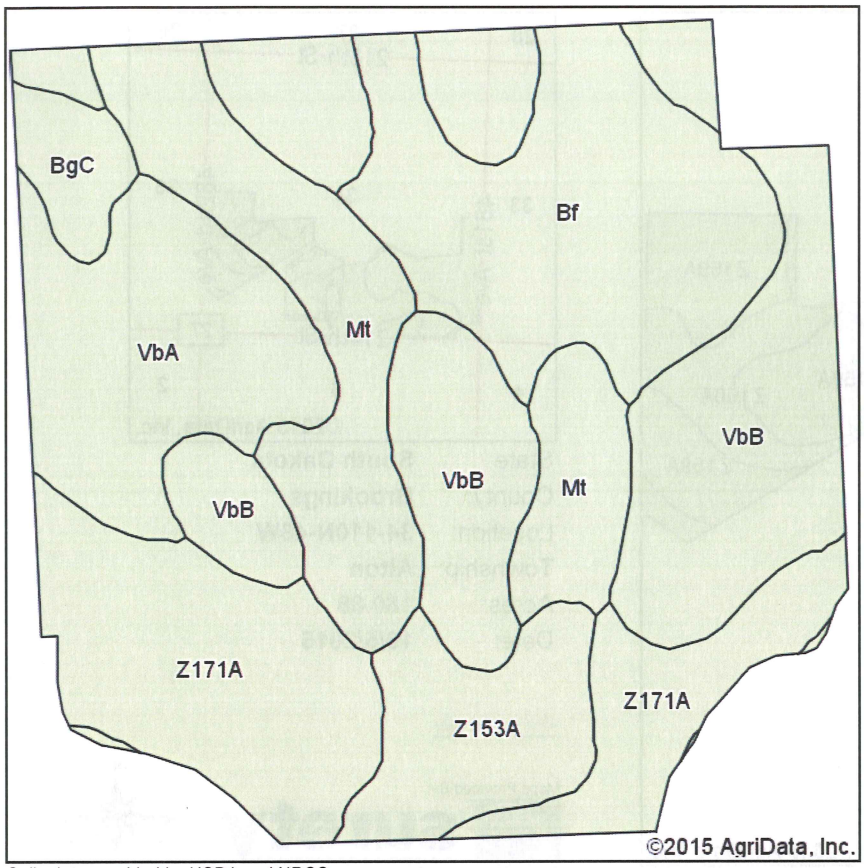
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	99.06	68.9%	IIe	85	75	90	33
VbA	Vienna-Brookings complex, 0 to 2 percent slopes	33.74	23.5%	Is	90	79	98	35
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	9.16	6.4%	IIs	81	71	87	28
Bf	Brookings silty clay loam, 0 to 2 percent slopes	1.79	1.2%	Is	95	84	106	38
				Weighted Average	**86**	**75.8**	**91.9**	**33.2**

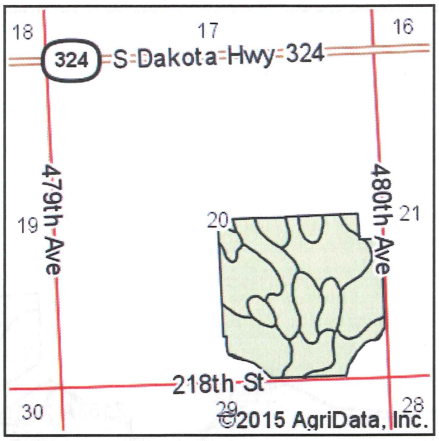
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 8B



Soils data provided by USDA and NRCS.



State:	**South Dakota**
County:	**Brookings**
Location:	**20-109N-48W**
Township:	**Parnell**
Acres:	**139.47**
Date:	**10/5/2015**

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N W E S

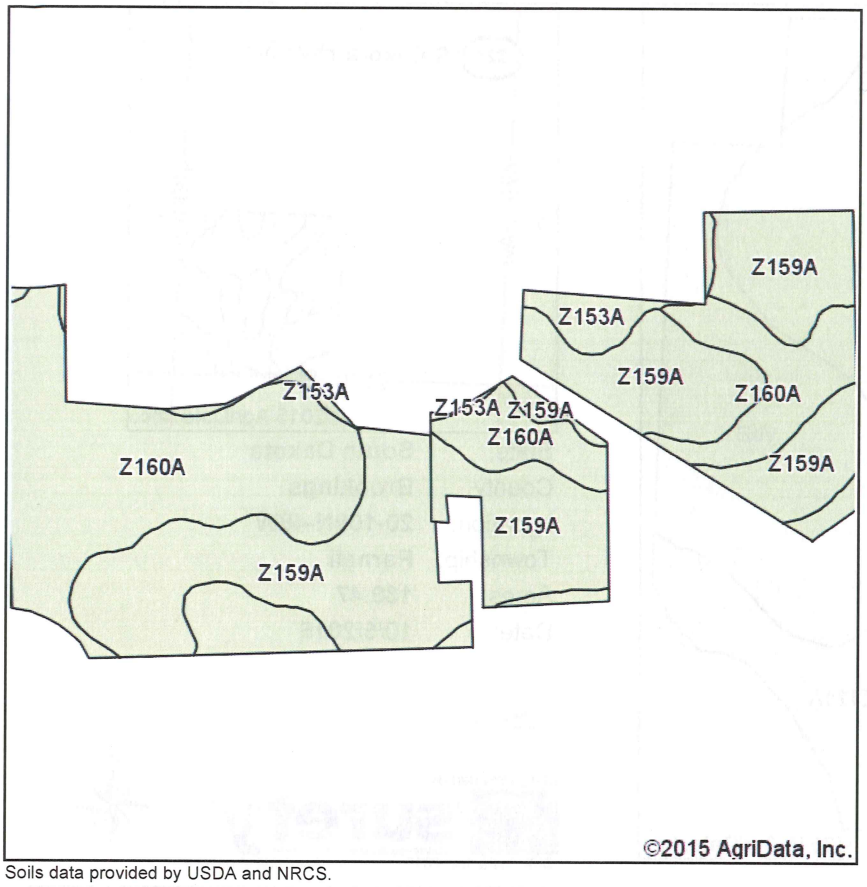
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	38.22	27.4%	IIe	85	75	90	33
Z171A	Renshaw-Fordville loams, coteau, 0 to 2 percent slopes	25.41	18.2%	IIIs	47	41		
Bf	Brookings silty clay loam, 0 to 2 percent slopes	23.86	17.1%	Is	95	84	106	38
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	21.77	15.6%	IIs	81	71	87	28
VbA	Vienna-Brookings complex, 0 to 2 percent slopes	17.00	12.2%	Is	90	79	98	35
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	9.89	7.1%	VIw	13	11		
BgC	Buse-Barnes loams, 6 to 9 percent slopes	3.32	2.4%	IVe	58	51	60	20
				Weighted Average	**74**	**65.1**	**69.8**	**24.7**

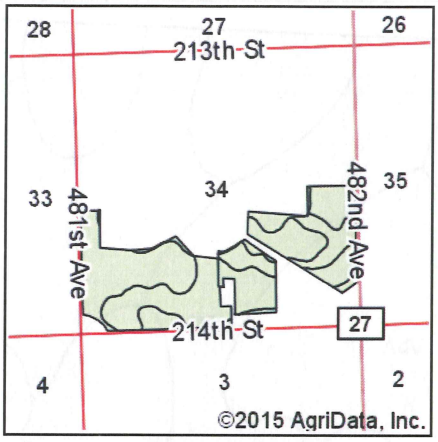
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 9



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **34-110N-48W**
Township: **Alton**
Acres: **180.88**
Date: **10/5/2015**

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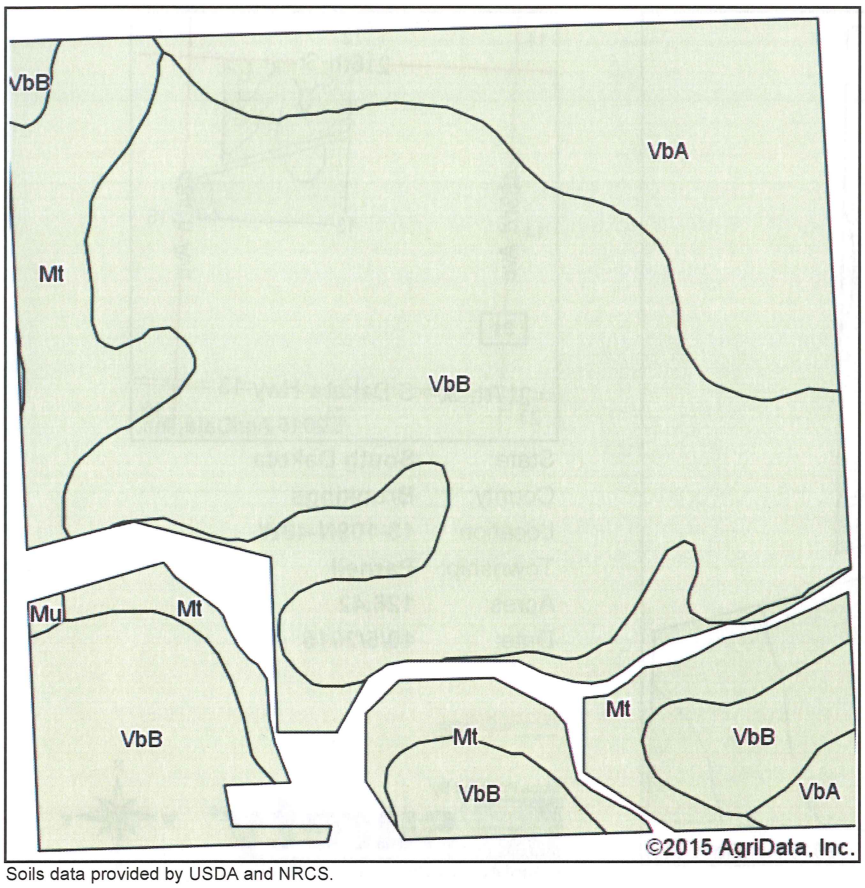
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index
Z159A	Divide loam, 0 to 2 percent slopes, occasionally flooded	92.91	51.4%	IIIs	54	48
Z160A	Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 percent slopes	80.97	44.8%	IIIs	65	57
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	7.00	3.9%	VIw	13	11
				Weighted Average	**57.3**	**50.6**

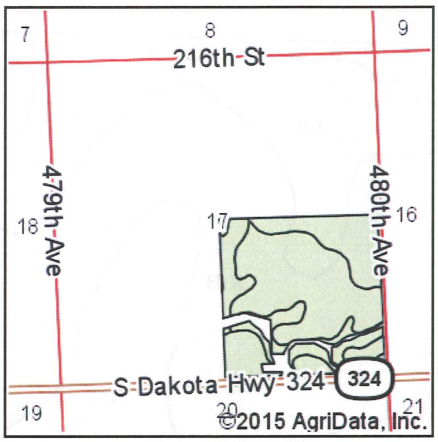
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 11



Soils data provided by USDA and NRCS.



State:	**South Dakota**
County:	**Brookings**
Location:	**17-109N-48W**
Township:	**Parnell**
Acres:	**141.55**
Date:	**10/2/2015**

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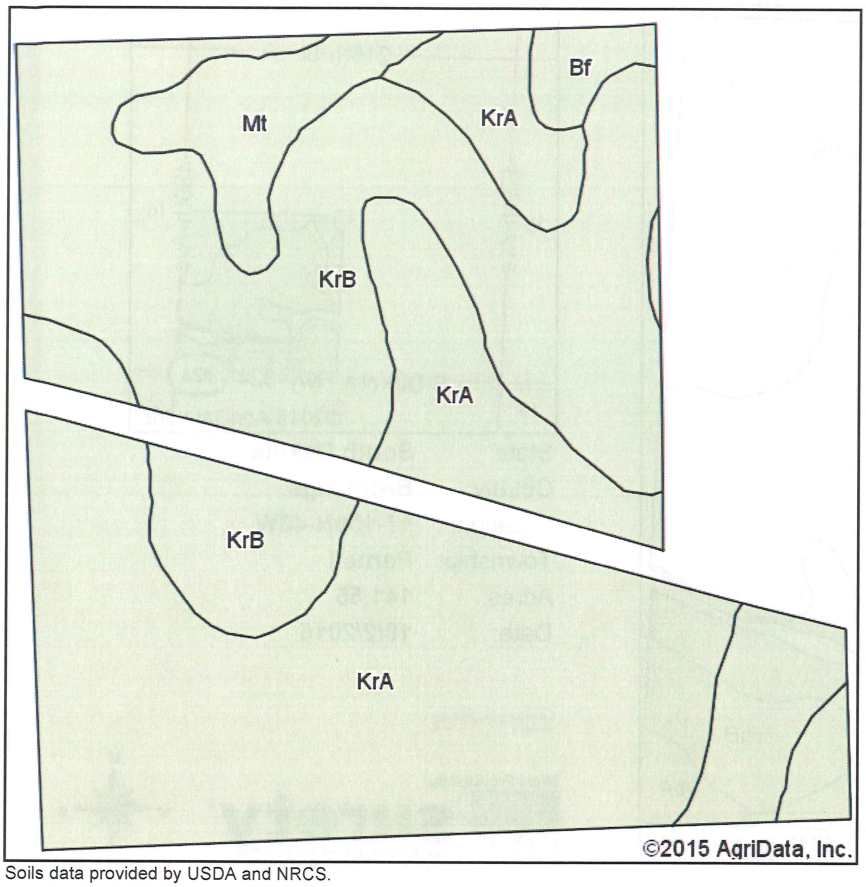
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	86.23	60.9%	IIe	85	75	90	33
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	28.11	19.9%	IIs	81	71	87	28
VbA	Vienna-Brookings complex, 0 to 2 percent slopes	26.95	19.0%	Is	90	79	98	35
Mu	McIntosh-Lamoure silty clay loams, 0 to 2 percent slopes	0.26	0.2%	IIIs	80	70	81	25
				Weighted Average	**85.1**	**75**	**90.9**	**32.4**

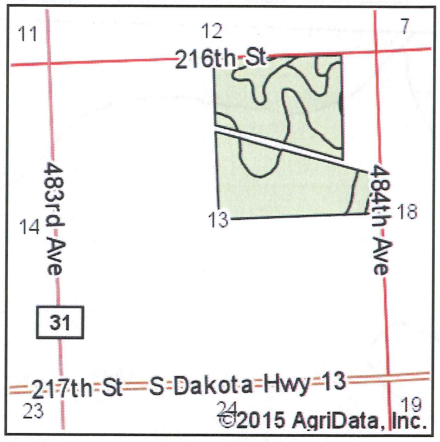
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 12



Soils data provided by USDA and NRCS.



State:	**South Dakota**
County:	**Brookings**
Location:	**13-109N-48W**
Township:	**Parnell**
Acres:	**126.42**
Date:	**10/5/2015**

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N W E S

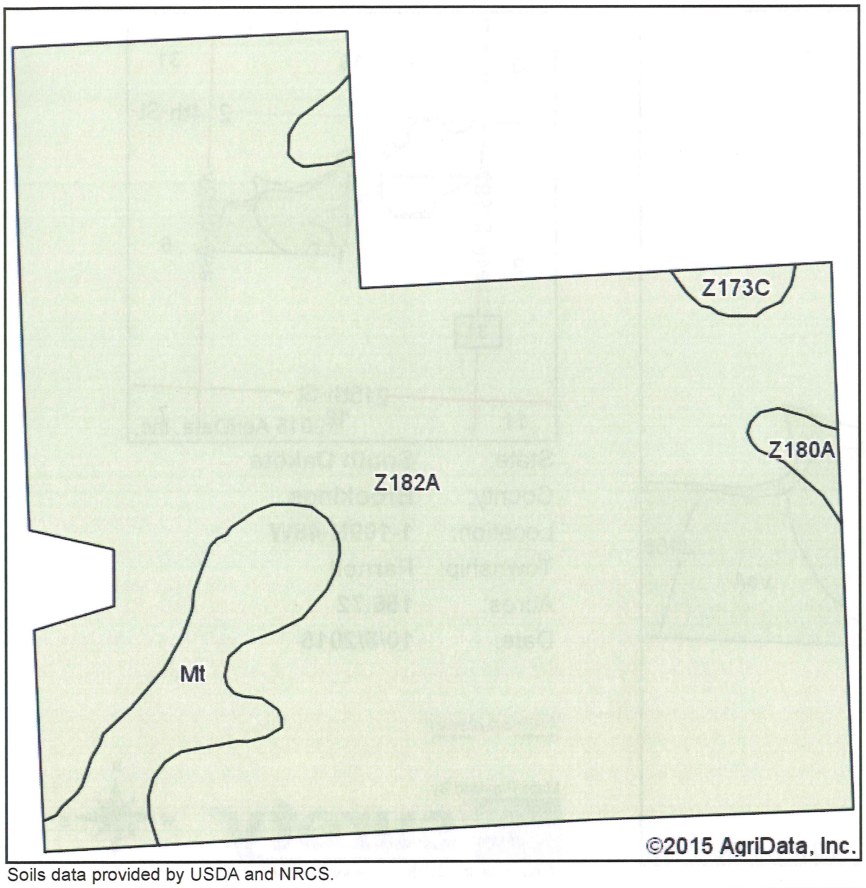
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	65.48	51.8%	Is	91	80	101	36
KrB	Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	52.12	41.2%	IIe	87	77	95	34
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	6.68	5.3%	IIs	81	71	87	28
Bf	Brookings silty clay loam, 0 to 2 percent slopes	2.14	1.7%	Is	95	84	106	38
				Weighted Average	**88.9**	**78.4**	**97.9**	**34.8**

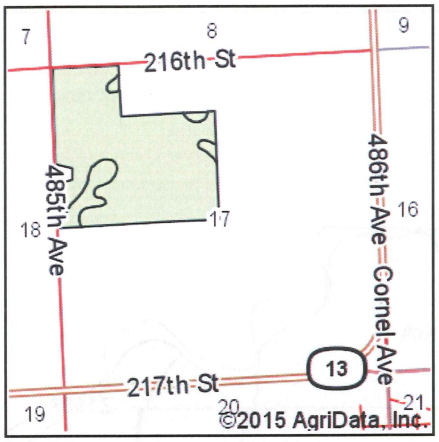
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 13



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **17-109N-47W**
Township: **Elkton**
Acres: **125.94**
Date: **10/5/2015**

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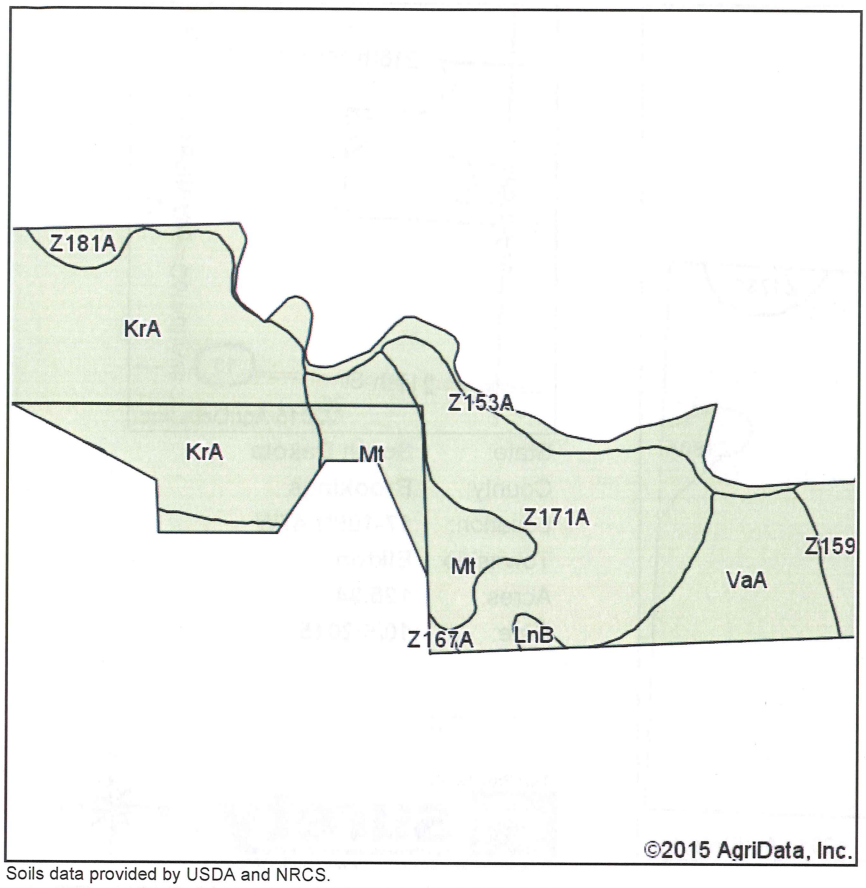
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
Z182A	Estelline silt loam, coteau, 0 to 2 percent slopes	114.11	90.6%	IIs	65	57		
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	8.59	6.8%	IIs	81	71	87	28
Z173C	Renshaw-Sioux complex, coteau, 6 to 9 percent slopes	2.00	1.6%	Ve	28	25		
Z180A	Goldsmith silty clay loam, coteau, 0 to 2 percent slopes	1.24	1.0%	Iw	89	78		
				Weighted Average	**65.7**	**57.7**	**5.9**	**1.9**

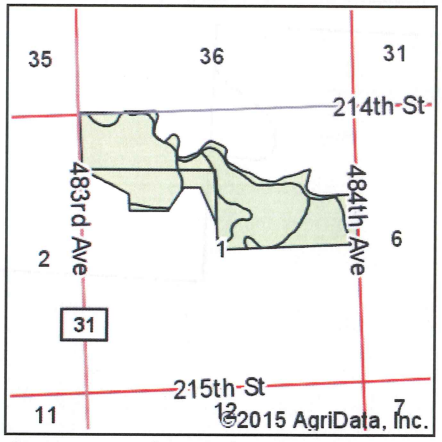
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 15



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **1-109N-48W**
Township: **Parnell**
Acres: **156.72**
Date: **10/5/2015**

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N W E S

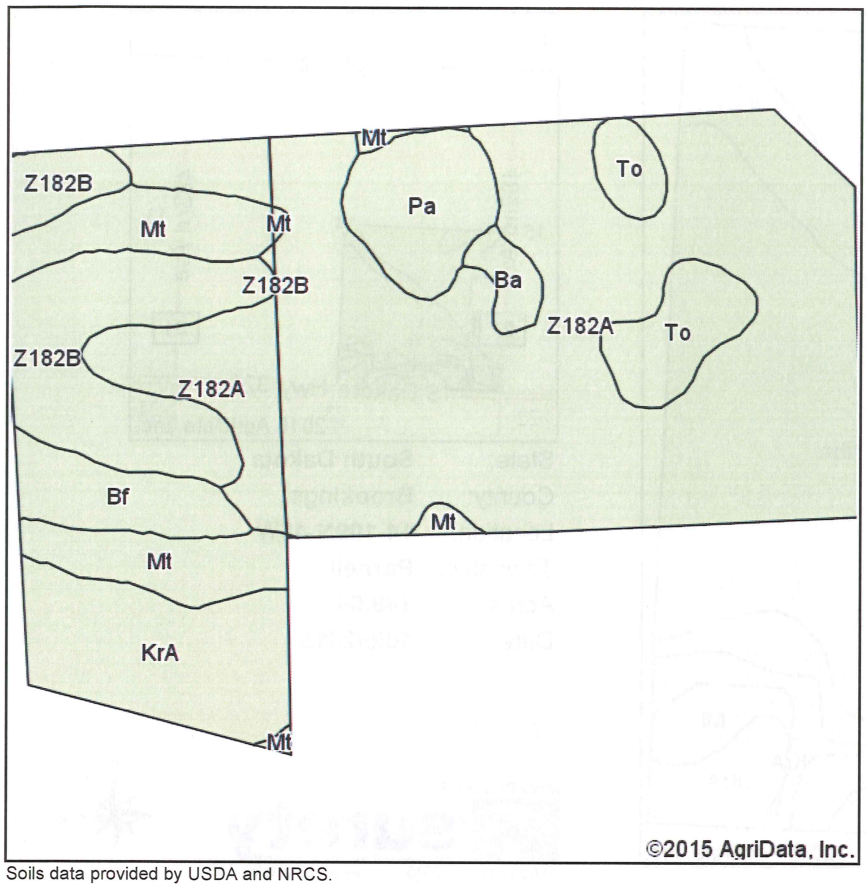
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	56.65	36.1%	Is	91	80	101	36
Z171A	Renshaw-Fordville loams, coteau, 0 to 2 percent slopes	41.70	26.6%	IIIs	47	41		
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	19.80	12.6%	IIs	81	71	87	28
VaA	Venagro-Svea loams, 0 to 2 percent slopes	18.36	11.7%	Is	89	78	100	36
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	10.34	6.6%	VIw	13	11		
Z159A	Divide loam, 0 to 2 percent slopes, occasionally flooded	5.50	3.5%	IIIs	54	48		
Z181A	Brandt silty clay loam, coteau, 0 to 2 percent slopes	2.78	1.8%	Is	85	75		
LnB	Lanona-Swenoda sandy loams, 2 to 6 percent slopes	1.00	0.6%	IIIe	63	55	64	23
Z167A	Renwash loam, 0 to 2 percent slopes, rarely flooded	0.59	0.4%	IIIs	47	41		
				Weighted Average	**70.9**	**62.2**	**59.6**	**20.9**

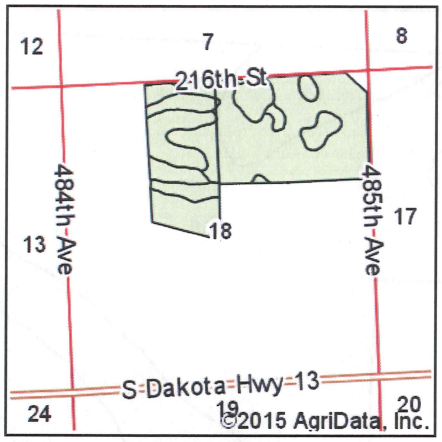
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 18



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **18-109N-47W**
Township: **Elkton**
Acres: **177.38**
Date: **10/5/2015**

Maps Provided By:

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N W E S

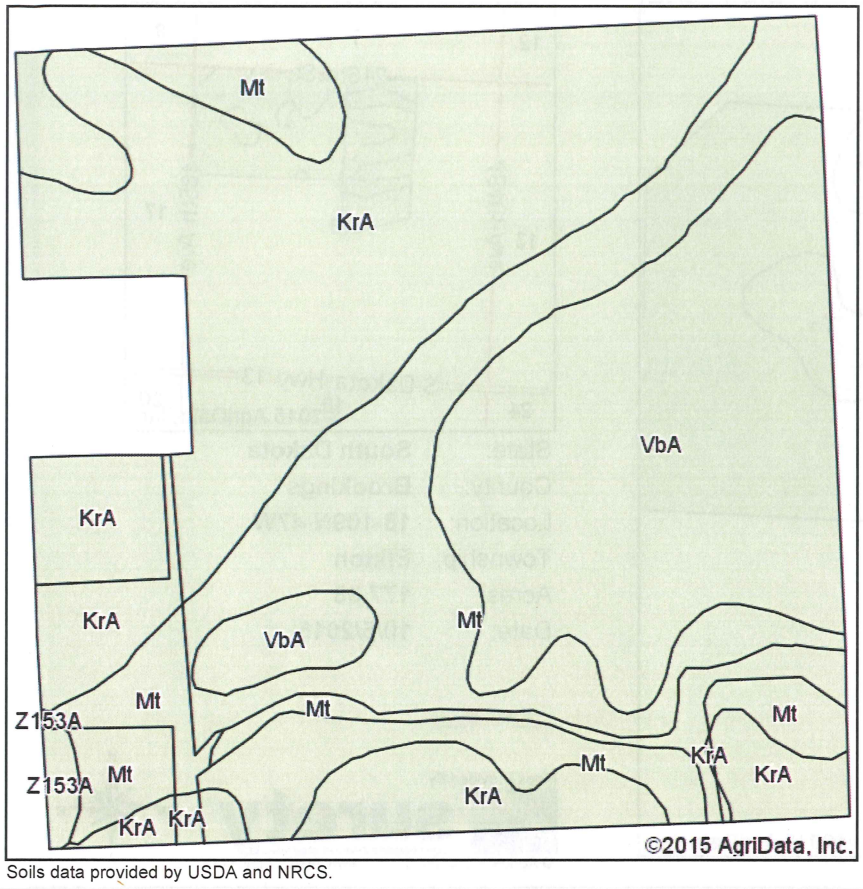
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
Z182A	Estelline silt loam, coteau, 0 to 2 percent slopes	99.89	56.3%	IIs	65	57		
Z182B	Estelline silt loam, coteau, 2 to 6 percent slopes	20.44	11.5%	IIe	58	51		
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	15.73	8.9%	Is	91	80	101	36
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	15.19	8.6%	IIs	81	71	87	28
Pa	Parnell silty clay loam, 0 to 1 percent slopes	8.66	4.9%	Vw	32	28	29	11
To	Tonka silty clay loam, 0 to 1 percent slopes	8.64	4.9%	IVw	57	50	58	22
Bf	Brookings silty clay loam, 0 to 2 percent slopes	6.64	3.7%	Is	95	84	106	38
Ba	Badger silty clay loam, 0 to 1 percent slopes	2.19	1.2%	IIw	79	70	82	31
				Weighted Average	**67.2**	**59**	**25.6**	**9**

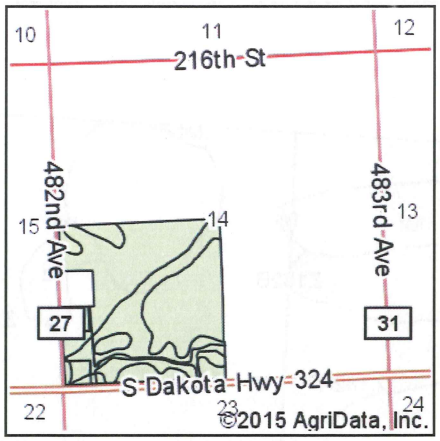
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 19



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **14-109N-48W**
Township: **Parnell**
Acres: **148.04**
Date: **10/5/2015**

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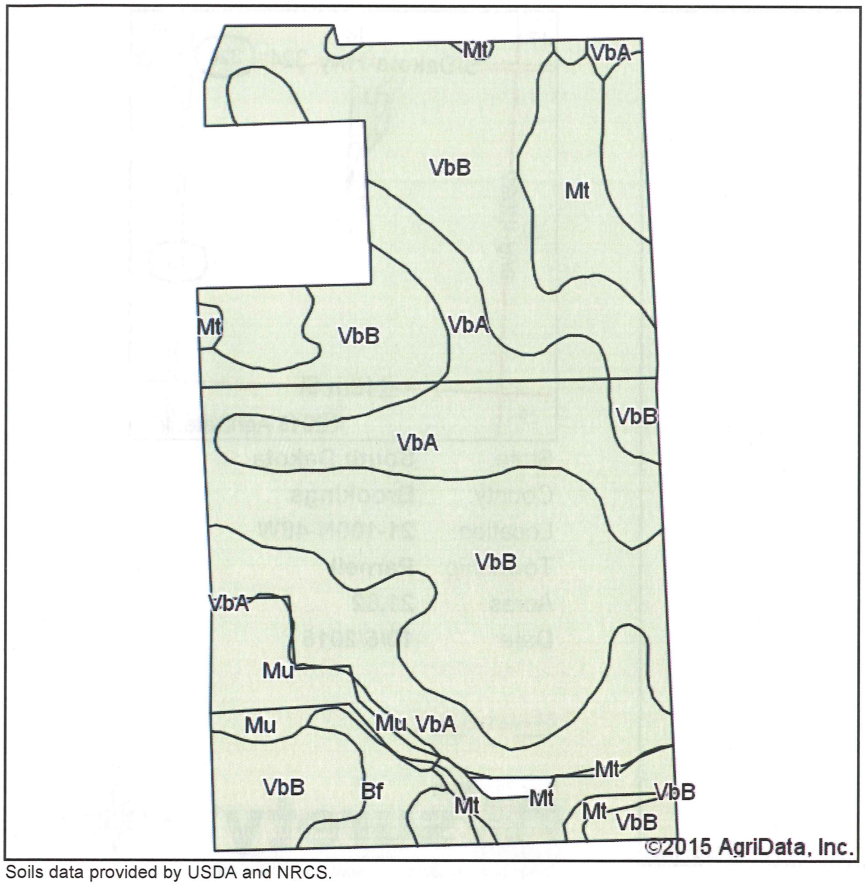
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
KrA	Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	59.56	40.2%	Is	91	80	101	36
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	47.84	32.3%	IIs	81	71	87	28
VbA	Vienna-Brookings complex, 0 to 2 percent slopes	39.73	26.8%	Is	90	79	98	35
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	0.91	0.6%	VIw	13	11		
				Weighted Average	**87**	**76.4**	**95**	**32.9**

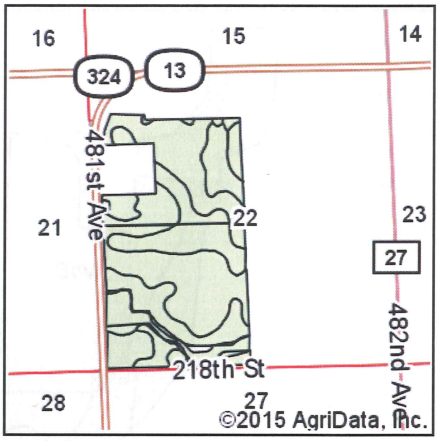
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 20



Soils data provided by USDA and NRCS.



State: **South Dakota**
County: **Brookings**
Location: **22-109N-48W**
Township: **Parnell**
Acres: **228.51**
Date: **10/5/2015**

Maps Provided By:

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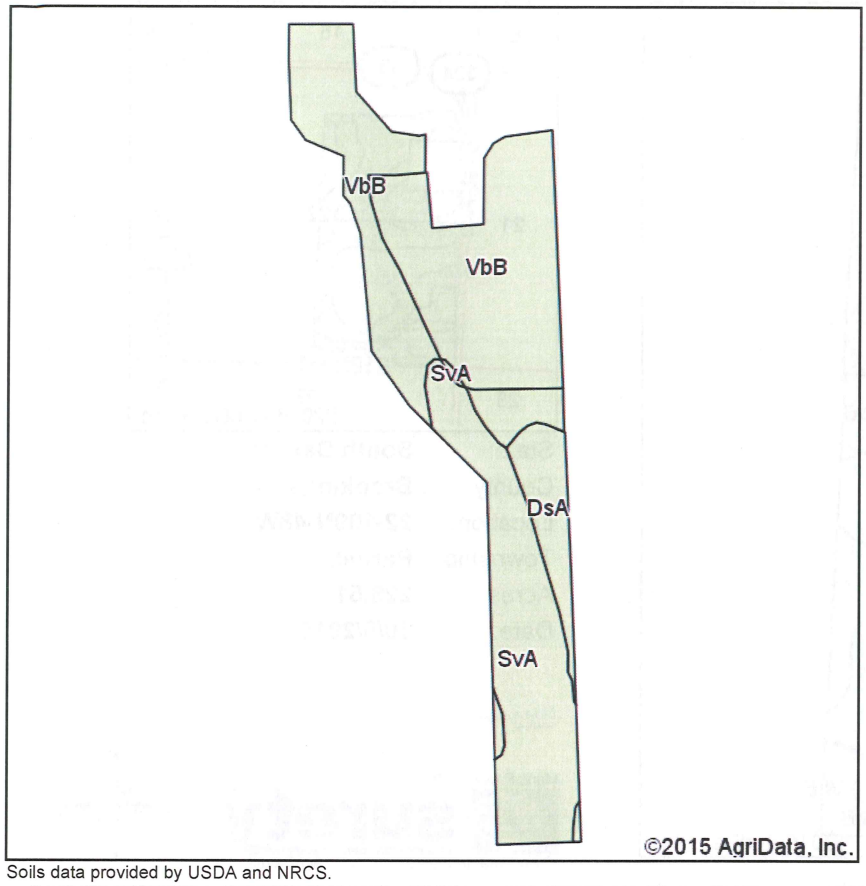
Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	124.43	54.5%	IIe	85	75	90	33
VbA	Vienna-Brookings complex, 0 to 2 percent slopes	64.50	28.2%	Is	90	79	98	35
Mt	McIntosh-Badger silty clay loams, 0 to 2 percent slopes	22.25	9.7%	IIs	81	71	87	28
Mu	McIntosh-Lamoure silty clay loams, 0 to 2 percent slopes	11.35	5.0%	IIIs	80	70	81	25
Bf	Brookings silty clay loam, 0 to 2 percent slopes	5.53	2.4%	Is	95	84	106	38
Z153A	Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	0.45	0.2%	VIw	13	11		
				Weighted Average	**85.9**	**75.6**	**91.7**	**32.7**

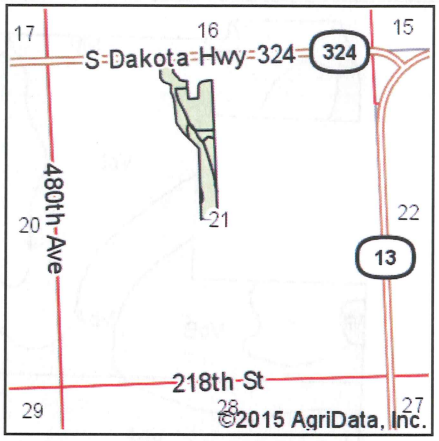
Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Field 23



Soils data provided by USDA and NRCS.



State:	**South Dakota**
County:	**Brookings**
Location:	**21-109N-48W**
Township:	**Parnell**
Acres:	**21.62**
Date:	**10/5/2015**

Maps Provided By:

surety® CUSTOMIZED ONLINE MAPPING

© Agridata, Inc. 2015 www.AgriDataInc.com

N W E S

Area Symbol: SD011, Soil Area Version: 20

Code	Soil Description	Acres	Percent of field	Non-Irr Class	Productivity Index	State Productivity Index	Corn	Soybeans
VbB	Vienna-Brookings complex, 1 to 6 percent slopes	13.15	60.8%	IIe	85	75	90	33
SvA	Svea loam, 0 to 2 percent slopes	6.77	31.3%	Is	94	83	102	37
DsA	Doland-Svea loams, 0 to 2 percent slopes	1.70	7.9%	Is	88	77	98	35
				Weighted Average	**88.1**	**77.7**	**94.4**	**34.4**

Area Symbol: SD011, Soil Area Version: 20

Soils data provided by USDA and NRCS.

Section 18, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

Prepared By

Eisenbraun & Associates
Professional Engineers & Surveyors

Innovative Solutions - Long Term Value

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Yankton, South Dakota 57078

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FAX 605-665-0523
"www.eaweb.com"

Kodiak Pork RE, LLC
Brookings County, SD

PROJECT NO:	Y15163
CAD DWG FILE:	NMP
DRAWN BY:	BRADW
REVIEWED BY:	XXX
DATE:	October 1, 2015
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SHEET TITLE

NMP Field

18-109-48

Section 3, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
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Scale

1 inch = 1000 feet

N

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SHEET TITLE

NMP Field

3-109-48

Section 20, Township 109 North, Range 47 West
Brookings County, South Dakota

Legend

- Fields
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Scale

1 inch = 1000 feet

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SHEET TITLE

NMP Field

20-109-47

Section 8, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

Fields

Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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SHEET TITLE

NMP Field

8-109-48

Section 20, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
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Scale

1 inch = 1000 feet

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SHEET TITLE

NMP Field

20-109-48

Section 34, Township 110 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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DATE:	October 1, 2015
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SHEET TITLE

NMP Field

34-110-48

Section 17, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

Fields

Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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Yankton, South Dakota 57078

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FAX 605-665-0523
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Brookings County, SD

PROJECT NO:	Y15163
CAD DWG FILE:	NMP
DRAWN BY:	BRADW
REVIEWED BY:	XXX
DATE:	October 1, 2015
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SHEET TITLE

NMP Field

17-109-48

Section 13, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

Prepared By

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Professional Engineers & Surveyors

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FAX 605-665-0523
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Brookings County, SD

PROJECT NO:	Y15163
CAD DWG FILE:	NMP
DRAWN BY:	BRADW
REVIEWED BY:	XXX
DATE:	October 1, 2015
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SHEET TITLE

NMP Field

13-109-48

Section 17, Township 109 North, Range 47 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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Brookings County, SD

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CAD DWG FILE:	NMP
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REVIEWED BY:	XXX
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SHEET TITLE

NMP Field

17-109-47

Section 1, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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Brookings County, SD

PROJECT NO:	Y15163
CAD DWG FILE:	NMP
DRAWN BY:	BRADW
REVIEWED BY:	XXX
DATE:	October 1, 2015
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SHEET TITLE

NMP Field

1-109-48

Section 18, Township 109 North, Range 47 West
Brookings County, South Dakota

Legend

Fields

Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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DATE:	October 1, 2015
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SHEET TITLE

NMP Field

18-109-47

Section 14, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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SHEET TITLE

NMP Field

14-109-48

Section 22, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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DRAWN BY:	BRADW
REVIEWED BY:	XXX
DATE:	October 1, 2015
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SHEET TITLE

NMP Field

22-109-48

Section 21, Township 109 North, Range 48 West
Brookings County, South Dakota

Legend

- Fields
- Buffer Zones and/or Exclusion Areas

Scale

1 inch = 1000 feet

N

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PROJECT NO:	Y15163
CAD DWG FILE:	NMP
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REVIEWED BY:	XXX
DATE:	October 1, 2015
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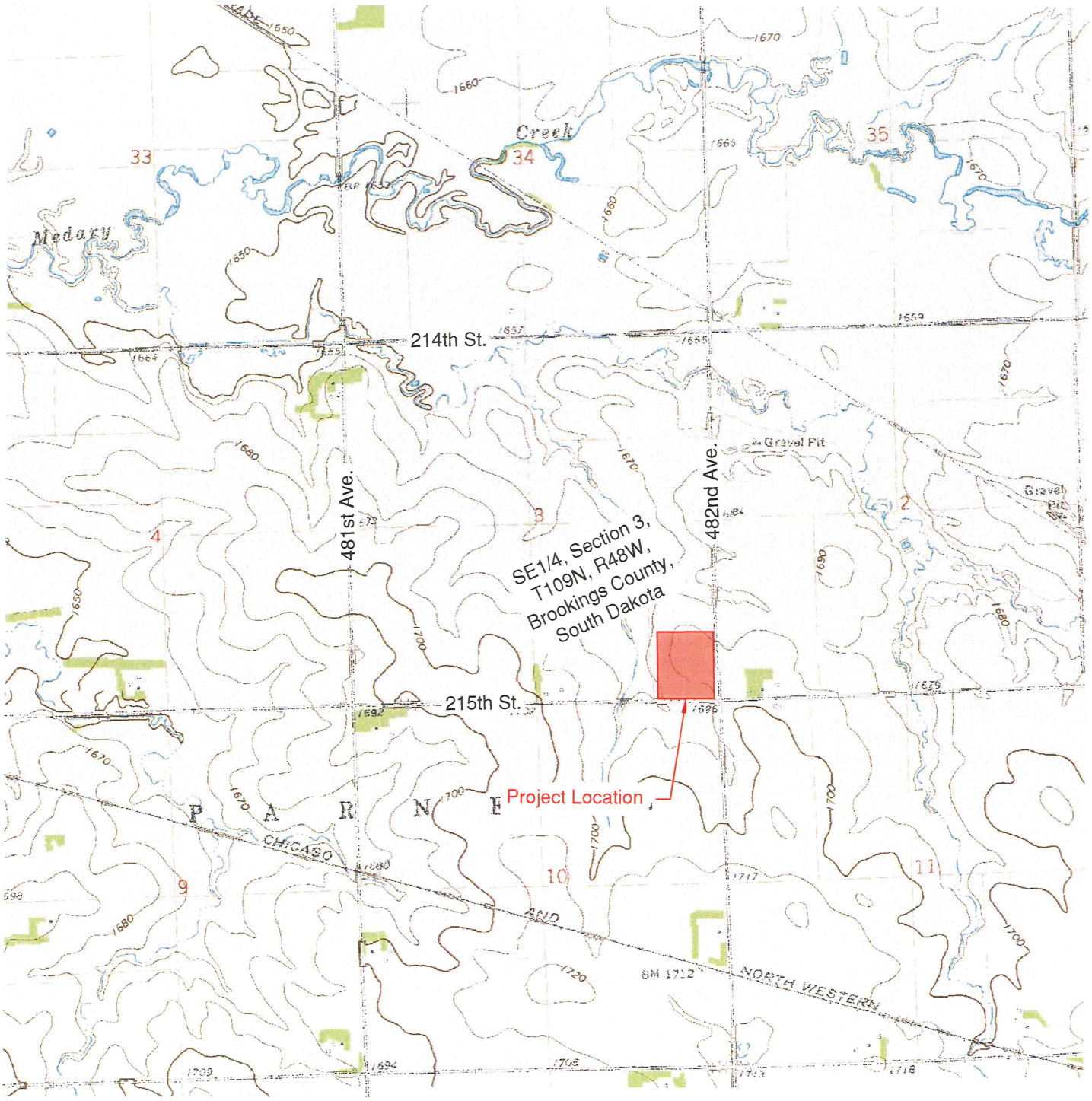
SHEET TITLE

NMP Field

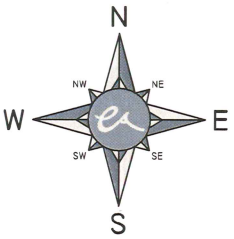
21-109-48

Appendix B

Kodiak Pork
Brookings County, South Dakota



Location Map



Scale: 1" = 2000'

PROJECT NUMBER:	Y15163
DRAFTED BY:	BRIANB
REVIEWED BY:	TVM
DRAWING:	C-15163-SITE
LAYOUT:	AQUIFER MAP
SHEET NO. 1 OF 1 TOTAL SHEETS	

Prepared By
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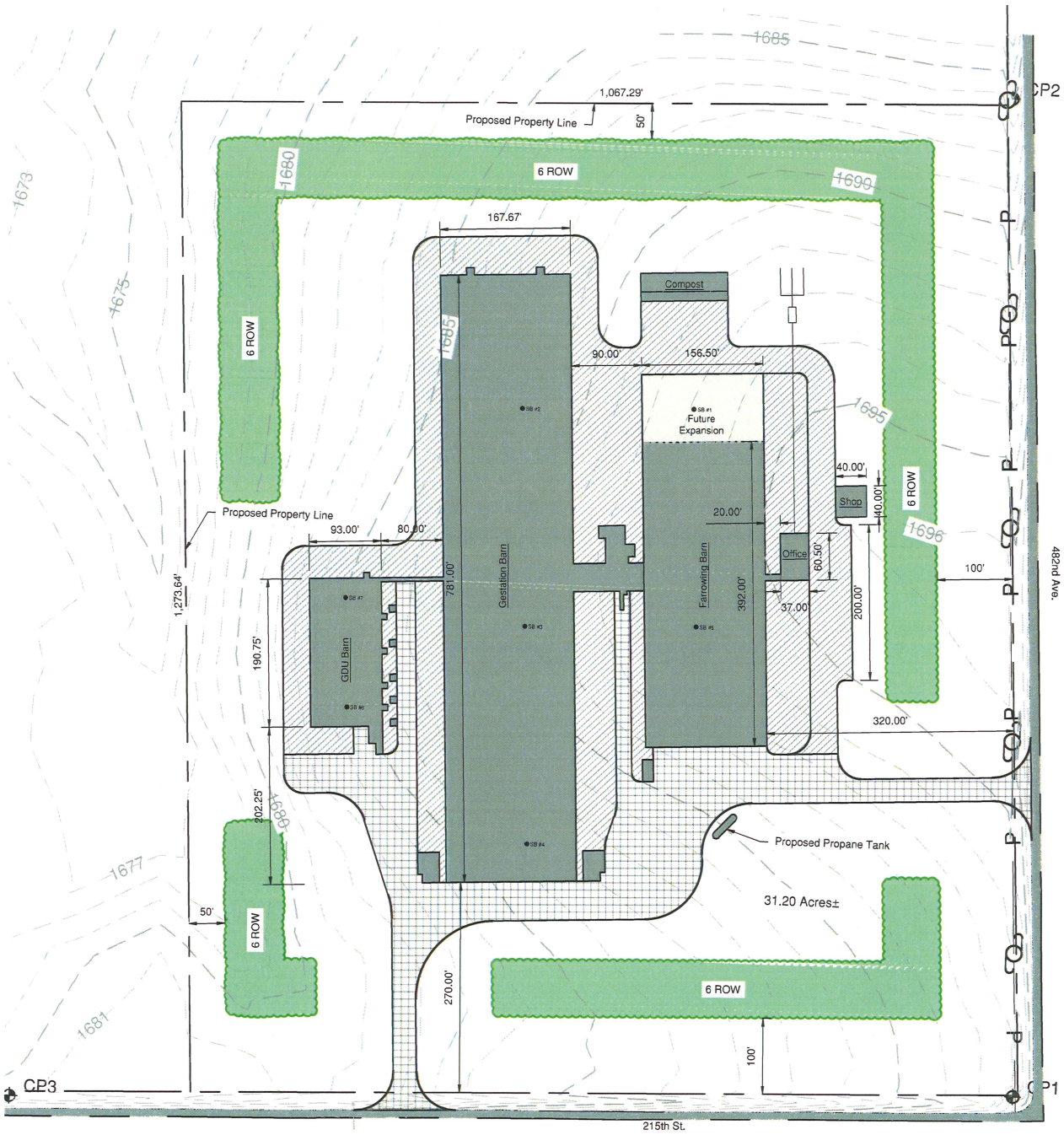
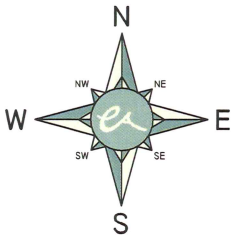
Kodiak Pork
Brookings County, South Dakota



Tree Planting Plan



Scale: 1" = 200'

PROJECT NUMBER:	Y15163
DRAFTED BY:	BRIANB
REVIEWED BY:	TVM
DRAWING:	C-15163-SITE
LAYOUT:	SITE LAYOUT
SHEET NO. 1 OF 1 TOTAL SHEETS	

Prepared By

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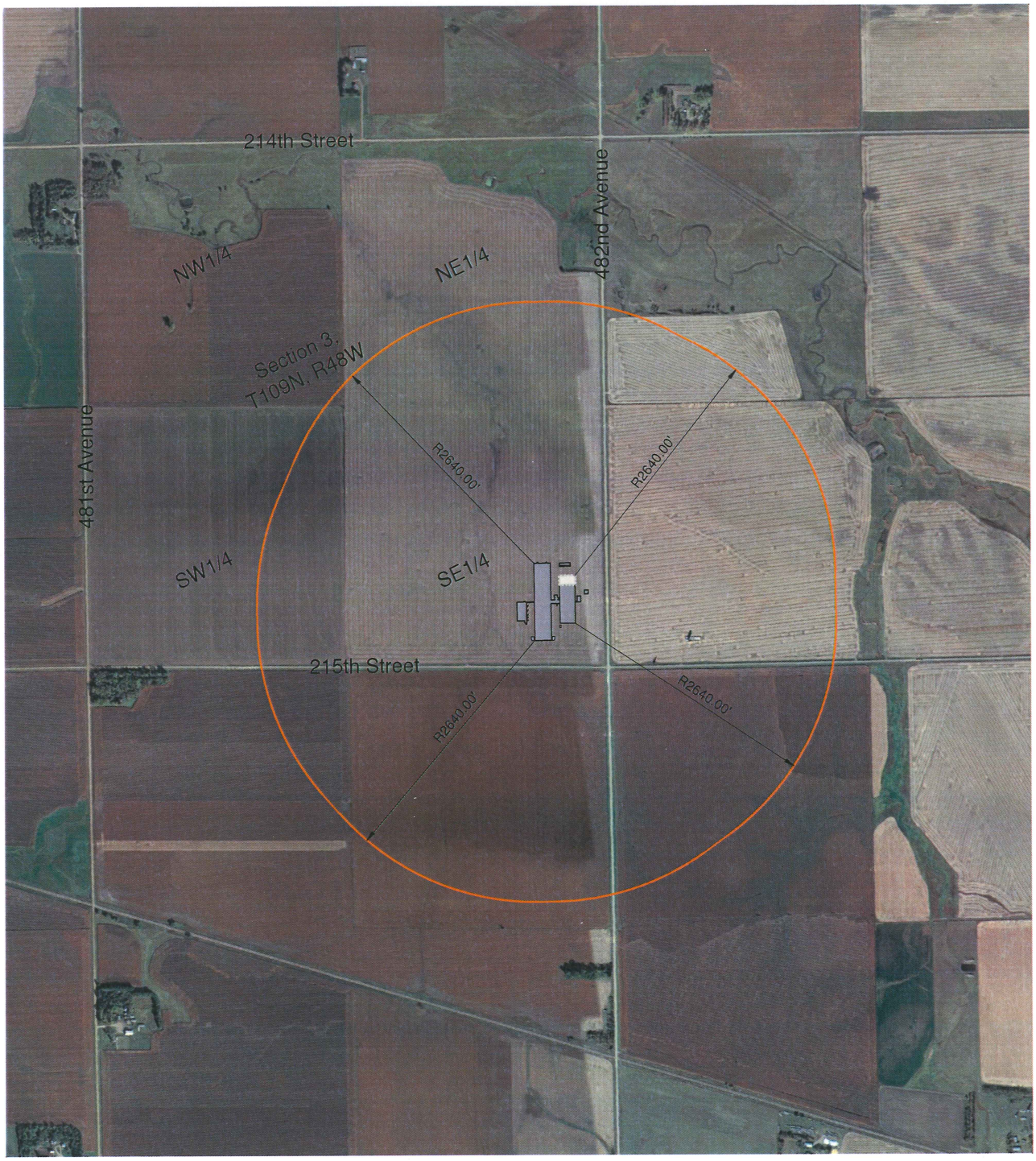
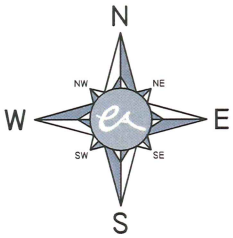
Kodiak Pork
Brookings County, South Dakota



Setback Map



Scale: 1" = 1500'

PROJECT NUMBER:	Y15163
DRAFTED BY:	BRIANB
REVIEWED BY:	TVM
DRAWING:	C-15163-STBK
LAYOUT:	SETBACK MAP
SHEET NO. 1 OF 1 TOTAL SHEETS	

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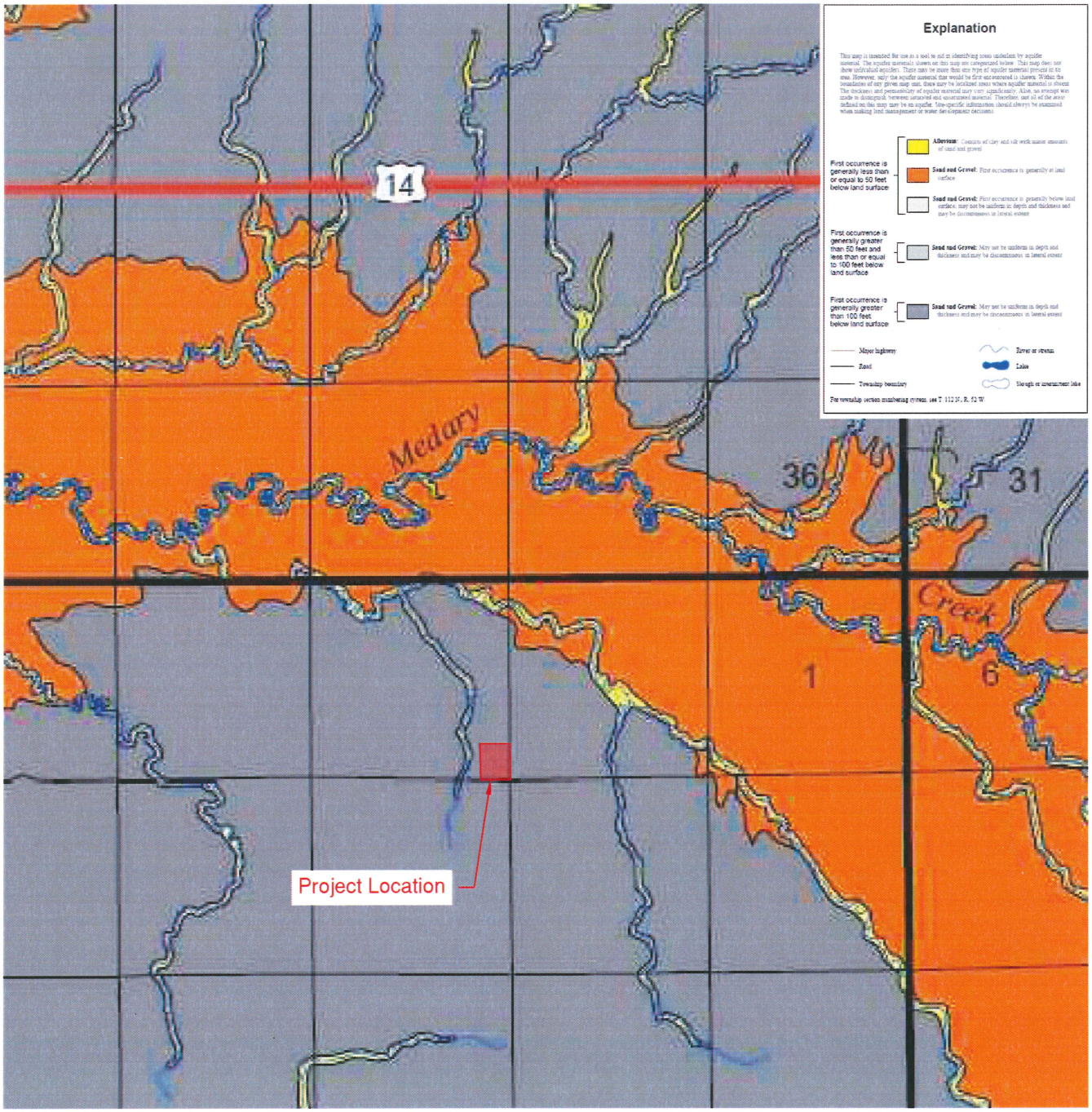
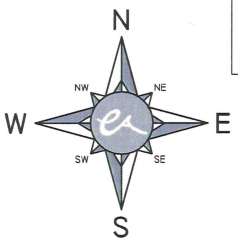
Brookings County, South Dakota



South Dakota Geological Survey Program's First Occurrence of Aquifer Materials in Brookings County South Dakota Map



Scale: 1" = 4000'

PROJECT NUMBER:	Y15163
DRAFTED BY:	BRIANB
REVIEWED BY:	TVM
DRAWING:	C-15163-SITE
LAYOUT:	AQUIFER MAP
SHEET NO. 1 OF 1 TOTAL SHEETS	

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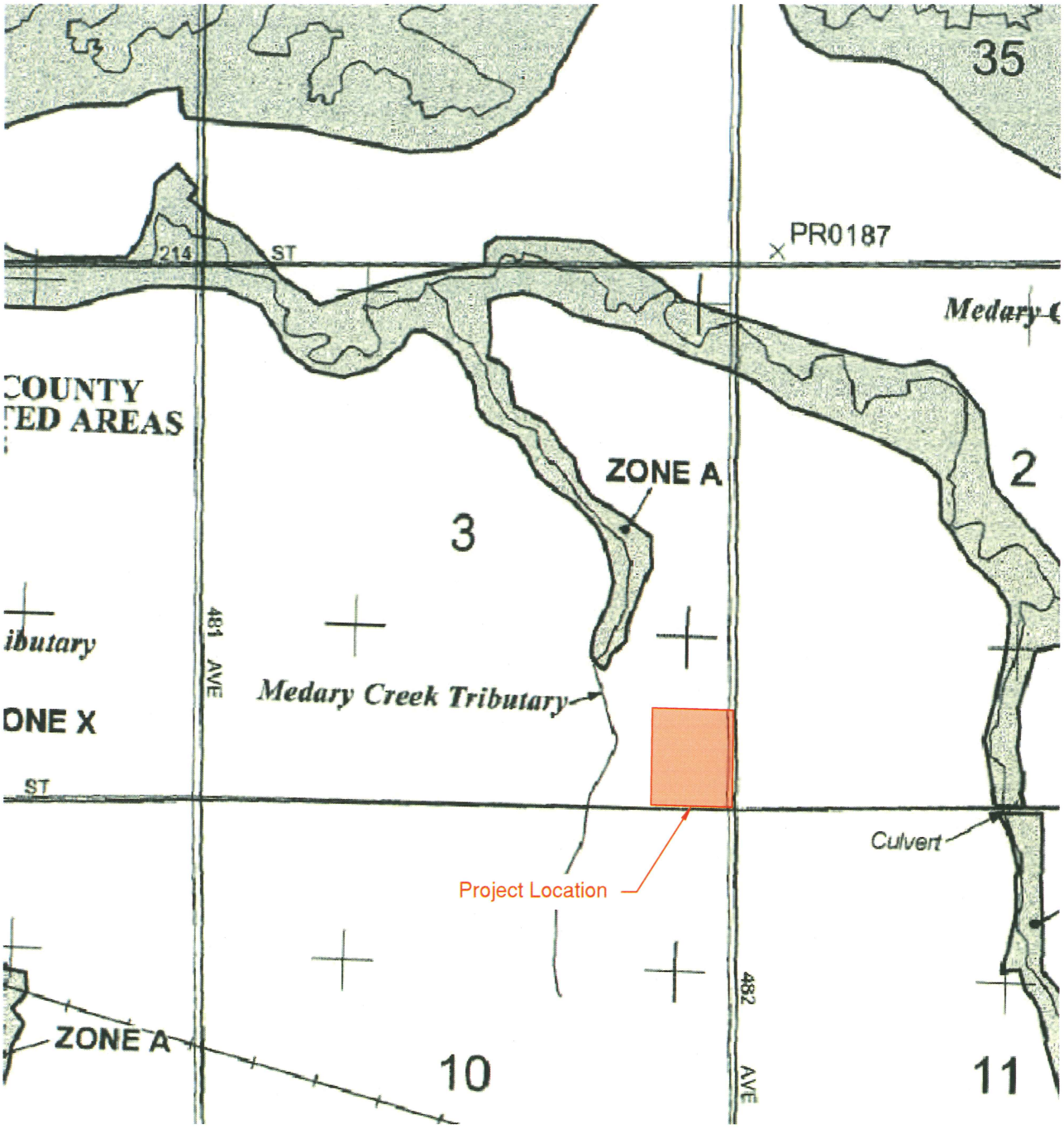
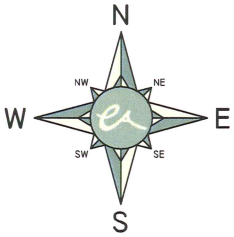


FEMA's 100-year Flood Plain Map



Scale: 1" = 1500'

PROJECT NUMBER:	Y15163
DRAFTED BY:	BRIANB
REVIEWED BY:	TVM
DRAWING:	C-15163-SITE
LAYOUT:	FLOOD PLAIN MAP
SHEET NO. 1 OF 1 TOTAL SHEETS	

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Appendix C

Appendix C

Kodiak Pork RE, LLC
Waste Management System
Operation and Maintenance Guidelines for Deep Pits

You, as owner of the system, are responsible for its operation and maintenance. Although the systems are designed based on the best available technical knowledge, it must be recognized that any system creates some risk, and therefore needs to be properly operated and maintained, including periodic inspection. In addition, total benefits cannot be obtained unless the system is operated and maintained such that it will safely serve the purpose both as to function and time for which it was installed.

Below are guidelines for operating and maintaining your system.

A. Operation:

1. Inspection
   a. Pumps, pipes, valves, ventilation system and pits for signs of damage and needed repairs.
   b. Fences and safety signs.
   c. Amount of stored sediment, debris, and liquid.
   d. Check the water level in the standpipe of the closed-loop drain tile system adjacent to the GDU & gestation barns weekly and after major rainfall events. Record water levels in a log format. Insure that the lid is tightly sealed after inspection.
   e. Entire system weekly.

2. Daily Operations:
   a. Remove stored waste in a timely manner to maintain adequate volume for the system to function as designed.
   b. Apply wastes as determined by nutrient test and/or nutrient utilization plan, in accordance with crop needs.
   c. Apply wastes downwind from any residences.
   d. Do not apply waste on snow or frozen ground.
   e. Do not apply waste material immediately after rain or within 24 hours of forecasted rain unless it can be immediately incorporated into the soil.
   f. Do not apply liquid at a rate that exceeds the soil intake rate or the consumption use of the crop. No more than 2 inches should be applied at any one time.
   g. Facility will be emptied to maintain design freeboard.
   h. Frozen manure should not be placed in the pit as it may cause all liquid to freeze.
   i. For safety, cover all openings when not in use. Be certain the covers provide ventilation as explosive, poisonous, and asphyxiating gases are produced.
   j. Extreme care must be exercised before entering the pit for maintenance. This should include safety harness and forced ventilation or the use of an oxygen mask. All operators should familiarize themselves with gas problem, special wiring needs, and ventilation needs. "No Smoking" and other appropriate signs should be posted to warn persons of the danger.
   k. All clean water should be diverted unless needed for dilution.
   l. Inspect manure application sites daily during times of application.
   m. If water levels in the closed loop drain tile system adjacent to the finishers or nursery barns rises, contact DENR (605-773-3351) immediately to obtain approval for a remediation plan. In the event of an emergency, liquids present in the drain tile system must be pumped back into the manure containment pits.

3. Pumping Procedure
   a. Prior to pumping waste from the pit, the waste must be adequately agitated to suspend solids.

Kodiak Pork RE, LLC
Waste Management System
Operation and Maintenance Guidelines for Deep Pits

B. Maintenance

1. Repair any damaged pumps, pipes, ventilation fans, or pits.
2. Repair fences and safety signs to original specifications.
3. Remove and dispose of trash and debris that will affect the aesthetics or functioning of the system.

Operator(s): _____

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 1
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
2'	Silty Clay: brown, moist, weathered (CL)	Fine Alluvium								
	Lean Clay: trace of gravel, moist, weathered (CL)	Glacial Till			1	CSS				
					2	CSS				
					3	CSS				
					4	CSS				
					5	CSS				
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/20/15
7/20/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A. with CSS
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 1b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
					6	CSS				
					7	CSS				
					8	CSS				
					9	CSS				
					10	CSS				
51'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/20/15
7/20/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A. with CSS
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 2
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
2'	Silty Clay: brown, moist, weathered (CL)	Fine Alluvium								
	Lean Clay: trace of gravel, brown, moist, weathered (CL)	Glacial Till								
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/20/15
7/20/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 2b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL / PL	QU
30'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/20/15
7/20/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 3
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
	Lean Clay: trace of gravel, brown, moist, weathered (CL)	Glacial Till			1	CSS				
	Note: water at tile that was drilled through		▼							
					2	CSS				
					3	CSS				
					4	CSS				
					5	CSS				
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	5' - tile drilled through	METHOD OF DRILLING: 3 1/4" H.S.A. with CSS
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 3b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
					6	CSS				
					7	CSS				
					8	CSS				
					9	CSS				
					10	CSS				
51'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	5' - tile drilled through	METHOD OF DRILLING: 3 1/4" H.S.A. with CSS
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 4
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
2'	Silty Clay: brown, moist, weathered (CL)	Fine Alluvium								
	Lean Clay: trace of gravel, brown, moist, weathered (CL)	Glacial Till								
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 4b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL PL	QU
30'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 5
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
	Lean Clay: trace of gravel, brown, moist, weathered (CL)	Glacial Till								
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 5b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL PL	QU
30'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 7/21/15
7/21/2015	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 6
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
	Lean Clay: trace of gravel, light brown (CL)	Glacial Till			1	fa				
					2	fa				
					3	fa				
					4	fa				
					5	fa				
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 1/6/16
1/6/2016	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 6b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL / PL	QU
30'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 1/6/16
1/6/2016	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 7
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA WL	N	NO	TYPE	LABORATORY TESTS W	D	LL / PL	QU
1'	Topsoil: mostly silty clay, very dark brown (CL)	Topsoil								
	Lean Clay: trace of gravel, light brown (CL)	Glacial Till			1	fa				
					2	fa				
					3	fa				
					4	fa				
					5	fa				
	continued next page...									

DATE:	WATER TABLE MEASUREMENTS	DATE: 1/6/16
1/6/2016	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

GEOTECHNICAL BORING LOG

PROJECT TITLE: Proposed Kodiak Pork RE, LLC: Elkton, SD
PROJ. NUMBER: 15G-16082

BORING NUMBER: 7b
GPS:

DEPTH IN FEET	DESCRIPTION OF MATERIAL SURFACE ELEVATION:	GEOLOGIC ORIGIN	SAMPLE DATA				LABORATORY TESTS			
			WL	N	NO	TYPE	W	D	LL / PL	QU
					6	fa				
30'	end of boring									

DATE:	WATER TABLE MEASUREMENTS	DATE: 1/6/16
1/6/2016	none	METHOD OF DRILLING: 3 1/4" H.S.A.
		CREW CHIEF: Mike Hudson

February 17, 2016

Mr. Gene Wilts, Manager
Brookings-Deuel Rural Water
47602 SD 28
Toronto, SD 57268

RE: Kodiak Pork RE, LLC; Brookings County, South Dakota
E/A Project No. Y15163

Dear Mr. Wilts:

This letter is to inform you that Kodiak Pork RE, LLC has applied for a Conditional Use Permit for a swine operation in the SE ¼, Section 3, T109N, R48W, Brookings County, South Dakota. This letter shall serve as official notification of the project to Brookings-Deuel Rural Water system as required by the Brookings County zoning regulations.

Eisenbraun and Associates is coordinating zoning and environmental permits for Kodiak Pork RE, LLC. If you have any questions regarding the project, please contact our office 605-665-8092.
Thank you.

Sincerely,

Stockwell, Inc.

Todd W. Van Maanen, PE
Project Engineer

February 17, 2016

Mr. John Neal
48216 218th St
Elkton, SD 57026

RE: Kodiak Pork RE, LLC Project; Brookings County, South Dakota
E/A Project No. Y15163

Dear Chairman Neal:

This letter is to inform you that Kodiak Pork RE, LLC has applied for a Conditional Use Permit for a swine operation in the SE ¼, Section 3, T109N, R48W, Brookings County, South Dakota. It is the plan to access 215th St. with one drive approximately 500' west of 482nd Ave. This letter shall serve as official notification of the project to the Brookings County Highway Department, as required by Brookings County zoning regulations.

Eisenbraun and Associates is coordinating zoning and environmental permits for Kodiak Pork RE, LLC. If you have any questions regarding the project, please contact our office 605-665-8092.
Thank you.

Sincerely,

Eisenbraun & Associates, Inc.

Todd W. Van Maanen, PE
Project Engineer

February 17, 2016

Mr. Dick Birk
Brookings County Highway Department
422 Western Ave
Brookings, SD 57006

RE: Kodiak Pork RE, LLC Project; Brookings County, South Dakota
E/A Project No. Y15163

Dear Mr. Birk:

This letter is to inform you that Kodiak Pork RE, LLC has applied for a Conditional Use Permit for a swine operation in the SE ¼, Section 3, T109N, R48W, Brookings County, South Dakota. It is the plan to access 482nd Ave with one drive. This letter shall serve as official notification of the project to the Brookings County Highway Department, as required by Brookings County zoning regulations.

Eisenbraun and Associates is coordinating zoning and environmental permits for Kodiak Pork RE, LLC. If you have any questions regarding the project, please contact our office 605-665-8092.
Thank you.

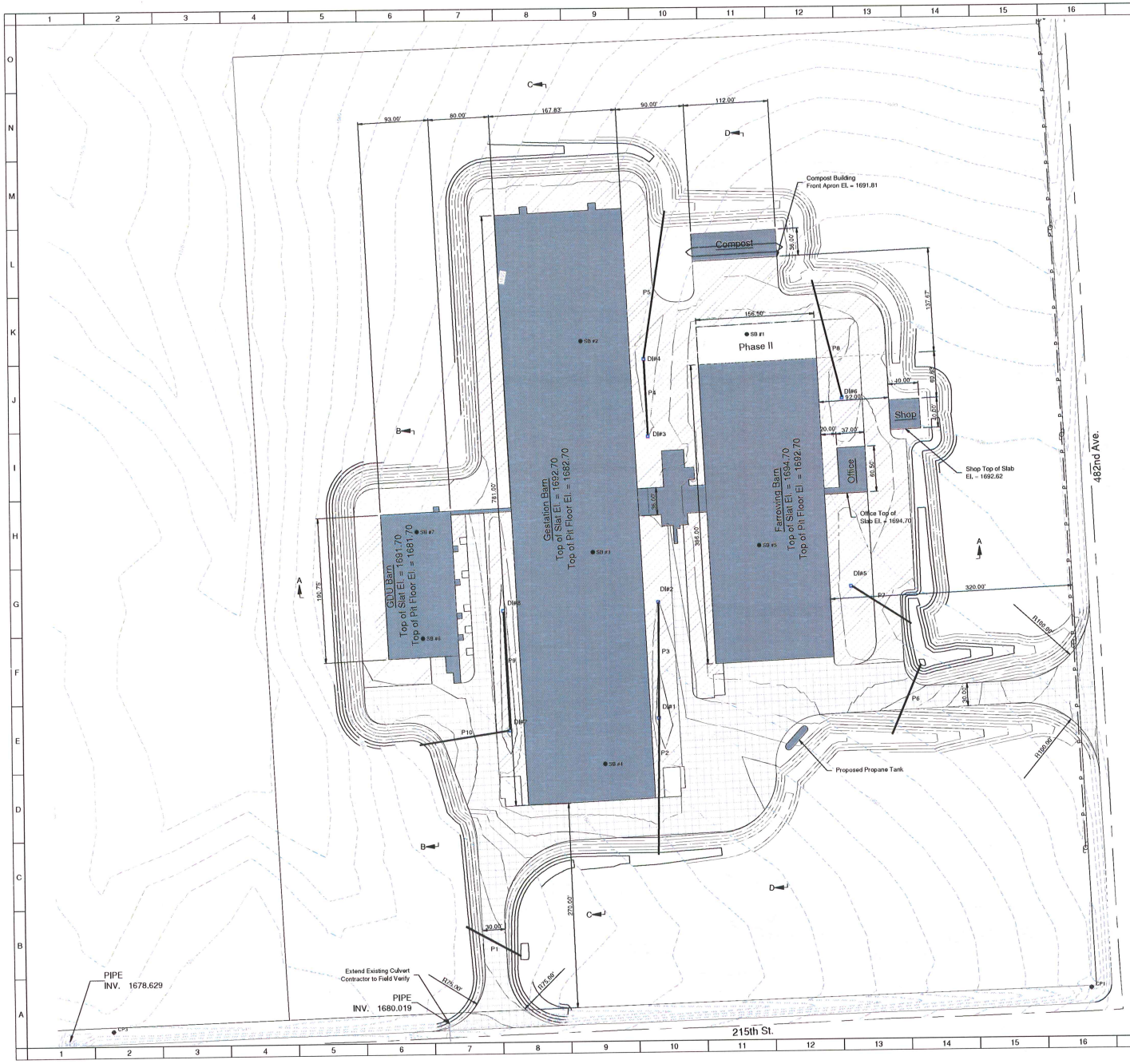
Sincerely,

Stockwell, Inc.

Todd W. Van Maanen, PE
Project Engineer

Appendix D

Appendix D



Control Table

Description	Northing	Easting	Elevation
CP #1	17,456.12	67,448.52	1,693.92
CP #2	18,738.44	67,400.07	1,685.05
CP #3	17,410.69	66,155.85	1,680.32

Estimate of Quantities

Description	Quantity	Units
Unclassified Excavation* (Cut)	46,711	CY
Unclassified Embankment* (Fill)	45,579	CY
Heavy Duty 15" Gravel Surfacing & Separation Fabric**	11,208	SY
Medium Duty 8" Gravel Surfacing**	17,984	SY
3' x 3' Concrete Drop Inlet w/Frame & Grate	8	EA
18" HP Storm Pipe (ADS)	1,335	LF
Concrete Surfacing	293	LF

Shrinkage Note:
Cut and borrow yardage figures of the earthwork construction quantities are determined by the in-place bank yardage. Fill quantities for this project have utilized a 30 percent shrinkage factor. Actual shrinkage factors may vary depending upon soil conditions, moisture content and construction techniques. The contractor is responsible for examining available data and on-site conditions.

** Gravel for surfacing shall meet the requirements of SD DOT 882 for gravel surface material. Separator fabric shall meet the requirements in SD DOT section 831 for woven material.

LEGEND

- Existing Contour
- Proposed Contour
- Proposed Storm Sewer Pipe
- DI#1 Proposed Concrete Drop Inlet
- Proposed Heavy Duty Gravel Surfacing (Geo-Separation Fabric & 15" of 3/4" SD DOT Surfacing Gravel)
- Proposed Medium Duty Gravel Surfacing (8" of 3/4" SD DOT Surfacing Gravel)
- Proposed Concrete Surfacing
- Soil Boring

Storm Sewer Drop Inlets & Junction Box Elevations*

Drop Inlet	Rim Elevation	Upstream Pipe Invert	Downstream Pipe Invert	Pipe Length	Units	Type
DI#1	1,689.20	1,686.20	1,686.10	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#2	1,691.00	-	1,688.00	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#3	1,691.00	-	1,688.00	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#4	1,690.20	1,687.20	1,687.10	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#5	1,692.10	-	1,689.10	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#6	1,692.15	-	1,689.15	-	EA	3' X 3' Concrete Drop Inlet w/Frame & Grate
DI#7	1,688.70	1,684.70	1,684.60	-	EA	3'X3' Concrete Drop Inlet w/Frame & Grate
DI#8	1,689.70	-	1,686.20	-	EA	3'X3' Concrete Drop Inlet w/Frame & Grate
P1	-	1,681.94	1,681.15	82.0	LF	18" HP Storm Pipe (ADS)
P2	-	1,688.10	1,684.33	180.0	LF	18" HP Storm Pipe (ADS)
P3	-	1,688.00	1,686.20	150.0	LF	18" HP Storm Pipe (ADS)
P4	-	1,688.00	1,687.20	160.0	LF	18" HP Storm Pipe (ADS)
P5	-	1,687.10	1,680.52	197.0	LF	18" HP Storm Pipe (ADS)
P6	-	1,687.95	1,687.45	160.0	LF	18" HP Storm Pipe (ADS)
P7	-	1,689.10	1,688.55	92.0	LF	18" HP Storm Pipe (ADS)
P8	-	1,689.15	1,688.18	160.0	LF	18" HP Storm Pipe (ADS)
P9	-	1,686.20	1,684.70	156.0	LF	18" HP Storm Pipe (ADS)
P10	-	1,684.60	1,680.50	119.0	LF	18" HP Storm Pipe (ADS)

* See Sheet S-501 for Storm Sewer Drop Inlet and Junction Box Detail.

Prepared By:
Eisenbraun & Associates
Professional Engineers - Surveyors
Innovative Solutions - Long Term Value
605.688.6050
FAX 605.688.6523
"www.eandaSD.com"
216 Walnut
Yankton, South Dakota 57078

LICENSED PROFESSIONAL ENGINEER
REG. NO. 10010
TODD VAN WALRAVEN
SOUTH DAKOTA
2/10/2016

REV. NO.	DATE	DESCRIPTION

REVISIONS

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO.	Y15163
CAD DWG FILE:	C-SP06-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
DATE:	Feb. 10, 2016

COPYRIGHT: 2016 EISENBRAUN & ASSOCIATES

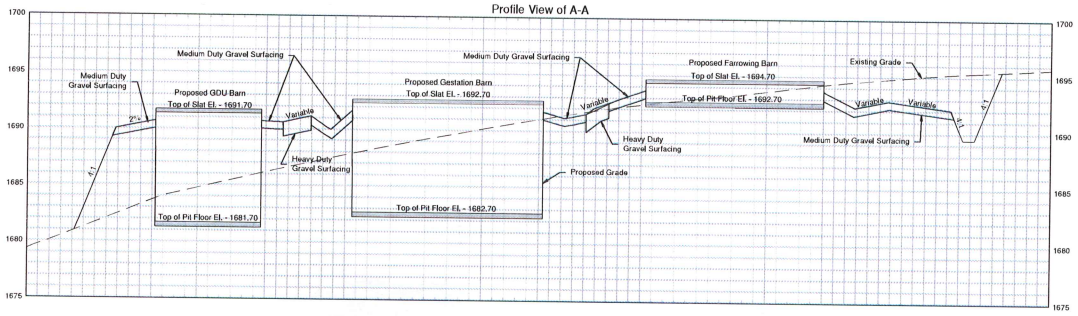
SHEET TITLE

Site Plan

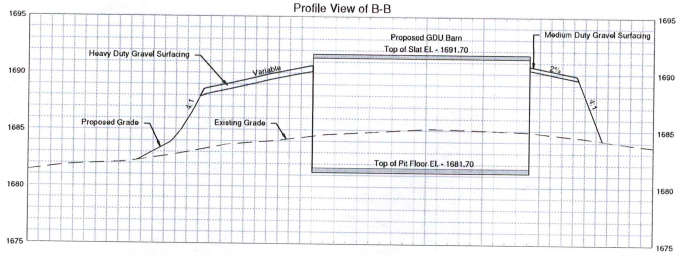
CG-101

SHEET 1 OF 12

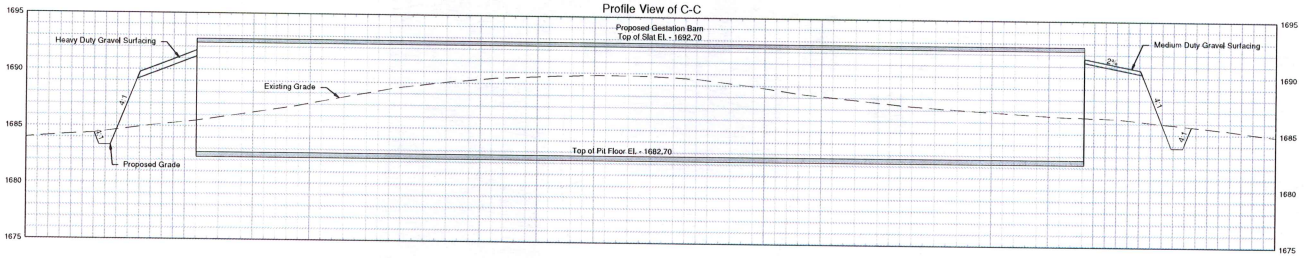
Profile View of A-A



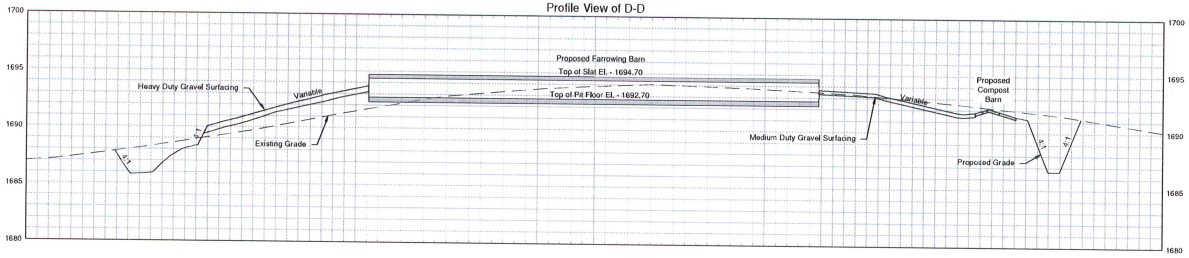
Profile View of B-B



Profile View of C-C



Profile View of D-D



Prepared By:

Eisenbraun & Associates
Professional Engineers - Surveyors
Innovative Solutions - Long Term Value
215 Walnut
Yankton, South Dakota 57078
605-665-9202
FAX 605-665-0201
www.eaassociates.com

LICENSED PROFESSIONAL ENGINEER
REG. NO. 18340
TODD VAN MANEN
SOUTH DAKOTA
2/10/2016

REVISIONS		
REV. NO.	DATE	DESCRIPTION

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG FILE:	C-SP06-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
DATE:	Feb. 10, 2016
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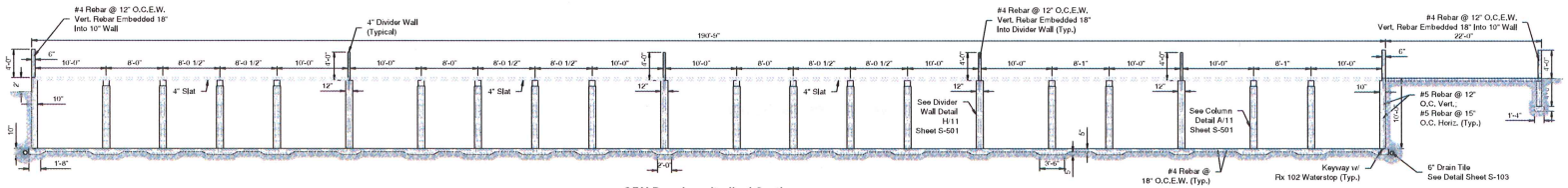
SHEET TITLE

Cross Sections

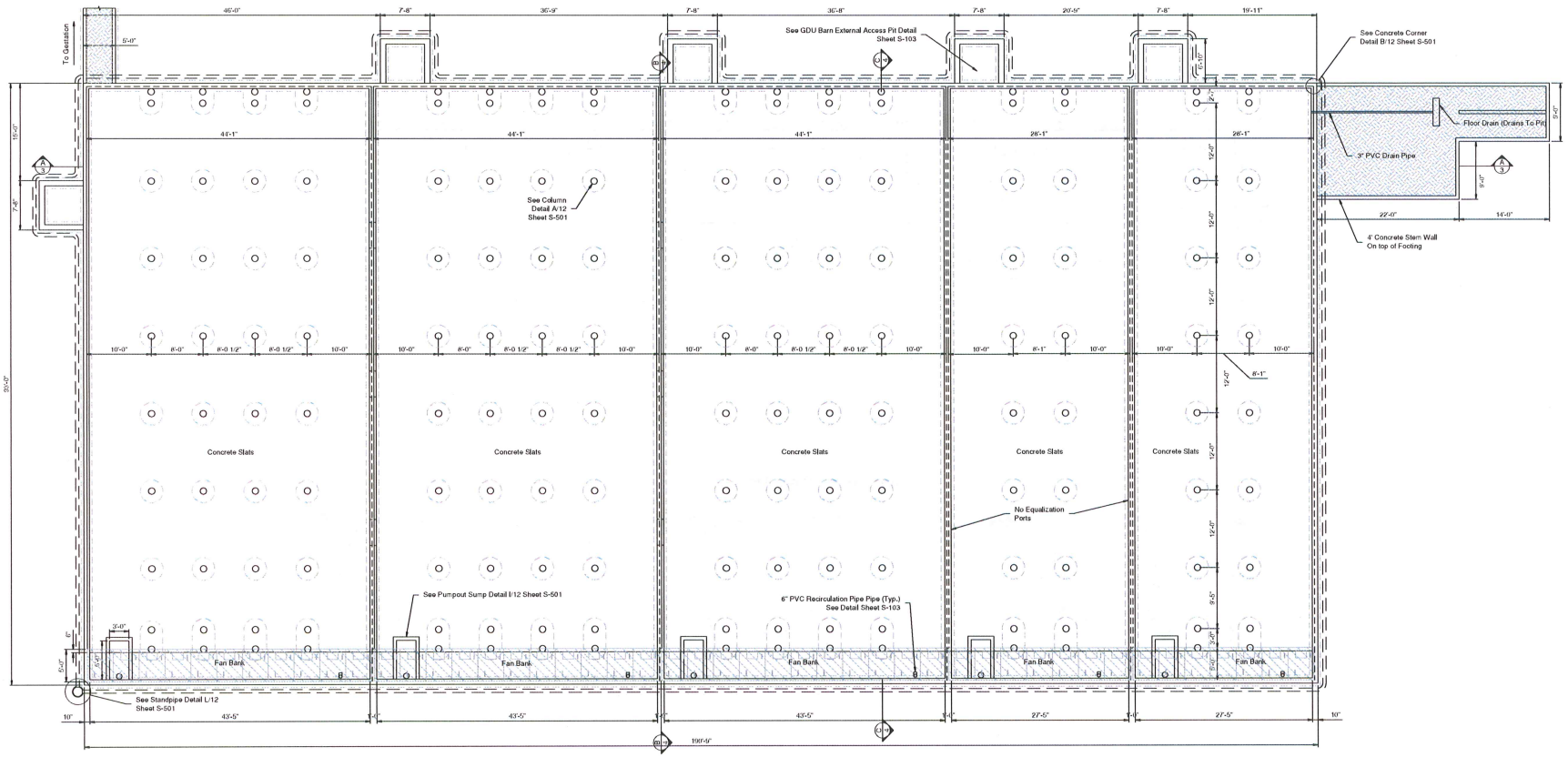
CG-201

SHEET 2 OF 12



GDU Barn Longitudinal Section
Scale: 1/8" = 1'-0"

Notes:
1. Equalization ports not used on all divider walls.
2. Rx 102 waterstop to be used on all construction joints of the waste containment structure that are exposed to the soil.



GDU Barn - Plan View
Scale: 1/8" = 1'-0"

Eisenbraun & Associates
Professional Engineers
Innovative Solutions - Long Term Value
216 Walnut
Yankton, South Dakota 57078
605.665.6002
FAX 605.665.6003
www.eaengineers.com

Prepared By

LICENSED PROFESSIONAL ENGINEER
REG. NO. 4080
TODD M. VANEN
SOUTH DAKOTA
2/10/2016

REV. NO.	DATE	DESCRIPTION

REVISIONS

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016

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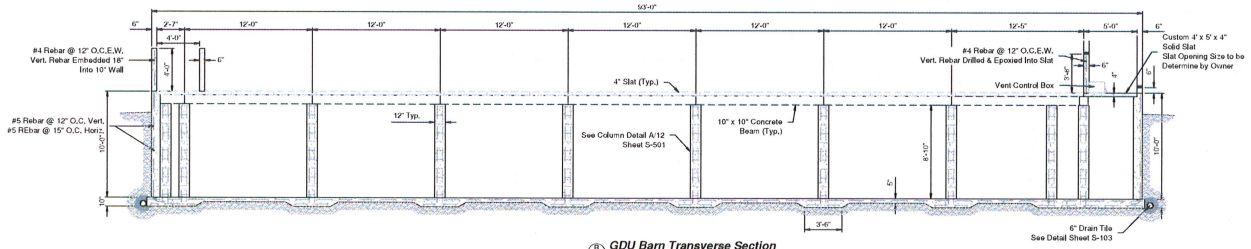
SHEET TITLE

GDU Plan View & Sections

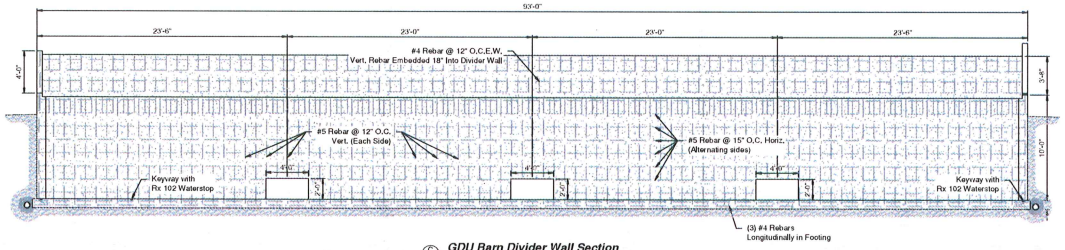
S-101

SHEET 3 OF 12



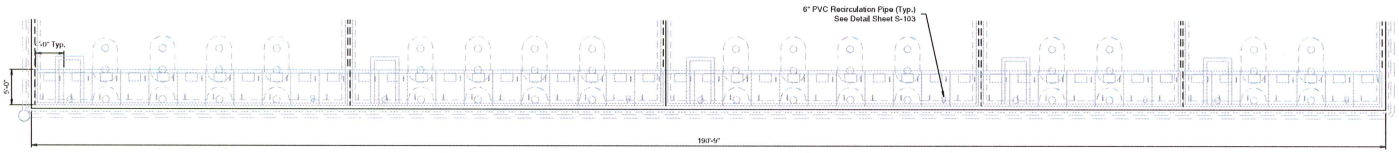
B/4 GDU Barn Transverse Section

Scale: 3/16" = 1'-0"



C/4 GDU Barn Divider Wall Section

Scale: 3/16" = 1'-0"



GDU Barn Fan Bank - Plan View

Scale: 1/8" = 1'-0"

Prepared By:

Eisenbraun & Associates
Professional Engineers - Surveyors
Innovative Solutions - Long Term Value
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FAX 605-665-0303
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LICENSED PROFESSIONAL ENGINEER
REG. NO. 7907
TODD VAN MAANEN
SOUTH DAKOTA
2/10/2016

REVISIONS

REV. NO.	DATE	DESCRIPTION

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG FILE:	C-DT01-151163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016

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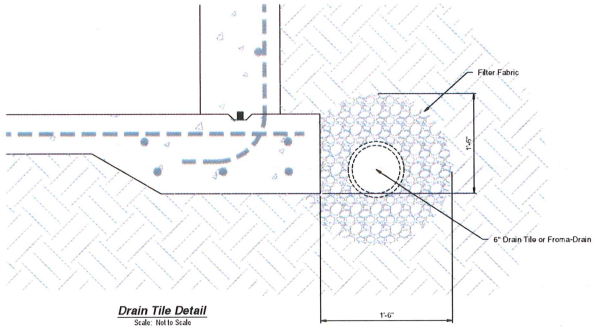
SHEET TITLE

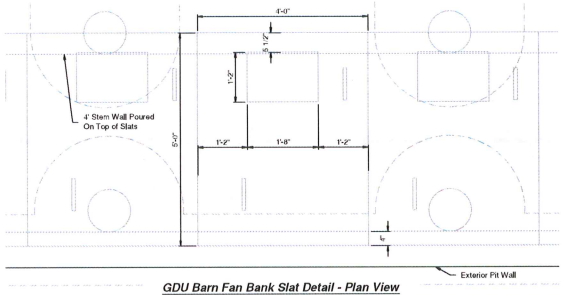
GDU Plan View & Sections

S-102

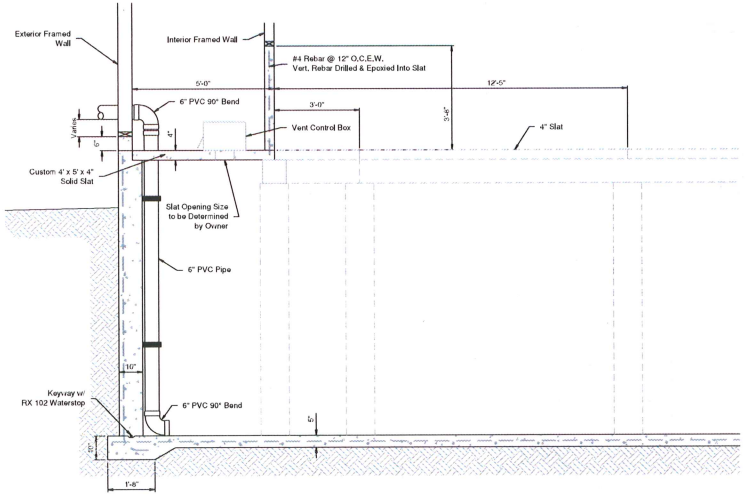
SHEET 4 OF 12



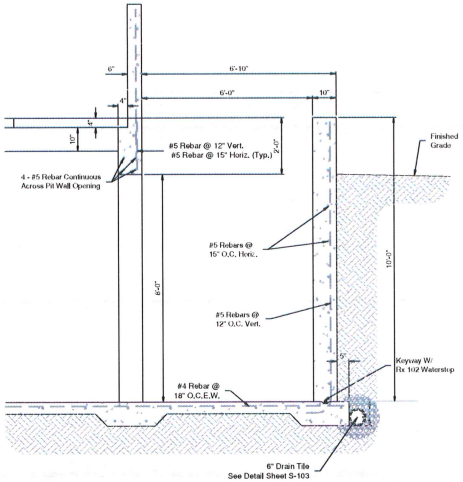
Drain Tile Detail
Scale: Not to Scale



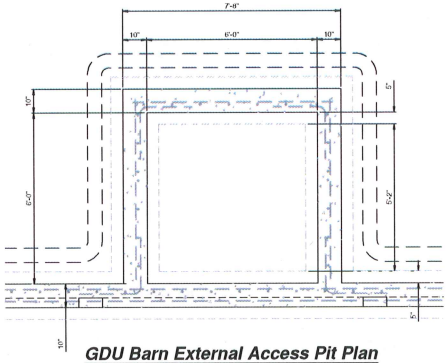
GDU Barn Fan Bank Slat Detail - Plan View
Scale: Not to Scale



GDU Fan Bank Section / Recirculation Pipe Detail
Scale: 1/2" = 1'-0"



GDU Barn External Access Pit Detail
Scale: 1/2" = 1'-0"



GDU Barn External Access Pit Plan
Scale: 1/2" = 1'-0"

Eisenbraun & Associates
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Innovative Solutions - Long Term Value
605-665-9302
FAX 605-665-9303
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Proposed By:
215 Walnut
Yankton, South Dakota 57078

REGISTERED PROFESSIONAL ENGINEER
STATE OF SOUTH DAKOTA
REG. NO. 8830
TODD VAN MANEN
SOUTH DAKOTA
2/10/2016

REV. NO.	DATE	DESCRIPTION

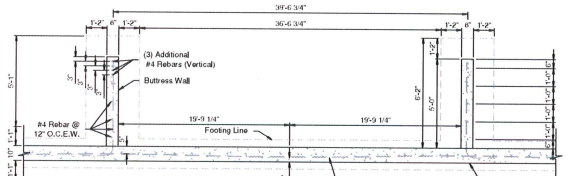
Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y16163
CAD DWG FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016
COPYRIGHT:	2016 EISENBRAUN & ASSOCIATES, INC.

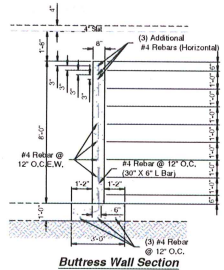
SHEET TITLE
GDU Details

S-103

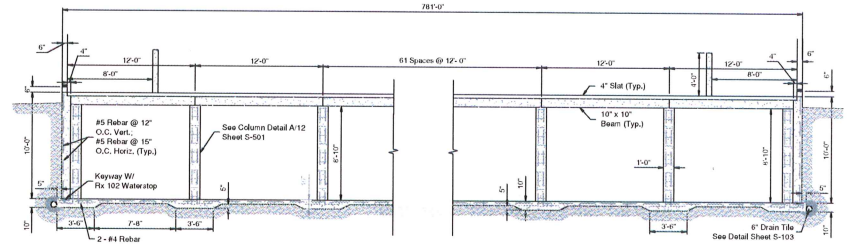
SHEET 5 OF 12



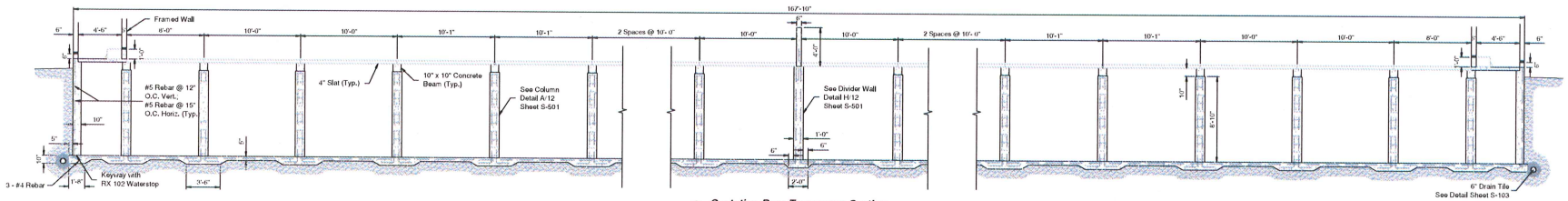
Buttress Wall Detail
Not To Scale



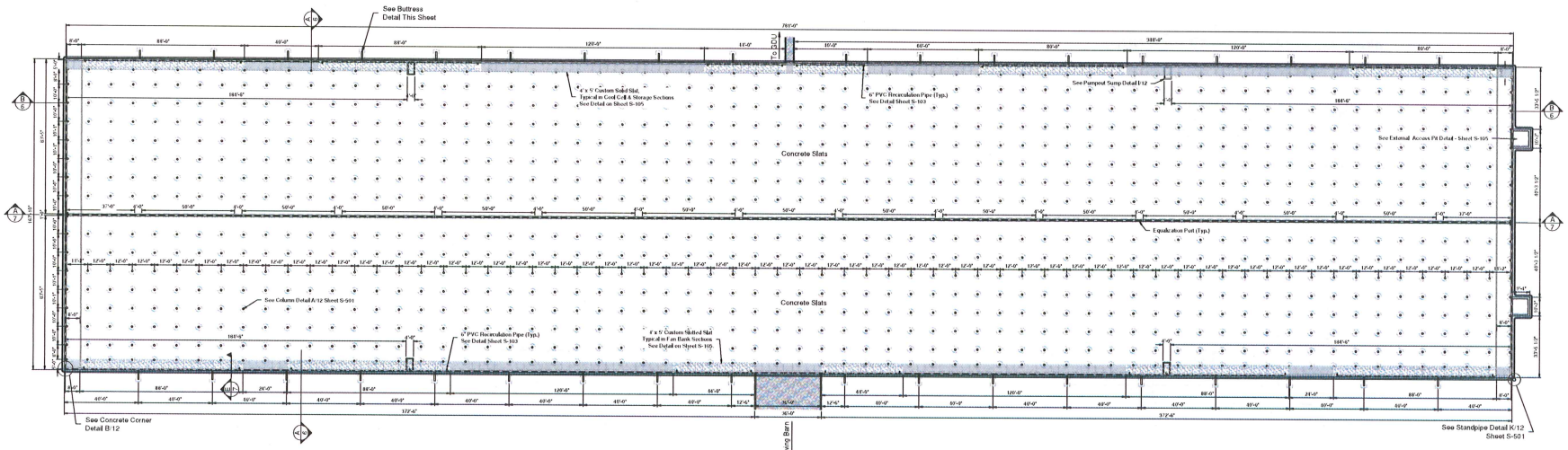
Buttress Wall Section
Not To Scale



B/6 Gestation Barn Longitudinal Section
Scale: 3/16" = 1'-0"



A/6 Gestation Barn Transverse Section
Scale: 3/16" = 1'-0"



Gestation Barn - Plan View
Scale: Not to Scale

Prepared By:
Eisenbraun & Associates
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2/10/2016

REV. NO.	DATE	DESCRIPTION

REVISIONS

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO.	Y15163
CAD DWG FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016

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SHEET TITLE
Gestation Plan View & Sections

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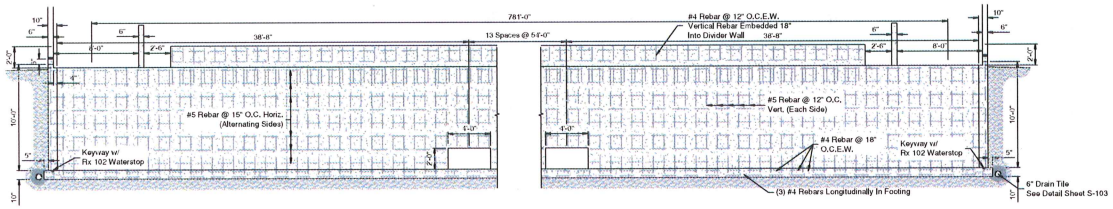
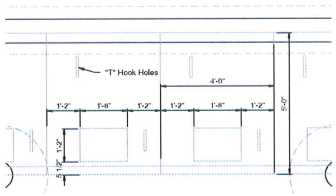
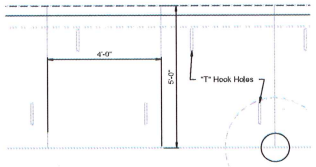
SHEET 6 OF 12



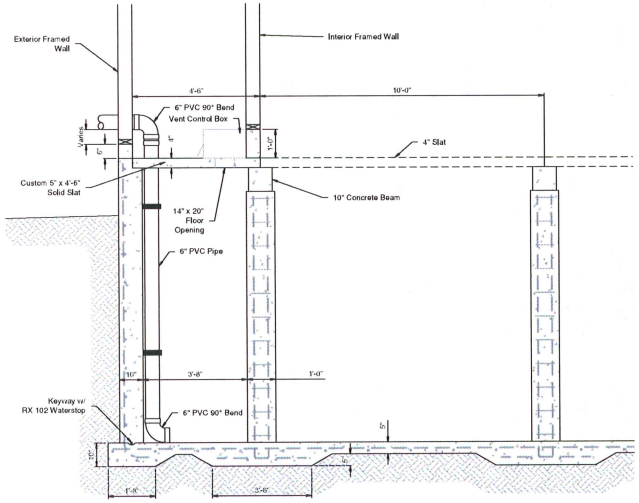
A/7 **Gestation Barn Divider Wall Section**
Not to Scale



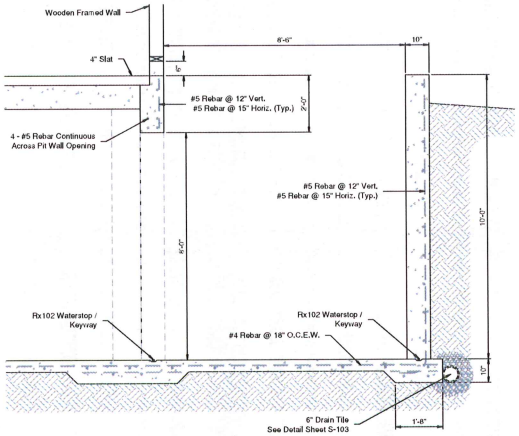
Gestation Barn Fan Bank Slotted Slat Detail
Plan View
Scale: Not to Scale



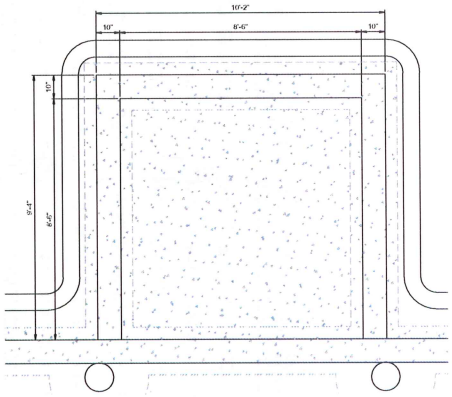
Gestation Barn Fan Bank Solid Slat Detail
Plan View
Scale: Not to Scale



E/7 **Gestation Barn Fan Bank Section / Recirculation Pipe Detail**
Scale: 1/2" = 1'-0"



Gestation Barn External Access Pit Detail
Scale: 1/2" = 1'-0"



Gestation Barn External Access Pit - Plan View
Scale: Not to Scale

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REVISIONS		
REV. NO.	DATE	DESCRIPTION

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y16163
CAD DWG FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016
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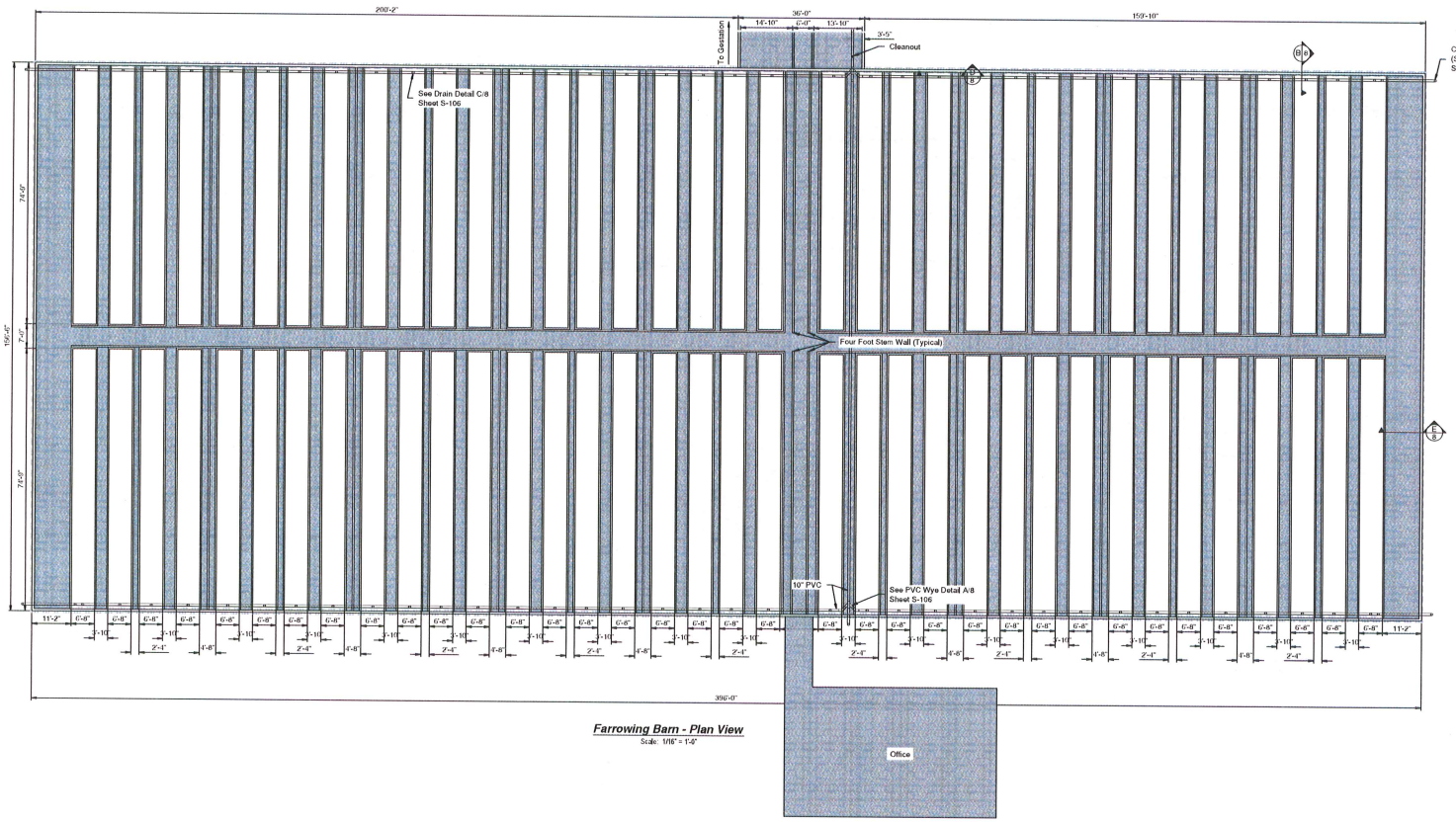
SHEET TITLE

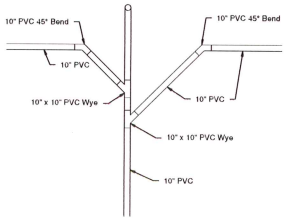
Gestation Sections

S-105

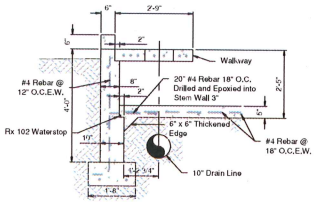
SHEET 7 OF 12



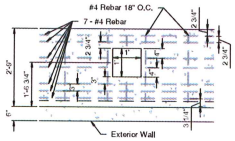
Farrowing Barn - Plan View
Scale: 1/16" = 1'-0"



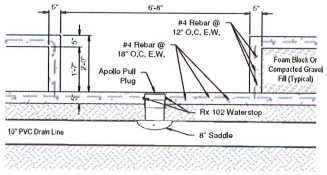
A/8 10" PVC Wye Detail
Scale: 1/8" = 1'-0"



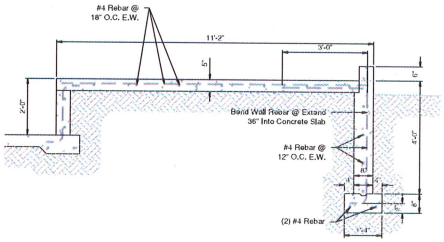
B/8 Farrowing Barn Exterior Wall Detail
Scale: 1/2" = 1'-0"



C/8 Walkway Access Detail
Top View
Scale: 1/2" = 1'-0"



D/8 Farrowing Barn Drain Detail
Scale: 1/2" = 1'-0"



E/8 Farrowing Barn Exterior Wall Detail
Scale: 3/4" = 1'-0"

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REVISIONS		
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Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
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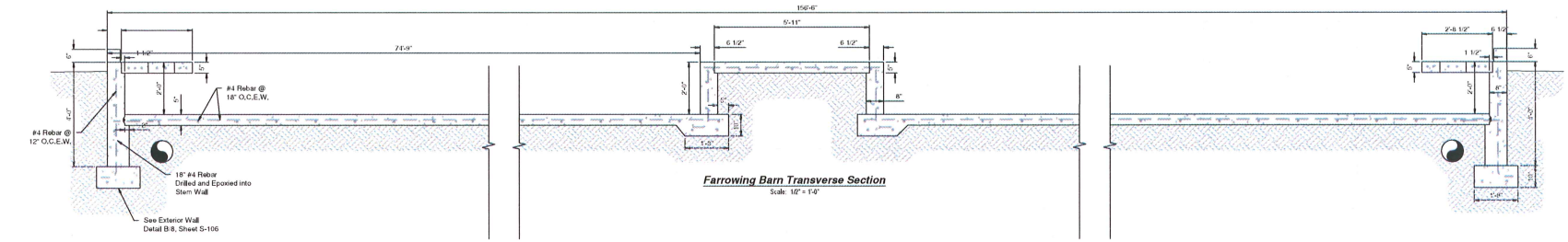
SHEET TITLE
Farrowing Barn
Plan View

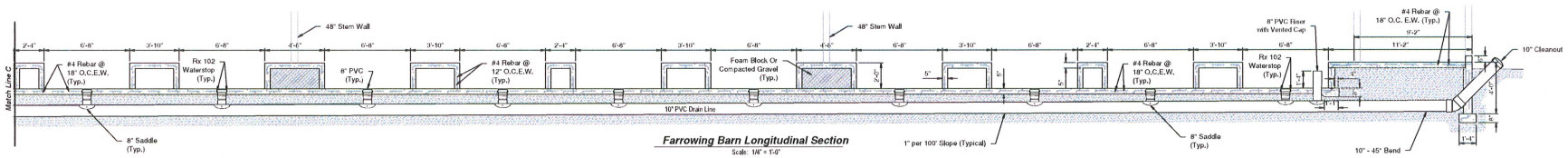
S-106

SHEET 8 OF 12

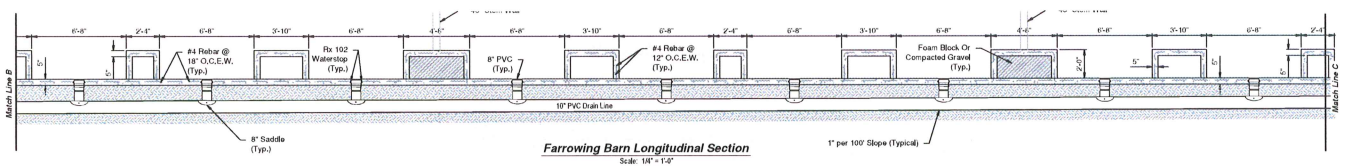
Note:
Waterstop (Rx 102) is required in all construction joints of the waste containment structure that are exposed to the soil.



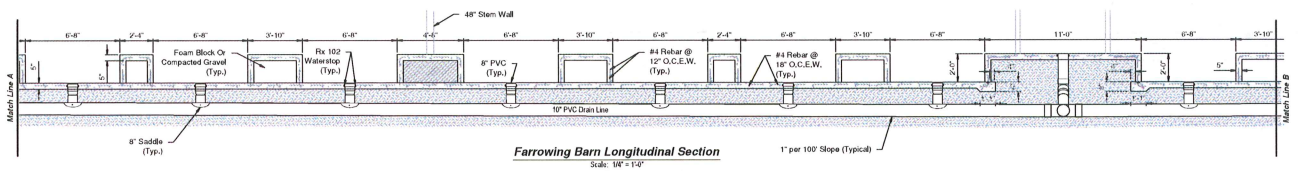
Farrowing Barn Transverse Section
Scale: 1/2" = 1'-0"



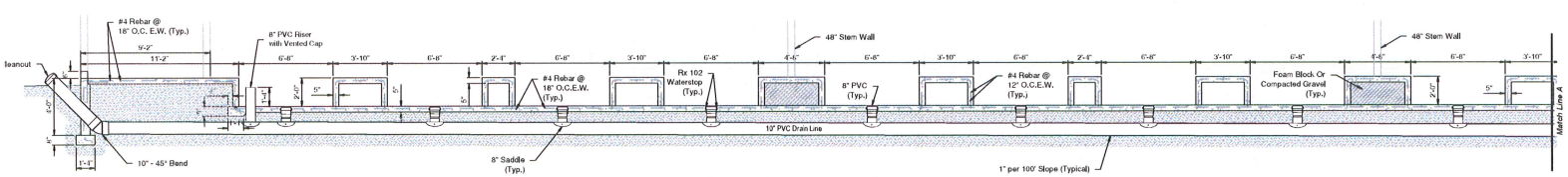
Farrowing Barn Longitudinal Section
Scale: 1/4" = 1'-0"



Farrowing Barn Longitudinal Section
Scale: 1/4" = 1'-0"



Farrowing Barn Longitudinal Section
Scale: 1/4" = 1'-0"



Farrowing Barn Longitudinal Section
Scale: 1/4" = 1'-0"

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REV. NO.	DATE	DESCRIPTION

REVISIONS

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO.	Y15163
CAD DWG FILE	C-DT01-15163
DRAWN BY	BRIANB
REVIEWED BY	TVM
REVIEWED BY	Feb. 12, 2016

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SHEET TITLE

Farrowing Section View

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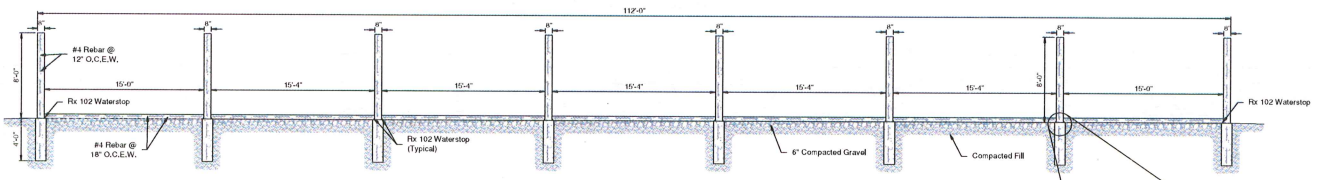
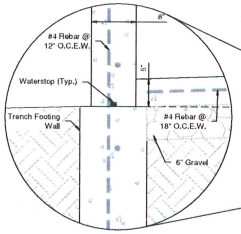
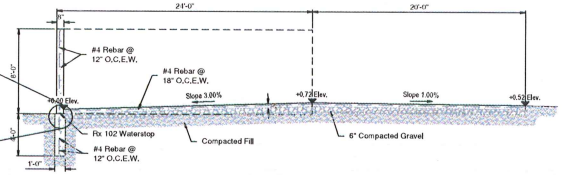
SHEET 9 OF 12

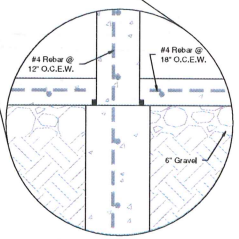


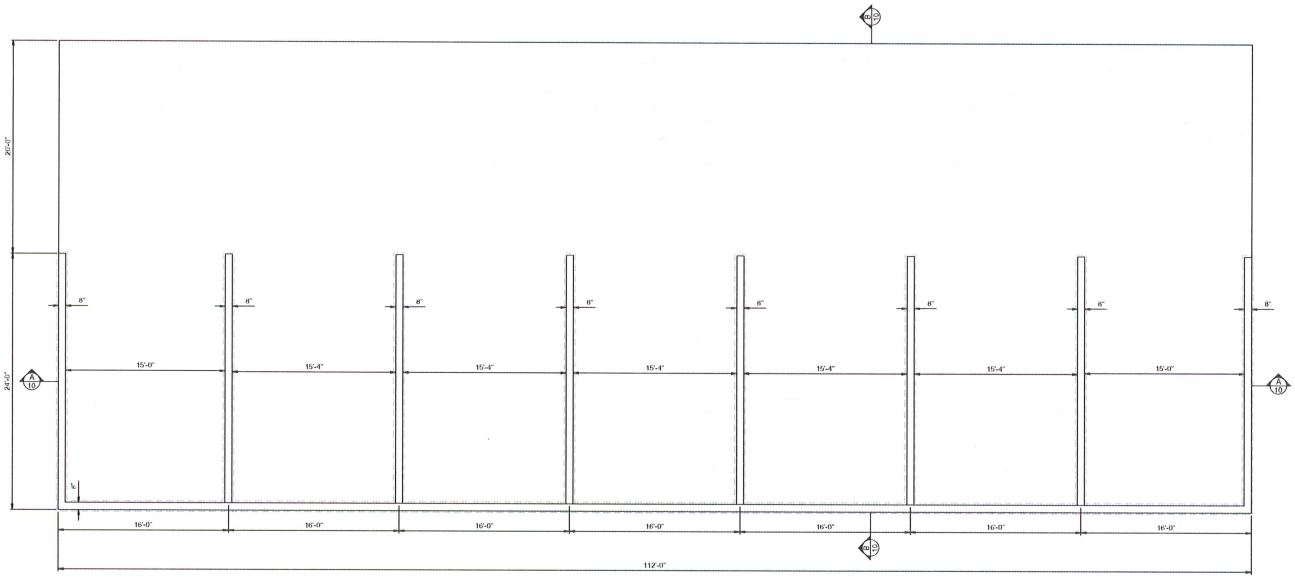
A/10 **Longitudinal Section**
Scale: 3/16" = 1'-0"





B/10 **Transverse Section**
Scale: 3/16" = 1'-0"





Compost Plan View
Scale: 3/16" = 1'-0"

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REV. NO.	DATE	DESCRIPTION

REVISIONS

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016

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SHEET TITLE
Compost

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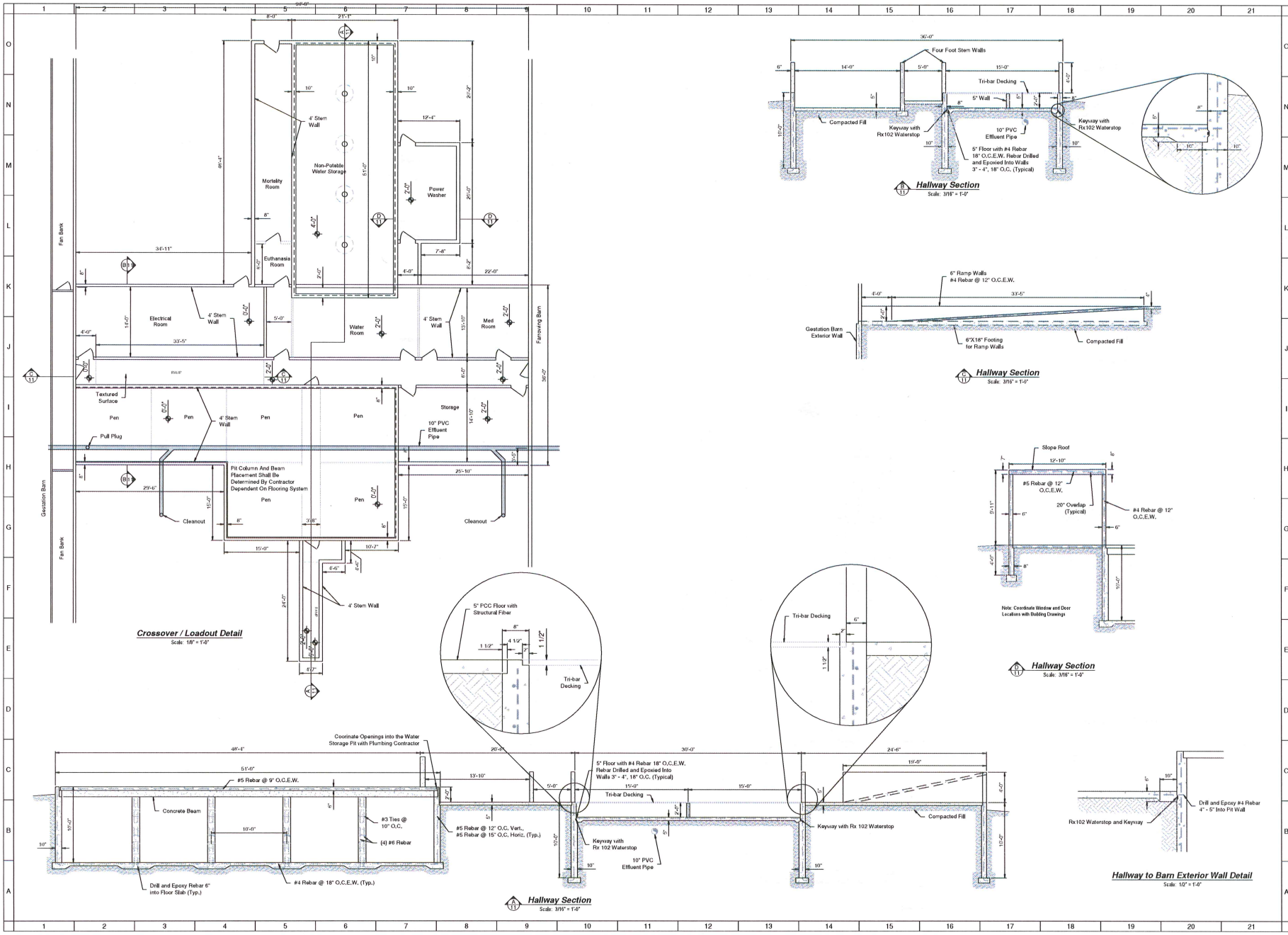
SHEET 10 OF 12



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REV. NO.	DATE	REVISIONS DESCRIPTION

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO.	Y15163
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DRAWN BY:	BRIANB
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SHEET TITLE:

Connector Hallway Details

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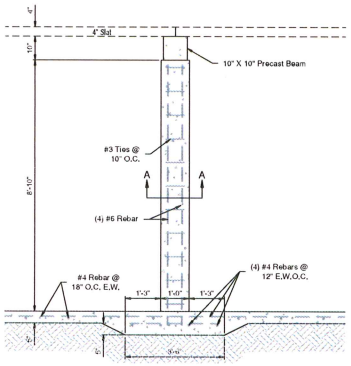
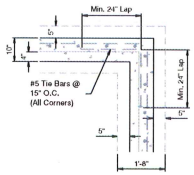
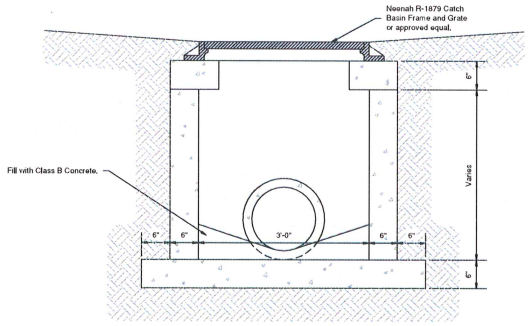
SHEET 11 OF 12



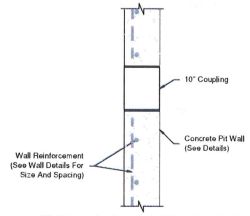
A/12 **Column Detail**
Scale: 1/2" = 1'-0"



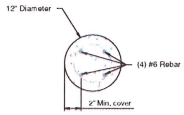
B/12 **Concrete Corner Detail**
Scale: 1/2" = 1'-0"



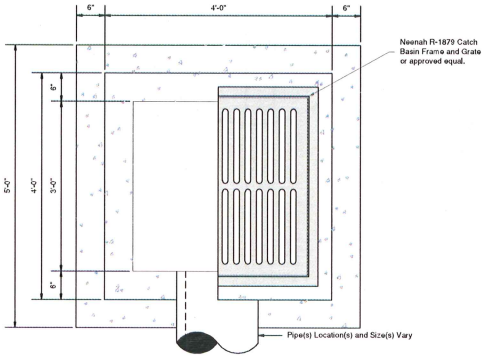
C/12 3' x 3' AREA INLET/JUNCTION BOX DETAIL

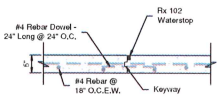


D/12 **Wall Penetration Detail for Gravity Line**
Not To Scale

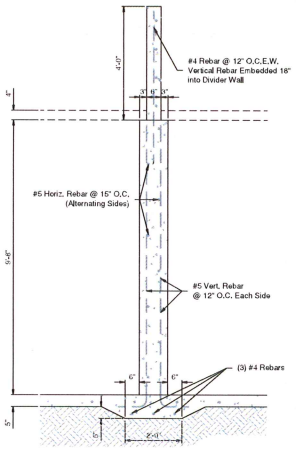


Column Section A-A
Scale: 1" = 1'-0"

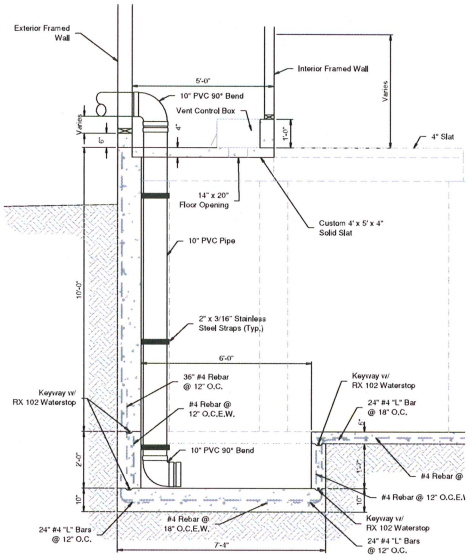




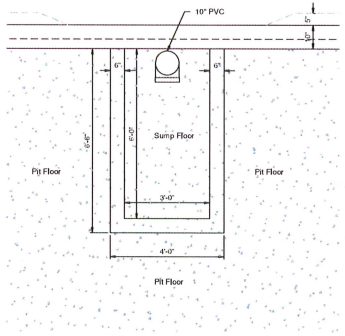
F/12 **Detail For Concrete Placement Termination For Pit Floor**
Scale: 3/4" = 1'-0"



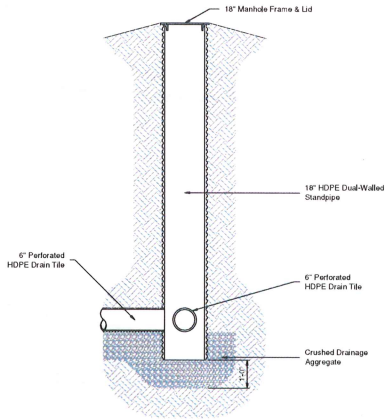
H/12 **Divider Wall Section**
Scale: 1/2" = 1'-0"



I/12 **Pumpout Sump Section**
Scale: 1/2" = 1'-0"



J/12 **Pumpout Sump Detail**
Scale: 1/2" = 1'-0"



K/12 **Standpipe Detail**
Scale: 1/2" = 1'-0"

General Concrete Notes:

1. All Concrete 4,000 PSI
2. Exterior Wall Reinforcement, See Sections
3. Floor Reinforcement #4 Rebar @ 18" O.C. Each Way
4. All Reinforcing Steel Shall Be Grade 60 Or Greater
5. All Rebar Must Be Inspected By A S.D. Electrical Inspector Prior To Placing Concrete
6. All Reinforcing Bar Shall Have A Minimum Of 18" Of Overlap
7. Waterstop Is Required In All Construction Joints Of The Waste Containment Structure That Are Exposed To The Soil
8. Verify Soil Strength Prior To Rebar Placement By Calling American Technical Services
9. Structural Engineer To Verify Rebar Size And Placement
10. Exterior Compaction Testing Required. Do Not Overpack Sand And Clay Exterior Fill.
11. Waterstop (Rx 102) is Required in All Construction Joints of the Waste Containment Structure thatare Exposed to the Soil.

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REVISIONS		
REV. NO.	DATE	DESCRIPTION

Kodiak Pork RE, LLC
Brookings County, South Dakota

PROJECT NO:	Y15163
CAD DWG. FILE:	C-DT01-15163
DRAWN BY:	BRIANB
REVIEWED BY:	TVM
REVIEWED BY:	Feb. 12, 2016

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SHEET TITLE

Details

S-501

SHEET 12 OF 12